

Motivation for Landscape Stewardship as a Driver of Change-

Garden Route, South Africa



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Lisa Heider

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Motivation for Landscape Stewardship as a Driver of Change- Garden Route, South Africa

Dissertation

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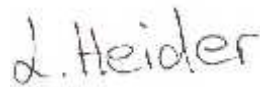
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March 2018

*To the present moment
and
the future Biosphere*

Declaration

By submitting this dissertation, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Nelson Mandela University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.



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March 2018

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Summary

Stewardship, as portrayed in much of contemporary literature is considered as a key to the sustainability challenges of the biosphere. In disciplines which regard sustainability in the context of Social Ecological Systems (SES), stewardship is associated with the goal of building resilience through the informal governance structures that dictate how the landscape is utilized. These disciplines lack a better integration of individual roles and responsibilities as they relate to their daily interactions with the environment. Formally initiated stewardship can evoke maladaptation, in other words the attempts to conserve a specific natural assets in one particular locality can shift the problem of degradation or exploitation to another place or point in time. This is because the individual, as an inevitable driver of unsustainability, has not been addressed. What is needed is the knowledge of strategies which resolve human disconnection from nature and the biosphere, through a greater focus on the individual motivational scale.

In Chapter 2, which consists of a literature review of recent stewardship discourses, I extract alternative theories which consider individual motivation and subjectivity as the underlying drivers of resilience. These include knowledge about Sense of Place, and theories from Conservation Psychology. Basic Human Value theory is also presented as a possible entry point for societal transformation through individual motivation. These ought to inform conservation interventions with mechanisms which truly grasp unsustainability at its roots. This is a place-based, qualitative study where the results assist in interrogating the question: How does individual motivation for stewardship mediate social-ecological trajectories of change?

The context of the study and the methods used to generate my research findings are presented in Chapter 3 and 4. The Garden Route provides the place-based context for this research and is situated in the Western Cape Province of South Africa. The region is home to diverse cultures representative of Western and indigenous regions who meet and negotiate what it means to care for the environment. The area is biologically rich and ecologically highly sensitive to current trajectories of development, fragmentation and global change.

Mixed methods and a qualitative approach was used to answer three sub-questions: (1) Which theories facilitate greater understanding of transformative stewardship pathways? (2) How can a transformative pathway be recognized? and (3) How can transformative pathways be pursued? One method used in this study is a photo-voice technique, which is coupled with self-directed journaling and in-depth interviews. Other sources of data include communication and engagement, observations

and focus groups. I apply a content analysis to the transcribed qualitative data to resolve the research questions.

Research results are presented in Chapter 5. In this empirical chapter I present three competing meanings of stewardship and visions for change held by individuals in the Garden Route. The three meanings are described as: *protect nature from human influence (Nature despite People)*; *work together and communicate (Nature for People/Nature and People)*; and *be the change you want to see in this world (People in Nature)*.

The variable which best describes the differences in visions is Critical Connectivity. Resilience in a SES is critically dependent on three levels of connectivity in stewardship. Firstly, individuals' consciousness of being interrelated and interdependent within a community of life; Secondly, expressions in the physical landscape which promote the connectivity of ecological systems as well as the connectivity between people and nature. Thirdly, Connectedness with the Biosphere, which means that the boundaries of the planet and the functioning of the life-supporting earth system are considered in behaviours.

I use Basic Human Value theory to test whether it can explain how the differences between and commonalities within the three groups arise. The results support the theory, suggesting that Basic Human Values underlie individual motivation for stewardship. However, inconsistencies and shortcomings of Basic Human Value theory became evident. I identified new values and value combinations which were not made explicit in the framework. These emerged due to my in-depth qualitative approach, as opposed to the common quantitative uses of the framework. The qualitative approach allows for values to emerge inductively and it elicits nuances of individual value interpretations that the definitions of Basic Human Values do not depict.

In the second part of the empirical chapter, I present evidence of maladaptive and transformative stewardship pathways in the Garden Route. A maladaptive pathway is one in which individuals' expression of care for the environment undermines Critical Connectivity and transfers vulnerabilities in the SES. A transformative pathway is one in which individuals pro-actively invest into Critical Connectivity and enhance resilience. The differences in these pathways are directly related to the differences in motivation.

The findings of this research reveal that stewardship is the act of 'place creation' which is motivated by unique and nuanced differences in basic values and individual consciousness. Recognizable features of transformative and maladaptive stewardship pathways are discussed in Chapter 6. I present a conceptual model that critically evaluates stewardship. This model firstly assists researchers and practitioners to become alert to early warning signs of maladaptive pathways. Secondly, it informs them of potential leverage points for interventions which can induce sustainability transformations.

I then apply this model to discuss transformative and maladaptive pathways against the backdrop of my findings and the literature. The elements which emerged as critical in this assessment are *risk perceptions, stewardship meaning, connectivity with nature, connectedness with the biosphere, relationship with place, sustenance and identity*. Different configurations of each indicator help explain the different pathways.

Lastly, I discuss the role of Basic Human Values in each of the pathways. I compare how the motivational orientation towards self-enhancement and self-transcendence, or towards openness to change and conservation, play roles in SES resilience. This discussion brings to the surface the fact that transformative stewardship rests on a combination of these four value categories. In contrast, the absence of self-transcendent values and the presence of power, security and conformity underlie the motivation for maladaptation.

I leave the reader with suggestions for interventions which have become relevant as a result of my study. Policy, media, conservation agencies and science shape meanings of stewardship, portray social norms and hence must motivate Critical Connectivity. Transformations can be achieved by targeting changes in values which must include autonomy, universalism, benevolence and spirituality. I discuss how policy and planning, communication, marketing and education can lever transformation through mechanisms identified in my research.

Chapter 7 concludes this research with a reflective summary of the academic and practical contributions my study has made for stewardship discourses and for the management of SES resilience in local landscapes. I provide recommendations for further research, as they apply to socio-political change in Post-Apartheid South Africa. I end the concluding chapter by encapsulating my research finding in future scenarios for the Garden Route in the face of change, which namely relate to abrupt and uncertain environmental change, immigration, population growth and implications for spatial planning, and the Garden Route Biosphere Reserve.

In Chapter 8, I provide a reflection of this research. This entails foremost a reflection of how I have accounted for four quality criteria in social research, which are namely dependability, credibility, conformability and transferability. I end the chapter with the limitations and outline of scope of my study.

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Thank you to Miila, Jenny and Mike for being endearing friends, inspiring and constructive sounding boards and a bastion of calm. I thank you for your interest, patience and friendship. You, amongst all the people mentioned above, made the PhD journey enjoyable, meaningful and rich.

Last but not least, I am eternally grateful for an experience in a physical landscape which made me feel at home and called for my reflection of what it means to care for nature and for each other. I

have been in awe of the natural richness which supports the diversity of cultures and people who characterize a unique place in the world. I have grown attached to the Garden Route, found many special places and have made friends who shared beautiful experiences in them. This research project was inspired by and dedicated to the living landscape of the Garden Route.

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Acronyms

Term	Meaning
ANC	African National Congress
DA	Democratic Alliance
NACSA	National Association of Conservancies/ Stewardship South Africa
NGO	Non-Governmental Organization
SANParks	South African National Parks
SES	Social-Ecological Systems
WESSA	Wildlife and Environment Society of South Africa

Definition of relevant terms

Term	Definition in the context of this research
Adaptive capacity	The ability of a system or an individual to respond to change
Anthropocene	The current era in which humans fundamentally shape the capacity of the biosphere to sustain life
Biocultural diversity	The diversity of life in its biological and cultural manifestations, which are interrelated and co-evolving in a SES.
Biosphere	Regions of the land, sea and atmosphere occupied by living organisms
Biomimicry	An ethos which emphasizes life-centred social development in line with closed-loop resource- and nutrient- cycling found in ecological systems
Bounded rationality	The cognitive filter through which reality is perceived and behaviours are justified
Citizen science	Environmentally scientific research conducted by lay members of the public and supervised by professionals
Common Pool Resource theory	A scientific theory which deals with local communities' informal rules and codes of conducts in managing the natural resources which belong to everyone
Community of life	Term for the biosphere in Political Ecology
Connectedness with the Biosphere	Drawing from local and renewable energies and materials, taking care of primary production systems
Connectivity with Nature	Sense of boundless connectivity in a community of life
Critical Connectivity	Constitutes (1) consciousness of interrelatedness in SES, (2) physical connectivity in the landscape and (3) Connectedness with the Biosphere
Ecological solidarity	An ethical paradigm and a conservation mechanism from Political Ecology
Ecosystem services	The provisioning, supporting, regulating and cultural services provided by ecosystems for human benefit
Empathy	Affectionate concern for the well-being in a community of life
Environmentally Responsible Behaviours	Predefined codes of conduct which are contemporarily viewed as desirable for the environment
Equality and justice	Equal access to life-essential services in a community of life
Experiential education	Education which builds on fostering direct and relational experiences with people and the environment, as a source of knowledge and value formation

Fynbos	Fire-dependent vegetation type endemic to South Africa, dominated by <i>Restio</i> , <i>Erica</i> and <i>Protea species</i>
Green economy	An economy that aims to reduce environmental risks and depletion of natural resources
Green loop system	A SES of which its dynamic is connected with the biosphere
Holistic health	Health of body, mind, spirit and environment
Interdisciplinarity	Research which draws from multiple branches of knowledge, ie. scientific disciplines
Intrinsic motivation	Motivation for behaviours which stems from a human consciousness of being interrelated with the environment
Leverage point for sustainability transformation	Places of entry in a SES in which external intervention can induce a transformation of the whole system
Maladaptation	The transfer of vulnerability from one point in time or specific place, to another
Metaphor	A symbol which stipulates values and norms for society
Permaculture	Holistic approach to landscape use and lifestyle, which integrates biology, ecology, geography, agriculture, technology, architecture and community building.
Place attachment	Emotional and physical bond between a person and a place
Placelessness	Affection for a particular locality overridden by values for mobility and flexibility
Planetary boundaries	The ecological limits to human growth and social development
Political Ecology	Scientific discipline which addresses relationships between political, economic, environmental and social factors from a perspective on ecological functionality
Reciprocity	Mutualistic relationship in a community of life
Red loop system	A SES of which its dynamic is disconnected from the biosphere
Redundancy	Assets of SES which maintain essential system functioning in case of the failure of others
Resilience	A dynamic of an ecosystem, a social community or an intertwined SES, which helps it adapt to uncertain and sudden change without sacrificing the functionality needed to sustain life and well-being
Self-actualization	The need and drive for an individual to fulfil ones' potential; achieved through expression of personal values and identities
Sense of Place	A subjective perception of a SES; collection of meanings, beliefs and symbols
Sense of continuity	A temporally-continuous relationship with place dependent on commitment

Social-Ecological System (SES)	An interlinked system of humans and nature which changes dynamically through feedbacks
Stewardship	Voluntary conservation; expression of care for the environment
Sustenance	Existential dependence on SES; needs for survival
Traditional ecological knowledge	Evolving knowledge acquired by local communities through direct contact with the environment
Trajectory of change	A pathway towards the future
Transformation	A fundamental change of SES dynamics towards resilient trajectories
Vulnerability	Malfunctioning of relationships in a SES; state of a SES which exposes it to collapse
Wicked problem	A problem difficult to define and delineate from bigger problems, and not solved once and for all but tends to reappear
* The definitions of terms reflect the researchers' own thinking about the phenomena as they pertain relevant to this research. Definitions stem from a variety of academic sources and have been modified by the researcher, in order to simplify key terms and concepts for the reader.	

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1. Stewardship and trajectories of change

1.1. Social-ecological relevance and justification

This thesis was inspired by emerging thoughts in SES theory. We are in the Anthropocene, *“the time interval in which human activities now rival global geophysical processes”* (Steffen et al. 2011, p.739). The gloomy predictions about the future of society and the biosphere occupied my mind. I felt drawn to the calls by scholars (eg. Folke et al. 2011; Zylstra et al. 2014; Abson et al. 2016) for enhanced connectedness between people and nature, and for a human future that is in concert with the capacity of the planet to support life and well-being (Rockström et al. 2009).

I realized that the issues around the availability of freshwater and other critical natural resources, the transformation of natural landscapes, the extinction of species, climate change and ocean acidification are part of a wicked problem. These are the planetary boundaries for humans to live, and it is evident that they are pressured by socio- economic factors, which drive inequality, power conflicts and cultural divides (Raworth 2012). A wicked problem is a problem that is *“difficult to define and delineate from other and bigger problems”* and *“not solved once and for all but tend to reappear”* (Jentoft & Chuenpagdee 2009, p.553). I was eager to contribute to this debate through solutions which can transform the currently unsustainable trajectory of human pathways on the planet.

The argument in sustainability discourses is often that wicked problems are structural or institutional. While recognising this broader framing, I would contend that the individual level at which wicked problems also derive are invariably important in problem-solving. Through many years of conservation experiences in different parts of the world, such as Germany, Namibia, South Africa, the US and the Seychelles, I have often observed how the individual scale can be an impediment to desired conservation goals. On the one hand, individuals’ apathy towards the conservation of nature and a sustainable relationship with the biosphere creates an obstacle. On the other, my involvement with professional conservationists has made me aware that even individuals’ good intentions for nature are not enough to reverse the environmental effects of people’s apathy towards conservation, and to manage ecosystems sustainably in the face of growth and change in society.

According to Xiang (2013), the resolution of wicked problems in social-ecological landscapes requires awareness, acceptance and adaptation. Common pool resources theory has helped me frame the individual as an obstacle. In the context of natural resource management, Elinor Ostrom (1990) states that individuals act on the basis of self-interest and bounded rationality, in other words the imperfect knowledge of the social-ecological feedbacks which affect the availability and flow of resources.

Individual action can thus be maladaptive, protecting one component of a global natural resource system at one point in time or specific place, but unintentionally transferring the vulnerability to another temporal or spatial scale (Barnett & O'Neill 2010). The imperfections arising from individual self-interest and subjectively perceived realities are inevitable.

This has raised burning questions with me. The one is whether there is not a universally human interest in, and common rationality for, the biosphere? Another is how can external intervention from conservation science, management or policy articulate and promote the necessary changes towards a common ground for sustainability? These questions have been dealt with in an insufficient and incoherent manner across scientific disciplines.

A goal in this thesis is to address these shortcomings through interdisciplinarity, a form of research which draws from multiple branches of knowledge and an academic strategy which is regarded as critical in resilience and stewardship debates (Chapin et al. 2011; Olsson et al. 2014). Self-interest of individuals in this thesis is explored by engaging with the concept of Basic Human Values by Shalom Schwartz (2006 & 2012). Values are beliefs enriched with feelings. They represent envisioned goals and act as the guideline for individuals' behaviours and norms (Schwartz 2012). Values motivate in the sense that individuals constantly work towards the reassurance and reinforcement of beliefs and personal identity (Agyris 1982).

Bounded rationality partly derives from Sense of Place which provides a cognitive filter in the relationship with the environment. It is an individualistic mind map of a SES and the subjective perception of a physical and contextual reality (Stedman 2016; Masterson et al. 2017). In other words, Sense of Place depicts the understanding and appreciation of a social-ecological landscape and can symbolize rationalities for a better way of existence. This better way is paved foremost by an understanding that humans, nature and physical landscapes are interlinked entities that interact through feedbacks with the life-supporting earth system (Zylstra et al. 2014; Abson et al. 2016). These are the principles of SES theory as a way of thinking about the future holistically, systemically and dynamically. This is contrasted by the conventional sustainability framework which considers the consequence of human behaviour on the natural environment in a linear fashion (Fischer et al. 2015).

The realities of the Anthropocene are immense global challenges of climate change, population growth, political and economic instability, all of which manifest at the local landscape scale. They cannot be seen in isolation from the uncertain and impulsive ways in which individuals make choices

in relation to natural resources. It is important for society to firstly reduce the “*magnitude of, and exposure and sensitivity to known stressors*”, secondly to focus “*on proactive policies that shape change*” and to thirdly avoid or escape “*unsustainable social–ecological traps*” (Chapin et al. 2009, p.241). These are the common ideals for stewardship that promote resilience enabling the biosphere to deal with the velocity and uncertainty of change.

Several scholars relate stewardship to notions of leadership and thus recognize the importance of individual behaviours as a driver of resilient change (eg. Lebel et al. 2006; Faulkner et al. 2018). While not all wicked problems can be solved through changes at the individual level, good leadership has the potential to break through structural barriers. As yet, however, the particular roles of individuals are not adequately understood nor captured in the framing of stewardship in SES frameworks. The problem with this neglect in science is that it creates a mismatch at the scale of public interpretations and individual responsibilities. This might explain the problems encountered in SES resilience management on the ground when no one feels in charge (Abel et al. 2016).

Transformation of individual mindsets is needed. This recognition is not new amongst SES scholars (eg. Chapin et al. 2010; Folke et al. 2011; Mathevet 2012 & 2014). However, SES resilience research has thus far not delved deep into an inquiry of the interactions between individual subjectivity, behaviours and the generated social-ecological feedbacks.

Studies of motivation for stewardship of landscapes, places or ecosystems are numerous. The problem is that they tend to be based on the shallow analysis of linear prediction. In other words, the question of the preconditions which motivate individuals to engage in stewardship are insufficiently articulated. For example Gosling & Williams (2010) and Raymond et al (2011) illuminate that place attachment motivates farmers to manage native vegetation on their farmland. The fact that stewardship is uniquely interpreted and expressed has been shown by Raymond et al. (2015), yet that individuals generate outcomes which are not necessarily desirable is a gap in the research.

Stewardship comes from a place of sympathy, and is broadly associated with expressions of care for the environment (Nassauer 2011). A study of motivation needs to critically explore this ‘subjective place of sympathy’ and the biases in interpretation of ‘environment’. This calls for research which identifies nuances in motivation using SES resilience as a backdrop.

I have chosen Conservation Psychology as a discipline which deals with the phenomenon of individual subjectivity in relation to the environment (Saunders 2003). This discipline incorporates identity and place theories to explain why and how certain individuals develop a sense of care for people and nature, while others do not (Clayton & Myers 2009; Devine-Wright & Clayton 2010). Conservation Psychology provides knowledge of the cognitive preconditions and mechanisms for Environmentally Responsible Behaviours, in other words the codes of conducts which are contemporarily viewed as desirable for the environment.

Once more, I identified shortcomings in theories from Conservation Psychology which would explain the impacts on resilience. Environmentally Responsible Behaviour is generally seen as a static condition which describes behaviours such as recycling, the use of public transport, volunteering for environmental organisations, or the willingness to donate money to good environmental causes. The empirical analysis most commonly uses Likert scales and thus merely quantifies self-reported Environmentally Responsible Behaviour (Clayton 2012; Gifford 2014). As a result, desired outcomes of environmental care are measured against the presence or absence of predefined and contemporary conservation goals that are not related to actual conditions or changes in SES.

Resilience, however, requires an outlook on the individual role in a dynamic SES, as individual decision-making accumulates in norms and structures of governance. One way of looking at this is to test to what degree a person contributes to SES resilience principles. These would be measured as contributions to social or ecological diversity and redundancy, to connectivity and to the management of slow and fast drivers of change. Resilience is also measured as the degree of motivation to participate in environmental management (Biggs et al. 2012 & Biggs et al. 2015).

The principle of participation, however, alarmed me as it disenfranchises the individual from ownership and responsibility. In this thesis I argue that calls for certain forms of participation, the ones that use a 'tick-box approach' to ensure that the public has bought into an externally developed conservation project, can gradually degrade the notion that an individual is part of the wicked problem or that he or she can be the solution to transformative change. Participation can imply that conservation goals are externally imposed to local communities. These are very often mismatched with the specific contexts of social-ecological landscapes and their needs for a sustained supply of ecosystem services (Cumming et al. 2006; Ogden et al. 2013). In many instances, top-down institutions degrade rather than strengthen principles for community resilience, such as agency, leadership or

knowledge diversity, which are culturally internal and physically place-based (Abel et al. 2006; Maciejewski et al. 2015; Faulkner et al 2018).

I have chosen to look at Basic Human Values as a variable because they transcend motivation and action within the external environment, and can influence resilience. For example the value for reciprocity and a give-and-take relationship, has implications for an individual's social and natural environment. Values which transcend motivation have been more recently termed 'relational values' and they emerge as a new way of thinking about stewardship (Comberty et al. 2015; Chan et al. 2016).

I use a qualitative approach to shine a light on the values underlying motivations. The outlook on relational values in resilience research is relatively new, lacking conceptualization and quantitative measures. Instead, I have chosen to base my methodology on the phenomenon Sense of Place. Even though Sense of Place is mainly associated with quantitative methods, an increase and development of qualitative place research can be seen in recent literature (Masterson et al. 2017). I used Sense of Place because it would allow me to identify the meanings that individuals assign to the SES and to stewardship. Many authors have demonstrated the value and validity of 'meaning' as an over-arching driver of motivation (Jorgensen & Stedman 2001; Smith et al. 2011; McAllum 2014; Raymond et al. 2015).

Through the lens of Basic Human Values and Sense of Place I aim to explore how individual motivation for landscape stewardship mediates social-ecological change. I raise the questions:

- 1) Which theories facilitate greater understanding of alternative stewardship pathways?
- 2) How can a transformative pathway be recognized?
- 3) How can transformative pathways be pursued?

1.2. Scientific and other contributions

From an academic and theoretical perspective, this study:

- i. Reviews interdisciplinary literature to present recent ways of thinking about stewardship in the Anthropocene era, and to critically evaluate stewardship ontologies in the context of individuals' role, responsibility and motivation in resilience. This provides knowledge for alternative stewardship theories which can induce transformations in society.

- ii. Provides empirical evidence for linkages between individual motivation and social-ecological change at landscape and biospheric levels, and describes the variation and essence of the meaning of stewardship in order to stimulate self-reflection in the reader.
- iii. Distils critical features of maladaptive and transformative pathways and illuminates the enabling mechanisms and values.
- iv. Places the results and insights into the context of leverage points for sustainability transformations, and informs further research agendas which focus on changing values and motivations.

This study has several practical implications for the Garden Route as the contextual background of this study. Given the rapid environmental and social change in the area, conservation practitioners and members of the public would benefit from the awareness of maladaptive and transformative pathways. A transformation in the area depends on changing mindsets in relation to the diversity of cultures, ecosystems, integrity of the landscape and the human role within it. This thesis is partly aimed at evoking critical reflection among all residents in the Garden Route about their conscious use of and interaction with the place where they live.

My research also targets those conservation practitioners, decision- and policy-makers who can have a meaningful impact on individual values, Sense of Place and motivation. I attempt to provide suggestions for interventions which can change maladaptive pathways or motivate passive individuals to engage in transformative pathways.

In June 2017 the Garden Route was officially proclaimed a UNESCO Biosphere Reserve. Biosphere Reserves are internationally recognized landscape-scale initiatives which strive to align urban, cultural and functional landscapes with the conservation of biodiversity and sustainability of natural resources. This occurs through learning, experimentation and collaborations between scientists, professionals and all members of the public. For the Garden Route, two district and five local municipalities are committed to engage in the establishment process and the integration of Biosphere Reserve principles in their Integrated Development Plans. The particular objective is to promote employment, education and entrepreneurial leadership which is in concert with environmental sustainability. It also seeks to resolve the prevailing problems for poor and resource-dependent communities in establishing sustainable livelihood options. These strategic goals are tied to the objective for growth of biodiversity-based businesses and a green economy in the Garden Route (www.sanews.gov.za, accessed on the 20th of June 2017).

The Garden Route Biosphere Reserve now finds itself at a critical junction where roles and responsibilities have to be delegated. The obstacle and the window of opportunity for municipal bodies and conservation agencies is to appeal to individuals' values and motivation to become proactive stewards in the name of the Garden Route. I situate my study in the relevant position of guiding the promotion of stewardship, through the knowledge of principles for resilient practices and of enabling motivational mechanisms.

1.3. Structure of thesis

A list of acronym meanings and definitions of terms used in this thesis is provided. These are my own short-hand definitions of relevant terms and concepts, for which more clarity is provided in the thesis. I begin this thesis with a critical review of the literature which deals with the notion of stewardship, connectedness and change in the era of the Anthropocene (Chapter 2). Chapter 2 addresses my first research question: Which theories facilitate greater understanding of alternative stewardship pathways? I outline the most dominant ontology, show how it neglects the individual motivational context and discuss how it creates stewardship meanings which stifle resilience or cause maladaptation in societies' interaction within the biosphere.

I then present alternative schools of thought which are emerging in response to neglect of the individual in current stewardship theory. These include theories from Conservation Psychology and Political Ecology, and concepts such as Sense of Place and Basic Human Values. I end Chapter 2 with a conceptual framework which claims that transformations toward sustainability occur through specific changes at the individual motivational scale, and that they can be levered through stewardship ontology and practical intervention.

In Chapter 3 I describe the Garden Route as the backdrop of my empirical study. I provide the social, ecological and political context which plays a role in the conservation of nature. I then briefly outline the current dynamic of the Garden Route as a SES. This entails a discussion of Critical Connectivity and social-ecological fit and of trajectories of change. My qualitative study approach of a critical and in-depth case study is presented in Chapter 4, followed by a description of my fieldwork and methods.

I begin to generate the knowledge about transformative stewardship pathways which interventions must address in Chapter 5. This empirical chapter explores aspects of two of my research questions simultaneously. Firstly, I provide foundational knowledge for the question: How can a transformative

pathway be recognized? I do this through a presentation of the different stewardship meanings and visions for change in the Garden Route. Secondly, I seek to answer: Which theories facilitate greater understanding of alternative stewardship pathways? I do this by applying Basic Human Value theory in the discussion of stewardship meanings, to test its explanatory power for motivational differences.

The second section of Chapter 5 further informs the research question: How can a transformative pathway be recognized? With the backdrop of maladaptation and resilience theory, I present anecdotal evidence of maladaptive and transformative stewardship pathways as they occurred in this case study. I distil the recognizable features of each pathway, including the features in consciousness and behavioural norms.

I begin Chapter 6, the discussion of this thesis, by proposing a conceptual model to critically evaluate stewardship. This model contains elements of stewardship pathways and Basic Human Values as the underlying motivation. I then apply this model to discuss and extract the elements and values of transformative and maladaptive pathways. Chapter 6 also answers the final question: How can transformative pathways be pursued? Based on my findings and supported by other empirical studies, I discuss the different entry points which can induce change at the individual motivational scale. This section has implications for interventions which can generate positive transformation in SES.

Chapter 7 forms the concluding chapter in this thesis. I conclude my research on the basis of the main research question: How does individual motivation for landscape stewardship mediate social-ecological change? I reflect on how my thesis has made contributions to academia and practice and make recommendations for further research. In the final section of the conclusion, I apply my findings to predict three likely scenarios of change in the Garden Route. The scenarios relate to abrupt and uncertain environmental change, the Garden Route Biosphere Reserve, and immigration and population growth with implications on spatial development.

The last chapter of this thesis constitutes research reflections which elicit the works' limitations, clarify its scope and elaborate on conformability, dependability, credibility and transferability as the four criteria for qualitative research.

2. Stewardship in the social-ecological resilience discourse

Stewardship in SES discourses is associated with the call for humans to re-connect with nature and respect the ecological systems which support all of life (Chapin et al. 2009; Folke et al. 2011). Based on an ontology of cohesion and co-adaptation in a biosphere shared by all life-forms, stewardship is the ideal for a pro-active and voluntary society that builds resilience. The biosphere as the shared backdrop for stewardship appeals to a common human sense and vision for a sustainable future. The approach in this literature review is a multi-scale perspective on SES resilience, with a focal interest in the scaling up of individual behaviours as a leverage point for resilience at the biospheric level.

SES research which seeks to understand pathways of resilience and transformation would benefit from more and better engagement with individual subjectivity. Individuals' relationships with the biosphere are fundamentally place-based experiences, based on physical, cognitive and emotional bonding with culture and ecosystems (Scannell & Gifford 2013). This attachment to places gives meaning to stewardship expression and must be considered in ontological positioning (Stedman 2016). In this chapter I argue that the dominant SES approach to stewardship marginalizes the individual motivational context as a product of unsustainability, thereby stifling the development of values, support for resilience and necessary transformations in society.

This chapter informs an ontology of stewardship that can transform the disconnect between people, places and nature. I begin by describing the ideas around stewardship that emerge from SES-thinking and elaborate on the concept of resilience as a goal for the future biosphere. I then introduce the issue of Sense of Place, and how it acts as a motivational driver for individuals to engage in stewardship. Particularly the role of meaning as a driver of stewardship is discussed.

I show how an SES paradigm can portray meaning of stewardship that is in conflict with resilience goals. I discuss that it can degrade individuals' sense of ownership, agency and responsibility for the well-being of society and the biosphere. I then review emerging theories in Conservation Psychology and Political Ecology to provide alternative views of stewardship as an embodied individual experience in biophysical landscapes.

2.1. The future of the biosphere in SES resilience theory

SES disciplines originate in an innovative and interdisciplinary science which aims to resolve unsustainability (Chapin et al. 2010; Fischer et al. 2015). In SES frameworks, the biosphere is conceptualized as a Complex Adaptive System which self-organizes through dynamic feedbacks at different time and place scales (Norberg & Cumming 2008). In other words, humans are embedded in the biosphere, interact with and shape immediate and distant ecosystems, and affect the life-supporting earth system (Walker & Salt 2006; Biggs et al. 2012). By its definition, the Anthropocene renders this dynamic vulnerable, risking irreversible tipping points towards unsustainability and species extinctions (Rockström et al. 2009).

An alternative to vulnerability is resilience, a concept and theory which has become a focal concern in the stewardship discourse. As defined by Biggs et al. (2012, p. 7) resilience is *“the capacity of SES to continue providing desired sets of ecosystem services in the face of unexpected shocks as well as ongoing change and development.”* Some SES scholars regard resilience as a desirable change dynamic which enables adaptation within the confines of the planet to support life (Folke et al. 2011; Benson & Craig 2014).

In the past two decades, scholars have extensively researched the conditions through which local communities can enhance their ability to respond to environmental changes without sacrificing the functioning of ecosystems or the biosphere (regions of the land, sea and atmosphere occupied by living organisms). This knowledge has recently been captured in the seven SES resilience principles by Biggs et al. (2012), which are namely: (1) to maintain social and ecological diversity and redundancy, (2) to break down undesirable and enhance desirable connectivity in ecological, social or intertwined relationships, (3) to manage the slow variables and feedbacks which affect sustainability of ecosystem services, (4) to foster Complex Adaptive System- thinking, (5) to encourage learning amongst decision makers and conservationists, (6) to broaden participation by the general public and (7) to promote polycentric governance systems. Resilience principle 6 highlights the participation in an academic and practical resilience community by the public and is commonly associated with the call for stewardship.

The term stewardship is used in various disciplines and contexts in relation to the natural environment. Common terminology includes stewardship of place (Chirisa 2013), landscapes (Lokocz et al. 2011; Raymond et al. 2011), ecosystems (Chapin et al. 2009), and the biosphere or planet (Power & Chapin 2009; Steffen et al. 2011). These terms are used synergistically to express human's voluntary care for the environment which comes from a place of sympathy (Nassauer 2011).

However, despite its noble goals for the future of the biosphere, scientifically-developed stewardship agendas have this far largely failed in halting the rapid exploitation and degradation of the environment. Empirical studies of stewardship show that a lack of individual motivation and skill is generally the greatest obstacle to resilience management of the environment. For example in a study of a local community in Australia's Murray-Darling Basin, Abel et al. (2016) have addressed the issue of 'Building resilient pathways to transformation when "no one is in charge" '. The authors acknowledge that stewardship will always be unsuccessful in the face of apathy or incapacity of individuals to become pro-active in SES.

Some believe that this is due to socio-cultural neglects in the metaphors of SES resilience theory (Pelling & Manuel-Navarrete 2011; Cooke et al. 2016). An article published in *BioScience* 63 (7) by Raymond et al. (2013) seems relevant in describing how problems with scientific metaphors can arise. The authors argue that the analytical frameworks for human-nature relationships are metaphors, in other words symbols with stipulated values and norms for the public. Raymond et al. (2013) uses the example of 'Ecosystem services' which has promoted the environment as a commodity that merely benefits humans, and has quite possibly contributed to losses of intrinsic values of nature, community and place (Kumar & Kumar 2008; Tengberg et al. 2012; Daniel et al. 2012). The notion of stewardship in the SES resilience discourse is a metaphor which is prone to similar consequences.

Some scholars argue that SES metaphors can detract from the fact that human development must be guided by ecological systems for it to be sustainable (Pickett & Cadenasso 2002; Folke et al. 2011). For example the metaphor of re-connectedness between humans and nature or society and the biosphere, undermines the fact that all living things are already inherently connected and interdependent (Davis et al. 2009). As stated by Fletcher (2016, pp.1-2), the call for re-connections in SES is an oxymoron which is *"discursively framed and materially manifest paradoxically exacerbates a sense of separation from the very entity with which it seeks reconciliation."*

Stewardship metaphors influence the norms of 'caring for the environment' (Raymond, et al. 2013). This can be problematic in the face of dominant social paradigms which inevitably portray a role and function to individuals at the local level. Ogden et al. (2013) for example speak of stewardship as being portrayed as 'global assemblages' which use top-down enforcement of change. These often disproportionately affect 'powerless spectators' in developing countries and resource-dependent subsistence communities (Fabricius et al. 2007). In many cases, global assemblages have

unintentionally increased pressure on resources and biodiversity, driven unmanageable illegal trade markets and violent conflicts, such as the one currently fought in the war on rhinos (Duffy 2014). At the individual and local scale, such a metaphor for stewardship often precedes political conflicts in the name of the environment.

Other scholars have linked SES resilience theory and the stewardship discourse to conflicts of interest and power (Olsson et al. 2014). SES and resilience are defined by individualistic ideas about 'who is in and who is out' as a responsible actor and a beneficiary of stewardship (Janssen et al. 2007; Fabinyi et al. 2014; Olsson et al. 2014). Moreover, the concept of resilience is often critiqued for being unspecific with regards to *what* it is in the local system that needs to be resilient to *what* kind of external change? (Carpenter et al. 2011; MacKinnon & Derickson 2013). The social conflicts around the right form of conservation are known to inhibit learning and adaptation among stewardship groupings (Galaz 2005).

With regard to resilience management of ecosystem services, Robards et al. (2011) state that social drivers affect equal and just distribution of benefits to people. In this way of thinking about the term stewardship, it is prone to evoke rigidity and poverty traps, power asymmetries and the 'scientization' of policy or the politicization of science. According to the authors, the social drivers of environmental justice and the conservation of ecosystem services are inadequately considered in the literature.

Parr (2009) suggests that the terms and conditions for stewardship are 'hijacked' by institutional metaphors for sustainability. The corporate world, and in some cases national governments, promote consumption based on 'greenwashing' strategies. These include stewardship certifications for forestry, fishery and agriculture which mobilizes guilt-free consumption and landscape transformation. Stewardship certifications are believed to have unintentionally contributed to the rapid depletion of natural resources, such as 75 % of global fish stocks (FAO 2005; Daw & Gray 2005; Jacquet et al. 2010).

In light of the above discussion, a future stewardship theory would benefit from the consideration of the individual motivational context in SES resilience. Transformative changes of individual values and goals can become the common ground for social cohesion, environmental justice and sustainability of resources. In this sense, it is critically important to regard motivation not only as a precondition for participation, but as a process which has consequences in the immediate and distant environment. While the motivational drivers in stewardship are well researched, these are barely conceptualized holistically at all interlinked scales.

2.2. Sense of Place and stewardship

In the context of individual motivation for stewardship, some scholars have begun to recognize an inevitable influence of Sense of Place, which acts as a cognitive filter in resilience challenges (Chapin & Knapp 2015; Stedman 2016; Masterson et al. 2017). Sense of Place underlies both unique perceptions of human relationships with nature, and ideals for desirable change and transformation. This subjective and emotional construction of place and responsibility within motivates physical expression and bottom-up stewardship (Cristoforetti et al. 2011).

Sense of Place is defined as *“The collection of meanings, beliefs, symbols, values, and feelings that individuals and groups associate with a particular locality”* (Williams & Stewart, 1998, p.19). The concept is receiving considerable attention in the recent resilience discourse. Chapin et al. (2012) for example have found that a pronounced Sense of Place shared by local communities motivates sustainable management of natural resources and enables transformative change. Scannell & Gifford (2010) state that it precedes place attachment, as an emotional, cognitive and behavioural bonding with places. Numerous studies have shown that place attachment is a motivation for landscape stewardship, community solidarity and volunteerism in protected areas (Manzo 2006; Gosling & Williams 2010; Raymond et al. 2011; Petrova et al. 2011).

The evidence of motivational linkages and the opportunities for transformations in society are considerable. However, Sense of Place and place attachment are ever-changing constructs and not descriptive of resilient relationships (Chapin & Knapp 2015). This means that they have limitations in research that seeks to identify predictors of SES dynamics.

Some scholars suggest that the construct of place meaning has better potential for SES analysis (Masterson et al. 2017). Stedman (2002), for example, emphasizes that people become attached to the meaning they assign to places, rather than the physical place itself. Individuals give meaning to ecological and social properties of their environment (Manzo 2005; Lewicka 2011b) and these meanings influence their subjective ideals for the conditions of a place and the visions for change (Jorgensen & Stedman 2001; Smith et al. 2011). Also in social psychology, it is recognized that meanings are reference points for reasoning and behavioural choices (Greider & Garkovich 1994).

Meanings can be used as potential symbols for resilient relationships and as predictors of motivation. This analytical value has been illustrated by Davenport & Anderson (2005) who studied the meanings

that individuals assign to the river nearby a local community in Nebraska. The authors found *tonic*, *nature*, *sustenance* and *identity* meanings which describe a collective Sense of Place. These meanings symbolize positive bonds and perceived dependencies on the river, and they explain why the local community opposes proposed development. This example shows that place meanings are descriptive of Sense of Place and directly linked to behavioural motivation.

Individuals also give meaning to their perceived function as a steward. Raymond et al. (2015) for example identified four meaning frames among local farmers in rural England, which portray stewardship through (1) an environmental frame and the role in conserving or restoring wildlife; (2) a primary production frame and the responsibility to take care of primary production assets; (3) a holistic frame portraying the farmer as a conservationist, primary producer, and manager of a range of landscape values, and (4) an instrumental frame emphasizing the financial benefits associated with the participation in stewardship agreements. Lastly, individuals give meaning to the outcomes of stewardship or of place protective behaviours in the face of change (Smith et al. 2011; Devine-Wright 2013). Stedman (2002 & 2016) has since argued that meaning is a powerful mechanism through which social-ecological change occurs.

How the SES resilience metaphor and the associated calls for participation and stewardship affect meaning and Sense of Place appears to have never been looked at. This is important because the vulnerability of the biosphere is not only a systemic or structural one, but also a cumulative effect of individuals' relationship with place. In the following section, I will critically assess this stewardship discourse with a particular interest in the meaning it portrays to the individual.

2.2.1. Stewardship in the resilience discourse

SES resilience theory is at the forefront of providing society with a meaning for stewardship (Steffen et al. 2011). This stewardship discourse is a response to "*the advent of the Anthropocene*" which "*suggests that we need to fundamentally alter our relationship with the planet we inhabit*" (Steffen et al. 2011, p. 739). In line with SES scholars, this refers to the re-connection of society to the biosphere (Folke et al. 2011), the acceptance of nature's limits to growth and the overall respect of the planetary boundaries to support life (Rockström et al. 2009). It includes the development of social foundations for sustainability, such as health, equality and justice (Raworth 2010; Dearing et al. 2014). It is also said to require ethical paradigm shifts to Ecological Solidarity, which is the increased awareness and support of connectedness between all human and non-human beings (Mathevet et al. 2014; Abson et

al. 2016). These targets represent academia's expectation from the public to enhance and sustain resilience in the face of global change.

The most accepted definition of stewardship is *"a strategy to respond to and shape social–ecological systems under conditions of uncertainty and change to sustain the supply and opportunities for use of ecosystem services to support human well-being"* (Chapin et al. 2010, p.241). Stewardship is therefore partly a framework for a new form of science (Power & Chapin 2009; Chapin et al. 2011; Folke et al. 2016). This science is transdisciplinary and participatory and provides an innovative outlook on human behaviour and social development which is in concert with the biosphere. Chapin et al. (2011, p. 47) state that stewardship *"requires that we pool our collective knowledge to understand better how social–ecological dynamics and Earth dynamics are linked, so that we can guide our homelands and our planet to a different, better future."* A similar conclusion is drawn by Tengö et al. (2011) who states that this is the process of generating a 'multiple-evidence base' which represents the voices in society, and provides a common platform for action.

Stewardship then also represents practical implementation in local SES. These local scales concern communities that affiliate with and heavily rely on ecosystems through their culture and livelihoods (Lu 2010). Stewardship is often associated with Biosphere Reserves and protected areas and the co-management between professional agencies and members of the local communities (Stoll-Kleemann et al. 2010; Cumming et al. 2015; Odom Green et al. 2015). Practical examples include conservation and restoration of primary production systems and landscape values (Raymond et al. 2015), monitoring of biodiversity and sustainable use of ecosystem services (Schultz et al. 2007), investment into sustainable development goals (Chapin et al. 2009), enhancement of peoples' well-being and capabilities (Chirisa 2010 & 2013), and 'bridging' between actors and 'navigating' feedbacks with ecological processes (Colding et al 2008; Schultz et al. 2011). Metaphorically speaking, stewardship means building social-ecological resilience (Olsson et al. 2007).

In a recent publication, Mathevet et al. (2016) describe a practical example of stewardship in a protected area and its surrounding landscape. The authors present Ecological Solidarity as a tool for collaborative decision-making. Ecological Solidarity highlights the socio-cultural embeddedness of protected areas and aims to find solutions which strengthen resilient and sustainable relationships. Based on social learning between decision-makers and stakeholders, the terms and conditions for stewardship are negotiated.

Another function of Ecological Solidarity is to *“enhance academic support for a socio-ecological systems approach to biodiversity conservation”* (Mathevet et al. 2016, p.5). The social learning platforms in stewardship are opportunities for professional agencies to identify the obstacles to conservation successes (also see: Pahl-Wostl 2002; Mostert et al. 2007). These are most often a lack of trust and support from local communities, and individual resistance to connectedness or change (Nkhata et al. 2008; Rogers et al. 2010).

Mathevet et al. (2016) propose that professionals use Ecological Solidarity to firstly understand the nuances of motivations and impediments, and secondly target buy-in through nudging, educating and incentivizing strategies. This is a metaphorical representation of what has been presented by Reddy (2016) as the most appropriate approach to behaviour-change in conservation.

Lastly, stewardship is a metaphor for policy and institutional frameworks (eg. Chapin et al. 2009; Folke et al. 2011; Curtin 2014). Ecological Solidarity also provides a worked example, in this case as an adaptive policy in a Biosphere Reserve in the French Camargue (Thompson et al. 2011). With the specified goal of constructing *“cultural landscapes for present and future generations”* (Mathevet et al. 2016, p.5), scholars are making an explicit linkage to policy planning at the biospheric scale.

To summarize the discourses around stewardship in SES resilience theory, they are a metaphor for science, management and governance. Empirical studies however reveal that there is a considerable mismatch in the related approaches to motivate individuals. From the field of common pool resource management, it is well understood that individual commitment is ultimately driven by self-interest, and based on the imperfect knowledge of how community and physical environment interrelate and dynamically change (Ostrom 1990).

Stedman (2016) critiques this overall neglect of individual subjectivity as a rigidity trap in a social-ecological resilience framework. A sense of care and collective responsibility is impossible to standardize and will always be compromised in a society with diverse values. The scientific interest in and rationale for a resilient future often stifles individual participation in its collective agenda. The subjectivity of behaviour *“is messy and difficult, and does not fit particularly well within the systems perspectives that characterize resilience work”* (Stedman 2016, p. 891). How its emerging stewardship metaphor performs in the transformation of SES is insufficiently considered. In the next section, I outline the main pitfalls of the dominant stewardship metaphor as they pertain to individual motivation.

2.2.2. Shortcomings of SES metaphors for a resilient future

The synthesis of stewardship ideals in SES discourses explained in the previous section has revealed four representative pitfalls which can stifle individual motivation or provoke undesirable change (Figure 1). Firstly, stewardship can be framed as a collective endeavour, whereby the individual responsibility is concealed within a social process, such as social learning, knowledge-sharing and collaboration. This individual experience occurs in the context of institutions, with values and norms that are academically or professionally dictated.

Secondly, stewardship can imply an individual purpose of mediating change in a relationship external to oneself. As a management metaphor, it means navigating the feedbacks between local communities and ecosystems, or changing and motivating conservation behaviours of others. The ideal of building social-ecological resilience means to adapt the Complex Adaptive System where resilience is actually generated (Lebel et al. 2006; Armitage & Plummer 2008).

Third, stewardship can be framed as an indirect form of human coupling with services from the biosphere, such as air, soil and water. In SES resilience theory, stewardship is framed in the context of scientific inquiry, policy development, and social learning, yet it distracts from the direct investment into the biosphere. Human geographer Relph (1976) described this as a 'placeless' form of stewardship, lacking the physical care for the biosphere.

Fourth, the stewardship metaphor is disempowering from an individual implementation point of view. Changing institutions, policies and management strategies provide an ambitious setting for individuals to participate in a meaningful way (Fischer et al. 2007; Abson et al. 2016). In his article *"Think global, act local? The relevance of place attachments and place identities in a climate changed world"* Devine-Wright (2013) shows that individuals' Sense of Place is constrained by time and place scales. Stewardship is often discussed at the highest of societal scales and as a strategy for achieving global sustainable development goals. Scannell & Gifford (2013) provide the evidence that individuals are significantly more responsive and pro-actively engaged in stewardship when environmental issues are perceived as locally relevant and changeable.

The four pitfalls identified in the review are depicted in Figure 1. The upper arrow of the diagram shows that stewardship is portrayed by a great part of influential ontology as the changing of social-ecological trajectories. This occurs through effects on knowledge paradigms, norms, behaviours and

institutions. These changes are supposed to support a resilient biosphere. The lower arrow indicates how this stewardship metaphor can be interpreted by individual members of the public. It evokes a meaning of stewardship as a collective endeavour, with an indirect responsibility for the resilience of the biosphere, but a role of mediating change in relationships with others.

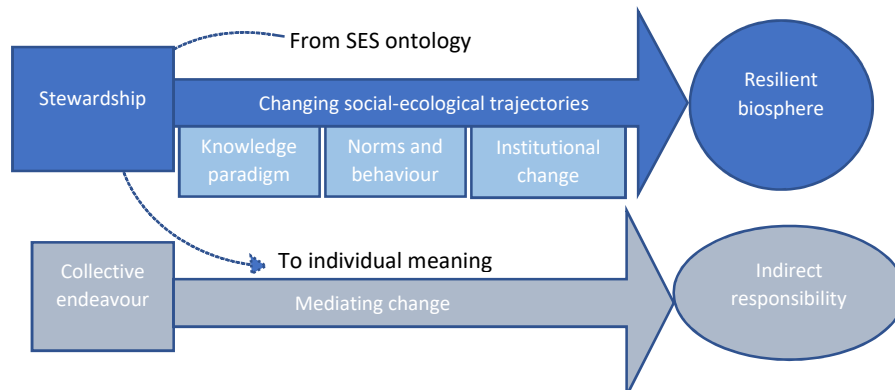


Figure 1: The motivational shortcomings of SES metaphors for stewardship

The discussion of the SES literature and the summary in Figure 1 have shown that the social contract with the biosphere can be a metaphorical controversy for individual change and explains some of the rigidity traps in resilience management. Based on an external intervention paradigm, it promotes the re-connection of humans and nature. From environmental behaviour theories it is increasingly recognized that the implicit awareness of connectedness with nature is a requirement for individuals to take ownership in the sustainability challenge (Hedlund-de Witt et al. 2014; Zylstra et al. 2014; Geng et al. 2015). This awareness is the deepest motivational level where necessary transformations could occur (Abson et al. 2016). The stewardship metaphor in SES theory impacts poorly on this level and thus underexploits its potential as a leverage point which changes behaviours.

2.3. Biosphere stewardship in a resilience crisis

Vulnerability is a wicked problem characterized by recurrent and complex conflicts of values, interest and competencies (Jentoft & Chuenpagdee 2009; Blok et al. 2016). The pathway towards disconnects from the natural environment is rooted in societal development. It can be diagnosed at different scales ranging from institutional and individual ones whereby various factors and processes play a role. An overarching disconnect is evident in a political and economic structure which marginalizes interdependencies between nature and human well-being. The dominant struggle for capitalism and political power are linked to rapid environmental pollution, climate change and landscape transformations (Fischer et al. 2007; Folke et al. 2011). This biophysical degradation cannot be

separated from environmental injustice which incapacitates individual and community scales in sustaining resources and integrity of ecosystems (Brock & Carpenter 2007; Raworth 2012).

Resilience is seen as a buffer against the undesirable consequences of development or change (Folke et al. 2002; Gunderson 2006). It presumes that the biosphere needs to be able to cope with and adapt to shocks, disasters or disturbances (Adger et al. 2005; Walker et al. 2006; Biggs et al. 2012; Benson & Craig 2014; Bohensky & Leitch 2014), which are either social or biophysical (Schoon & Cox 2012). Rockström & Karlberg (2010) hereby particularly emphasize the disastrous consequences of climate change, economic and demographic growth, ecosystem degradation and the unpredictability of ecological responses.

These four main triggers have become known as the 'quadruple squeeze to the biosphere' which directly or indirectly originate from anthropogenic change. Rockström et al. (2009) describe how the four squeezes mutually reinforce each other in a pathway towards planetary boundaries and irreversible tipping points in life-supporting systems. This is the reality of the Anthropocene, and it raises doubts about the stewardship focus on (and fundamental purpose of) *building* resilience.

It seems that the interpretive resilience lens has led to a self-inflicted problem which cannot be resolved through its own ontology. According to Corlett (2015, p.38) the new challenge in conservation is to deal "*with the pervasiveness and irreversibility of Anthropocene impacts*" while maintaining the traditional objectives for the "*protection of nature and prevention of extinctions*". This is firstly an arbitrary separation of professional and fundamentally human responsibility in a common biosphere. Secondly, it detracts from the fact that the Anthropocene represents every action taken by all individuals.

It is pressing to understand that SES resilience frameworks are a scientific Sense of Place, an academic lens on society and the biosphere, which gives meaning to stewardship and desirable pathways. As such, it is highly influential in sustainable development at global scales (Galaz et al. 2012). Some SES scholars suggest that the Millennium Development Goals should be "*reframed in the biosphere stewardship context combined with calls for a new social contract for global sustainability*" (Folke et al. 2011, p.719). This contract manifests at sectoral levels in institutions, policies, management structures and action networks. In the individual, it internalizes as values in the biosphere.

The ontological representation of place matters to resilience as it paves trajectories of change. Dearing et al. (2014, p.227) believe in the SES framework *“as a powerful metaphor and communication tool for regional equity and sustainability”*. This is further supported by Fischer et al. (2015) who promote its mainstreaming in sustainability agendas for society. Based on an ideal for complexity- and resilience-thinking in the biosphere, SES-thinking creates a common ground for knowledge, values and norms in society (Walker & Salt 2012; Rogers et al. 2013; Benson & Craig 2014; Biggs et al. 2015).

Stewardship and resilience management are scientific concepts which give meaning to human actions. Their theoretical foundations reach the public through media, environmental action forums, educational programmes, conservation volunteerism and engagement between agencies (Chapin et al. 2011; Rogers et al. 2013). Here, it acts as a metaphor for pro-active change and motivates self-organization in society. This emerging voluntary and bottom-up movement significantly drives social-ecological pathways (Schultz 2009; Krasny & Tidball 2012).

My intention is not to critique the SES resilience framework for its ethical foundations. Through it, unsustainable paradigms have been significantly advanced from preservation of biodiversity and human exclusion, to an ideal for co-existence, mutualism and reciprocity (Chapin et al. 2010; Cumming et al. 2015). I fully support the sentiment in a statement by Folke et al. (2016, p.41): *“The social-ecological resilience approach.... is an approach whereby humans and nature are studied as an integrated whole, not as separated parts. Humanity is embedded in the biosphere. Nature is inside us as much as we are inside nature. In this sense people, irrespective of social and cultural contexts, coevolve with the planet and our beliefs, perceptions, and choices shape our actions, technologies, and future in the biosphere in sustainable or unsustainable ways.”* However, it is the persisting divide between research and management which I regard as controversial and counterintuitive in motivating individually conscious relationships.

The stewardship contract proposed in the SES resilience framework can be seen as a maladaptive agenda for society. Maladaptation refers to an action taken ostensibly to avoid or reduce vulnerability at one point in time or place, thereby unintentionally increasing the vulnerability of the biosphere at other points (Barnett & O'Neill 2010). This synthesis suggests that the neglected individual subjectivity not only underlies rigidity traps in sustainability challenges, it also provokes maladaptive practices which transfer disconnects in society to the individual motivational scale. SES resilience approaches aim to avoid *“pathways of social-ecological misfits that lead to social traps”* and to identify *“options for societal development and future capacity for adaptations”* (Galaz et al. 2008, pp.1-2). In order to

resolve rigidity and maladaptation, sustainability science and practice would benefit from a greater emphasis on transformation (Olsson et al. 2014).

Transformability is a component of a resilient SES. A resilient system is able to fundamentally change its identity when its current state is no longer beneficial or sustainable (Folke 2006). As I have discussed before, the challenge of the Anthropocene is however that many aspects of the current system (of society and biosphere) lacks this internal ability. The necessary step is then to externally induce changes in the underlying drivers of disconnects between humans, nature and the biosphere (Tzanopolous et al. 2013; Abson et al. 2016; Pichler et al. 2017).

2.4. Leverage points for sustainability transformations

Some scholars have found that resilience is evident when components of the system transform. Chapin et al. (2012) and Marshall et al. (2012) for example have found that regional systems could enhance their ability to adapt to change due to transformations of cultural identities and Sense of Place. An emerging thought around this has been inspired by Donella Meadow's concept of leverage points for sustainability transformations. Abson et al. (2016) have recently advanced the application of this framework and received considerable attention from SES discourses.

The framework is based on the assumption that SES are levelled according to points of entry for intervention which have more or less potential in inducing a complete transformation to sustainability. The first level with the highest transformational potential is called 'intent level'. The intent level includes the worldviews, values, goals and intrinsic motivations of society which determine how people relate to the environment. The second is the 'design level' which includes the social structures and institutions which regulate how the environment is governed collectively, either through formal conservation mandates, or public action. 'Feedbacks' in the SES are the third level which arises between governance and environmental responses. The forth level is the 'parameters', in other words the mechanistic characteristics of the SES, such as resource availability, flow of materials, taxes and subsidies.

Level three and four are shallow leverage points wherein changes have limited success in transforming the SES. This is because intent and design in society are the deep leverage points which drive feedbacks and parameters. They are the places where innovation must occur when targeting sustainable development (Abson et al. 2016). The preconditions and mechanisms by which such changes occur are an understudied phenomenon in resilience research, leading to a lack of practical solutions to

induce transformation. If external intervention could motivate individuals in resilient social-ecological relationships, bottom-up stewardship can become a transformative process which is self-generated by society.

2.5. The loss of resilience and alternative stewardship theory

Another way of thinking about the future of the biosphere is to prevent the extinction of existing resilience and the ability to adapt to change. Many scholars from Conservation Psychology, deep ecology and other fields view unsustainability as being related to Sense of Place. The human geographer Pyle (1993, pp.146-147) for example describes: *“As cities and metastasizing suburbs forsake their natural diversity, and their citizens grow more removed from personal contact with nature, awareness and appreciation retreat. This breeds apathy toward environmental concerns and, inevitably, further degradation of the common habitat (...) So it goes, on and on, the extinction of experience sucking the life from the land, the intimacy from our connections...”*. Many scholars have picked up on what became known as the ‘extinction of experience’ hypothesis, to explain how individual apathy unfolds in a vulnerable biosphere (for a review, see: Soga & Gaston 2016).

As society becomes increasingly technologized, mobilized and urbanized, the interaction with the biophysical and cultural environment loses its meaning. Lewicka (2011a) has identified a growing sense of placelessness, common amongst young and educated people who pursue a worldly identity. The author describes this as a Sense of Place which is characterized by an emotional and normative indifference to the immediate surroundings as a result of enhanced mobility.

Placelessness is closely linked to a loss of place dependence. It is both a cause and a symptom of individuals’ detachment from natural resource bases and life-supporting services. While most studies focus on the positive feedbacks between place dependence, place attachment and resilient relationships (eg. Kyle et al. 2004; Marshall et al. 2007; Bendt et al. 2013), others discuss how the lack of attachment furthers the ignorance of an unsustainable consumer society (Louv 2006; Kareiva 2008; Castree 2008). The aim for economic growth and political distribution of natural resources arguably creates the illusion that individuals are independent from nature and not directly responsible for sustainability issues.

This in turn increases the urgency for governmental agencies to incentivize stewardship among the public. From psychological disciplines it is known that behaviour change is most easily induced by appealing to existing value frames (John et al. 2010; Reddy 2016). Stewardship metaphors are then

often built on neo-liberal meanings which are highly debated for knock-on effects in the natural environment (Castree 2008). Spash (2015) for example found that tax incentives or product certifications, which are contemporarily seen as a form of environmental care, 'bulldoze biodiversity' when more lucrative opportunities for development arise.

Society runs the risks of irreversible losses of stewardship cultures (Parr 2009). Some cultures still live by the principle of integrating ecology into daily rituals and living environments. Examples include rotational and experimental subsistence practices (Smith & Wishnie 2000), but also the means by which urban citizens establish habitat in public and private food gardens (Krasny et al. 2015; Svendsen 2009). Cocks & Wiersum (2014) describe this as the 'biocultural diversity' that is adapted to draw benefits from physical places while at the same time creatively enhancing biodiversity. Biocultural diversity supports resilient change, but is losing its impact in a progressively placeless society. The homogenization of human culture is also increasingly visible in the homogenization of physical landscapes (Groffman et al. 2014).

The trend to placelessness is phasing out the implicit knowledge of the benefits that a personal relationship with the environment provides (Schultz et al. 2004). In an extensive review, Keniger et al. (2013) substantiate the numerous benefits of interacting with nature in recreational, spiritual or subsistence contexts. The authors conclude that this is fundamental to the health of body, mind and spirit. It is known that the motivation to conserve a multiple range of ecosystem services depends on this awareness (Andersson et al. 2015; Kumar & Kumar 2008).

Placelessness also degrades important sources of factual knowledge. Miller (2005) provides evidence for an illiteracy in ecology and sustainability which is found in Western culture. The author uses concerning examples whereby children no longer know the origin of carton milk, and the knowledge of corporate logos outweighs the knowledge of native species.

The extinction of SES resilience is intricately linked to an extinction of agency for stewardship in local communities. In resilience theory, agency is often studied as the ability for self-organization in social-ecological management. Olsson et al. (2004, p.75) describe self-organization as a process in local groups which *"learn, and actively adapt to and shape change with social networks that connect institutions and organizations across levels and scales and that facilitate information flows."* From an empirical study in two regional SES, Abel et al. (2006) have shown that the organic process of self-organization is easily disturbed through the external imposition of rules for stewardship. This is in line

with Ogden et al. (2013) who warns that global assemblages weaken community agency and the resilience of local SES. The community assets of agency are quite well understood, and they include cohesion, trust, common vision and leadership (Olsson et al. 2004; Berkes & Ross 2013). Leadership is a reference to an individual who drives self-organization. Olsson, Folke & Hahn (2004) provide an example of a local community which self-organized in the resilient management of a Swedish wetland. The transformation from a previously unsustainable regime was accounted to the leadership of one key individual.

Olsson, Folke & Hahn (2004) further found that the motivational trigger was the perception that particular ecological and cultural values were vulnerable. Perceptions are a critical consideration in stewardship motivation. It is an element of individual subjectivity which influences motivation in two fundamental ways. First, numerous studies have found that the perception of change and risks in places shape specific behavioural responses, which either enhance resilience or vulnerability (Devine-Wright & Howes 2010; Brown & Westaway 2011). Second, the perception of agency determines whether behavioural change, leadership and self-organization occurs. In a discussion of the concept 'adaptive capacity', Grothmann & Patt (2003) take an individual cognitive stance on *perceived* adaptive capacity. The authors argue that adaptive capacity, which is a core feature of SES resilience, cannot be separated from an individual sense of control and influence in its process.

In summary, preventing the extinction of resilience and the loss of individuals' ability to adapt to change requires that certain sources of motivation are preserved. A Sense of Place which motivates resilience depends on direct experiences, awareness, knowledge, agency and perceptions. This is a critical consideration for conservation science and practice which targets transformation in society. It suggests that firstly inducing change at level two, three and four (refer to Section 2.4.) carries the risk of negative consequences at the individual motivational scale, which is then directly related to other SES scales. Secondly, the greatest opportunities for a system transformation lie at the level of 'intent'. Due to incoherent theories around the individual motivational scale, the resilience-enabling features of intent are still poorly understood. I propose that valuable lessons can be learned from fields of psychology as they pertain to conservation and social-ecology.

2.5.1. The psychology of stewardship motivation and sustainability transformation

Knowledge from psychological disciplines might aid in conceptualizing how individuals are motivated to sustain SES resilience. The most promising area of research is social-ecological psychology which is defined as "*an area within psychology that investigates how mind and behavior are shaped in part by*

their natural and social habitats (social ecology) and how natural and social habitats are in turn shaped partly by mind and behaviour” (Oishi 2014, p. 581). Social-ecological psychology is an emerging field of research and as yet provides insufficient empirical insights to the antecedents of motivation for SES resilience.

Empirically more substantiated is the discipline Conservation Psychology, defined as *“the scientific study of the reciprocal relationships between humans and the rest of nature, with a particular focus on how to encourage conservation of the natural world. Conservation Psychology is an applied field that uses psychological principles, theories, or methods to understand and solve issues related to human aspects of conservation. It has a strong mission focus in that it is motivated by the need to encourage people to care about and take care of the natural world.”* (Saunders 2003, p.138). Conservation Psychology is used as foundational knowledge in social-ecological psychology. I argue that it holds insights to the mechanisms between individual motivation and consequences in SES which are currently underexplored.

The first topic which is frequently raised in Conservation Psychology is Connectedness with Nature. Zylstra et al. (2014, p.119) have recently defined Connectedness with Nature as *“a stable state of consciousness comprising symbiotic cognitive, affective, and experiential traits that reflect, through consistent attitudes and behaviours, a sustained awareness of the interrelatedness between one’s self and the rest of nature.”* In two syntheses of the concept, Zylstra et al. (2014) show that Connectedness with Nature is linked to leadership for sustainability and Restall & Conrad (2015) show that it acts as a predictor for stewardship and conservation at local scales.

One shortcoming of Connectedness with Nature however is that the term ‘nature’ is framed in an ecological, rather than social-ecological context. This means that Connectedness with Nature may predict whether and how ecological systems are affected by individual motivation, but not the social consequences which are inevitably interlinked. In one other concept termed Connectivity with Nature, Dutcher et al. (2007) seek to address this problem. The authors state that Connectivity with Nature *“involves dissolution of boundaries and a sense of a shared or common essence between the self, nature, and others”* (Dutcher et al. 2007, p. 474). In contrast to Connectedness with Nature, Connectivity with Nature incorporates an element of equality, solidarity and justice for human and non-human beings on a shared planet.

However, as a purely cognitive construct, Connectivity with Nature lacks the predictive power for behaviours and SES resilience. As argued by Beery & Wolf-Watz (2014) the term 'nature' is too elusive to give meaningful direction to individual leadership and stewardship. The authors propose the relational concept of 'place', which in contrast has the power to transcend changing values and behaviours to a geographically defined area.

Cooke et al. (2016) have critiqued the focus on connectedness in consciousness, as lacking the predictive power for pro-active and dynamic change in a physical landscape. The authors argue that stewardship must be seen as an individual embodiment in an ever-changing assemblage of human and non-human beings. This, they metaphorically express as 'Dwelling in the Biosphere' (Cooke et al. 2016). In this line of thinking about connectedness, it is an individual experience of interactions between mind, body and environment. Zylstra (2014) illuminates the critical importance of experience as it pertains to motivation. His phenomenological study of 'meaningful nature experiences' has shown that they motivate leadership in sustainability. In order for leadership to be in favour of SES resilience, a view on the specificity of experiences is necessary.

I suggest that Mathevet's (2012 & 2014) concept of Ecological Solidarity has significant potential as a metaphor which considers resilience in an individual experience. In Section 2.2.1., I have referred to Ecological Solidarity as a conservation tool advocated in the SES discourse. More importantly, however, Ecological Solidarity is an ethical paradigm which applies to every individuals' experience in SES. This experience is defined as the *"reciprocal interdependence of living organisms amongst each other and with spatial and temporal variation in their physical environment. It has two main elements, one factual associated with the dynamics of ecological processes and biodiversity in space and time, the other, normative, based on recognition that human beings are an integral part of ecosystem function"* (Thompson et al. 2011, p. 414).

Ecological Solidarity originates from Political Ecology and is based on the disposition that humans are living systems operating in complex environments and share ecological principles and evolutionary processes with all other species (Bryant 2015). In Political Ecology, a place (the biosphere, the landscape or SES) is seen as habitat for a community of life. This community of life operates on mutualism as an ecological principle which is said to be the essence of a resilient system dynamic.

According to theories in Conservation Psychology, experiences are linked to identity, as in the perception of 'self' in relation to other beings and the physical environment. In the Introduction to the

special issue 'Place, identity and environmental behaviour' (Journal of Environmental Psychology 2010), Devine-Wright & Clayton say that *"Our identities are shaped by the experiences we have with both social and non-social stimuli, the people and places that we encounter, and these identities affect our responses to new events. Attention to, and interpretations of, environmental threats are clearly filtered through a perspective based on the perceiver's identity"*. Numerous empirical studies have shown that identity underlies the intrinsic drive for self-actualization and provide the impetus for Environmentally Responsible Behaviours (Markus & Kitayama 1991; Clayton 2012; Manfredo et al. 2016).

Constructs from Conservation Psychology predict stewardship and to a degree the consequences of behaviours and experiences on the dynamics that affect a SES. The shortcoming is however that they hold little value in explaining how identity, connectedness or Ecological Solidarity arise in the first place. Self-reflection, awareness and reciprocity can only be experienced when individuals are oriented towards these goals and are willing to perceive the benefits to oneself. This was confirmed by Zylstra (2014) who found that meaningful nature experience only occurred upon the individuals' intention for it to occur.

This suggests that an even more nuanced outlook is required at the level of 'intent' in the societal system. Many scholars hereby highlight an important role of values. In SES resilience theory these values are variably described. The two most common approaches are the ecosystem services framework and place values. These two lenses illuminate whether aspects of place, community or nature are valued by individuals and cultures.

However, ecosystem and place values are merely descriptive of individual perception but do not necessarily motivate behaviours and experiences. Arguably, every person values water as a provisioning ecosystem service, but it does not necessarily mean that water is consciously used and conserved. The analysis of an experience that affects SES dynamics requires a value lens which integrates motivational behaviour theories. I propose that greater understanding is provided by ideas and concepts espoused by Shalom Schwartz's Basic Human Value theory (eg. Stern et al. 1999; de Groot & Steg 2007).

2.5.2. Schwartz's Basic Human Value Theory

From the field of intercultural sciences, Basic Human Value theory by Shalom Schwartz is an extensive and commonly used theory in current research on motivation. It is often used to study cultural conflicts and predict processes of global change, including sustainability issues and relationships with the natural environment.

Schwartz's theory is based on the disposition that values explain motivation, due to the following features:

-) Values are beliefs, encourage effect and emotional responses.
-) Values describe the desirable goals that motivate action.
-) Values transcend specific actions and situations and are thus different from norms and attitudes.
-) Values serve as guidelines and criteria for attitudes and norms.
-) Values are ordered hierarchically, according to an individual's relative priorities.
-) Action is driven by the relative importance of multiple values.

According to Schwartz, these are features of all values which humans may hold. His subsequent studies then aimed at a better understanding of the content of these values.

Schwartz identified 10 basic human values which he found to be universal across all major cultures of the world. These he termed: hedonism, autonomy (or self-direction), power, security, achievement, universalism, benevolence, tradition, stimulation and conformity. Each of these come with indicative values, such as humble (in tradition) or social recognition (in power). Some of these values are commonly linked. For example many people exhibit a combination of security and achievement, which is then indicated by a value for social esteem and superiority. The description of each value, common value combinations, and their indicators is shown in Table 1.

Table 1: Summary of Schwartz's Basic Values (Schwartz 2012)

Value priority	Description	Value indicators
Single values		
Hedonism	Pleasure or sensuous gratification for oneself	Pleasure, enjoying life, self-indulgent
Tradition	Respect, commitment, and acceptance of the customs and ideas that one's culture or religion provides	Detachment, devout, humble, respect for tradition, moderate, accepting my portion in life
Power	Social status and prestige, control or dominance over people and resources	Social recognition, wealth, authority, preserving my public image
Security	Safety, harmony, and stability of society, of relationships, and of self	Healthy, family security, clean, social order, reciprocation of favours, sense of belonging, national security
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature	Broad-minded, equality, protecting the environment, inner harmony, unity with nature, a world of beauty, social justice, a world at peace, wisdom
Benevolence	Preserving and enhancing the welfare of those with whom one is in frequent personal contact (the 'in-group')	Mature love, true friendship, loyal, meaning in life, responsible, helpful, a spiritual life, forgiving, honest
Self-direction/Autonomy	Independent thought and action-choosing, creating, exploring	Freedom, curious, independent, creativity, choosing own goals, privacy, self-respect
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms	Self-discipline, honouring of elders, politeness, obedience
Stimulation	Excitement, novelty, and challenge in life	Daring, a varied life, an exciting life
Achievement	Personal success through demonstrating competence according to social standards	Intelligent, capable, successful, ambitious, influential
Common value combinations		
Conformity and tradition	Subordination of self in favour of socially imposed expectations	
Achievement and hedonism	Self-centred satisfaction	
Universalism and self-direction	Reliance upon one's own judgement and comfort with diversity of existence	
Universalism and benevolence	Enhancement of others and transcendence of selfish interests	
Conformity and security	Protection of order and harmony in relations	
Security and power	Avoiding or overcoming threats by controlling resources and relationships	
Achievement and power	Social superiority and esteem	
Benevolence and conformity	Normative behaviour that promotes close relationships	
Hedonism and stimulation	A desire for affectively pleasant arousal	

The distinguishing factor between these 10 values is the type of goal or motivation which it expresses. Schwartz has found that this takes any of two bipolar directions: openness to change or conservation and self-transcendence or self-enhancement. The first one depicts the bipolarity between

independent thought, action, and feelings and the readiness for change which is opposed by order, self-restriction, preservation of the past, and resistance to change. The second one refers to the concern for the welfare and interests of others as opposed to the pursuit of one's own interests, success and dominance over others.

Groups of values are descriptive of these directions and are thus either compatible or conflicting in their underlying motivation. Only hedonism shares two orientations at the same time: openness to change and self-enhancement. Any individual or group may hold compatible and conflicting values. However, how certain values are prioritized over others is the critical predictor of intentions and goals. This captures Schwartz's second research objective to conceptualize the relational dynamic of Basic Human Values. Schwartz (2012) concluded with a framework which portrays a circular motivational structure that is culturally universal. This framework is shown in Figure 2. In the inner layer of the circle are the ten basic values, and the outer layer are the four underlying goals and motivations. The closer two values are in adjacent proximity, the more compatible they are in pursuing a specific goal. These are represented by the common value combinations in Table 1. Values at opposite sides of the circle symbolize the most critical conflicts faced within and between individuals and cultures of the world: openness to change or conservation, and self-enhancement or self-transcendence.

With this publication, "An Overview of the Schwartz Theory of Basic Values" in *Online Readings in Psychology and Culture* in 2012, Schwartz provides an invaluable lens for the analysis of stewardship as a driver of SES resilience. His framework shows the relationships between priority values and motivational orientations. The inner layer helps us understand through which value perspective individuals view the SES that they are a part of. These values and their indicators are symbolic of the intentions of individuals and the goals they strive for. The outer layer predicts how resulting norms may affect the system dynamic and trajectory of change.



Figure 2: Schwartz's framework of motivational value orientation (Schwartz 2006; 2012)

2.5.3. Uses and limitations of this framework in stewardship research

Schwartz's theories are accepted by key scholars in Conservation Psychology as a way of explaining Environmentally Responsible Behaviours (eg. Schultz 2001; Stern 2011; Gifford 2014; Clayton 2016). It is understood that Environmentally Responsible Behaviour partly derives from values, and Schwartz's framework has been applied to test these relationships in numerous cases. Examples include engagement in recycling, consumption of organic and eco-labelled products, the use of public transport, or discussing the environment and sustainability issues regularly with peers (Stern 2000; Vaske & Kobrin 2001; Thøgersen & Ölander 2003).

The applications of Schwartz's Basic Human Value theory in this context have been summarized in the recent Oxford Handbook of Environmental and Conservation Psychology (Clayton 2012). The main finding is that intentions for the protection of the environment are predicted by universalism and benevolence. This is not surprising as these are the two self-transcendent values in Schwartz's value framework which portray altruism. In contrast, self-enhancing values are associated with personal norms that are described as environmentally harmful (Klöckner 2013). The relationship of Environmentally Responsible Behaviours with conservation- and openness to change- values is considered weak or non-existent. A few exceptions have shown that conservation values lead to an

apathy towards the environment, and underlie a lack of willingness to make sacrifices in consumption (Stern et al. 1998; Schultz & Zelenzy 1999). Also openness to change values were negatively correlated with Environmentally Responsible Behaviours. Poortinga et al. (2004) for example found that openness to change values motivated that individuals use their own cars excessively and carelessly, while opposing public transport. Another body of literature established that hedonistic values most significantly explained environmentally harmful behaviours, such as wasteful consumption and energy use (eg. Liobikienė & Juknys 2016). All these studies of Environmentally Responsible Behaviours were based on the quantitative analysis of Schwartz's value framework.

I regard the contemporary discourse around Environmentally Responsible Behaviours in relation to basic values as an overly simplistic outlook on stewardship which holds little value in predicting SES resilience. Firstly, resilience is a fluid and individually unique experience and cannot be measured against static and broadly defined behaviours. Secondly, it must be seen in the context of SES, whereby the environment includes humans and nature. Thirdly, SES resilience principles stipulate that motivation is studied in relation to spatial and temporal connectivity (Biggs et al. 2012). I argue that conventional quantitative measures of Environmentally Responsible Behaviours are not appropriate to explain how individuals can shape system dynamics. This research will benefit from a qualitative use of Schwartz's framework, which allows me to explore nuances and relationships between values, day-to-day interactions with places and the implications for SES resilience.

2.6. Emerging research questions and conceptual framework

This literature review leads me to the following conceptual model which will help me in meeting the aim of my research: To advance a transformative theory for stewardship. The conceptual framework that will direct my methodology is represented in Figure 3. I hypothesize that individual motivation for stewardship entails various levels with entry points for a sustainability transformation.

The first level is the subjectivity which drives individual's day to day relationship with the immediate surroundings. The second level is an individual experience of stewardship, which reinforces values and Sense of Place. The third level comprises the consequences on the dynamics of SES, which in turn also reinforce experience and subjective perception.

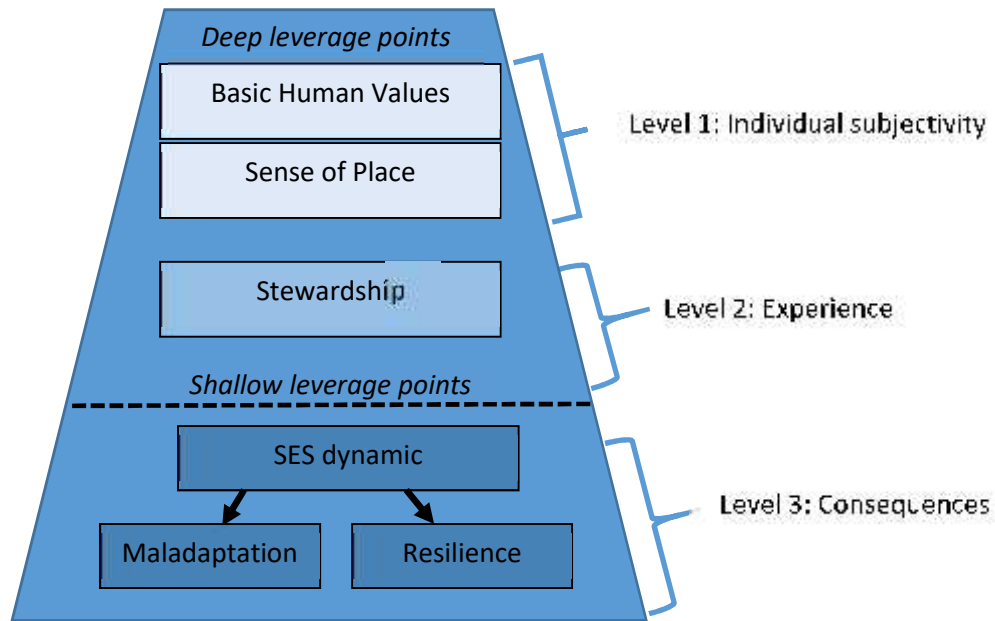


Figure 3: Conceptual framework of individual motivation for landscape stewardship (adapted from Abson et al. 2016)

I will use this framework to answer the following research questions in my empirical study:

1. How does individual motivation for stewardship mediate trajectories of social-ecological change?
 - 1.1. Which theories facilitate greater understanding of alternative stewardship pathways?
 - 1.2. How can a transformative pathway be recognized?
 - 1.3. How can transformative pathways be pursued?

These questions can best be answered through a qualitative study for an in-depth understanding of motivation as a function of consciousness, behavioural norms and experience embedded in the social-ecological context and dynamic of place.

2.7. Summary

I conclude that the linkage between stewardship and SES resilience is insufficient in current theory for leveraging a transformation of humans' disconnection from the biosphere. In this chapter I have shown that the dominant stewardship approach neglects the reality of individual motivation in addressing the sustainability challenges which concern all of society. The outcome of this theoretical approach is evident in stewardship metaphors which controversially encourage individuals to *promote* rather than *sustain* the assets of resilient SES.

Such stewardship metaphors are prone to maladaptation. Individual subjectivity and Sense of Place means that the motivation to change SES is biased, and more often than not mismatched with resilience or sustainability goals. Part of the problem is that individuals prioritize specific assets, places and time scales. This provokes stewardship which causes disconnects somewhere or sometime else in the holistic and interlinked human-nature relationship.

Stewardship theory which targets resilience would benefit from a metaphor which provides a common ground. This common ground must be inclusivity and connectedness for the present and the future, ownership and responsibility for each other and embeddedness in a shared biosphere. The scale of impact of a progressively placeless society points to the fact that an ethical transformation is necessary.

Instead of promoting the idea that individuals repair environmental damage caused by others, conservation science and practice can build on transformative change through intrinsic motivation. In order to understand how individuals are intrinsically motivated to sustain resilience, theories from Conservation Psychology and Political Ecology are extremely helpful. However, the understanding and conceptualization of underlying drivers and enabling mechanisms is still sparse.

In this chapter I have proposed that Basic Human Value theory could be a missing link. I anticipate that the motivational level in society is nuanced and dynamic and is fundamentally driven by the basic values prioritized by the individual. Schwartz's value theory, in conjunction with, for example, theory of place, identity and Connectedness with Nature, can enhance the explanatory power of stewardship motivation which transforms SES.

3. Context of the Garden Route in South Africa

In this chapter, I describe the context of the study area and how it has influenced my choice of research approach and methods. I begin with introducing the background of the Garden Route in terms of its social and ecological diversity. I also outline the most important socio-political considerations and present how the current approach to nature conservation fits into this context.

I then outline how vulnerability or lack of resilience presents itself to local communities and landscapes. In following some of the critical features of resilience, I address the two underlying issues (1) Critical Connectivity and (2) Change and vulnerability. These are the social-ecological trajectories in the study area and will form the starting point for my empirical analysis of individual experiences of stewardship, as mediated by Basic Human Values and Sense of Place.

I have lived in the town of Wilderness in the Garden Route for the four years of my academic affiliation with the Sustainability Research Unit at the Nelson Mandela University. My lens on the area has been shaped by SES frameworks and Sense of Place theory and I intend to describe *this* place as an insider of the system.

The Garden Route in South Africa is well-known for its rich diversity of people, cultures, biomes, ecosystems and species that attract a growing number of tourists and immigrants. This diversity is embedded in a complex anthropogenic landscape which experiences high temporal and spatial flux. Diversity is generally understood as an important source of social-ecological resilience. It is said to provide 'functional redundancy' as it means that several components of the system can perform the same fundamental service which buffers the system against collapse (Biggs et al. 2012). The diversity of natural resources, for example, ensures that local communities are not solely dependent on one life-supporting service which might be particularly vulnerable in the face of global change. In the literature this is often associated with rotational harvesting practices and diversification of livelihoods as a form of conservation. The diversity of cultures also means that natural resources are valued disproportionately, thus potentially reducing the pressure on their sustainability (Folke et al. 2005).

At the same time, social-ecological diversity provides the greatest challenge in finding common ground for stewardship. The multiplicity of ecological assets evokes conflict of interests between development, conservation and restoration of the landscape. When one of these interests is enriched by power and prestige through economic, cultural or political processes, resilience is at risk (Fabricius et al. 2007; Fabinyi et al. 2014).

Diversity makes the Garden Route an intriguing context for the study of resilience, which relies on common goals for connectedness and change. Individual values can compete with collective goals, and provoke maladaptation and vulnerability. I will examine the study area through the analytical lens of Sense of Place which portrays different angles from which resilience is perceived and approached by individuals through stewardship.

3.1. Background to the Study Area

The empirical work of this study dealt with the diversity of ecological values and distribution of benefits in the post-Apartheid era. The spatial unit is the Garden Route, situated in the Western Cape Province in South Africa. Figure 4 indicates the position of the Garden Route in South Africa, and the specific localities which are referred to in this thesis. The Garden Route is an affectionate name given to this area of outstanding natural beauty and touristic interest. It stretches roughly from the Tsitsikamma mountains in the east to the Outeniqua mountains in the west (Pauw 2009).

The Garden Route is an informal term for an area for which no clearly demarcated boundaries exist. At this stage it is most conventionally said to incorporate the municipalities Mossel Bay, Bitou, Knysna and George which are part of the Eden District Municipality. In the near future, the Eden District Municipality is however going to become the Garden Route Municipality.

The Eden District is economically well positioned and rich in natural resources. This is in contrast to other populated areas in South Africa in which nature has given way to industrialization, most notably the Cape region and Gauteng Province. The Eden District is nationally known for its relatively organized and liberal institutional infrastructure and, unlike most municipalities in the country it boasts clean audits and is managed by the Democratic Alliance (DA), which is the officially opposing political party to the ruling African National Congress (ANC).

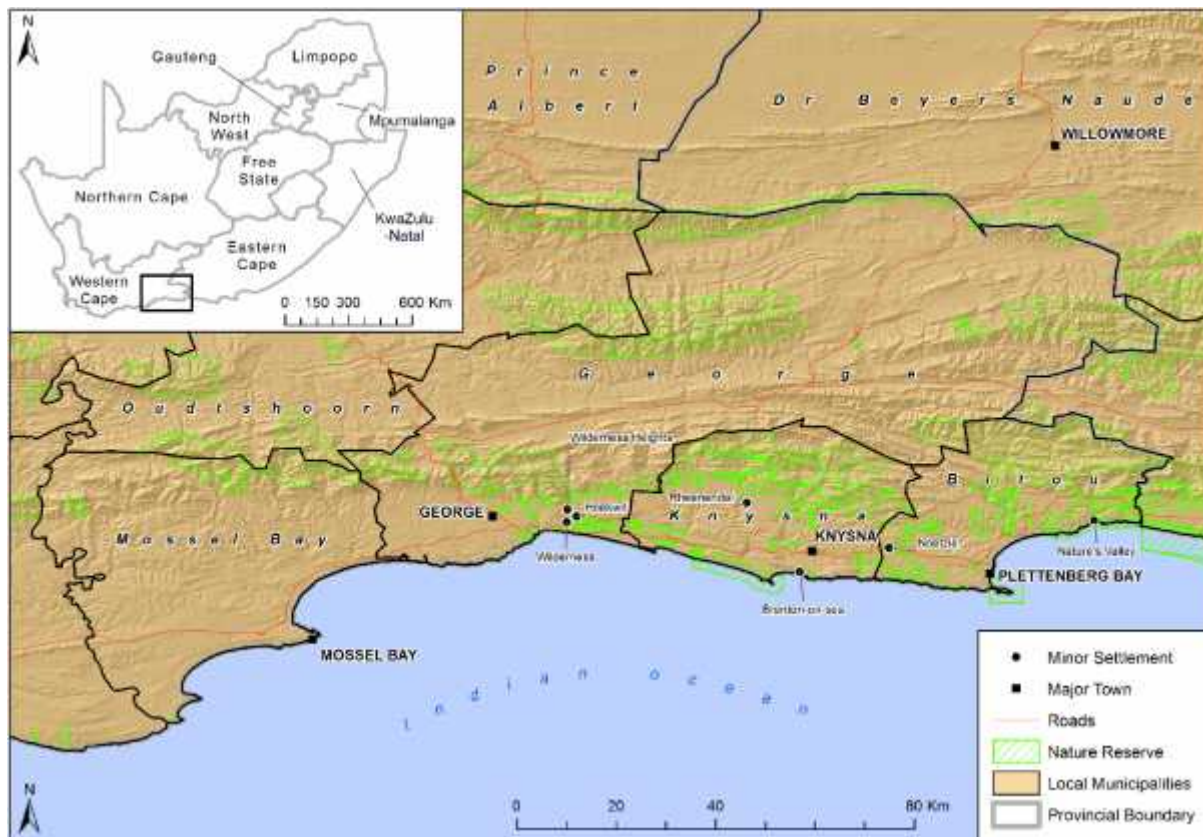


Figure 4: Map of the Garden Route

3.1.1. Ecological context of diversity

The Garden Route contains some highly productive, specialised and sensitive ecosystems which extend beyond municipal boundaries (Vromans et al. 2010). Thirty nine broad habitat types are recognized in the Garden Route, among them are six aquatic systems and several distinct types of forests, mountain, lowland and coastal fynbos (Mucina & Rutherford 2006; Vlok et al. 2008). The two main biomes are forests and Fynbos (a fire-dependent vegetation type endemic to South Africa, dominated by *Restio*, *Erica* and *Protea species*).

The Southern Cape Forest stands out as an iconic habitat in the area, as it is the largest system of Afromontane Forest in South Africa and one which comprises of a total of 465 plant species (SANParks 2012). These forests are home to a variety of charismatic and nationally significant animals, such as elephants, blue duiker, the leaf-folding frog, leopards, crowned eagles and the Knysna seahorse (Vromans et al. 2010; Turner 2012). The Fynbos biome comprises a major section of the Cape Floristic Region, which is one of three internationally acclaimed biodiversity hotspots in South Africa. This is due to its high species diversity and endemism as well as its high levels of vulnerability in the face of global change (Vromans et al. 2010; SANParks 2012).

The region's iconic freshwater ecosystems, made up of several rivers, salt marshes, estuaries and lakes, are also particularly diverse. This is where some of South Africa's most valuable wetlands are found with part of Wilderness Lakes system having been proclaimed by the Ramsar convention as a wetland of international importance (Vromans et al. 2010), and the Knysna Estuary, ranked number 1 in South Africa in terms of its conservation value (Turpie et al. 2002).

The Garden Route's coastline and its rocky shores, sandy beaches, sand banks, sheltered bays, and dunes are of significant ecological importance. Extending some 250 km out to sea, the shallow Agulhas Bank forms a very specialized marine ecosystem. Influenced by the warm water of the Agulhas current and the upwelling of cold and nutrient-rich bottom water, the habitat conditions form an intermediate zone between east and west coastal marine systems. The productive marine ecosystem provides habitat for a variety of crustaceans and fish species, and makes the Garden Route a centre of the country's fishing industry (Vromans et al. 2010). It is also an important permanent and seasonal habitat for many seabirds and marine mammals, such as whales, dolphins, seals and penguins. Many of the plants and animals have mutually-dependent relationships that are essential in sustaining the ecological system as a whole (Turner 2012).

As diverse as the Garden Route's ecosystems are the biotic components. Biodiversity in the Cape Floristic Region, for example, constitutes around 13 000 plants, 560 vertebrate and countless invertebrate species (Turner 2012). Fynbos in general harbours many endemic plants such as heath, grasses and orchids, which support an even more specialised and vulnerable diversity of insects and endemic birds (Vromans et al 2010).

Spatial distribution of biodiversity in relation to its formal protection status and conservation priorities is highlighted by the region's Critical Biodiversity Areas map. The map divides the region into five categories: Protected Areas, Critical Biodiversity Areas, Ecological Support Areas, Other Natural Areas and No Natural Areas Remaining (in Vromans et al. 2012). The map aims to inform spatial planning, management prioritisation and governance arrangements in the Garden Route (Vromans et al. 2010).

The boundaries of the ecological system are fluid in the regional landscape. Terrestrial, aquatic, coastal and marine systems interact and collectively produce the ecological values for local communities. This is the social-ecological meeting point that, in many ways, defines human habitation in the Garden Route and shapes place-based cultures and identities.

3.1.2. Social context of diversity

The Garden Route is inhabited by a population of 400 923 resource users with density variations in persons per km², namely 44 in Mossel Bay, 37 in George, 62 in Knysna and 50 in Bitou. The majority of the population is of working age, between 15 and 64 years of age, and the area's demographic makeup consists of Coloured (54, 2%), Black African (24, 7%), White (19, 2%) and Indian or Asian (0, 4%). At least twelve different languages are recognized (Census 2011). Despite a high economic growth rate, the region experiences extreme poverty, particularly in the black African and Coloured communities (Department of Social Development 2009; Knysna Municipality 2011). The unemployment rate is high, averaging at 25 % between the four municipalities (Census 2011). This percentage compares to a national average of 27, 7% (South Africa 2015).

The Garden Route experiences significant influxes of seasonal visitors and a constant stream of national and international immigrants. Many of the latter pursue small-scale business opportunities in tourism, agriculture, manufacturing, trade and the service sector (Eden District Municipality 2010). Economic diversity is clearly reflected in the landscape and manifests as a mosaic of commercial and small-scale farmland, plantation forests, protected areas, residential areas and holiday resorts (Russell et al. 2010).

The landscape also illustrates a diversity in lifestyles and financial status. All towns have clearly distinguishable upper-class and middle-class residential areas with outlying, low-cost government housing projects and informal settlements. In the rural areas, modern golf courses, expensive hotels and resorts are mixed with small-holdings, humble retreat centres and artists' communities.

The diversity in the landscape portrays the diversity of values the social community assigns to the ecological assets of the Garden Route. Apart from socio-economic benefits, landscape usage is also informed and motivated by aesthetic, spiritual, subsistence and recreational values (SANParks 2012). Some landscape uses compete with ecological assets, due to a value absence for the sake of unconstrained development (Vromans et al. 2010). This is clearly visible in George and Plettenberg Bay, where a trend of outward urban expansion claims natural areas and is exemplified by extensive shopping centres and homogenous housing estates around their edges. Figure 5 provides a visual representation of the social-ecological landscape of the Garden Route. It shows firstly how nature areas, production areas and urban areas are competing for space in a fragmental arrangement, and secondly, the natural beauty and ecological diversity which makes the Garden Route such an attractive area for people.

 <p>a) Featherbed Nature Reserve and Thesen Island in Knysna</p> <p>www.gardenroutemeander.co.za</p>	 <p>b) Wilderness Lakes Area</p> <p>www.sunsafaris.com</p>
 <p>c) George</p> <p>www.gardenroute.com</p>	 <p>d) Informal settlement in Knysna</p> <p>www.travelblog.org</p>
 <p>e) Fancourt Golfcourse</p> <p>www.lhw.com</p>	 <p>f) Pine plantation in Rheenendal</p> <p>www.plettenbergbayrealestate.com</p>
 <p>g) Viewshed "Map of Africa"</p> <p>www.gardenroutemeander.co.za</p>	 <p>h) Endemic Knysna Loerie</p> <p>www.pezulaprc.com</p>

Figure 5: Visual representation of the Garden Route, South Africa (images retrieved 21st of October 2017)

3.1.3. Socio-political considerations

Introduced in South Africa after the fall of Apartheid in 1994, political decentralization was formulated in the 1996 Constitution in order *“to provide democratic and accountable government for local communities”* (CSA Section 152). This three-tier political system sees a national provider govern nine provincial ones, which in turn are made up of several local municipalities. In 52 areas in South Africa, including the Eden District Municipality, a fourth tier exists at district level.

The national level deals with security affairs and maintains rights over economic policy, and social services departments. The provincial sector administers social services, including health, education and social grants. The district councils are responsible for the bulk infrastructure, such as water and sewerage systems, and for assisting the affiliated local municipalities with financial and advisory capacities. Lastly, the local municipalities are responsible for providing the basic needs and services for the local communities (National Department of Health Republic of South Africa 2011).

This system is however being critiqued for aggravating some of the inequalities which it sought to address. It is vertically interdependent and tends to constrain local municipalities in decision-making and implementation. It is argued that obstacles occur at provincial levels, where factors such as corruption, incompetence and lack of transparency impede skills and resources on the ground. This is of relevance to the realization of forward planning in the area, and issues related to public services, housing and communication with local communities, which often remain unresolved (Stanton 2009).

On a national scale, South Africa still deals with immense inequalities which can be seen in the poverty trends outlined in a recent report published by the South Africa Government (Statistics South Africa 2017). The highlights of this report are that 13.8 million people still live in extreme poverty and at least 13% of South Africa’s population is vulnerable to hunger. This is contrasted by a headcount of 24.4 million people who are considered non-poor. The reality is that these statistics are correlated to the ethnicity of South African people. In other words the percentage of poor individuals is 41.2% amongst Coloured, 64.2% amongst Black African, 5.9% amongst Indian or Asian and 1% amongst White. Also the GINI coefficient index, which is a measure of inequality, shows this divide in a national income distribution ratio of Coloured (0.58%), Black African (0.65%), White (0.51%) and Indian or Asian (0.56%). The socio-political statistics which are most relevant to this research are summarized in Table 2.

Table 2: Socio-political statistics for the Garden Route

Category	Statistics	Scale and year
Population	400 923	Eden District 2011
Ethnic groups	Coloured (54.2%), Black African (24.7%), White (19.2%) and Indian or Asian (0.4%).	Eden District 2011
Average age	0-14 years (24.9%); 15-64 years (67.4%); 65+ years (7.8%)	Eden District 2011
Unemployment	25%	Eden District 2011
Poverty headcount per ethnic group	Coloured (41.2%), Black African (64.2%), White (1%) and Indian or Asian (5.9%).	South Africa 2015
Non-poor headcounts	24.4 million people	South Africa 2015
GINI coefficient per ethnic group	Coloured (0.58%), Black African (0.65%), White (0.51%) and Indian or Asian (0.56%).	South Africa 2015

A recent inclusion in the planning arena is the over-arching National Development Plan (National Planning Commission 2010). The implementing framework of this plan is the Integrated Development Plan, which is to be provided by each of the 234 local municipalities in South Africa. The National Development Plan aims to guide development in South Africa through strategic investments into economy, environment and social services. The emphasis in this document is the boost of the country's economy through, for example, a strengthened export market and the provisioning of economic access for all South Africans. This idea is closely linked to the goal of poverty reduction and job creation.

Rural South African communities and those living in townships which are disconnected from urban centres are termed "*economically marginalized*" (National Planning Commission 2010). The National Development Plan not only stipulates the redistribution of wealth through government aid, but also emphasizes the building of entrepreneurial leadership in previously disadvantaged communities. Underlying this is the goal for an economically interconnected South Africa (Stewart 2012).

The National Development Plan seeks to find low-cost strategies for the provision of basic services. One of these strategies is to densify cities, strengthen bulk infrastructure and invest further into service delivery. This is a response to the fact that 10% of South African households live without electricity, 16% without piped water, and close to 40% without flush toilets (Statistics South Africa

2017). The goal for service delivery not only entails water supply, sewerage systems, electricity and internet to all households, but also the provisioning of security, health and education through stable national systems. These are noteworthy secondary targets in South Africa's National Development Plan.

The implementation of visually insensitive bulk infrastructure, such as high-voltage electrical powerlines, can have severe implications for the receiving environment and can fundamentally affect Sense of Place. Marginally addressed in the National Development Plan is the development of a resilient environment. In recognition of climate change and depletion of natural resources, it highlights sustainable and carbon-clever solutions for economic growth and promotes wise investment in the diversity of natural assets that South Africa has on offer. This means steering away from the depletion of minerals and a focus on consumptive resource uses, towards non-consumptive benefits through industries such as tourism (National Planning Commission 2010).

Informing development at lower levels are various provincial and local Spatial Development Frameworks and policy guidelines. In the Eden District, a fundamental theme in the Spatial Development Frameworks is the recognition of the intrinsic value of the Garden Route landscape and the need to conserve its natural heritage.

3.1.4. Nature conservation

The natural resource system in the Garden Route extends over private, communal and formally protected areas. A variety of institutions inform nature conservation, ranging from high levels of legislative protection to mainstream conservation mechanisms and unlegislated voluntary conservation. This local multi-sectoral infrastructure responds to global, national and provincial levels (Turner 2012).

Protected area strategies are the most traditional form of nature conservation in South Africa (Venter et al. 2008). They are based on the assumption that destructive or undesirable change can best be controlled through top-down institutions (Turner 2012). Protected areas are supported by the National Environmental Management: Protected Areas Act (NEMPAA) (Act No. 57 of 2003), Marine Living Resources Act (Act No. 18 of 1998), The Biodiversity Act (NEMBA) (Act No.10 of 2004) and the Western Cape Nature Conservation Board Act (Act No. 15 of 1998) (Rossouw 2012). The two mandated organisations in the Western Cape are South African National Parks (SANParks), and Cape Nature, and they govern the Garden Route National Park and four bordering nature reserves respectively.

The Garden Route National Park is currently undergoing a process of expansion. The Protected Area Expansion Strategy was piloted in 2008 (South African National Biodiversity Institute & Department of Environmental Affairs 2010) with the goal *“to achieve cost-effective protected area expansion for ecological sustainability and increased resilience to climate change”*. The Protected Area Expansion Strategy indicates significant success as shown by the spatial extent of conservation area in South Africa (Holness et al. 2016). The strategy builds on the acquisition of land, the declaration of public and state land, and on contractual agreements with private landowners which are conventionally known as stewardship programmes (Barendse et al. 2016).

The most well-known is the Biodiversity Stewardship Programme for the Western Cape, launched by Cape Nature in 2003. The vision for this programme as cited on the Cape Nature website (www.capenature.co.za, accessed on 19th of April 2014) is:

-) *“To ensure that privately owned areas with high biodiversity value receive secure conservation status and are linked to a network of other conservation areas in the landscape.*
-) *To ensure that landowners who commit their property to a stewardship option, will enjoy tangible benefits for their conservation actions.*
-) *To expand biodiversity conservation by encouraging commitment to, and implementation of, good biodiversity management practice, on privately owned land, in such a way that the private landowner becomes an empowered decision maker”.*

The stewardship options for landowners depict degrees of commitment, and range from the establishment of reserves to formal agreements for best practice in biodiversity management (Turner 2012). In the Western Cape, close to 134 000 individual landowners already participate in the expansion strategy (Holness et al. 2016). This collaboration is based on weakly legislated contracts with environmental agencies (Turner 2012) who offer opportunities for co-management of ‘off-reserve’ biodiversity based on ‘on-reserve’ principles (Pence et al. 2003).

Stewardship programmes portray a gradual shift in paradigm for nature conservation worldwide. In a perspective published in *Science*, Mace (2014) presents a timeline that depicts how nature conservation has changed approaches from human exclusion in protected areas to a gradual acceptance of connectedness and the pro-active shaping of human-nature relationships. This globally perceived ideal of stewardship of the environment, ecosystems and landscapes also shapes perceptions in South Africa.

Mace's timeline presents phases that are recognizable in the conservation history of the Garden Route. The first two phases are 'Nature for itself (1960-1970)', and 'Nature despite People' (1970-1980). They relate respectively to the conservation focus on species preservation in protected areas and defence from human-induced risks and have physically manifested in several large, fenced and isolated protected areas in South Africa. It was during that era that the displacement of communities to the margins of protected areas occurred (Dasmann 1984).

A subsequent phase is 'Nature for People', which began around the year 2000 with the development of environmental economics (Turner & Daily 2008). The ecosystem services framework represents a milestone in a paradigm which highlights that humans are critically dependent on the benefits of nature (MEA 2005). The ecosystem services framework is associated with the economic incentivising of stewardship, and forms a major part of the protected area expansion strategy, and a significant component of environmental research and academic curricula in South Africa.

More recent recognitions that human-nature relationships are not linear, but mutually dependent is seen in the emergence of SES resilience-thinking. The phase termed 'People and Nature' took influence in 2010 with the uptake of interdisciplinary sustainability sciences at several South African Universities, including Stellenbosch University and Nelson Mandela University. The scientific services units at Cape Nature and SANParks work closely with this emerging scientific paradigm.

Resilience goals and the empowerment of the population for stewardship now feature heavily in conservation management plans and practices (Venter et al. 2008; SANParks 2012; Turner 2012). However, the stark reality of South Africa's emerging democracy is that opportunities for people to experience, value and manage ecological assets are unequal (Roux et al. 2017). The Garden Route, as the rest of the Western Cape Province, has been severely affected by backlogged challenges of decentralization. When land is scarce, access restricted and poverty prevalent, motivation and opportunities for stewardship are severely constrained.

3.1.4.1. Stewardship in the Garden Route

The term 'stewardship' evokes different meanings across the broad spectrum of the South African public. The general understanding is that stewardship is a professional conservation mechanism, or 'programme'. In a recent review of the concept, Barendse et al. (2016) made an attempt to establish a more coherent definition for South Africa. The authors established stewardship categories, namely

landscape or seascape initiatives, market-based schemes, biodiversity programmes, communal conservancies and educational and awareness projects. These categories represent stewardship as a collective endeavour between and across governmental, non-governmental and public sectors with the main differences being that of formality and scale. The legal mechanisms for stewardship on private land, such as the stewardship programme by Cape Nature outlined above, are provided by international institutions such as the Convention on Biological Diversity.

A lesser degree of formality exists for stewardship in communal areas of the Garden Route (Turner 2012). Several international and national frameworks merely facilitate and guide local communities who are driven to contribute to the conservation of the ecological common. They include the National Association of Conservancies/ Stewardship South Africa (NACSA) (NACSA 2003), The Cape Action Plan for the Environment (Younge & Fowkes 2003), Mission Blue Hope Spots as a seascape-based conservation initiative (www.mission-blue.org, accessed on 9th of May 2014) and UNESCO's Man and the Biosphere Program (Pool-Stanvliet 2013). In the Garden Route, these have enabled the establishment of a number of conservancies, two designated Hope Spots, the Gouritz Cluster Biosphere Reserve (Lombard et al. 2010) and, more recently, the Garden Route Biosphere Reserve (refer to Box 1).

Box 1: The Garden Route Biosphere Reserve as a case of stewardship



The Garden Route Initiative began the proclamation of the Garden Route as a UNESCO Biosphere Reserve in 2017. The reserve includes three marine protected areas, the Wilderness Lakes Ramsar site, the Garden Route National Park and two components of the Cape Floristic Region: the Nelson Bay Cave and the critically endangered Langkloof Valley.

The Garden Route Initiative is driven by the mission to “*conserve and restore the unique biodiversity and Sense of Place in the Garden Route, while supporting the sustainable management of the region and the delivery of benefits to local communities*” (www.grbr.co.za, accessed on 23rd of May 2014). It hereby builds on the voluntary participation of professionals, the public and any experts in the fields of climate change, social development, environmental education, sustainable energy and ecology, to collaborate in the name of stewardship.

The Biosphere Reserve is governed by a steering committee that directs and coordinates the activities of the Garden Route Initiative and participating partners from governmental and non-governmental spheres. Part of the strategy is to formulate management plans for the coast, facilitate research, integrate management of fire and Invasive Alien Plants with socio-economic benefits and promote stewardship on private land to safeguard biodiversity. Environmental education, risk assessments, job creation and economic incentivizing are the proposed approaches to motivate participation by the public.

Further complementing the stewardship structure in the Garden Route are various self-organized or bottom-up initiatives. These are NGOs, programmes, partnerships and projects which negotiate visions and objectives amongst their members (Müller 2012). Examples of such projects are the Eden-to-Addo Corridor Project and various estuary management forums. Influential Non-Governmental Organisations (NGO) in the Garden Route include the Wildlife and Environment Society of South Africa (WESSA), Sustainable Seas Trust, Orca Foundation, Cape Leopard Trust, Nature’s Valley Trust and Custodians of Rare and Endangered Wildflowers. Self-organized stewardship can operate on various levels within and between formally protected areas. This type of stewardship is defined by voluntary individual participation in a system where norms and rules are collectively formulated and organized in management plans (Rossouw 2012).

Stewardship also encompasses practices on a very informal and sometimes even cryptic scale. This includes the day-to-day activities of individuals or small groups who portray personal interest rather than professional or organizational functions. This form of stewardship is known as civic ecology and local examples would include activities such as the rehabilitation of wildlife, citizen science, tree planting, promoting environmental awareness and beach clean-ups (Barendse et al. 2016).

Civic ecology might be the least formal type of conservation, yet it is by no means the least influential. Civic ecologists are growing in their numbers, footprints and broader impacts on achieving scientifically framed

resilience goals (Krasny & Tidball 2012). This trend is as relevant worldwide as it is to the Garden Route.

A publication by the South African National Biodiversity Institute presented the critical importance of citizen science as an early warning system for climate change. The publication describes how long-term data, collected by lay volunteers, indicates the affects and influences of climatic shifts on the distribution and abundance of butterflies, birds, plants, coral reefs, insects and other groups (Barnard & De Villiers 2012). Crowd-sourcing of ecological data via online interfaces such as The South African Atlas Program or ISpot is becoming a common research practice, and fundamentally underpins conservation management.

3.2. Social-ecological dynamics

The Garden Route is highly vulnerable as a result of interacting climatic, landscape and social changes. Population growth and pressure on land and resources is a major concern with the area having experienced a population boom of 39% between the years 2001 and 2011. The current average growth rate is 3.2% (Census 2011).

Immigration is largely responsible for population growth in the region with two clear trends being apparent. Economically motivated immigration draws people from rural South African provinces and other African countries, such as Malawi and Zimbabwe, in search of employment and better living conditions. As yet, no formal statistics exist for this trend in the Garden Route (Kok & Collinson 2006; Pauw 2009).

The other important immigration group comes from a more affluent sector of society. National and international people are moving to the Garden Route in search of a 'rurally defined lifestyle' (Pauw 2009). This has been described by Stimson & Mannery (1998) as a phenomenon of 'sun-belt migration' based on leisure, retirement and tourism. The authors compare trajectories in the Garden Route to the trend in the Gold Coast, which has rapidly developed into the most populated non-metropolitan area in Australia.

These are trends that the South African Government is poorly equipped for (Crush & Dodsden 2007). One reason for this is the declining quantity of water available to an ever-increasing number of households and their demand for industrial, agricultural and forestry-related products (Pauw 2009). The supply of water is a major challenge to the Department of Water and Sanitation, with the Western Cape having already exhausted the carrying capacity of public water supply in 2005. Without significant intervention and investment, the current water supply cannot support further growth (Midgley et al. 2005).

Similar predictions are made with regards to food security in the Garden Route (Pauw 2009). The growing demand for exclusive residencies, hotels and recreational facilities in rural areas has motivated the transformation of farmland away from agriculture and towards more tourist oriented uses such as exclusive golf estates and game farms (Eden District Municipality 2010). The approval of such developments outside defined urban edges sets precedents for 'leap-frog development' on valuable agricultural land and leads to ad hoc planning scenarios.

On the other end of the spectrum, the provision of housing and public services to low income residents and immigrants is a major challenge for local government, given the rate of influx, financial challenges, the scarce availability of suitable land and the inadequate water supply. Government has responded by investing into energy efficiency and water conservation with the consideration and implementation of low-cost housing developments. Government-sponsored houses are in huge demand and short supply, and long waiting lists exist. As a result, roughly 21% of the Garden Route population have no formal means of habitation (Census 2011). With a lack of sanitary facilities such as waste management and sewerage systems, informal settlements are associated with hazards to human and environmental health. These conditions compound the problems associated with pollution and sedimentation in rivers and estuaries in the Garden Route (Midgley et al. 2005).

Other predictions for the Garden Route are related to climatic and ecological changes. Water scarcity, as a result of decreasing rainfall, is challenging already vulnerable ecosystems (ASSAf 2017) and threatening endangered vegetation types, such as coastal Fynbos. Hotter and drier climate predictions are a tangible reality in the Garden Route (ASSAf 2017) and already account for a shift of biomes. Succulent thicket from the Eastern Cape expands into the Western Cape and gradually replaces Fynbos (Midgley et al. 2005). The knock-on effects concern the biodiversity of the Cape Floristic Region. In the face of climate change, critical biodiversity has already been found to move progressively out of range of protected areas and risks the loss of formally conserved habitat by the year 2050 (Hannah et al. 2005 & 2007).

The area is also experiencing sea-level rise and changing ocean circulation patterns which lead to an increased frequency and intensity of coastal storms, erosion of sandy beaches and flooding of houses (Pauw 2009; ASSAf 2017). The latter is becoming a relevant issue for residents along dunes and river courses. Regular flooding of properties in the past decade appears not to have provided enough learning to discontinue new development in ecologically sensitive areas (Tempelhoff et al. 2009).

Box 2: Knysna fires 2017

A recent event of wildfires in June 2017 shows clearly how social and ecological changes in the Garden Route interact at the expense of resilience. Dramatic fires between George and Plettenberg Bay were fuelled by extensive areas of Invasive Alien Plants which have, over an extended period, negatively affected the Garden Route. Dense stands of Australian Acacias, Eucalyptus and European Pines (amongst others) form undesirable connectors between the small towns and rural areas which were affected by the fires. Invasive Alien Plants are typically more fire-prone than the indigenous afro-montane forest. They are also more water-thirsty and typically establish along riparian areas, thereby contributing to the prevailing drought conditions at the time (Baard & Kraaij 2014). The dry landscape caught and carried fires rapidly through farmlands, plantations and fynbos in mountain and coastal regions. Public infrastructure in Knysna was significantly damaged and it is estimated that at least 700 people lost their houses. Moreover, considerable losses of fertile topsoil, biodiversity and wildlife have been experienced as a result of the fires.

The predictions for Invasive Alien Plants are currently not positive, and highlight an urgent need for sustainable adaptation. The biomass of Invasive Alien Plants is believed to increase due to fire-generated re-sprouting. This aggravates the problem in a naturally fire-prone environment, dominated by Fynbos and pine plantations. The challenges for the Garden Route with regards to Invasive Alien Plants are four-fold: Firstly, the conflicting fire management needs for the safety of residential areas and forest plantations, against those of Fynbos vegetation. Fynbos depends on fire to rejuvenate and is exposed to controlled burns in order to be conserved. Secondly, fire-propagated pines from plantations continuously invade indigenous vegetation. Thirdly, the lack of resources to address Invasive Alien Plants through socio-economic change and conservation management and finally, landscape fragmentation and competition between homogenous forestry and patchy conservation areas (Kraaij et al. 2011).

that could be used for agriculture, housing and conservation, it also means a critical risk for unmanageable spreads of Invasive Alien Plants. The plantations designated for removal are depleted in soil nutrients and veld conditions and as such tend to favour hardy exotic pioneer species. While

Urban development along coastal dunes, in wetland systems and along river courses occurs at the expense of the natural infrastructure. This is increasingly undermining the buffers for people against severe weather events, erosion and pollution, and has implications on the health and well-being of the affected communities (Midgley et al. 2005; DEA 2013).

Perhaps the biggest ecological challenge is the spread of Invasive Alien Plants, which depletes water and biodiversity, and presents a fire hazard to residents in the Garden Route (refer to Box 2). Invasive Alien Plants are in part a legacy of commercial forestry who could not contain the spread of exotic trees. Coupled with the introduction of ornamentals from European and South American settlers, this means that the Garden Route now harbours 244 alien species and is the most invaded region in South Africa (Baard & Kraaij 2014). Transformation to agriculture, abandonment of farmlands, urbanization and poorly planned residential areas are amongst the most common windows of opportunities for Invasive Alien Plants to establish.

A current social-ecological transformation in the Garden Route may well aggravate the Invasive Alien Plants problem. This is the phasing out of approximately 45 000 ha of marginal forestry plantations. Even though this will provide land

the restoration of the land to Fynbos could be assisted by conservation, the financial means for this are lacking. Indigenous forest is altogether unlikely to re-establish in previous plantations (Pauw 2009).

According to Pauw (2009) the social-ecological context in the study area has led to several 'transitional dead ends'. These consist of less optimal uses in the landscape or degraded areas that cannot be reversed or transformed, due to ecological or economic constraints. The dead ends in the Garden Route are areas that are infertile and eroded, occupied by uncontrolled Invasive Alien Plants, or by unsustainable human settlements. These vulnerabilities are projected to increase in the near future of the Garden Route.

Vulnerabilities are a threat to life as it is in the Garden Route. Slingsby et al. (2017) have found, for example, that the intensifying drought and the highly competitive nature of Invasive Alien Plants combine to suppress the regeneration of Fynbos in the Cape Floristic Region and create further knock-on effects on the carrying capacity of water catchments in the Western Cape. Another alarming prediction is the extinction of species and impoverishment of biodiversity by as much as 30% in the near future (Midgley et al. 2005).

Current trajectories are set to compromise human well-being and sustenance. Apart from life-provisioning and -supporting services, cultural ones are also severely at risk. The loss of Sense of Place for example is highly critiqued by members of the public. Letters to newspapers express locals' concerns about trajectories of visual and biophysical change in the landscape. This resident for example addresses an issue of coastal development and states: *"Heavy machinery scoops up the very building blocks for dune formation that nature so miraculously deposits while the dunes themselves remain littered by insensitive development, skyline erosion, obnoxious intrusions into public space and transgressions that are so invasive they beggar belief. Planning processes lean heavily towards development and the very same planners and consultants whose depth of knowledge underpins the vision for a greener Wilderness systematically de-vegetate our environment and erode our sense of place."* (George Herald 2015). Indeed, it appears that the symbolic features of the Garden Route related to its natural beauty are losing their meaning in the face of urban development and Invasive Alien Plants dominated landscapes (Barendse et al. 2016).

3.2.1. Critical Connectivity

While the above are some of the most visible consequences of decreasing resilience, I regard two major factors as the underlying sources which require reflection. The first is fragmentation or the loss of Critical Connectivity. Connectivity in a SES can protect ecosystem services by facilitating recovery or preventing a disturbance from spreading (Biggs et al. 2015). Spatial connectivity of ecosystems ensures the persistence of biodiversity and associated redundancy. As in many places of the developing world, the construction of buildings, roads and fences are gradually fragmenting the physical corridors used for animal movements, genetic dispersal, and water or nutrient flows. The establishment of commercial livestock farming, such as pastures for dairy in the Garden Route, also act as barriers for essential ecological processes.

From a social perspective, connectivity between different groups can aid information sharing, trust and reciprocity, thereby providing critical elements for stewardship in a shared landscape (Biggs et al. 2015). In the Garden Route, social communities are still clearly segregated and, even within similar ethnic groupings, increasingly divided in their values and worldviews. Different circumstances such as language, ethnicity, economic and educational backgrounds are coupled with different values, interests and priorities, and they determine how the Garden Route is experienced and utilized. One might argue that social disconnects are part of the post-apartheid regime which continues to suffer from inefficient governance, unequal opportunities and distribution of wealth (Stewart 2012).

Connectivity is linked to culture and the wish for bonding within groups and for distinction from others. Different cultural affiliations with the natural environment have been found to strengthen distinct groupings in the central Garden Route area (Roos 2015). I am often intrigued by how these cultural differences are exhibited in the way nature areas are utilized. Through a social network analysis, Roos (2015) portrayed the Garden Route as a hotspot for multiple collective identities, which are bound by common relationships with nature, such as recreation, hobby, economic or subsistence use.

3.2.2. Change and vulnerability

The second consideration is how change in the Garden Route is approached by influential social processes and how this might affect vulnerabilities in the future. In a recent publication Hamann et al. (2015) have mapped SES in South Africa to indicate how people's relationships with nature affect sustainability. The authors hereby looked at the degree of coupling to ecosystem services which are essential for local communities to survive. While all communities depend on services such as wood for

heating and cooking, crop production, freshwater, building materials and animal production, regional differences occur in how they are obtained by individual households.

Hamann et al. (2015) depicted the Western Cape as a 'red loop system', referring to SES in which people draw from ecosystem services indirectly by means of an economic market. The characteristics of a red loop system reflect the targets of the National Development Plan, and indicate the proposed future direction of the Garden Route. A red loop system typically has a high population density and major urban centres. Households are tied to the municipal grid, and sewage and water supply system. This incorporates affluent and middle-income residents as well as lower-income generators who live in government sponsored houses. These characteristics also apply to the rural areas of the Western Cape. The red loop systems are the predominantly wealthy rural households who use land for commercial farming and tourist accommodations.

What is important here is the authors' conclusion that red loop systems are fundamentally disconnected from the biosphere. This means that households draw from primary production services by other means, such as the import of non-renewable materials enriched by additional production chains and carbon emissions. Hamann et al. (2015) found that disconnects are driven by the ease of access to land through wealth, and a commercially-motivated form of land use. Development in red loop systems inevitably occurs at the expense of sustainability and conservation, and is negatively related to economic dependency and access to markets (Folke et al. 2011; Cumming et al. 2015).

Figure 6 and Figure 7 are from the statistical report of poverty trends (Statistics South Africa 2017) and they indicate how consumption and effects on the biosphere relate to wealth in South Africa. The consumption of raw materials for housing, and of water and food, or the expenditure of energy for transport and electricity is significantly higher in non-poor households. This is despite the fact that non-poor households are with an average of 2.4 headcounts smaller than poor households with an average of 4.6 headcounts. The national discourse around development revolves around the alleviation of poverty, whereby poverty is only measured against financial resources. This curbs the fact that many rural South Africans live in resource-rich and fertile areas, with access to renewable energies, fresh water, clean air and potentially content and fulfilling lifestyles.

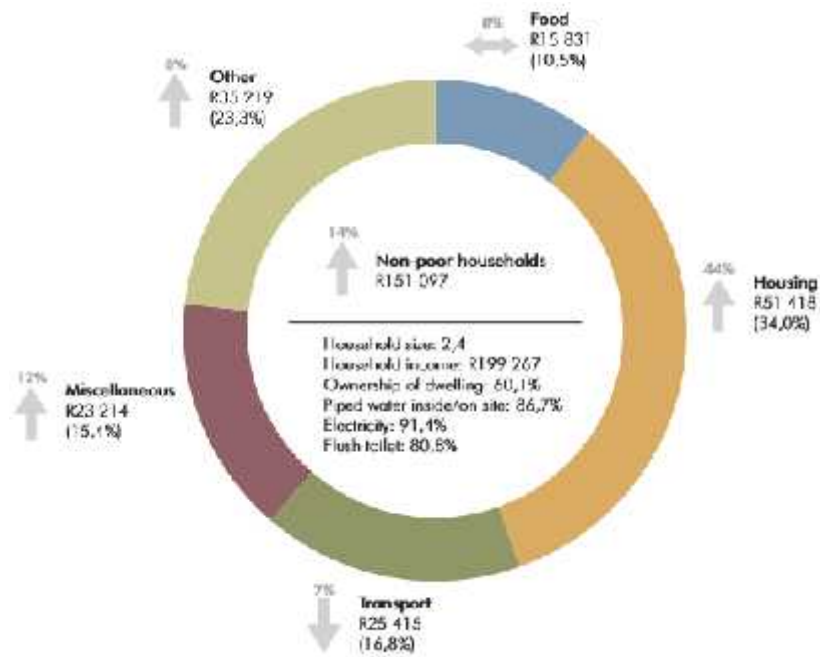


Figure 6: Annual average non-poor household consumption expenditure in 2015 and change from 2006 (Statistics South Africa 2017)

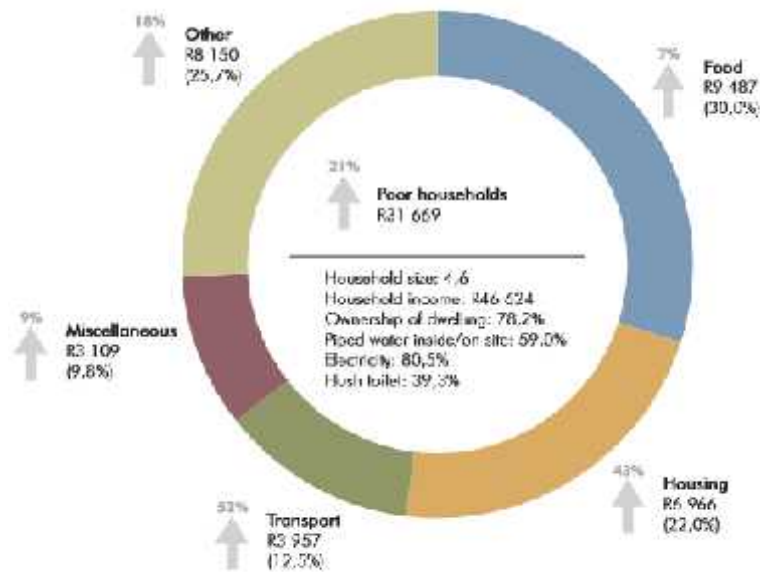


Figure 7: Annual average poor household consumption expenditure in 2015 and change from 2006 (Statistics South Africa 2017)

These lifestyle conditions resemble the contrasting ‘green loop systems’, which enclose households that draw directly from bundles of ecosystem services for livelihood and survival. They are characteristically found in areas where land is in communal tender, or communities with a pronounced

spiritual and cultural tie to nature. In South Africa, green loop systems are found in parts of the Eastern Cape Province and KwaZulu Natal (Hamann et al. 2015). The National Development Plan refers to these as the economically marginalized and low-income areas which require government aid.

The dominant trajectory of change in the Garden Route depicts the red loop system as an unsustainable form of economic development. Firstly, the area is becoming increasingly popular for large scale commercial farming, particularly dairy (Pauw 2009). Secondly, side-ward expansion through shopping malls, and excessive duplication of franchised restaurants, shops and supermarkets are overwhelming. Thirdly, urbanisation shows trends of high-end commercialization, as indicated by the rapid emergence of affluent residential areas, security complexes and exclusive shops and restaurants. Not only are many of these developments insensitively sited in vulnerable ecosystems, they are often highly dependent on a global economy and non-renewable energies and materials, such as coal in South Africa (ASSAf 2017).

While writing about spatial development issues in the Garden Route, I stumbled upon an *Opinion* published on the online platform MSN News (www.msn.com, accessed on 28th of July 2017). In the article “How to build inclusive cities in an unequal South Africa” (2017), the author Judith February states that *“South African cities have failed to create safe spaces for interaction between ordinary people in a society with high levels of inequality and unemployment...”* and that they *“...face similar challenges of urbanisation, lagging infrastructure and the remnants of apartheid’s spatial development that sees the poor living outside the city and often in low-lying areas prone to floods and sewage leakages”*. With particular reference to the Garden Route, February (2017) states that *“One drive along the Garden Route in the Western Cape shows how golf-course style development is threatening the environment and our beautiful coastline. Our peculiar South African ‘mall culture’ has created a particular lifestyle that has the effect of exclusion and closing off parts of the city to the ‘other’ ”*. The author points out that spatial fragmentation is deeply rooted in, and significantly furthers, inequality, social divides, environmental injustice and the loss of resilience.

While I empathize with these concerns, I also challenge the gloomy future scenarios for urbanization and red loop system dynamics in the Garden Route predicted by February (2017) and Hamann et al. (2015). Arguably, green loop system characteristics are also visible in parts of the social community with many locals having never cut their close ties to ecosystems which tends to lose importance in the face of economic gain and urbanization. Hunting and gathering, low-impact building and crafting from local materials still forms part of many people’s lives in the Garden Route.

The Garden Route also depicts a clear trend towards the re-establishment of direct resource use. Many individuals choose to disconnect from the big city life and the global economy, and go 'back-to-basics' in the resource-rich Garden Route. This is apparent in the living conditions of individuals and trends towards the establishment of a local and carbon-neutral economy. One sees more and more people integrating solar energy, rainwater harvesting, composting, vegetable production and water-wise indigenous gardening into personal living spaces. These developments similarly pertain to selected holiday accommodations and a conscious trend towards eco-friendly tourism (www.southmagazine.co.za, accessed on 7th of September 2017).

Also evident is the growth and support of numerous farmers markets, farmstalls, shops and restaurants with an emphasis on local, organic and homemade foods and crafts. A prime example is the nationally famous Wild Oats Market in Sedgefield, a community-driven initiative which *"calls special attention to the global need for developing local food security, local skills, local and seasonal food awareness and local community-mindfulness... A truly authentic country market offers a healthy community-building opportunity that stands in sharp contrast to the dominating 'corporate shopping experiences' that disengage shoppers from their local context, from seasonal produce and from producers themselves. Fresh local foods and a beautiful country atmosphere inspire a deep pride in our local landscape and broaden a positive sense of a community-connected."* (www.wildoatsmarket.co.za, accessed on 18th of September 2016). The development towards green loop system dynamics shows a craving for a rural Sense of Place and self-sufficient living in the Garden Route, which gives hope for the resilience of this study area.

This trend is supported by the numerous individuals who express a more salient sense of care for the environment. Some common forms of this are to eradicate Invasive Alien Plants, restore degraded land, plant indigenous trees and re-introduce animals. Lifestyles which are created on the basis of care for the environment are in the minority and if they are to be instigators of transformations, then individual leadership to push such movements will be needed.

The different interactions with nature form a bond between people with similar values and social-ecological knowledge. The influence on nature, such as emerging abundance of wildlife and flora, forms new interest groups such as birders, citizen scientists or artists. The ecological system of the Garden Route shapes how individuals relate to each other in stewardship cultures, the diversity of which forms the context of my study.

My particular topic however was motivated by the observation of the social conflicts that are evoked by different meanings of stewardship. Amongst the research respondents for example is a group of subsistence fishing women whose livelihoods and belief system revolves around the sustainable use of marine resources. In the face of age and declining physical mobility, the elderly women severely suffer from the effects of conservation. The private sector in the Garden Route increasingly controls access for subsistence fisher-folk through fences, guards and security systems which prevent them from reaching their traditional fishing grounds in manageable distances.

The challenge for the Garden Route is that its cultural diversity constantly evolves in a mutualistic way with the ecological system. The history of Invasive Alien Plants for example depicts well how Western settlers in South Africa have brought a sense of home in the form of ornamental garden plants, symbolic trees, popular commercial trees and windbreaks for farms. These are now the classic transformers of the ecological system (Baard & Kraaij 2014).

Pressures on the landscape prevail in the face of political, economic, and environmental changes. Against this backdrop, cultures in the Garden Route grow, fluctuate and shape meanings of stewardship. Resilience is my chosen lens which holds insight to the values, Sense of Place and specific stewardship expressions that underpin dynamics in an uncertain future.

3.3. Summary

This chapter describes the context of the Garden Route in South Africa which forms the study area in this thesis. An important point is that the Garden Route is one of the most ecologically diverse areas in the world, and it is internationally recognized as such. At the same time, it is also ecologically vulnerable and requires protection in the face of development. For this reason, the Critical Biodiversity Area map has become an integral guideline for spatial planning in the region.

The Garden Route is not just popular amongst tourists, but also attracts immigrants from many different countries and parts of South Africa. It is a culturally diverse meeting point of ethnicities from the developing and developed world. Important cultural differences are educational backgrounds, knowledge types, worldviews as well as levels of income, all of which factors shape different relationships with the natural environment.

Everyone has got a different reason to live in the Garden Route, a fact which is mirrored in the diversity of land uses. The most dominant ones are agricultural farms, forestry plantations, touristic enterprises such as game reserves and resorts, urban spaces, small towns, and smallholdings in rural areas. This array creates a biophysical mosaic in between undeveloped and protected forests, mountains, rivers and coastlines.

The political considerations which are relevant for this research is that the Garden Route, as the rest of South Africa, is in the process of decentralization after the Apartheid era. The main goal of decentralization is to foster equality and economic well-being for all people. The reality of a yet suboptimal governance structure however is that a divide between the rich and the poor still prevails.

The ecological assets of the Garden Route play an important role in the national economy and a legal system for nature conservation is in place. The most notable form of protection is the Garden Route National Park, managed by the national agency SANParks. This is complemented by several provincial nature reserves, managed by Cape Nature.

A less formal degree of protection occurs through what is conventionally conceived as stewardship in the Garden Route. These are namely stewardship agreements with landowners. Stewardship is hereby seen as a mechanism which assists professional agencies in their goals of biodiversity conservation and it is thus closely tied to legislative frameworks.

Stewardship however also entails conservation practice which derives from a self-organized public. This includes private nature reserves, conservation initiatives, NGOs and short-term or long-term projects with various environmental targets. These community-based forms of stewardship tend to be tied to, or supported by, the professional agencies SANParks, Cape Nature and Department of Environmental Affairs. This formal nature governance system in the Garden Route is complemented by a cryptic form of stewardship which is embedded in individuals' day-to-day interactions with the environment.

The relevant dynamics in the Garden Route is for one the overwhelming amount of influx of people. This occurs in conjunction with drastic environmental challenges, such as droughts and the spread of Invasive Alien Plants which deplete water resources and land surface. These social-ecological dynamics form a great challenge to resilience in the Garden Route.

The lack of connectivity in the SES suggests that nature conservation is going to have severe difficulties to meet sustainability goals. On the one hand, biophysical fragmentation of the landscape undermines its capacity to function and generate the life-supporting services to the local community. On the other hand, a growing divide between people and cultures indicate a lack of social cohesion which could affirm positive action and public support.

The dominant trajectory of change, as it is formulated in regional and national development strategies, is one of urbanization, economic growth and disconnects from the biosphere. This occurs at the expense of recognition for resource-dependent or subsistence people who live in direct and arguably more sustainable interactions with ecosystems. Against this backdrop, stewardship and the voluntary care for the environment by the public presents challenges and opportunities for the future Garden Route.

4. Methodology

I begin this chapter about methodology by outlining my research approach as a critical and in-depth study. I then explain how this approach has informed my fieldwork and methods, which constituted a photovoice method coupled with in-depth interviews, communication and engagement with the general public, focus groups and field observations.

Understanding how Sense of Place and values play a mediating role in SES resilience requires a research approach which draws from multiple knowledge sources. I position myself in the interdisciplinary sustainability science which emerges from the SES' school of thought (Brandt et al. 2013; Lang et al. 2012). The complexity of my research phenomenon relies on the balancing of multiple epistemologies, namely SES resilience, Conservation Psychology and Political Ecology.

Sense of Place as a research field inherits different analytical approaches, ranging from phenomenological, interpretive or discursive, and quantitative surveys (Lewicka 2011b). These approaches serve to answer questions that relate to lived experiences of place, place identities, or place meaning and attachment respectively (Stedman 2016; Masterson et al. 2017). The diversity of approaches explains a conceptual divergence of Sense of Place still found in the literature, and it is generally understood that it would benefit from further grounding through qualitative research (Brehm et al. 2012; Masterson et al. 2017).

Basic Human Value theory by Schwartz (2006; 2012) is founded on quantitative research approaches. Surveys and questionnaires are conventionally used to establish cultural or individual value differences as underlying different worldviews and lifestyles. More recently, Schwartz's value theory is being linked with Conservation Psychology (Clayton 2012). In these cases, it is used to establish which basic values explain the presence or absence of Environmentally Responsible Behaviours, also through quantitative approaches. Values as a determinant of quantifiable behaviours, however, do not explain the direction of motivation in relation to SES resilience. This, I suggest, requires a qualitative and inductive approach which has seemingly not been applied in Conservation Psychology.

4.1. Critical research and in-depth study

This is a qualitative social-ecological research study based on a critical paradigm. Critical ontology regards a virtual reality as it has crystalized over time, in response to social, political, economic, cultural and ethnic values. Critical research arises out of inequalities of power in a diverse society and

the consequential trajectory of change. It is an ontological positioning which targets change through empowerment of the oppressed (Denzin & Lincoln 2011; Creswell & Poth 2017).

When considering social-ecological resilience as the virtual reality, and the role of stewardship as the research phenomena, oppression becomes an important issue. The critical paradigm recognizes that individual agency and opportunity in their interaction with nature is constrained by power struggles and privilege. Power is a recognized impediment in resilience management, and deserves much more critical reflection in social-ecological research (Fabricius et al. 2007; Robards et al. 2011; Fabinyi et al. 2014). Such critical research addresses socio-economic status, political recognition, race, language and mental and physical ability as underlying issues of agency (Denzin & Lincoln 2011). The knowledge generated can then impart change and transformation of human thought and values for instance, as they pertain to an ethical existence within a community of life (Guba & Lincoln 1994; Creswell & Poth 2017).

Critical research implies that the researcher and the research participants are interlinked through the subjective value lens of the researcher. This is indicated by the epistemological underpinning of the methodology. I firmly position myself in an epistemology which is equally informed by social-ecology, Conservation Psychology and Political Ecology (Mathevet 2012; Bousquet et al. 2015). This epistemology mediates the findings of the research and underlies the claims of a subjective and transactional reality (Guba & Lincoln 1994).

This research followed a case study structure (Creswell & Poth 2017). Case studies allow for an in-depth study of activities and context-specific implications. The context of my study dealt with stewardship of the ecological system in the Garden Route, taking into consideration its social context of diversity. In this sense, the Garden Route provides an exciting case of SES. As I have shown in Chapter 3, the Garden Route is an outstanding example of the biocultural diversity which characterizes South Africa in an international context.

The social diversity in the Garden Route had me let go of my initial goal of studying the motivations of people to take care of nature. As I have mentioned previously, I moved to the Garden Route and immersed myself in the study area for a few months before I began this research. Through preliminary observations, I realized that different values of nature, meanings of care, and degree of consideration of social-ecology was the more critical research theme. This, I came to understand, was a question of individual diversity, embedded in culture.

The Garden Route inhabits a multi-racial community with cultures that are distinctively different in their dependencies on nature. In a geographically defined range, wealthy cultures with conservation values mingle with less prosperous ones who enact subsistence use of natural resources. This was the most intriguing context which led me to question the individuals' Sense of Place and perceived purpose in nature.

A research approach that facilitates a critical study of social diversity is the Multiple Evidence Base approach (Tengö et al. 2014). The Multiple Evidence Base approach recognizes that a diversity of knowledge systems manifest in stewardship and potential conflicts of power. Scientific, local, indigenous and practitioners' sources of values, knowledge and learning are all driving forces of the complex feedbacks which motivate relationships with nature and determine the trajectory of change (Tengö et al. 2014). The role of critical research is to facilitate dialogue between them and draw them back to the epistemological underpinning in the analysis (Denzin & Lincoln 2011).

4.2. Fieldwork and methods

Best suited for this approach is qualitative research which draws from observations, interviews and other forms of communication. My fieldwork commenced in May 2014, after I had received ethical clearance from the Research Ethics Committee at Nelson Mandela University. I began with an iterative process of snowballing (Newing 2011). I initially approached key actors from SANParks, Cape Nature, WESSA and Department of Environmental Affairs to obtain a professional opinion on the issue of voluntary conservation. I asked them who they would consider outstanding examples of motivated and influential stewards in the Garden Route.

This led me to 10 individuals, who are, for example, volunteers for NGOs, environmental activists, conservation project initiators or conservancy members. This first set of respondents was well distributed across all major towns in my study area. I then visited these respondents to conduct a first set of preliminary interviews. In these interviews, I questioned them about their particular engagement in conservation and their overall expression of care for the environment.

At the end of these initial engagements, I questioned them about further individuals who they would consider show a particular sense of care and concern for the natural environment. This helped me identify another 10 individuals in and around the areas of Plettenberg Bay, Sedgefield, Knysna, Wilderness and George. I then made contact with this next set of respondents and repeated the

interviews around expressions of stewardship. Once I had established that some represented groups were willing to partake in my research, I prepared them for the next stage of interviews, which consisted of a photo-voice research method described in the next section.

4.2.1. Photo-voice

Sense of Place not only informed the theoretical framing of this thesis, but also justified my choice of methods. My main source of data emerged from a photo-voice research technique which produced self-directed photographs and journals from respondents. The outcomes from using these tools were then used as the prompts in in-depth interviews with the research respondents.

I adjusted this method from photo-voice techniques which are now becoming common place in SES and place research (Stedman et al. 2014). They are used to elicit which places people attach to and why this is so. In most of the applied cases, participatory photography extracts meanings and symbols that explain the subjectivity of place attachment, values and perceptions.

At the forefront of this research is Beckley et al. (2007) who coined a method termed Resident Employed Photography. Resident Employed Photography was applied to study values of, and attachment to, the social-ecological environment around Jasper National Park in Canada. In one case of a phenomenological study, a similar technique was used to better understand the embodied experience of place, in other words, how individuals perceive the place they live in through their senses and emotions (Bijoux & Myers 2006).

Photo-voice research originates from the field of psychology with the purpose of giving a voice to individuals who are physically or mentally constrained in their expression of emotions and thoughts. It has become a common research tool in the social sciences, because it overcomes the challenge of power in silencing voices of marginalized communities (Masterson 2016). In this research, which deals with different cultures and races, photo-voice is also suited in addressing potential barriers of language and misconceived individual expressions. Photography has the power to unify expression of values through the visual representations of the world around oneself. However, photographs depict more than just a valued physical place. They express stories, beliefs and worldviews in a universal language of symbolism (Brehm et al. 2012; Stedman et al. 2014).

The method used in this research was adjusted from the empirical applications by for example Beckley et al. (2007) and Bijoux & Myers (2006). I began by developing an interview guide which would cover

relevant themes of motivation for stewardship. These questions were meant to act as probes for individual self-reflection with the hope that they would reveal ulterior motives of behaviours and lifestyles. It was critical to contrast the conventional approaches in environmental behaviour theories. As I have mentioned in Section 2.5.1., these are often aimed at establishing predictors for specific Environmentally Responsible Behaviours and they are measured against self-reported motivations.

The empirical literature however continues to raise questions about the infamous knowledge-behaviour gap, which problematizes that people might *know* about environmental issues but do not consider them in their actions. Conservation management is thus still challenged to motivate the public for a generally supportive attitude and experience which evolves with social-ecology. Knowledge and values do not necessarily motivate resilience, and my study depends on a method which allows for the less salient predictors to surface. The value of the photo-voice method, as applied in this study, is that it facilitates the inductive emergence of motives through indirect probing of key themes.

From Conservation Psychology and environmental management it is known that critical themes are values, experience and perceptions of risks (Brown and Westaway 2011; Clayton 2012; Soga and Gaston 2016). I designed my interview guide based on the following presumptions: Firstly, the values that are assigned to biophysical and social attributes illuminate a Sense of Place, the cognitive filter through which the world around oneself is perceived. Secondly, Sense of Place motivates individuals in their day-to-day experience of the world, and encompasses attitudes and behaviours which are impulsive rather than only conscious and intentional. Thirdly, perceptions of risk illuminate how individuals feel driven and equipped to initiate change in the world around them. Risk perceptions are a critical theme in a discourse of cognitive and physical agency in stewardship.

I thus raised the three open-ended questions:

-) Which physical places do you value most and why?
-) Which subjects shape your experience of place?
-) What are the risks to what you value most?

The letter with instructions for the photo-voice exercise that was given to respondents is provided in Appendix 1.

My method required that research informants reflect on these questions in a diary and creatively depict them in a set of photographs. Participants were generally expected to take new photographs with a disposable camera provided by the researcher. The disposable cameras were used to create standardization and enhance validity of the data collection process, across a participant profile with unequal financial opportunity. If any individual felt inclined to use an existing photograph which was relevant in bringing a specific point across, they were however encouraged to do that. Each participant was given a month, which I considered an adequate time for reflection, journaling and photographing. At the end of this period, I revisited to collect the cameras and schedule an in-depth interview.

In the interviews, the developed photographs and the diaries were used as a probe and guideline for open-ended conversations. In some cases however, individuals felt more inclined to speak about the thoughts and self-realizations which have been triggered through the photo-voice exercise, rather than the topic of each picture per se. With the main goal of stimulating self-reflection and reaching the essence of motivation, I maintained a flexible and passive attitude during the interviews. All these interviews were recorded on voice recorder upon consent of each respondent. I then transcribed all interviews and filed them with the set of photographs and the diary provided to me. Each participant received an identification code for storage in an electronic database.

A preliminary analysis of the data from the profile of 20 respondents, however, soon brought me to a saturation point. I found that stewardship, nature and place were given similar meanings, leading to similar relationships with the SES. I was thus determined to expand my participant profiles to integrate a diversity of voices, including the ones of stewards who are less recognized in the conventional conservation paradigm which prevails in the professional circle of the Garden Route. The interviews had revealed negative attitudes towards people who lack the scientific and professional knowledge, which is presumed needed to manage the ecological system. This pointed to cultures and individuals whose interaction with nature is based on different knowledge paradigms. I thus introduced a form of selective sampling (Newing 2011) in which I consciously chose a set of research respondents who held belief systems which deviated from the existing study profile. This set of respondents is described in the following sections about secondary forms of data collection.

4.2.2. Communication and engagement

I used various forms of communication and engagement to select research respondents with a non-scientific worldview. I once again consulted with professional conservationists from SANParks, Cape Nature and WESSA to inquire about individuals who possess what might be considered as traditional

ecological knowledge. This helped me identify a leader of a Griqua community in the Plettenberg Bay Area. The Griqua are semi-nomadic people, descendent from South Africa's multiracial Coloured community, and with European, Khoikhoi, San and Bushmen ancestry. It also included a Rastafarian community in the town of Knysna, and a traditional healer from the Bushmen ancestry living in George.

I also considered it important to include individuals who live subsistence lifestyles in the Garden Route. A colleague at the Sustainability Research Unit referred me to a group of six elderly women from a subsistence fishing community who she had engaged with during previous stewardship research. Through my general observations as a resident in the Garden Route, I had become aware that subsistence has also become an important lifestyle amongst residents with small-holdings in the rural areas or urban fringes. This, I learned, is a community of permaculturists in the Garden Route. Permaculture is defined by Graham Bell (1992) in his book 'The Permaculture Way' as *"the conscious design and maintenance of agriculturally productive systems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of the landscape with people providing their food, energy, shelter and other material and non-material needs in a sustainable way"* (p.7). I was motivated to look a bit deeper into the practice of permaculture. I visited one particularly well established permaculturist in the Sedgefield area and partook in a two-day permaculture festival which was hosted near Nature's Valley, to engage, communicate and learn.

Lastly, I visited various public events, such as artist and music festivals and participated in four meetings of the Garden Route Biosphere Reserve in order to opportunistically increase my study profiles to include more diverse expressions of stewardship. This led me to the Precious Tree Project which became a major component of my research, to two individuals who stood out for their commitment to an environmentally conscious lifestyle, along with one Xhosa-speaking individual who writes nature poetry.

Through communication and engagement 13 additional participants were included for the photo-voice research. Furthermore, substantial amounts of data were collected through conversations with individuals from various backgrounds, and three stewardship groupings were identified with whom I used a focus group technique in 2014. During engagement with each individual, I ensured that the conversation was directed along the three themes of my interview schedule. I kept a research journal and recorded the core information from any engagement and subsequent observation.

4.2.3. Field Observation

The other source of information which enriched the data base for this thesis were my own observations in the study area. Observation is an accepted and invaluable tool in conservation research and it can be flexibly applied to meet the aims of a particular research (Puri 2011). I ensured that I immersed myself fully in the study area and critically observed individuals' embodiment of stewardship and the consequences which they generate. This meant on the one hand that I attended public events initiated by respondents, for example, on environmental calendar days (eg. World Ocean Day, Arbour Day). I also attended various internal meetings of specific stewardship groupings, such as planning meetings of the two Blue Ocean Hope Spots or general meetings by conservancies and NGOs.

I also paid critical attention to the impacts of stewardship action on the regional ecology. Through my educational background in ecology and years of experience in conservation and restoration practice, my observations were fine-scaled to ecological functioning. I took note for example of how stewardship actions enhance or constrain natural succession, genetic dispersal, symbiotic or mutual relationships and the biophysical integrity of the system in the Garden Route.

Throughout my fieldwork, I kept in mind temporal and spatial impacts, social-ecological resilience principles (Biggs et al. 2015) and the possibility of transfers of vulnerability or of transformative change at multiple scales (Barnett & O'Neill 2010). I recorded how the behaviours of a single individual at one place and point in time relate to challenges encountered elsewhere in local or global SES, and how they might aggravate or resolve them. This method further enhanced my understanding of the social-ecological embeddedness of selected research respondents.

Further examples were obtained through observational data derived from conversations with residents from the informal settlement in Wilderness, who reported on the influence that the local conservancy has had on their lives. Numerous engagements with experts from conservation agencies and NGOs were included that have illuminated some of the broader challenges faced by nature conservation in the Garden Route in general. Core information was recorded from the observations in my research journal. Observations in the study area have been on-going and are currently still influencing my interpretation of the results.

4.2.4. Focus groups

A focus group method (Newing 2011) was applied to three stewardship groupings I interacted with during the course of participant sampling. These included the Rastafarian community from Knysna, the group of subsistence fishing ladies from Sedgefield and the Precious Tree Planting Project which originated in Wilderness. I used various approaches to the focus group method, which seemed appropriate and most suitable to the three contexts in which stewardship occurred.

The Rastafarian community- My initial contact with the Rastafarian community was with the community leader, who partook in the photo-voice exercise and an in-depth interview. However, I sensed that this data did not fully capture the richness of a stewardship culture which seemed to form a major component of Rastafarian lifestyle. I then began to have conversations with the whole community, in which I allowed any topic to emerge freely.

I visited the community on four occasions. The first time, two of the community members had agreed to give a tour of the communal area and the private nature reserve which is run by the Rastafarians. The second and third time, I simply visited the community to have conversations with people on the street. The fourth time, I attended a festival hosted by the community in their communal area. In these focus groups, conversations were partly recorded on voice recorder and transcribed. Other parts of the conversations, as well as observations, were recorded in my research journal.

The fishing ladies- Contact with the six fishing ladies from Sedgefield was arranged through my colleague at the Sustainability Research Unit who had gained their trust during a previous research project. The particular draw that I had to this group of respondents was that they have a reputation for being particularly concerned and conscious resource users amongst the subsistence people in the Garden Route. The advantage of having my colleague as a mediator was that she acted as a translator for me, as the women only speak Afrikaans.

My colleague and I initially scheduled an evening for a focus group discussion with all six women at one of their homes in the township in Sedgefield. The discussion was themed around Sense of Place and we ensured that everyone's voice was heard. We had conversations about place values, experiences of place and perceived risks. At the end of the evening, we handed disposable cameras and the letter of instruction to all the women, and we agreed on a day for an outing.

At this outing, the Sustainability Research Unit provided us with a rental mini bus, we drove around the Wilderness and Sedgefield Lakes area, to visit those places the women wanted to take photographs of. The day was rich in conversations and stories that each of the respondents wanted to share about the areas they know, used to know, value and are concerned about. All conversations were recorded on a voice recorder and transcribed. The photographs taken by the women, as well as our own photographs constituted supplementary data derived from this focus group.

The Precious Tree Project- The Precious Tree Project is a community-driven attempt to build a corridor of indigenous forest between protected areas, public land and private properties in the Garden Route. The project's goal is to plant an indefinite number of indigenous trees in open or degraded areas through the support of more than 30 volunteers from the local community.

My approach to engagement with this project was participatory. Every Saturday, the group of volunteers met at different locations in which tree planting was to be done. For 6 months, I joined these outings in order to participate in tree-planting, to observe and to have focussed discussions around this form of stewardship. I directly recorded conversations and observations in my research journal.

This adapted version of a focus group however also exposed me to much deeper insights than anticipated. I got to know the diversity of individuals and learned that tree-planting was only one of many expressions of voluntary care. Three of the individuals from the tree-planting projects then also became key informants and underwent the photo-voice exercise and in-depth interviews at a later stage.

4.3. The final data base

Not all respondents initially interviewed and given a disposable camera actually underwent the photo-voice exercise. In some cases, the first contact and the interviews themed around the expressions of stewardship remained the main source of information. This was the case with 8 individuals.

I considered at least 33 respondents as key informants with whom I had in-depth interviews. This number includes the three focus groups which were counted as one respondent respectively. The study profile emerged from snowballing and selective sampling in which age, gender and race were not criteria. The male to female ratio was serendipitously equal and the two age classes which were most prevalent were between 25 and 35, and above 50. The predominant race was White, English-

speaking individuals. Key informants also included five Coloured, and one Black respondent. Many more respondents from a diversity of ethnic backgrounds contributed to the final data base in this thesis. All recorded conversations, observations, communications and engagements, plus the self-directed journals and photographs, produced more than 500 pages of transcribed information, which is available as supplementary information. It forms the core data from which I draw simultaneously in the presentation and analysis of findings.

This qualitative data underwent a basic content analysis (Given 2008; Newing 2011). I stored all transcribed data and photographs in *atlas.ti v7*. I then used this software tool for processing. I initially used deductive coding for meanings (for example place, nature and community), but then determined that these alone did not explain differences in stewardship expressions. I then inductively searched for themes which depicted variations in the differences in behaviours directly. These were critical resilience features, such as the degree to which social-ecological diversity is enhanced, the degree to which collaborations are encouraged or whether individuals consider immediate and distant drivers of change. This led me to the most important motivating variable within my participant profile, which was the degree of risk perception. Some individuals were fundamentally motivated by risks, others were not. I identified additional subthemes, coded conversations and quotes which portrayed these themes.

There is an ongoing academic debate which questions and necessitates the validity of qualitative research in SES sciences. A main issue in qualitative research studies is to provide in-depth knowledge of the dynamics and processes in a particular system, while maintaining validity and opportunity for replication in other SES. According to Moon et al. (2016), these challenges can be overcome by looking at factors which enhance dependability, credibility, confirmability, and transferability of qualitative social research. Throughout the course of data collection and data analysis, I have been aware and cautious of this debate and of adhering to the best practices in recent literature. In the concluding chapter of this thesis, I dedicate research reflections as they pertain to the validity of this qualitative study.

4.4. Summary

In this chapter I have presented my qualitative and interdisciplinary approach to a study of stewardship motivation. I use a critical paradigm and Sense of Place as an analytical lens to investigate the relationship between individuals and social-ecological dynamics. I do this in a place-based study. Due to the Garden Route's cultural diversity, I thought of it as important to take a Multiple Evidence Base approach. This approach allows for the diversity of knowledge types and worldviews to inform my research interpretations.

Four methods guided the fieldwork and data collection. First, I targeted key informants through a photo-voice research method, coupled with interviews and self-directed journals. Second, I engaged and communicated with stewards and affected parties in the Garden Route. Thirdly, I conducted observations in the study area and fourthly applied a focus group method to three groupings of stewards. I used a qualitative content analysis on the transcribed sources of information. Criteria of validity and replicability of qualitative social research were considered throughout and adhered to as much as possible.

5. Competing stewardship meanings and visions for change in a social-ecological landscape

In this section I present findings I have made about individuals' Sense of Place and framing of roles and responsibilities for the environment. As I have conceptualized it in Section 2.1., I understand the environment as an interlinked SES, with natural and human elements, at local, regional and global scales. In Section 5.1. I begin by presenting three meanings of stewardship as they were indicated by the interpretations of research respondents. They are the results from the research tools I have described in Section 4.2., namely in-depth interviews, self-directed photographs and journals, observations and communication. I then draw from theories in SES theory and Conservation Psychology to discuss the main differences and potential competitions that arise between these differences. Simultaneously, I refer to Section 2.5.2. to test whether Basic Human Value theory by Schwartz (2012) holds explanatory power for the formation of meanings.

In Section 5.2. these findings are presented on the basis of the criterion Critical Connectivity. Chapter 2 in this thesis has shown that Critical Connectivity in a SES occurs on at least three levels, which are namely consciousness, the physical landscape and the biosphere. These three levels are intricately interlinked in driving resilience at local and global scales, and they will require critical analysis in the following chapter of this thesis.

Chapter 3, the representation of the study context, has then shown that the Garden Route suffers from the lack of Critical Connectivity in the landscape which undermines its ecological functionality, and in social relationships which impedes collective vision and action in favour of resilience. It was also suggested that the future trajectory of change is moving towards urbanization, economic growth and disconnects from the biosphere. This is symbolized by the red loop system which I have referred to in Section 3.2.2. By looking at the role of stewardship, I zoom into the opportunities and the obstacles which arise from motivated individuals who indicate a sense of concern and care for the environment. This, I present in the last section of this chapter as examples of transformative and maladaptive stewardship pathways.

5.1. Groupings of stewardship meanings in the Garden Route

In a first step of analysis I established basic groupings of stewardship meanings. I applied a thematic content analysis to my transcribed data. I asked the question ‘What motivates individuals to take care of the environment?’ I questioned how individuals interpret the terms and conditions for stewardship, by looking at their framings of care, of environment, and of roles and responsibilities. How my thematic approach has led to the emergence of stewardship groupings is visually depicted in Table 3.

The first and most critical variable which led to a delineation of stewardship meaning emerged from the interview question ‘What are the risks to what you value most?’. Here, the research respondents could be split into two distinct groups. The first one emerged as a group that focussed heavily on risks to portray their motivation for stewardship. While the interviews covered the three stipulated themes ‘special places’, ‘experiences in place’ and ‘risks to what is valued most’ (refer to Appendix 1), according to the respondents, the latter theme formed the core of their motivation to engage in stewardship. This group constituted 9 of the research respondents.

Amongst the remaining 24 respondents, perceptions of risks were either absent or only discussed after my probing using the interview schedule. Five individuals explicitly mentioned that they do not think in terms of risks, but rather in an optimistic and trusting way about a better future. These individuals did not provide photographs in the category ‘risks to what is valued most’. The other 19 respondents did provide pictures for the risk theme, however explicitly formulated that these are merely ‘concerns’ with regards to the environment. Such as this individual who stated:

“It (climate change) concerns us. You can see a bit of change and variation in the patterns over the last 30 years. But these are changes that we can manage. They might have even benefitted us. We don't feel vulnerable to broader issues like that, such as political issues. I am a natural optimist, and I think that before things get very very bad, there will be some major change that will result in an improvement.”

(Respondent 8)

In this second group, the strongest motivation for stewardship, as it was stated by the individuals was found within the theme ‘experience of place’.

These initial findings support the assumption made by Schwartz (2012) that perceptions of risks form the most basic competing motivation which is found in all cultures. Schwartz (2012) refers to this as a

bipolar orientation of behaviour which is (1) anxiety-based, focussed on the prevention of loss and characterized by self-protection against threat or (2) anxiety-free, focussed on the promotion of gain goals and characterized by self-expansion and growth. Anxiety-free and anxiety-based motivation well describes that there are different pathways with opposing motivations found in the study area.

The photographs in Figure 8 and Figure 19 depict a difference between anxious and optimistic individuals. The images in Figure 8 portray the most common fears in the first group. Stewardship motivation derived from the perceived risks to the environment directly, but were also explained in the context of risks to oneself. The common themes which were elaborately discussed by respondents in the interviews were a) the fear of a drought in the Garden Route which would cause the dry-up of estuaries and the disappearance of the lush forested environment; b) the fear of environmental pollution, such as through littering or sewage discharge into waterbodies; c) the fear of Invasive Alien Plants which destroys a natural feel of the Garden Route, depletes water and causes a fire risk; d) the fear of species loss, particularly endemic or charismatic animals or plants; e) the fear of loss of a spouse; f) the fear of death and concerns about one's limited time on earth; g) the fear of suffering from long and slow illness, h) the fear of overpopulation and development at the expense of natural areas; and i) the fear of crime, poverty and political changes which would form a risk to their own well-being in the Garden Route.










	
a) Common fear of drought (Photo: Respondent 7)	b) Common fear of environmental pollution (Photo: Respondent 1)
	
c) Common fear of Invasive Alien Plants (Photo: Respondent 1)	d) Common fear of species-loss (Photo: Respondent 16)
	
Common fear of e) personal loss (Photo: Respondent 12); f) death (Photo: Respondent 6) and g) illness (Photo: Respondent 1)	
	
h) Common fear of overpopulation and urbanization (Respondent 12)	
	
i) Common fear of crime, poverty and political change (Respondent 1 and 7)	

Figure 8: Photographs illustrating anxiety-driven and fear-based motivation

In contrast, Figure 9 depicts the motivations which were most commonly referred to in the second group. This constituted valued experiences in social-ecological communities, such as a) the

enjoyment of solitude and quiet time in nature and the experience of connecting with nature or ‘God’s creation’; b) experiencing biodiversity, observing ecosystems, and learning about ecology; c) restoring ecosystems, helping people and creating opportunities for new life; d) enjoying communion and peace amongst people in the Garden Route. The distinct feature of this second group seemed to be a freedom from anxiety, and trusting and optimistic mindsets which were absent in the first group.

	
a) Enjoying solitude, connection with nature and God’s creation (Photos: Respondents 14 and 22)	
	
b) Experiencing biodiversity, observing ecosystems, learning about ecology (Photos: Respondents 15 and 9)	
	
c) Restoring ecosystems and creating opportunities for life (Photo: Respondent 23)	d) Enjoying communion and peace (Photo: Respondent 18)

Figure 9: Photographs illustrating anxiety-free and experience-based motivation

At closer investigation of the two groups, I found a second level of distinction in the framing of responsibility. In the anxiety-driven pathway, responsibility was portrayed as the accountability for risks to nature. Individuals referred to behaviours and ignorance of other people, or to political, economic and cultural processes which are deemed undesirable. This group implied that their own responsibility in stewardship is to protect nature from the harm posed by others.

In the anxiety-free pathway, a two-way split occurred in framings of responsibilities. A subgroup of 14 respondents highlighted the fact that communities have a shared responsibility for a common ecological landscape which is under pressure from anthropogenic change. The other subgroup of 10 individuals distinguished itself through its focus on self-responsibility. While anthropogenic pressures were addressed and recognized in its global complexity, all discussions were linked back to the role of oneself in regulating them.

I identified at least three meanings of stewardship which I divided into three groups: (1) Protect nature from human influence, (2) Work together and communicate and (3) Be the change you want to see in the world. In retrospect of this research, I propose that the differentiation of the groups is justified by Mace's (2014) idea that different paradigms of human-nature relationships influence the practice of conservation. This idea was presented in Section 3.1.4. in this thesis. Conservation paradigms portray that people perceive different degrees of interlinkage between humans and nature and between oneself and SES and shape the strategic approach to conservation. As I will illustrate in the following section, the 1st group matches Mace's characteristics of the paradigm 'Nature despite People' and the second group a paradigm which features both 'Nature for People + People and Nature'. The third group embodied a belief which emphasizes 'People in Nature', a paradigm which has not been reported by Mace as a milestone in the history of conservation. I perceive this terminology as an adequate description of the dominant mindsets in the three stewardship groupings, and will use them as the descriptive terms throughout this thesis.

The three groupings emerged from my own conceptualization of the data, as it pertains relevant to the research questions of this study. I do recognize, however, that concepts are not rigid and that the boundaries of the groups are porous. For example, 'risk' and 'concern', 'anxiety-based' and 'anxiety-free', or 'responsibility' are fluid concepts. I disclaim that the three groups did not indicate subtle overlaps in the way these concepts were perceived. To the best of my ability, however, I have extracted them as the most striking motivational distinction amongst the study profile. In the next section, I provide the basic descriptions of the conceptual groupings.

5.1.1. Group 1: Protect nature from human influence (Nature despite People)

The 1st group envisions stewardship as the protection of nature from negative human influence. Individuals are typically of the opinion that the nature areas which they value most belong to them. The second characteristic which accompanied this opinion was individuals' pronounced wish for retreat from other humans. These two characteristics are indicated in the two statements below:

"Little, secluded beach, rocks, sand and pebbles. Spectacular, right at the bottom of the Heads. Many reasons I find it special. We used to live on the Heads. So that down there, used to be "our beach."

(Respondent 11)

"A deserted wild place accessible via a pathway that runs through our property and onto our neighbour's property. Because of its remoteness it is a very special place to us, I mean me and my family. It is an adventure we go on. It is a bit of a scramble down the dune, you go down the steep bits with rope, and then you get there and it is that immense peace of being in a place without other people and that is just wild and beautiful."

(Respondent 5)

This wish for remote and secluded nature unfolds through landscape stewardship by various means. Individuals hereby benefit from an institutional infrastructure which enables voluntary conservation in the Garden Route. These include formal stewardship mechanism, the proclamation of private nature reserves, management of private properties and volunteering for environmental agencies. As I have indicated in Section 3.1.4., these forms of stewardship are supported by conservation agencies and they are common in the Garden Route (Barendse et al. 2016).

Some organisations provide platforms for self-organization amongst the public. A relevant example is the NACSA which enables community-driven conservancies in the country. In the Garden Route, different communities have used this channel to formulate management of shared ecosystems and water catchments. I interviewed respondents from four different conservancies, who regard their membership as their main responsibility for the environment. All conservancies are advised by, or work collaboratively with, conservation agencies. However, the specific management agenda is decided upon by the group of volunteers.

Stewardship in group 1 is also expressed as the voluntary participation in existing organisations. All of the respondents in this group are volunteers to NGOs and governmental agencies, such as Cape

Nature, WESSA, the Botanical Society and SANParks. The activities that individuals might engage in are varied, and include education, administration, strategic planning and implementation of conservation practice in the landscape.

Stewardship in this group also means to take initiative in the protection of nature on private land or public areas. Five of the respondents, for example, have initiated the proclamation of nature reserves. Some of these are private, others are communal and co-managed with SANParks, Cape Nature or municipalities. Other individuals in this group either assist in the management of reserves, and/or concentrate protection within their private residencies.

Private properties and nature reserves in this group are physically or visually linked to formally protected landscapes. Stewardship is interpreted as a landscaping practice, with an emphasis on the creation of indigenous vegetation, ecological niches, and aquatic habitat. As described by one interviewee:

“Bringing in the local plants (into the reserve) is a natural way of gardening. The indigenous vegetation does not need much to grow and it is spontaneous and surprising which different species and colours come up”.

(Respondent 7)

I generally found that a passion for gardening played a major role in this group.

Last, stewardship means the implicit support of governmental schemes which target the protection of the natural environment in the Garden Route. I refer here essentially to the participation in the ‘war on weeds’ declared by national and provincial government. One of the strategies is to support private landowners in the eradication of Invasive Alien Plants, through a program called Working for Water. Working for Water has been influential in shaping a public opinion that Invasive Alien Plants need to be completely removed from the area through clear-cutting and herbicide uses. Particularly in the fringes of urban centres and on farmlands, people draw heavily from the public service of Working for Water (Turpie et al. 2008), including all individuals in group 1.

Group 1 portrays the characteristics of the paradigm ‘Nature despite People’ because it compares to the perception that nature is at risk due to extinctions, habitat transformation, overexploitation or pollution. Moreover, Group 1 depicts the historically engrained idea that conservation necessitates

the mitigation and warding-off of risks in order for nature to persist. The resemblance between Group 1 and 'Nature despite People' will illuminate further in the presentation and analysis of my findings.

5.1.2. Group 2: Work together and communicate (Nature for People/People and Nature)

This group portrays nature as a common pool resource and as the shared ecological assets in the Garden Route, which are made vulnerable by socio-economic and -political structures. Most striking in this group is the perception that a transformation to sustainability is stifled by inefficient conservation management, poor communication channels and a lack of interest by the public. The respondents perceive their own responsibility as facilitators of change of either people or management structures for ecosystems. This respondent referred to the perceived reality that people from previously disadvantaged economic and political backgrounds tend to be less engaged in conservation than White and formally educated ones:

"I think bad education and poverty are the reason that this process is so slow. Conservation ethics is the least thing on people's mind when their immediate conditions of existence are somehow challenged. I believe we can reach these people through the younger generations, primarily through schools. I'm also a supporter of WESSA's eco schools. They have done an amazing job with connecting disadvantaged communities with nature... We all work together, all the time. We know each other in the area, and we know of everyone's strengths and fields of expertise."

(Respondent 9)

Education plays a major role in this interpretation of stewardship and it is commonly perceived that transformation cannot occur without awareness about the environment. The educational messages here are based on scientific knowledge, teaching principles of taxonomy, ecology and conservation biology. One respondent who is particularly involved in various environmental education programmes in the Garden Route states that they need to be backed up scientifically to "*get the right message across*" and to ensure the flow of funding from governments. Most other respondents support the sentiment that "*conservation, science and education go hand-in-hand*" (Respondent 17).

Education is variedly approached as occasional talks at institutions and public functions, on specific calendar days (eg. World Biodiversity Day) and as embedded in activities such as 'clean-ups' of beaches and other ecologically sensitive areas. Others are long-term established environmental education programmes which predominantly target the youth and previously disadvantaged communities.

Environmental education in this group is increasingly expanding its scope of context and physical scale. As it is phrased by Respondent 18: *“Everyone who lives in this catchment is targeted”*.

One important educational message is to promote connectedness between humans and nature. However, Respondent 18 states that *“anecdotal evidence”* of connectedness is nothing without formalized knowledge. Sometimes the educational approach thus integrates citizen science. This includes the monitoring of migratory animals and endangered species, habitat conditions, quality of water catchments, and general biodiversity. The proponents of citizen science are emphatic that no research and data should be lost, be they to scientific databases of universities or conservation management agencies. A secondary goal of citizen science is to stimulate ecological literacy and interest in the public.

The experiences from education however have taught that a lack of knowledge is not the only obstacle to responsible care for the environment. There is a prevalent belief that inequality, poverty and the general ghosts of the Apartheid past are part of the stewardship challenge. ‘Why should you care about nature, when you struggle to put bread on the table’ is a prominent sentiment in this group, voiced by six respondents. The perceived responsibility in this group is to capacitate resource-dependent communities, through social upliftment. Social upliftment is interpreted as providing skills, legal land rights or jobs through conservation-based enterprises, such as ecotourism, invasive species control or other bio-wise solutions.

This group also targets change in the attitude and norms of financially advantaged socio-cultural communities. Individuals held a common belief that wealthy people in the Garden Route marginalize nature through development and landscape transformation. This group is characterized by an approach of incentivizing conservation and nudging participation in stewardship. This goes hand-in-hand with the common belief, held by at least four respondents, that wealthy people are ‘only in for economic gain’.

Four respondents thus dedicate stewardship efforts to the promotion of economic benefits to landowners, farmers and businesses to integrate biodiversity and landscape conservation. One of these regional examples is the Biodiversity Wine Initiative which promotes eco-labelling to wine farmers (Respondent 19). Another one is tax incentives (tax rebates) for private properties who follow best practice of biodiversity conservation. This group is characterized by sentiments that state *“all they care about is money”*, *“we need to pick them up where they are at”* (Respondent 5) or *“speak*

their language” (Respondent 13). Some individuals have a professional background in economics and assist conservation agencies in developing incentives, others refrain to the promotion of existing ones.

In a similar sentiment, this group relies on environmental law as a lens on social development in the area. The following quote from a particularly active citizen in Lake Brenton reflects how this is a stewardship strategy:

“It is interesting how the people who are well-off are often the most destructive ones. They seem to think they can just start anew whenever the environment does not support their lifestyle anymore. All of us who are environmentally concerned try to be custodians in some way. Ideally, we would like to live in a mutual-benefit society where enforcement of laws for the environment weren’t necessary, and development would naturally occur within the laws....I am not a fan of using law to everything, running to court for everything. But the municipality does. It is important to know environmental law, to know when you’re being crooked. We are facing a lot of disruption through development here. Developers always take their chances. But we have been quite successful to prevent some worst cases, here locally, but also in the Garden Route. I would not say I am involved in fighting development, but I make an effort that we create honesty amongst us.”

(Respondent 9)

Finally, group 2 stood out for individuals who spearheaded or took leadership roles in communication and management platforms. This has led to numerous self-organized stewardship projects and water catchment forums across the Garden Route. In my study profile, this constitutes four individuals who are directors or committee members in three different catchment forums, as well as three leaders of conservation initiatives and two NGOs. Most individuals in this group supported the sentiment: *“We can pool resources together and collaborate-that’s the key!”* (Respondent 5).

The 2nd group depicts remarkable resemblance with the paradigm ‘Nature for People’, which is recognized by the acceptance of human dependencies on Ecosystem Services and natural resources in the interpretations of stewardship. Nature for People emphasizes the need for pro-active management of ecosystems through economic, educational or environmentally legislated pathways (Mace 2014). However, a transitional paradigm which highlights environmental change, social-ecological dynamics and adaptability is also apparent due to the perceived social responsibilities in

group 2. According to Mace (2014), this is the current era of a conservation paradigm of Nature and People. Group 2 suggests that it is in a transitional phase from sole consideration of ecosystem functioning towards SES-thinking, and is henceforth referred to as Nature for People/Nature and People.

5.1.3. Group 3: Be the change you want to see in this world (People in Nature)

The third group emerged from a group of respondents who perceive themselves as the responsible agent for sustainability. The common sentiment amongst respondents is to 'be the change you want to see in this world' and a general attitude of support for life and all beings. The experience of stewardship is based on the fundamental rule to take ownership and live out "*who you are as a human on a living planet*" (Respondent 28).

Living out an existential human identity means that stewardship is integrated in holistic lifestyles in group 3. Six respondents have gone through an immense effort and struggle to make a living based on self-sufficiency. A permaculturist close to Sedgefield for example described to me how he moved onto a plot of land twenty years ago, to find nothing but a thick forest of Invasive Alien Plants. He lived in a caravan for five years, while restoring a functional ecosystem, observing the opportunities for energy-efficient building of a house, and establishing fruit forests and vegetable gardens. The personal sacrifices of comfort and financial security were necessary, to "*get to know the land, how it functions and what it needs*" (Respondent 28).

A second theme in group 3 was subsistence resource use. Respondents from a Rastafarian community in Knysna, and six women from a fishing community in Sedgefield, regarded stewardship as 'sustainable use'. The Rastafarians depend on medicinal plants from the wild and run a communal nature reserve in which they harvest sustainably and reintroduce vulnerable species back into the wild. The ladies from the fishing community find the mere act of spending the day in nature and "*catching one fish to feed the family*" (Respondent 33) as the playing out of an existential human identity. In this paradigm, sustainability derives from the direct and conscious use of natural resources.

Last, stewardship in group 3 means to engage in the smallest of pro-active behaviours on a daily basis. All respondents in group 3 asserted their role as conscious consumers who make a statement for sustainability through the products they buy. Respondents were adamant that consumption must be kept to a minimum, and then support local producers of organic products or skilled individuals who use local resources for building and crafting. Another symbol which emerged in this context was the

planting of trees to offset one's own or other people's environmental footprint. Finally, a few individuals are actively engaged in improving polluted environments. One respondent wrote in her journal:

"The most awesome part of it, is just how cool it is to be doing things for the greater good. No jokes, I stopped in the road the other day to pick up litter & some dude hi-fived me. It's that easy. All it took was a stretch down, followed by a stretch back up to meet his hand & in two solid movements I had made the world prettier and I had also made a new friend."

(Respondent 31)

The 3rd group does not resemble any of the paradigms which mark the history of nature conservation outlined by Mace (2014). The paradigm Nature and People, characterized by the management of SES, and goals for adaptability and resilient change, is not enough to explain the tight couplings to nature and processes of change which exists in group 3. Individuals in this group suggest embeddedness in SES, firstly through the direct use of natural resources, and secondly through stewardship actions which are based on personal change from within the system. This is in contrast to Nature despite People and Nature for People/Nature and People, whereby conservation goals revolve around the external change of other people and of nature. I thus introduce the paradigm 'People in Nature' to refer to group 3 throughout this thesis.

The three groups in this study are bound by a motivational orientation and similar perceptions of risks, responsibilities, stewardship meaning and actions. Table 3 illustrates the characteristics of the three stewardship groups which have emerged through an inductive analysis of the data.

Table 3: Characteristics of three stewardship groupings emerging from inductive analysis

Stewardship			
Motivation	The risks to what I value most	The experience in place	
Responsibility	Prevention of loss, mitigation of risks, defence of nature values	Promotion of gain, collective responsibility for the conservation of a common landscape	Promotion of gain, self-responsibility and ownership of environmental processes
Meaning	Protect nature from human influence	Work together and communicate	Be the change you want to see in the world
Action	<ul style="list-style-type: none"> -Retreat from people -Establish conservancies and private nature reserves -Volunteer for professional conservation agencies -Landscaping on private properties -Support of governmental conservation schemes -Monitor and sanctioning 	<ul style="list-style-type: none"> -Education -Engage in or establish environmental forums -Social networking -Citizen science -Social upliftment -Economically incentivize stewardship -Apply environmental laws 	<ul style="list-style-type: none"> -Affectionate relationships with nature -use resources directly, consciously and sustainably -Minimize consumption -Support local economy -Observe and attend to the need of ecosystems -Live by example through responsible earth citizenship
Group	1	2	3
Synonym	Nature despite People	Nature for People/People and Nature	People in Nature
Respondent numbers	9	14	10

Schwartz (2012) states that commonalities within groups are due to shared cultural values. In the next section, I present the results of the individual scale in relation to Basic Human Values to test how they are culturally linked and distinguished between the groups.

I structure the section according to the theme Critical Connectivity. My literature review has revealed that at least three levels of connectivity are important for resilience. The first one is the consciousness of interrelatedness in a social-ecological community. The second one is a structural and functional connectivity within a landscape, and the third one is the connectedness with the life-supporting system of the biosphere. These three levels of Critical Connectivity explained the fundamental differences between the three groups.

The motivational orientation towards Critical Connectivity deserves attention as it is indicative of resilience and transformation. Critical Connectivity entails a set of theories that are linked to SES resilience discourses. In chapter 2, I have presented Connectedness with Nature, Connectivity with

Nature and Connectedness with the Biosphere. Critical Connectivity is an umbrella concept for motivation that derives from identity and Sense of Place, which explains manifestations of Ecological Solidarity, and predicts social-ecological consequences of behaviours. I will use these concepts synergistically to establish the relationships with Basic Human Values at the individual level.

5.2. Value differences explain Critical Connectivity

Schwartz's basic values (2012) can be linked to Critical Connectivity and visions of change in my study. Values were differently prioritized between the groups. Most individuals held both, basic single values and closely-related value combinations. While all of Schwartz's 10 values were represented in my data, not all of them could be linked to stewardship motivation. The analysis of these results focusses on value priorities which explain how stewardship is given meaning by the interviewees. The basic values which emerge from this analysis are summarized with definitions in Table 4.

Table 4: Basic Human Values relevant in case study (based on Schwartz 2012)

Nature despite People	Nature for People/People and Nature	People in Nature
<i>Basic priority values</i>		
Hedonism	Tradition	Tradition
Achievement	Universalism	Autonomy
Security	Benevolence	Spirituality
Power	Conformity	Universalism
Conformity	Achievement	Benevolence
	Security	Hedonism
		Achievement
<i>Value combinations</i>		
Achievement and power	Universalism and benevolence	Universalism and autonomy
Security and power	Conformity and security	Universalism and hedonism
Achievement and hedonism		Autonomy and tradition
		Autonomy and achievement
<i>Descriptions</i>		
<p>Hedonism: Pleasure or sensuous gratification for oneself Tradition: Respect, commitment, and acceptance of the customs and ideas that one's culture or religion provides Power: Social status and prestige, control or dominance over people and resources Security: Safety, harmony, and stability of society, of relationships, and of self Universalism: Understanding, appreciation, tolerance, and protection for the welfare of <i>all</i> people and for nature Autonomy: Independent thought and action-choosing, creating, exploring Spirituality: Meaning, coherence, and inner harmony through transcending everyday reality</p> <p>Achievement and power: Social superiority and esteem Security and power: Avoiding or overcoming threats by controlling resources and relationships Universalism and benevolence: Enhancement of others and transcendence of selfish interests Universalism and autonomy: Reliance upon one's own judgement and comfort with diversity of existence Universalism and hedonism: Self-gratification through the feeling of harmonious relationships and connectedness Autonomy and tradition: Independent thought and action-choosing, creating and exploring is a cultural custom Autonomy and achievement: Sense of accomplishment through independent thought, actions and creations Conformity and security: Protection of order and harmony in relations Achievement and hedonism: Self-centred satisfaction Conformity and tradition: Subordination of self in favour of socially imposed expectations</p>		

In the following section, I present the data according to the three levels of Critical Connectivity. I show how each of the groupings portray Critical Connectivity in consciousness, in the normative relationships with the landscape and with the biosphere. I simultaneously draw from Basic Human Value theory to test its applicability in conceptualizing between-group differences.

5.2.1. Critical Connectivity

5.2.1.1. *Critical Connectivity in consciousness*

Connectivity at the level of consciousness is understood by Dutcher (2007) as the boundless sameness between all beings and it includes an orientation towards empathy and equality. In the interviews, this showed through individual perceptions and attitudes which were similar within each group. In Nature despite People, an attitude towards separation stood out in the interviews. Essentially, Nature despite People portrayed stewardship in the context of a conflict between the development paradigms that clash in the Garden Route. In a conversation around the colonial displacement of African communities who have lived tightly coupled with local ecosystems, one interviewee said: *“We are educated enough to know. Civilized for long enough to learn. If you can’t leave them on the land as they were, you have to educate them”* (Respondent 4). Individuals portrayed an ‘us-and-them’ mentality, which was rationalized on the basis of cultural differences.

Individuals in Nature despite People often trusted in political strategies as the right way of doing things. One of my case studies is a conservancy in the Wilderness area. In an Annual General Meeting I attended as an observer, the group discussed the possibilities of displacing an informal settlement. According to the discussions, this settlement interferes with the vision of the conservancy to preserve a ‘natural feel’ of the area and to combat pollution, crime or other social and environmental risk factors. I witnessed how individuals drew from legislations or from personal contacts with municipal actors to formulate this strategy. The sentiment of this meeting lacked the empathy and equality for other cultures and their rights to land which characterizes connectivity.

Another example from my data further indicated that conservancies are sometimes used as platforms for power to pursue specific interests. One particular conservancy in this study is well known for an emphasis on Invasive Alien Plants in the area. Conversations with members and interviews with four of my key informants revealed that the negotiation of and adherence to rules in the management of Invasive Alien Plants is a main function of the conservancy. The former conservancy chair told me that:

“I drew up a proposal to undertake ratings of property owner’s commitment to clearing their lands of aliens in our valley. The rating is supposed to be used for financial support for committed actors. It is a financial incentive for people to do the right thing. (...). It is a rating of physical properties, but also characters.”

(Respondent 1)

This statement depicts the inclination towards individuation in Nature despite People.

Underlying were value priorities of achievement and power. Schwartz (2012) characterized achievement and power as two closely related values which prioritize social superiority and esteem and motivate pursuit for maintaining the status quo. I found that this status quo in Nature despite People was rationalized on the backdrop of good education, wealth and modern lifestyles by the respondents. Three individuals additionally referred to their political affiliation when they rationalized why stewardship was an exclusive responsibility. For example this respondent regards his membership in the Democratic Alliance (DA) as a statement for the environment:

“I ran in election 2011 for the DA, campaign manager, 250 votes- it was close. Yeah, it gave us control. DA over ANC for Knysna. Yes, it’s all connected...Got into politics for 2 reasons – my then wife XXX, who now is the deputy mayor, and second reason was conservation matters...Watch this space though, another election coming in 2016.”

(Respondent 11)

The other prevalent value in Nature despite People was security and it supported the perceived disconnects between people in the social community of the Garden Route. Security is defined by Schwartz (2012) as *“an orientation towards safety, harmony, and stability of society, of relationships, and of self”*. Security was exemplified as a value by a resident of the Wilderness Heights area, who explains about the informal settlement:

“It’s a pretty grim place, as you can see. A few little shops and a bar are in there. It’s expanded hugely since we’ve been here. And obviously the risk there, from my perspective, is security. All these unemployed people. Sometimes there’s violence, people have been stabbed etc. It’s become bigger, and we’ve become a lot more aware. When we first came, we didn’t even shut the doors at night. Left things lying around and didn’t even think about it. Now, we’re more aware – we have a WhatsApp group, where people can post if they see

something suspicious going on, they'll message around. Police as well is part of that conversation."

(Respondent 10)

The conversations around security always revolved around the personal space and the self-protection from people of different culture and income level. This underpins the anxiety and fear-driven attitude which characterized Nature despite People.

Another subtheme which emerged as relevant in analysing connectivity was the respondents' meaning of 'nature'. Individuals in Nature despite People predominantly referred to nature in the context of pristine landscapes untouched by human influence. 'Pristine', 'untouched', 'unspoilt' and 'wilderness' were the common symbols which indicate that nature is perceived as something separate from humans. This was further suggested by the emphasis on negative human influences on the environment. Throughout all conversations, frequent references were made to 'overharvesting', 'pollution' and 'destruction', thereby weaving an overly negative sentiment about humans in nature. The image of humans as an undesirable entity in an external natural world suggests disconnects in consciousness.

The other dominant perception in Nature despite People was that nature means 'biodiversity', even more particularly referring to charismatic, rare and endangered species. All individuals indicated this in various contexts. Three respondents have camera traps in their garden, which they use as a recreational tool to observe wildlife in their backyards. Many also spend time in nature to actively search for rare and endangered animals and plants. The protection and preservation of species is symbolic in this group. In one case, a woman has established a wildlife sanctuary to protect leopards, wild cats and caracals from the risks of traffic, hunting and killing by farmers. The interviewee believed that these animals cannot survive in a human-dominated world any longer, and she has "*given them a home*". This quote originated from the conversation around the photograph shown in Figure 10.



Figure 10: Protecting vulnerable species in wildlife sanctuaries (Photo: Respondent 16)

The explicit separation into single species suggests a lack of consciousness of the spatial and functional context of their existence.

In the above findings from Nature despite People, I recognize a value of hedonism. Hedonism is defined by Schwartz (2012) as *“pleasure or sensuous gratification for oneself”*. The preference for pristine landscapes was linked to the pleasure of ‘aesthetic beauty’ by all the interviewees. One respondent used the term ‘sanctuary’ to describe how she experiences pristine nature as a space for gaining a sense of ‘sanity’ and ‘peace’. In her diary she wrote about her upmarket homestead and provided the photograph in Figure 11 below:



Figure 11: Pristine natural landscapes as a source of sensuous self-gratification (Photo: Respondent 1)

“This is the land that holds my Heart, a wedge of Mountain Coastal thicket and its home in the open space at the top. The elements of Privacy, and yet surrounded by nature, with the views that give one the feeling of endless possibility, it was in Dire need of love, and fixing, making me an important part of its well being, giving me a reason to be there, as with no reason we are nothing.”

(Respondent 1)

The interaction with biodiversity can also be viewed from a hedonistic value perspective. The experiences with charismatic, rare and endangered species were associated with the experience of 'amazement' and 'wonder'. One respondent for example states about the experience in her private nature reserve:

"I've put up a couple of trail cameras which has been a fun part of living here. It has enriched my part of being here...Every week I collect the cards from the cameras and we go and have a look. We've had lovely footage of porcupine, bushpig, caracal, zillions of bushbuck. These have been a tool for bringing us much excitement and enjoyment of our place."

(Respondent 5)

Further discussions around this revealed that every respondent in Nature despite People is part of a club which served as a platform for hedonism. These included clubs which specialized on hiking, birding, botany and nature photography. The hedonistically motivated membership in these clubs was always part of respondents' meaning of stewardship. This shows that the value for pleasurable and self-gratifying experiences acts as a direct motivation for stewardship, and can provoke separation.

Nature for People/Nature and People in contrast supported the sentiment of equality and empathy which characterizes connectivity. The first indication of this already showed in the framing of responsibility. A frequent use of the terms 'shared' and 'collaboration' exposed an orientation towards social cohesion. Moreover, I observed that the words 'we', 'us' and 'environment' were used by respondents when explaining their motivations for stewardship. For example the statement "*We humans are put here as custodians and I for one, like other environmentalists feel we have that 'Duty of Care' to the world we live in*" (Respondent 9) well describes the consciousness of social connectivity which I observed in Nature for People/Nature and People.

This was further underlined by the attitudes towards equality and justice, which was particularly illuminated by two respondents. This photograph in Figure 12 and part of an interview comes from an environmentalist who pursues public access to fishing at a river in Plettenberg Bay:



Figure 12: Solidarity for subsistence fisher folk in an estuary (Photo: Respondent 23)

“Local subsistence fisher folk have used this place to fish for over 30 years at least. Was always a place where they catch for food- not for selling as such but for their livelihood (...).

These people have become part of my life. But their access is becoming more and more difficult- with XXX Estate and XXX putting down more and more rules. A lot of the fishermen come for drinking-water at my place, and sometimes we walk together and pick up rubbish. (...) A lot of them live under that bridge; in winter as well (...) This place is basically the only place left here where the public had free unobstructed access (...). I have spent many hours with municipal officials, councillors, environmental groups, ministers etc. trying to keep access open, but to no availability.”

(Respondent 23)

This statement indicates empathy for other cultures as well as an aversion against disconnects of humans from nature. Connectivity in consciousness can be most adequately described by Schwartz’s value combination universalism and benevolence. These are two related values which motivate *“the enhancement of others and transcendence of selfish interests”*. The important goals are universal connectedness, equality and justice (Schwartz 2012).

Linked to this self-transcendent orientation is Nature for People/Nature and People’s meaning of ‘nature’. The common perception was that nature holds a diversity of values which all people depend on. Individuals referred to ‘resources’, ‘ecosystem services’, ‘sustainable use’ and ‘management’ to portray that human embeddedness as users or beneficiaries of the environment cannot be denied.

I also observed a consciousness of ecological connectivity which motivated stewardship. The persistent use of the words ‘ecosystems’, ‘corridors’, and ‘water catchments’ during the interviews indicated this. These symbols for nature acknowledge spatial connectivity and functional

interdependencies. One respondent even made this explicit by saying that *“corridors in the landscape have to begin in peoples’ minds...”* (Respondent 13). This statement comes from the initiator of the Eden-to-Addo Corridor Project, which she describes as an *“anti-eco-apartheid”* initiative that targets the elimination of game fences and homogenous land-uses which interfere with *“genetic diversity, dispersal and movement of all animals and plants”*. Three other respondents in Nature for People/Nature and People were involved in the Eden-to-Addo Corridor Project and similarly driven to enhance ecological connectivity.

This once more reflects the characteristics of universalism and benevolence as supporting values for empathy and equality. In the case of the Eden-to-Addo Corridor Project it is shown that these values expand from the social to the ecological sphere. This phenomenon is addressed by Schwartz (2012) as a sub-value of universalism whereby individual concern is not only for justice in society, but for all non-human beings in a biophysical landscape. The following respondent illustrates this empathy in the following quote:

“We found that some of the migrant (bird) species numbers had come right down, and I was very upset about that. It is the pollution that affects them directly. But the threat is also a subsequent green algae bloom, something called the sea lettuce. It spread all over the lagoon last year. When it dried on the shores, it looked like toilet paper. Everyone thought it is sewage spill and got so upset. The birds couldn’t feed through it, especially the little birds with the little beaks couldn’t feed through the sheets. They were heavily impacted by numerous things, including up the silting up of the Ashme Channel. They always say that, with the Thesen Island development there would be more wonderful scouring effect. But it didn’t work like it. The sand builds up higher and higher and covers the organisms that the little birds would eat. The ones with the long beaks, like the ibises that I captured on this image, they are scavengers and would eat almost anything in any case. They can survive, but not the little ones... Birds feeding on the estuary indicate the health of the natural system. Vital need to keep the Knysna Estuary pollution free. Bird, fish, invertebrates, humans, all need a healthy system.”

(Respondent 9)

In People in Nature, I identified Connectivity with Nature at an even deeper level, whereby motivation derives from a philosophical worldview. Respondents in People in Nature suggested that the

distinction between 'social' and 'ecological' is arbitrary. A quote by the Rastafarian community leader well depicts a sentiment which was also portrayed in the other interviews.

"You know, biodiversity, nature...These are just words. We are it! All of it. And we would be nothing without the other. Biodiversity is unity. Lots of different things together."

(Respondent 14)

Even though the linguistic distinction between humans and nature was made by interviewees, the general opinion was that a 'life-force', 'energy' or 'spirit' connects everything in a living system. According to all respondents, human and non-human beings are equal in their purpose and value as 'receivers' and 'givers' of this energy. At least 5 respondents also included the inanimate elements, such as water, wind and rocks as a connector. Respondents then used symbols such as 'Mother Nature', 'Universe' or 'Gaia' to underline this belief in a boundless connectivity.

Spirituality stood out as a particularly strong motivation amongst the Rastafarian community. In Rastafarian belief, God is the creator and all of creation is equal in its purpose to spread 'one love'. This spiritual purpose promoted the respondents' sense of responsibility which expands their physical existence in the here and now to the future of generations. Moreover, it appeared linked to the understanding and reflection of complexity and interconnectedness in SES:

"We all hear about climate change, and, the evidence is there: topsoil taken away, less food in near future, unpredictable weather patterns, more destructive rains. Those kinds of things. You can see it, and also, we know this. We're spiritual people and what prophecy foretold us is that because of all the negative human impacts, these would be the outcomes. Now we see more thunder storms and cyclones. It fits prophecy. So yes, we need to make people aware that climate change is not just a word, but it is things that are happening, and that it connects with your spirituality. It's very important not to only see through the scientific eyes. Nowadays there's huge demand for more traditional knowledge. Simple traditional knowledge. That's the basis also for all the scientific knowledge. That's how people go to seek, look, find the experience. We can then understand that planting trees, greening and conservation is part of health; that kind of awareness. Then we can start taking action in our own habitat."

(Respondent 14)

This shows that spirituality evokes a sense of boundless connectivity which is a strong motivational driver in the way individuals interact with the environment. One of the respondents indicated this by providing the photograph shown in Figure 13 and writing in her journal:



Figure 13: Spirituality plays an important role in relationships with place (Photo: Respondent 24)

My spirituality, philosophical outlook and belief systems have an influence over my experience of my surroundings and my interactions with my immediate and extended environment.

(Respondent 24)

Steering away from spiritual motivations in People in Nature, I also identified a pronounced value for universalism. Universalism is defined as “*understanding, appreciation, tolerance, and protection for the welfare of all people and for nature*” (Schwartz 2012). Many terms used in the interviews matched Schwartz’s characteristics of universalism, and they included ‘harmony’, ‘balance’, ‘peace’ and ‘unity’. With a lesser weight of importance, ‘balance’ and ‘harmony’ were also used by respondents in Nature for People/People and Nature to describe motivations.

However, People in Nature distinguished itself through the combination of universalism and hedonism, rather than universalism and benevolence as in Nature for People/Nature and People. In contrast to benevolence, hedonism places self-enhancement into the foreground of motivation. According to Schwartz (2006; 2012) this is conflicting to the self-transcendent motivation found in benevolence. I cannot support this claim. What was unique in People in Nature was that the experience of sensuous self-gratifying (hedonism) was sourced through feeling connected within a harmonious social community and within a prosperous environment. These findings suggest that the value hedonism can also motivate self-transcendence.

In order to better explain this, I am presenting a sub-value of hedonism which I call sustenance. The importance of sustenance first occurred to me when reading Davenport & Anderson (2005) who studied the different meanings of a scenic river in Nebraska, as held by a local community with a shared stewardship responsibility. To recapture what I have stated in Section 2.2., the authors found that meanings depicted values of the river which they categorized as *tonic* (body, mind and soul), *identity* (part of individual being and their connection with family and community), *nature* (undisturbed ecosystem and character), and *sustenance* (tangible benefits and goods). The authors concluded that these meanings represents a collectively held value system and shared Sense of Place, that influences attitude to stewardship and visions for change.

I support that all these values occurred as a motivational driver in my study. However, when looking at the meaning of sustenance, the categorical distinction blurs. As defined in the Merriam Webster Dictionary, sustenance is the “*means of support, maintenance or subsistence*”, or “*act of sustaining or being sustained with the necessities of life*”, and “*something that gives support, endurance or strength*” (www.merriam-webster.com, accessed on 12th of February 2017). Sustenance, thus, represents an existential dependency as perceived by individuals in the place they inhabit. In place theory, this is known as place dependence (Stokols & Shumaker 1981; Lewicka 2011b).

While place dependence is known to be a critical motivation for stewardship, it is a psychological construct and individually subjective (Tidball & Stedman 2013; Bott et al. 2003). Through this lens of sustenance and place dependence, nuances in this subjectivity become apparent in my data. In Nature despite People, the emphasized dependencies were nature (biodiversity and wildlife) and tonic (enjoyment and aesthetics). The photographs in Figure 14 represent two of numerous examples of this.

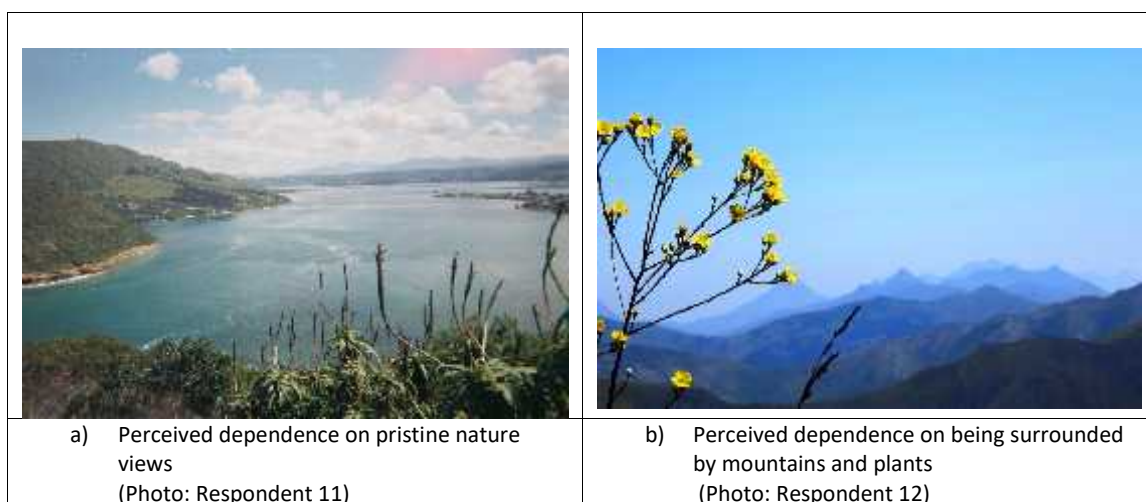


Figure 14: Nature and tonic as a sustenance value

Remarkably, the existential dependence on provisioning resources were not mentioned as a motivational factor amongst respondents in Nature despite People.

Nature for People/Nature and People matched Davenport & Andersons' (2005) definition of sustenance as the dominant motivational value. This was shown by the respondents most frequent mentioning of tangible dependencies, in other words the provisioning ecosystem services. Particularly the dependence on freshwater systems was emphasized as the source of survival for people in the Garden Route. The chairman of a water catchment forum for example states that:

"I have an interest in biodiversity conservation because it is important for the catchment. It helps us secure freshwater resources at a time of drought and increasing population."

(Respondent 8)

Finally, People in Nature highlighted all value categories as being equally important in their relationship with place. Nature values were most generally framed as the value of 'all life', but specific references to animals, vegetation types, freshwater systems and the ocean were made. The sustenance values, as in the tangible goods and benefits from the environment, were predominantly clean air, food, water and building materials. Interestingly, all these values were overarchingly categorized as tonic values, which 'feed body, mind and spirit'. Almost all interviewees in People in Nature used this or symbolic expressions.

These tonic values, however, were viewed as the source of sustenance and existential dependency on physical places. Six respondents for example did not only value 'organically' or 'home-grown' food, but also perceived it as a necessity to sustain the environment and one's own body. So for example explained by the Rastafarian community leader on the use of wild medicinal plants, and a woman about her vegetable garden, shown in Figure 15.



	
<p>a) <i>"We depend on the holy herbs to feed our holy bodies (...) Herbs for us is like a preventative remedy or resource. It's there to prevent things, not to be used when you get sick. It is part of our life, as a tea, tonic or a drink. We use it frequently."</i></p> <p>(Respondent 14)</p>	<p>b) <i>"Our vegetable garden symbolizes having our own nutritious, organic food supply for good health as well as composting, turning food waste into soil food. The garden also helps us ground ourselves."</i></p> <p>(Respondent 24)</p>

Figure 15: Holistic health as a sustenance value

To explain these values of sustenance to body, mind and soul, four respondents referred to 'holistic health'. This motivation for holistic health was very prevalent in People in Nature and it supported a sense of dependency on all of Davenport & Andersons' (2005) identified place values. Holistic health for example also promoted a sense of dependence on nature experiences. For seven people, the experience of nature meant the peace and solitude to get in touch with a 'spiritual' or an 'existential' identity.

Every respondent portrayed the belief that the health of body, mind and soul is dependent on a healthy environment, while the health of the environment depends on healthy people who are motivated to sustain this relationship. This emerged as an overarching meaning of stewardship. Respondents viewed the investment into the health of the landscape and local community as a process of growth, actualization and learning. For example, a large community of volunteers has self-organized in an ongoing tree planting endeavour to restore indigenous forest in Wilderness. When I asked all individuals about their motivation to participate, the experience of restoring forests emerged as a dominant one. This stewardship experience was uniquely symbolized and included terms such as 'aliveness', 'meaning', 'grounding', 'sense of belonging' and pure 'joy'.

I do not claim that Nature despite People and Nature for People/People and Nature disregard health as a critical value. In Nature despite People, health was discussed as an important part of security. Security includes values for good national health systems and clean environments (Schwartz 2012), two symbols which featured majorly in all interviews with Nature despite People. In discussions

around risks, respondents emphasised this gain of personal security in what is perceived as an increasingly 'polluted', 'uneducated' and 'inefficient' South Africa.

Also four individuals in Nature for People/Nature and People valued health as an element of security, but with an emphasis on the well-being of society rather than only oneself. Respondents hereby made reference to unpolluted ecosystems and watercourses which support the local community. This again supports the pronounced value for universalism and benevolence. Only People in Nature linked health of self, other people and the environment in a value of hedonism. Sustenance and hedonism emerged as a value combination for self-transcendence, and provides a contrast to conventional theory in which this value combination is not recognized.

Then, however, People in Nature also indicated a sense of separation from what I understood as mainstream society. All but one respondent made explicit that they distinguish themselves from a system based on 'capitalism'. The Rastafarian community in my study referred to this as 'Babylon'. Both symbols essentially critiqued how environment and human well-being are overruled by power, greed and oppression in large-scale global development.

However, rather than negatively highlighting disconnects as it was done by Nature despite People, People in Nature emphasised the value for autonomy. Autonomy describes cultures in which individuals are valued as autonomous and bounded entities, who are encouraged to *"cultivate and express their own preferences, feelings, ideas, and abilities, and find meaning in their own uniqueness"* (Schwartz 2006). Autonomy is a value which prioritizes the development of independent intellect and expressions, and is recognizable in broadmindedness, curiosity and creativity (Schwartz 2006).

Several features in People in Nature indicated a pronounced value for autonomy. Firstly, all but one respondent in this group were self-sufficient and self-employed. Self-sufficiency and livelihoods were characteristically diverse and embedded in holistic lifestyles. One example is a woman in Sedgfield with concern and empathy for the increasing numbers of stray and abused pets in the Garden Route. The respondent sources funding and support for animal welfare, and houses animals until she finds them good homes. At the same time, she established an online platform which enables sustainable tourism. This is an online interface whereby travellers can choose holiday accommodation and restaurants based on their environmental footprints. Moreover, the garden of her house is gradually transforming into a rich supply for vegetables for her own needs and potentially exchange on a local market.

This local market is another source of evidence for autonomy. Two of the respondents have been involved in establishing a local bartering system for the greater Wilderness area, called the Talent Exchange. This system is a creative opportunity for any individual to trade skills and products including food, crafts, and craftsmanship, yoga or music lessons to name just a few. Four more respondents in People in Nature indicated that they are enthusiastic beneficiaries of Talent Exchange.

Autonomy showed in photographs which symbolize the value for independent intellect and expression. These are depicted in Figure 16.


	
<p>a) Value of individual agency, resources and skills (Photo: Respondent 23)</p>	<p>b) Value of autonomous use of natural resources- a dam on private property (Photo: Respondent 26)</p>
	
<p>c) Valuing self-sufficiency- permaculture (Photo: Respondent 29)</p>	<p>d) Valuing creative self-expression as a source of income (Photo: L. Heider)</p>

Figure 16: The facets of autonomy valued amongst People in Nature

More specifically related to ecological systems, creativity stood out as a particularly important asset for connectivity. In at least seven individuals, autonomy and creativity were tied to restoration of landscapes. One interviewee describes this in relation to his self-sufficient home space:

“Taking care of soil, one of my greatest love. Then, everything else is happy. Looking after water. When we arrived, the property was very different. A farmer lived here (...) cleared all this forest. A lot I’ve now put back, but also fruit trees, compost heaps. It’s not taking it right back to a forest as it was, but also human beings, my family and me, in it, too. Like a story. A big canvas, I’m an artist, co-creator of it. I only do some actions, and the actual art comes from the growing of things, the interactions between birds, insects, bacteria, all that happens.”

(Respondent 26)

Similarly, respondents in People in Nature indicated a broadminded approach to the issue of Invasive Alien Plants on their (predominantly) smallholdings. This included the experimentation with a variety of methods to gradually phase out invasive plants. This always occurred in combination with restorative practice, such as re-seeding and replanting indigenous vegetation. In two cases of smallholdings, Invasive Alien Plants were gradually replaced by the establishment of competing food forests. Three individuals have also developed creative income sources from the problematic invaders, one being carpentry and wood art, the others a service of consultancy and management for other landowners. The Rastafarian community sells Invasive Alien Plants as firewood to a provincial market. The creative use of Invasive Alien Plants was depicted in photographs, shown in Figure 17.



Figure 17: Photographs illustrating uses of Invasive Alien Plants in People in Nature

In the case of the Rastafarians, a pursuit for tradition was linked to autonomy, suggesting a value combination which has not been formulated by Schwartz. According to the theory, tradition motivates *“respect, commitment, and acceptance of the customs and ideas that one’s culture or religion*

provides”. The Rastafarian belief system revolves around a spiritual connectivity. On the one hand, this belief strengthened respondent’s devotion to culture and community, as well as a humble, moderate and respectful attitude towards life on earth. On the other, tradition emerged as an underlying driver of autonomy, which was portrayed in the statement below:

“This community started in 1990. We, 7 individuals, shared the Rastafarian faith, but lived scattered across the township. We wanted our own place, our own land to practice our faith, and to live our philosophy One Love, between all of God’s creations....People like our community were always excluded from protected areas. We were prevented from accessing the natural resources that we needed to live. All these rules were put in place which made us criminals when we used our natural products. Instead, we were encouraged to use chemicals and modern medicine.”

(Respondent 14)

In Schwartz’s theory, tradition is a value which motivates conservation and stands in conflict with cultures who value broadmindedness, creativity and openness to change. The Rastafarian tradition however portrays a unique condition in which these assets of autonomy are stipulated customs. Since the remaining individuals in People in Nature distinguished themselves from capitalistic society, it can be argued that they represent an oppositional culture with rules for connectivity, not separation.

5.2.1.2. Critical Connectivity in the physical landscape

In this section I discuss in more detail some of the physical elements of Connectivity with Nature. According to Zylstra (2014), the awareness of being connected motivates and sustains behaviours which nurture connectedness in a SES. I am interested in testing this idea and set out to explore whether connectivity in consciousness manifests as normative interactions with the landscape. This analysis thus mainly draws from the interview question about the ‘experience in place’, and is complemented by observational data. Observational data includes the expressions of stewardship which were not mentioned during my interviews, but that I saw and learned about during my personal contact with the respondents.

In Nature despite People, I found that the perceived separation and divide between humans and nature mirrored individuals’ expressions in the landscape. Due to priority values for biodiversity, endangered species and aesthetically pristine areas, stewardship emerged as a preservation ideal. The typical forms of stewardship in Nature despite People included protection of isolated nature values in

isolated spatial contexts. A prime symbol for preservation was the privatization of nature reserves, which constituted a theme in five of the interviews. One private landowner has proclaimed her large property a private nature reserve. The other four respondents have been involved in the proclamation of private reserves in public areas.

The focus of individual attention is to support the general 'feel of nature', which hosts an abundance of biodiversity and wildlife. The specific activities associated with this focus were typically landscaping practices. The respondents emphasized the creation of indigenous vegetation, ecological niches, and aquatic habitat. As described by one interviewee about the establishment of a private reserve managed by a small group of locals on a populated island which belongs to the town of Knysna:

"We want to keep the place pristine. We restore habitat, create interesting ecological groupings, put up owl boxes, plant trees, create bird gardens, identify plants, remove weeds and grasses, monitor and restore vulnerable saltmarsh..."

(Respondent 6)

Once again, this expression of stewardship in Nature despite People mirrors the value of hedonism, with a particular interest in an aesthetic appeal and experience of biodiversity.

However, linked to hedonism in these stewardship expressions was the value achievement. According to Schwartz (2012), hedonism and achievement means striving for self-centred satisfaction. For example, one proclaimed nature reserve was due to an endemic animal species close to extinction. According to the initiating respondent, the species' last remaining habitat is minute, and encapsulated within a residential area. Apart from the threat of population growth and physical development, the species is experiencing a climate-related loss of its dependent vegetation type.

The endemic species has become an iconic symbol for the small settlement near Knysna, and a few individuals dedicate their free-time to its protection. This includes strict access control to the reserve, and physical manipulation of vegetation, in order to mimic the positive impacts of absent wildlife and prevent succession from Fynbos to thicket. As shown in Figure 18, the interviewee provided a photograph of the current habitat and indicated a sense of accomplishment about its preservation:



Figure 18: The preserved habitat of an endangered species in the midst of a residential area (Photo: Respondent 11)

“It was a race against time...There was so much scepticism that such a tiny reserve would help in conserving the XXX. I used my entire PhD and many following decades to prove them wrong”.

(Respondent 11)

Another common manifestation of hedonism and achievement in Nature despite People became evident in four respondents’ self-centred satisfaction of having created accessibility to nature. Respondent 5 makes this particularly explicit by saying: *“We cut these trails and they have given us access into our nature areas that no-one before us on the estate had. We use these for the simple pleasure of enjoying our place. It is a lovely and very important experience of walking through the forest and the Fynbos.”* In this case the respondent valued the ‘wild’ feeling of the bush.

In others, a more ‘tame’ experience of nature is desired. In order to facilitate recreation and personal enjoyment, nature reserves and private properties are partly tamed through lawn spaces, boardwalks and trimming of ‘bushy’ areas. The statement below depicts one of these sentiments about a walkway through a private reserve, and the photograph in Figure 19 illustrates the transformation the respondent is referring to.



Figure 19: Creating tame and beautiful nature (Photo: L. Heider)

"XXX Way in XXX Nature Reserve was established 7 years ago with indigenous vegetation from a rubbish dump. It signifies my sense of achievement and the recognition of achieving something that no one else has thought of, in such a short period of time. It was creating a life transformation from a rubbish dump to a beautiful walkway."

(Respondent 7)

I also found a linkage with a motivation for security and power. Security and power is a value combination which emphasizes *"avoiding or overcoming threats by controlling resources and relationships"* (Schwartz 2012). One respondent stated:

"I don't want to control nature. But I also still need an area of control. I am very clean and tidy. I keep a bit of lawn to give me sense of space, sense of control, but also as a fire break."

(Respondent 1)

This notion of control came up in several interactions with the landscape which, as shown in the above examples, were quite heavily based on the manipulation of ecologic systems.

Similarly pronounced was the control of social relationships in Nature despite People. Intricately embedded in stewardship expressions was the exclusion of other people, which was phrased by two respondents (6 and 10) as a solution to *"keep out the bad human element"*. I indeed found that individual expression has an avoidance and a controlling element to it. Avoidance was portrayed as passively restricting access to nature (for example through fences, entrance fees and reporting trespassing to authorities). Overcoming threats and controlling others was an active pursuit indicated by various examples. One includes the nature reserve on the island in Knysna:

“What is now XXX Nature Reserve was XXX Park- just a patch of untidy, un-kept and dirty wilderness serving as a squatter camp for Rastafarians. It was a dangerous place, and people from the island avoided it. 3 or 4 of us volunteered to clean it up. We continued to complain and nag about the situation. The security on the island did nothing to support us. Then, we revitalized the home owner’s association. How can we ensure that the beautiful place is still here for future generations? - This became the common theme for action.”

(Respondent 7)

A ‘common theme for action’ was likewise projected in the management of Invasive Alien Plants amongst Nature despite People. Invasive Alien Plants are locally seen as one of the biggest threats to biodiversity and a common value of an ‘indigenous’ Garden Route. Invasive Alien Plants also present a significant fire hazard and cause of droughts which concerns conservation agencies, government and the public alike. The local municipalities and the supporting media have thus announced a ‘war on weeds’. This phrase has become a symbol for public stewardship and emerged as a prominent paradigm within Nature despite People. Respondents used symbols such as ‘enemies’ and ‘fighting’ to rationalize why the eradication of Invasive Alien Plants constitutes one of the most important stewardship roles.

Six respondents told a similar story of having claimed property which was heavily overgrown by invasive and exotic shrubs and trees. The achievement of ‘alien-free’ is a common interpretation of environmental contribution. However, through the interviews I observed that the underlying values and motivations were security and achievement, rather than self-transcendent ones which concern the betterment of the landscape for the benefit of all.

A common objective was to clear ‘bushy’ areas which were deemed undesirable by and risky to individual respondents. The negative sentiment of densely infested areas was coupled with the fear of habitation by the homeless and poor. In three cases, individual respondents took the initiative to remove invasive plants and illegal dwellings from bushy areas. On the one hand this was rationalized as ‘preserving pristine areas.’ Through further discussion however, the fear of ‘squattening’, ‘drug-abuse’, ‘littering’ and ‘crime-elements’ transpired as a stronger motivation.

The other indicator for security and power in Nature despite People was monitoring and sanctioning. Respondents generally liked to ‘observe’ public activity in their surrounding environment and felt

responsible to report poaching, snaring, pollution, or trespassing to environmental authorities. In some areas, there was a particular interest in the enforcement of invasive species management. The planting of exotic ornamentals or the lack of participation in clearing efforts is generally frowned upon. Respondents pro-actively pressurize residents to change behaviours, or marginalize and badmouth community members who do not conform to their ideals. Two individuals have even made this the focal area of stewardship attention. An extreme example of such a case is depicted in the following story:

"There is so much arrogance in the neighbours, community and conservancy members. I can't deal with the arrogance. People are hypocrites, even though they know the troubles with aliens, and they are committed to clearing in the face of the conservancy, they continue planting exotics in their own gardens. I struggle to pace myself, and sprayed a front yard with herbicide. He laid charges against me as the person who is right! How is this possible? These plants don't have a right to be here and he knows it."

(Respondent 1)

On the other side were also the individuals who framed the adherence to these rules as a main function of stewardship. I interviewed respondents from four different conservancies, who regard their membership as their main voluntary commitment to the environment. Moreover, all members of one particular conservancy have participated in the nation-wide governmental project Working for Water. Working for Water is an upliftment project for the poor, which offers contract work for the removal of Invasive Alien Plants on private and public land.

The conservancy has benefitted immensely from this service and is, as a communal arrangement, highly supportive of the project. During the conservancy meetings which I attended, I noted that, firstly, the mapping and strategizing for Working for Water in the greater landscape constituted at least 80% of the action themes. Secondly, individuals' own responsibility to draw from Working for Water as a service on their own property was an unspoken rule of the collective. One of the domineering characters in the conservancy stated in the interview:

"Negative about our place are the aliens. Fighting aliens, and when your neighbours are not fully co-operative. I find it difficult, although I try to convince them all the time."

(Respondent 4)

No doubt that such strong opinions around a highly pressing environmental issue have an impact on individuals with a 'follower' mentality. This is described in Schwartz's (2012) value conformity, defined as the *"restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms."* Conformity can be a means to prevent conflicts within neighbourhoods and conservancies, and membership and participation are arguably manifestations of this peer pressure. The value conformity, though not made explicit in the interviews, was implied and observed in behaviours and norms. One of the more silent voices in the conservancy, for example, described his controversial position as a former chairman of a conservancy which used to pursue his interest in wildlife and biodiversity. With a change in leadership, the focus changed to Invasive Alien Plants as the respondent explains:

"He's chairman now and she's secretary. She's passionate about clearing. She spends half her time in Johannesburg, landscaping; the other half here, helping people clear and getting them excited. And it was her who got me going on getting Working for Water here as well. I wondered, is it going to be a security risk? But they came for two weeks, working very responsible and self-sufficient."

(Respondent 10)

Nature for People/Nature and People gave a similar weight of importance to the management of Invasive Alien Plants. However, the interviews and photographs revealed several distinctions from the motivational inclination in Nature despite People. The problems arising from Invasive Alien Plants were framed in a more comprehensive picture, in other words considering the challenges in the context of entire water catchments and ecological corridors. The statement below exemplifies this:

"The same with the alien situation. The catchment has a water shortage that gets worse and worse. We need to get the invasives out of the water and at least we managed to achieve something. When Pezula was developed, the whole pine plantation was removed. It was amazing and wonderful to see how with the removal, the whole river suddenly filled up with water. It was abstract knowledge until you saw it happening."

(Respondent 9)

Moreover, stewardship highlighted collective interest in the security of common pool resources and collective action to achieve this. This highlights self-transcendence and stands in contrast to the self-enhancing expressions which were dominant in Nature despite People.

Nature for People/Nature and People was characteristically concerned with the establishment of grassroots stewardship projects which depicts the orientation to universalism and benevolence outlined earlier in this chapter. In this study, these projects targeted stewardship of land- and seascapes, and include two Blue Ocean Hope Spots, the Eden-to-Addo Corridor Project, two Biosphere Reserves and several water-catchment management forums.

I have already pointed out that universalism and benevolence featured strongly in individual awareness and attitudes towards stewardship. I showed how this value portrays a social group without evident distinctions between cultures or different stakeholders. Instead, a defining feature was the shared ecological landscapes and the common dependency on functioning, services and responsibility. This seems to motivate the group's investment into the 'welfare' of a collective, thereby highlighting the benevolence part in stewardship expressions.

One example of this is the previously mentioned individual who fought hard for the conservation of an estuary in Plettenberg Bay. The ecosystem is facing numerous challenges related to public uses, privatization, development and institutional organization. The respondent has dedicated a decade of his life to gain local support for an integrated management plan. This plan is a compromise between allowing recreation and resource use, while considering the highly fragile and biodiverse ecological system. According to the interviewee, stewardship means *"open access for education, research and management to all people who value and depend on the estuary"* (Respondent 23).

Collaboration was a key symbol which depicted how universalism and benevolence is expressed in Nature for People/Nature and People. For example, an individual who perceives her stewardship function as one of social networking describes:

"(Conservation agency XXX) closed up certain areas where nobody was allowed to dig for baits. They made bait reserves. And now with me shouting, they are now looking at the management of the bait reserves. They are going to check if these are optimal areas, or whether they should open them now and check other areas. They need to rotate, otherwise one area becomes plain dead. All these things go together. They are my concerns. I get to address these concerns at the environmental forum and the XXX forum. We work with the Knysna Basin project, which has scientists looking at these issues."

(Respondent 9)

My data held many examples in which individuals' motivation has promoted the collaboration between management agencies, the public and science to achieve conservation goals for the benefit of the social collective.

A target of collaborations in Nature for People/Nature and People is social-ecological functionality, integrity and connectivity. Four of the respondents mentioned how this links to the goal of 'securing resources well into the future'. This portrays a literacy in ecology and sustainability. A voluntary leader of a Biosphere Reserve highlighted that effective management of ecological connectivity requires that *"generalists mix with ecological specialists"* (Respondent 19) to provide a holistic knowledge base. This ideal was prevalent in Nature for People/Nature and People, which typically supported the cross-fertilization of expertise in environmental education, academia, conservation management and businesses. All respondents in Nature for People/Nature and People fulfilled such an expert role in one or several grassroots projects.

I did not easily identify a value by Schwartz (2012) which adequately positions individuals' motivation for professional collaborations. A reason for this might be that the underpinning conservation paradigm is not universal across cultures. Interestingly enough, I found that all respondents in Nature for People/Nature and People are tied to science or conservation profession in their stewardship function. This showed in the identities which individuals referred to when they described their motivation. Stewardship was framed as a responsibility for 'research' and 'management' by all individuals. At a more nuanced level, these included identities as retired or as still active scientists and conservation professionals whose stewardship role is an extended responsibility beyond other commitments.

A physical tie to ecological systems was absent in Nature for People/Nature and People's expressions of stewardship. The perceived responsibility were social and organizational functions, such as leadership roles symbolized by 'director' of environmental forums, or 'CEO' of organizations. It also includes mediation and bridging between people. One respondent's role is to *"convince landowners and farmers to become stewardship partners...and to assist them with the annoying bureaucracy involved"* (Respondent 19). As a trained ecologist, this individual feels he sacrifices his passion of physical conservation in ecosystems, for a bigger impact on human norms within them. Other interviewees fully thrive in the role of social networking, such as this retired teacher who says that:

“It has become a natural way of living to me. Whenever a new issue arises, there is no doubt that I try to help fix it. There are so many conservation activities and collaborations that have emerged from this.”

(Respondent 9)

Schwartz (2102) speaks of conformity and security, which is a goal of “*protection of order and harmony in relations*”. This value combination arguably illuminated in Nature for People/Nature and People as protecting the order and harmony in ecological systems, and in the way humans manage them sustainably. Conformity and security might explain individuals’ motivational focus on professional collaborations and for inclusive knowledge networks, communication platforms and decision-making processes.

Moreover, ‘order’ was also portrayed by the reliance and trust in legislative frameworks, and by the wish for participation in the general public. Conformity showed as the individuals’ pronounced wish to adhere to management principles as they are proposed by scientific and professional conservation agencies. Respondent 10, a farmer in the Plettenberg Bay area, says that he perceives a sense of responsibility to integrate his farm into a conservation corridor which is formally planned and managed by respected conservation agencies. Moreover, conformity showed in the firm belief that stewardship means to obey environmental legislation. This individual explains:

“Someone wants a road built from Brenton two thirds to Buffalo Bay, so he can build fancy houses overlooking the sea. It got approved. Astounding it still happens. This is under jurisdiction of (conservation agency XXX), so national government. This application thus went to Pretoria and the consultant came from there, didn’t know the place at all, signed the papers. We didn’t know. So now it’s approved by the minister. And we’ve registered an appeal. But it’s a late hour... However, fortunately XXX here is a lawyer and put together this appeal. We realized we need this more strict approach since we see and have demonstrated they have broken the law. They’re breaking the government’s own laws.”

(Respondent 11)

This is in contrast to conformity in the majority of Nature despite People, whereby the rules and norms were driven by individualistic interest and self-enhancement. Nature for People/Nature and People values universalism and benevolence which motivates the ‘welfare’ of all people and nature in a

shared landscape. Security and conformity then influences how 'welfare' is interpreted and implemented.

In *People in Nature*, the physical expression of stewardship was very diverse and embedded in individual lifestyles. This was supported by the idea that nature is essentially there to be sensibly used. The community leader of the Rastafarians describes this in the context of subsistence use:

"Everyone has got their own view on harvesting, on taking and on giving energy. Everyone has got their truth. But our truth is that nature comes first (...). We are resource users, and at the same time fertilizers and agents of growth..."

(Respondent 14)

A permaculture practitioner also supports this belief and portrays it in the context of bee-keeping on his property. He provided the photograph in Figure 20:



*Figure 20: Beehive on permaculture farm: a means to promote the functioning of a closed ecological system
(Photo: Participant 29)*

According to the interviewee, beekeeping has in fact nothing to do with "*keeping the bees*". It is a means of enhancing the closed ecological system which has suffered from the impacts of drought and Invasive Alien Plants. Providing habitat, food and water for bees enhances the pollination of his food garden and has a positive impact on the vegetation beyond his own property. According to the interviewee, harvesting small amounts of honey is an extra benefit which he values but doesn't strive for.

Individuals in *People in Nature* were distinct from the other research respondents in portraying restorative ecosystem management. Due to the choice of self-sufficiency, individuals aim to maintain

ecological integrity and fertility of the land which they depend on. Stewardship is hereby expressed as active management of soil, water, air and physical connectivity.

It comes with the value of achievement, and a sense of pride in autonomous lifestyles. When I visited the respondents, all insisted on showing me the physical manifestations of their stewardship efforts. These included nurseries, vegetable gardens, energy-efficient structures and eco-friendly buildings. It also included restored areas, such as soil eroded sites or the ones which were previously covered by Invasive Alien Plants. In the case of the Rastafarian community, it included a tour of the communal nature reserve which they have established to protect indigenous vegetation and to secure communal access to nature and the supply of herbs.

Schwartz (2012) states that the defining goal of achievement is *“personal success through demonstrating competence according to social standards”*. He links achievement to the approval by others who represent the standards of one’s culture. The condition of a culture which actually values autonomy the most, however, somehow obscures Schwartz’s meaning of achievement. I did not find that individual motivation was linked to approval by others, but significant evidence that it was motivated by self-accomplishment through independent thought, creation and exploration.

Also in the other two groups, achievement was a motivating value. In Nature despite People, this fact was portrayed to me through photographs of for example ornamental gardens, and of private property which was cleared by Working for Water upon respondents’ initiative. One respondent showed pride for being involved in a private nature reserve with significant ecological importance. Examples of the value achievement in Nature despite People are depicted in Figure 21.



	
<p>a) Pride of the creation of ornamental gardens (Photo: Respondent 1)</p>	<p>b) <i>"XXX Nature Reserve is my little baby. So unusual, that it's in centre of town. In a way it's threatened and I feel responsible. It's like my ego. I really want to do everything in my power to see that it carries on"</i> (Respondent 3)</p>

Figure 21: Photographs illustrating achievement as a value in Nature despite People

In Nature for People/Nature and People, one woman showed me several awards for her social engagement in conservation. Another respondent in this group stated with pride:

"I have initiated the XXX Forum, with the goal to fight development in the area. I have been very active and successful with it in the last 20 years. Together with like-minded and concerned people in the area, we've prevented establishments like eco-resorts, desalination plants, etc. between Kaaimans River and the eastern boundary of George municipality. Some of these fights took 7 years, but we won."

(Respondent 3)

These findings reveal that the value of achievement motivates stewardship in all individuals.

The other notable feature of connectivity in the physical landscape was the subtleness of support through affection and empathy in People in Nature. Underlying this feature was the belief that plants, animals, and elements of the earth are receptive to intentions and thoughts. Just like any human being, it was perceived that life thrives on empathy, compassion and love. One piece of writing from a respondents' journal depicts these sentiments well.

"Have you ever had ants in your house, & asked them politely to leave...? Or maybe you asked a flower for permission before you plucked her from the plant? Have you ever stated your pure intentions before walking through a forest, just letting the Big Mamma know that

you are there to love, appreciate & that you act with peace? If you answered yes to any of these questions, you will understand what I mean when I say that the nature and life around you is a pure projection of yourself, how you see the world and your place within it."

(Respondent 31)

Two individuals in this group formally practice animal communication with pets and wildlife. Others habitually 'bless' and 'appreciate' plants in close interactions, as I observed in four respondents of a tree-planting project and in two owners of vegetable gardens. I also found a pronounced trait of paying close attention to the environment. One respondent for example uses poetry writing and landscape drawing as an expression of this. He regards it as a way of connecting with nature, through observation and reflection of one's own role within. This clearly resembles the characteristics of universalism: "*understanding, appreciation, tolerance, and protection for the welfare of all people and for nature*" (Schwartz 2012).

The experience of affection in relationships with humans and nature was a source of satisfaction to individuals. Interviewees symbolized the rewarding effects by the terms 'fulfilment', 'meaning', 'purpose' and 'happiness'. These are indicators of hedonism. Hedonism is a value understood by Schwartz as "*pleasure or sensuous gratification for oneself*". It refers to the satisfaction of organismic needs, and includes the motivation to enjoy life.

In People in Nature, the goal for hedonism was pursued through relational experiences in the physical landscape. At least 9 of the respondents hold norms for meditation, prayer or quiet time in nature. One individual for example described about her experience as a marine biologist:

"I could stay underwater forever and never come up! It's the peace and quiet, and so much life. Every little thing down there is alive. Even the things that seem inanimate are alive...With Knysna estuary, have a special connection, because it's the first one I've learnt to know and understand. Total change of job and field. And this was exactly what I needed to do. I want everyone to know what's going on underwater! So people get more aware. That things around them are alive."

(Respondent 15)

This statement shows that the pleasurable or sensuous gratification for oneself is derived from a feeling of being connected with life. It also includes the within-group experience of stewardship. In the case of tree-planting activities for example, it generated feelings of 'like-mindedness', 'positive energy' and 'fun'.

The emotional level is important in hedonism. Many individuals referred to the 'honour' and 'pleasure' of sharing love, wonder and admiration for nature. A particularly important gratification was the emotions that individuals draw from educational experiences. A woman from Nature for People/Nature and People talks about her role as an educator and facilitator of citizen science as follows:

"It is wonderful to get involved with enthusiastic people and feeling that I have made a difference in some of their lives, making them ambassadors for our wonderful natural assets; This kind of education makes a difference, because you can see, you can touch and you can experience. I would like to teach respect. The role of clean water, the removal of invasives, life cycles, and interactions with other species, all of this is important...If you're directly exposed to natural processes, it makes the difference..."

(Respondent 9)

Relational experiences, or experiences of connectedness between people and nature, are thus motivated by the value combination hedonism and universalism.

5.2.1.3. Critical Connectivity with the biosphere

Lastly, when analysing Critical Connectivity in the landscapes, the consideration of the biosphere cannot be neglected. In exploring Connectedness with the Biosphere, I pay attention to the relationship of individual behaviour and the ecological boundaries of the planet to support life. These boundaries include the transformation of landscapes, nitrogen outputs, climate change and greenhouse gas emissions (Rockström et al. 2009). The planetary scale processes are not always immediately recognizable in the physical landscape, and make it difficult for local communities to adapt rationally or mitigate appropriately.

From an analytical point of view, Connectedness with the Biosphere has thus far been lacking approaches at individual scales. Only recently, Dorninger (2017) proposed that connectedness can be recognized locally by individuals drawing from renewable regional energy and restoration of primary

production systems. I want to test whether connectivity in consciousness and expressions in the physical landscapes are related to Connectedness with the Biosphere.

The findings in this study provided some clues to the individual norms which support or disregard the biosphere. People in Nature provided the best example of connectedness, through the expression of self-sufficient lifestyles. Moreover, individuals valued minimalism and opposed 'wasteful' or 'excessive' consumption. The findings from People in Nature suggest that Connectivity with Nature in perception and stewardship expression are interlinked with the resilience of the biosphere at large.

I here recognize Schwartz (2012) value for a tradition, as in *"respect, commitment, and acceptance of the customs and ideas that one's culture or religion provides"*. In People in Nature, tradition seemed to apply to customs and ethics which are fundamentally human. Interviewees consistently drew the conversations back to the basic fact that humans are dependent on the planet.

The individuals in People in Nature portrayed the characteristics features of tradition, such as respectful behaviours towards 'Mother Nature' and the acceptance of one's moderate position in the world. This was expressed as a sentiment of 'living sensibly' within the confines of the environment. The following statement describes the underlying value of tradition:

"Development gives my spirit anxiety. I know it's a necessary evil in our society. But to go to places where people are still living, like we should be living...Traditional people live wholly on the Earth. And I aspire to that. We're trapped in the illogical existence with our buildings, cars and all that... I couldn't live on this beautiful Earth and not be sensitive to what it's giving me. I feel it's my moral obligation to care for it. Regardless of what everyone else is doing- I'm not part of that."

(Respondent 2)

This respondent lives her life in a humble dwelling which is designed in an energy-efficient manner. She opposes excessive consumption and travelling, but chooses to *"rather spend money and time doing things on the ground"*. These activities include biodiversity monitoring, ecological restoration and an outdoor classroom in which she exposes people from different socio-cultural backgrounds to the experience of the natural environment.

In stark contrast, the individual lifestyles in Nature despite People exposed disconnects from the biosphere. On the one hand, this was reflected by the modern and prosperous lifestyles portrayed in interviews and photographs. Individuals value worldly travelling, wealthy and large homesteads and modern cars. These are some of the human values which contribute to the pressure on the planet, and they are arguably motivated by self-centred satisfaction and social esteem identified earlier in this study.

The other source of evidence for disconnects was the overarching disregard of primary production systems amongst Nature despite People. The first indication of this was the negative attitude towards subsistence resource use. In the perceptions of risks, all individuals in Nature despite People linked subsistence lifestyles to firstly 'poverty' and secondly 'environmental degradation'. Subsistence fishing and hunting for 'bushmeat' were particularly frowned upon and associated with the catastrophic conditions of 'overfishing' and 'extinctions of wildlife'. Two respondents also critiqued agroforestry or permaculture as 'untidy' in the landscape.

Six respondents further associated poverty with 'overpopulation' and with the 'growth of an illiterate social class' in Africa. This was illustrated in the statement:

"...the tragedy the majority of our population has to live with. There is just too many people living on this beautiful planet. The rapid growth of our population is a cause of environmental degradation. I really can't see how the exploding population has enough room on this planet, especially in South Africa. If I watch Wimbledon and I see the White races watching there and know that the birth rates are in the negative, but if you look South Africa, and India, Malaysia, China, and all of those countries.... I just don't see HOW we could be supported for longer than maybe 100 years. And we are still quite fortunate here in Knysna. We are still about 30 years 'behind' from what other parts of the country are experiencing."

(Respondent 7)

These conversations signified a negative attitude towards subsistence resource use by black African people, which was often concluded with the sentiment: 'they don't care about the environment'. Two of the female respondents also mentioned that their not having children was a conscious choice in favour of environmental protection.

These dominant perceptions of a sustainability challenge were otherwise accompanied by an apparent lack of self-responsibility in the biosphere. With the exception of two themes, ownership for conservation of soil, water and climate, and responsible consumption patterns were not mentioned. These two themes were ecolabels and recycling, and they formed the only contextual relationship of what it means to be a steward of the biosphere.

This initially occurred to me during an event of a national environmental NGO I attended as an observer and member of the Sustainability Research Unit. The function was in honour of the NGO and its voluntary members for their long-term commitment. The Sustainability Research Unit used the opportunity to raise a discussion about the meaning of stewardship. We asked the group to specify the interpretation of the NGO's slogan 'Caring for the Earth'. The most common responses of individuals were 'recycling' and 'sustainability'. At further probing in the evenings' discussions, it showed that 'sustainability' meant on the one hand the preservation of natural resources, and on the other the consumption of ecologically certified products. These findings were further emphasized by the catering of the evening, which the NGO presented as MSC certified fish and free-range animal products. These meanings also emerged from the content analysis of my interviews at about an equal rate of importance.

Security in Nature despite People emerged once more as a pronounced value and motivation for stewardship. As stated before, a symbolic meaning of stewardship in the biosphere was 'recycling'. Four people regarded the growing uptake of recycling in private and public spheres as an indicator for a 'transforming mindset'. One individual provided the photograph in Figure 22 and stated:



Figure 22: Recycling as the meaning of stewardship can burden the biosphere (Photo: Respondent 20)

“This in our area represents some sort of a shift of thought pattern, which I think is fantastic. I see it shaping our environment in a massive way. That we have to recycle a lot, and people start to become more and more aware... that is good. It has become an essential social practice to middle-high income people (...). But the key in recycling is in getting it into the disadvantaged communities. If we can do that, it’s going to make a huge difference. And a huge job creator.”

(Respondent 20)

In one case, a lady initiated a recycle-swap shop to discourage littering in a ‘dirty and polluted’ township. The shop provides donated goods to the community members, in exchange for garbage collected from the streets and gardens. Security is defined as *“safety, harmony, and stability of society, of relationships, and of self”* and it includes goals for a clean and tidy environment (Schwartz 2012). In Nature despite People, this was one of the most prevalent goals for the physical landscape and the planet at large.

In conversations with Nature despite People, individuals indicated that the media acts as the main source of information for the risks to the planet. This was even portrayed in the photographs of respondents, which depicted that newspapers, TV and the internet significantly shape individual’s outlook on the environment. These are shown in Figure 23.

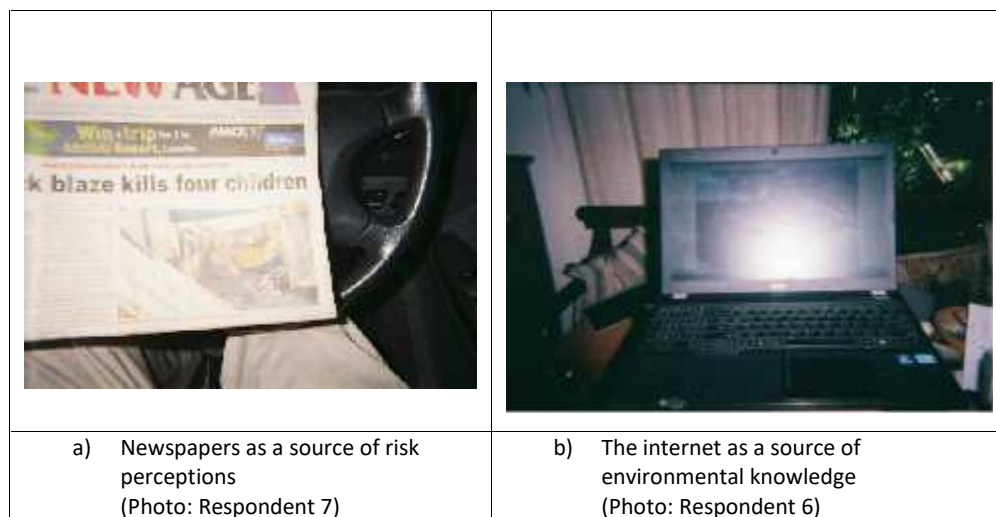


Figure 23: Photographs illustrating the value of the media in Nature despite People

Apart from the pursuit of security, this also suggest that conformity and tradition influences how stewardship is framed. Schwartz (2012) regards conformity and tradition as a value combination which leads to the *“subordination of self in favour of socially imposed expectations”*. Eco-labels and recycling

symbolize mainstream expectations for a sustainably developing society, which Nature despite People seeks to be a part of.

In Nature for People/Nature and People, the importance of a functioning biosphere was marginalized in the discourse around stewardship. Individuals did not explicitly talk about their responsibility for drawing from renewable energies or take care of primary production systems. Further probing and personal observations however revealed that three of the respondents did practice small-scale organic gardening, harvested rainwater and used solar energy in their personal living environments. Moreover, I noted humility in the sizes of dwellings and amount of material possessions amongst all respondents. The fact that this was not mentioned indicates tradition, which according to Schwartz (2012) is recognized by the *“humble acceptance of one’s moderate share and piece in the wold”*.

The other indication of Connectedness with the Biosphere was the commitment to place in Nature for People/Nature and People and in People in Nature. Apart from three individuals, respondents in Nature for People/Nature and People have been residents in the Garden Route from childhood age and have been active in their interpreted stewardship activities. All respondents in this group indicated that they are content in ‘this’ place and committed to invest into its nature and people. This indicates a pronounced loyalty which is part of Schwartz (2012) value benevolence. This commitment to place was just as prominent in People in Nature, in which not only benevolence, but also the pursuit for autonomous lifestyles played once more a critical role.

The values in Nature despite People in contrast motivated mobile lifestyles and a ‘pack-up-and-leave mentality’. Firstly, all of the respondents emphasized that they moved from the bigger cities for a more ‘natural’ experience in the Garden Route. Secondly, four respondents said that they are ready to emigrate to Europe or Australia if socio-political conditions in South Africa continue to marginalize White people or threaten national security. This once more seems linked to the fear of loss of the security and power which is valued so much. Figure 24 illustrates the degrees of Critical Connectivity with the biosphere which was presented by the three groups in this study.








Nature despite People		
		
a) Valuing large, comfortable and secure properties (Photo: Respondent 10)		b) <i>"It represents freedom. We're free to go whenever we want to go."</i> (Photo: Respondent 7)
Nature for People/Nature and People		
		
c) Valuing humble dwellings (Photo: Respondent 23)		d) Valuing the possibilities for humble rural lifestyles (Photo: Respondent 22)
People in Nature		
		
e) Building self-sufficient houses from local materials (Photo: Respondent 26)	f) Producing food (Photo: Respondent 29)	g) Valuing subsistence resource use (Photo of Respondent 33, L. Heider)

Figure 24: Photographs portraying the degrees of Connectedness with the Biosphere across the 3 groups

5.3. Maladaptive and transformative stewardship pathways in the Garden Route

In the previous section I have shown that individual motivation underlies different orientations towards change. I have shown that individuals are differently configured in consciousness and behavioural norms. This configuration emerged from my data along a gradient of scale of Critical Connectivity. For convenience of analysis, this was presented in three conceptual groupings, with Nature despite People reflecting the least degree of connectivity in consciousness, and in their relationship with the landscape and the biosphere. People in Nature depicted connectivity at all three levels the most. Nature for People/Nature and People emerged as a median between the two, whereby the pursuit for universalism resembles goals for Critical Connectivity, but values such as conformity and security constrain stewardship to a social function of collaborating within the realm of a professional paradigm.

Figure 25 represents a summary of Section 5.2. and shows the most striking symbols and indicators of the different degrees of Critical Connectivity across the three stewardship groupings.

<div> <div>Low</div> <div>Critical Connectivity</div> <div>High</div> </div>		
Nature despite people	Nature for people/ People and nature	People in Nature
Symbols and indicators		
<ul style="list-style-type: none"> -Sense of separation from other people and the rest of nature -Displacement of local communities -Fences -Preserving charismatic species -Privatization and individuation -Manipulation of ecological systems -Fighting -Controlling others, sanctioning -Consumption -Recycling -Aesthetic priorities 	<ul style="list-style-type: none"> -Collaborations and communication -Inclusivity -Sense of shared responsibility -Facilitating access to natural resources -Perceived dependency on ecosystem services -Managing ecological corridors -Grassroots stewardship projects -Citizen science -Education -Environmental laws -Humble lifestyles 	<ul style="list-style-type: none"> -Sense of boundless connectivity between people and the rest of nature -Self-responsibility for future generations -Affectionate relationships with people and the rest of nature -Holistic health -Restoring air, soil and ecosystems -Minimalism -Local economy, bartering -Diverse livelihoods -Creativity -Renewable energies -Self-sufficiency -Empathy and communication -Relational experiences

Figure 25: The degree of Critical Connectivity and associated symbols and indicators across stewardship groupings

I now set out to present the evidence that motivation mediates social-ecological change. I use examples from my study to show maladaptive and transformative pathways. I consider a maladaptive

pathway one in which individuals' motivation for stewardship unintentionally transfers vulnerabilities in SES. These vulnerabilities are negative consequences on Critical Connectivity at other physical places or distant points in time. A transformative pathway in contrast is one in which individual motivation is to pro-actively invest into Critical Connectivity in immediate and global SES. This kind of motivation is crucial for the resilience of landscapes and the biosphere.

5.3.1. Maladaptive pathways

The first and most prevalent cases of a maladaptive pathway stems from Nature despite People's motivation to protect nature from human influence. The first example is the negative consequences on human health and well-being. The second is the consequences on the overutilization of resources, environmental pollution and degradation.

It became clear that preservation through access control to nature areas or natural resources disconnects subsistence communities from their close tie to ecosystems. Two anecdotes in my study tell a story in which this stewardship meaning has created vulnerabilities in subsistence communities. The first one can be traced back to the exclusive paradigm which is often portrayed in the context of protected areas. This paradigm has restricted the Rastafarian community from harvesting medicinal plants. The extract of a quote which I provided in Section 5.2.1. shows this vulnerability transfer:

"People like our community were always excluded from protected areas. We were prevented from accessing the natural resources that we needed to live. All these rules were put in place which made us criminals when we used our natural products. Instead, we were encouraged to use chemicals and modern medicine."

(Respondent 14)

According to conversations with the rest of the community, the problem lies in the overall philosophy which underpins nature conservation and the controversial messages it portrays to the public. One member said that: *"We are natural resource users... I disagree with some of mainstream conservation messages, because it is often about preserving something and keeping it for someone specific."*

This was also experienced by the group of fishing ladies from Sedgefield. Four of the six women grew up in an area near Rondevlei where they had spent the first 40 years of their lives. Already at this time, their families had survived on fish from the Wilderness Lakes. This however had to change between 1985 and 1991 when National Parks Board and Cape Nature Conservation began to manage more and more sections of the Wilderness Lakes Area as a formally protected area (www.sanparks.org, accessed

on 29th of June 2017). One of the women showed me that the buildings, which used to be her families' home, are now SANParks conservation offices. Figure 26 is a visual display of the Rondevlei area as it is found by the fishing ladies today.



Figure 26: Rondevlei- Previous home of fishing ladies before the displacement through Nature Conservation (Photographs: L. Heider on behalf of respondents)

For the fishing ladies and their families, the formal proclamation of a protected area meant that they were re-located to a township near Sedgefield. This area, known as Smutsville, is 16 km away from their traditional fishing grounds. Figure 27 shows the Wilderness Lakes Area, the location of Rondevlei and the new home of the fishing ladies.



Figure 27: Map of fishing ladies' fishing grounds indicating areas of private and formal access control in relation to their current location

According to the opinion of the respondents, formal nature conservation is influencing the mindsets of the public in and around Sedgefield. More and more individual property owners seek to protect the pristine feel and the biodiversity in the vicinity of Swartvlei and on Sedgefield Island. These two areas form the last remaining sites around the lakes where the respondents can fish in possession of legal fishing permits. Private property owners control access to Swartvlei Lake and of the estuary that is accessible via Sedgefield Island. During the focus group with the fishing ladies, access control formed a major part of the discussions around the theme 'experience in place'. The problematic of this undesirable experience is illustrated in the photographs shown in Figure 28.

	
<p><i>"That fence makes me crazy. Makes me feel bad. Because why? We are also part of the world and the water."</i></p>	<p><i>"Now they've also closed there. They build there, closed it. That place is also now forbidden. Now you must walk around completely. It's a distant for us to walk. It was easy to go over the hill to get to the fishing."</i></p>
	
<p><i>"I say, they put fences in the water. But the water is for everyone. We can walk there. Why must they put fences there? They haven't bought the water. They only bought the property."</i></p>	<p><i>"Some of the whites don't want us to catch fish here. It looks like they bought the house and property with the water and all. That's what they think. Yes, because they chase us. Because if we go forward, there's signs along the road that say that that grass is sensitive. But we still go there. 'Don't walk on sensitive grass'. Now I want to know why that specific grass is sensitive, and other grass isn't sensitive? When they came to live here, there was grass there, and we caught fish there. So they came with new ideas. They planted that grass there and said it is sensitive."</i></p>

Figure 28: Photographs illustrating access control to important fishing locations of a subsistence community (Photographs: L. Heider on behalf of respondents)

The greatest challenge for the respondents is that they are now, at an age above 70, suffering from health issues and cannot walk very far. One of the women told me that she used to catch one fish a day to feed her family. Now, that she is old, walking to the nearest fishing spot would take her half a day. She continues by saying that:

“My whole family has gotten so sick from not eating fish anymore. All we can afford is this bulk food from the store without nutrients. Now we have all these medical bills and medicines we can’t afford.”

(Respondent 33)

The idea that nature conservation means to exclude humans from subsistence resource use is diminishing financially less prosperous peoples’ right to and opportunity for well-being. The negative consequences on health featured as the main vulnerability caused by preservation and exclusion to the Rastafarians and the fishing ladies.

In the latter case, it came with an additional problem related to the sustainability of local fish stocks. All six women understood the purpose and need for fishing regulations and enforcement by conservation agencies. One of them said:

“It’s often the men who take out too much with illegal gill nets. They place the one point there then they row over there and plant the other point there. Then, at a certain time in the evening, they come and they pull that net out. I go. Then you hear how afraid and surprised those fish are...One evening we sat there, here in front of where we are going to now, and I had a big torch. It shone far. I shone on the water. I saw how spooked those fish were and you could only hear that rowing fishing boat.

You couldn’t hear them when they were putting their nets in or out.”

(Respondent 33)

In practice, however, the women do not feel that they actually *can* obey to all the conservation rules enforced by others. The women explained that the cumulative financial and logistic burdens caused by fishing restrictions, protected areas and private access control sometimes forces them to fish illegally. Bending and adapting conservation rules reduces the transparency and security of fish stocks and makes it even more complicated and costly for implementing conservation agencies to monitor. The fishing ladies, hence, regard law enforcement by nature conservation as random and insensible, as seen in the following statement:

“I come here with a purpose. Oh Father, that I just catch a fish for myself for this evening...It’s lots of laws. Nature conservation had to come to me yesterday and I was taken to jail. We want THEM to be send to jail. And they must take away the nets and the tools that they use to make the nets.”

(Respondent 33)

The next example of maladaptation also stems from the motivation for preservation and human exclusion. In the cases of private nature reserves, the intention of conserving biodiversity and natural resources has had knock-on effects in the broader landscapes. I hereby particularly refer to the establishment of two nature reserves in Knysna. As I have shown in Section 5.1., these two reserves emerged as a response to “a bad human element”. A volunteer for one of these reserves states that:

“A bad element of people used to access the reserve. We need to man the gates and electrify all of our fences. Today, XXX Reserve is quite safe through the security system. But a long history with drug addicts and squatters has scared people away.”

(Respondent 6)

Similarly, the establishment of the second private nature reserve in Knysna came with the displacement of homeless poor and the access control of subsistence resource users, such as fishermen and bait collectors. The initiator (Respondent 7) appears disillusioned about the positive impacts this has had on nature and biodiversity. He says: *“We wanted a comfortable place... I don’t care where the Rastas went to after we have chased them away.”*

The realities of the consequences are faced by other residents and concerned environmentalists in the Knysna area. One interview with a marine biologist in particular illuminates some of the unintended consequences of private nature reserves. On the one hand she observes squatting, littering, drug abuse and violence along the uncontrolled banks of Knysna estuary. Secondly she states that:

“People come with shovels and dig. It’s not allowed. This location on the estuary is not open to bait collection, but it still happens all the time. SANParks says, they know and look for it. Bring the people to jail. But they don’t have the money, so they come back. Something here needs to change. I think it happens in the night.”

(Respondent 15)

This story from Knysna illustrates the vulnerability transfers which occur as a result of human exclusion and preservation in ecological islands. The two photographs in Figure 29 depict how the protection of nature in one specific area aggravates the degradation of another. The risks to biodiversity and natural resources are perceived at isolated scales, but they are inevitable linked to poverty, despair and lack of environmental consciousness at the landscape scale.

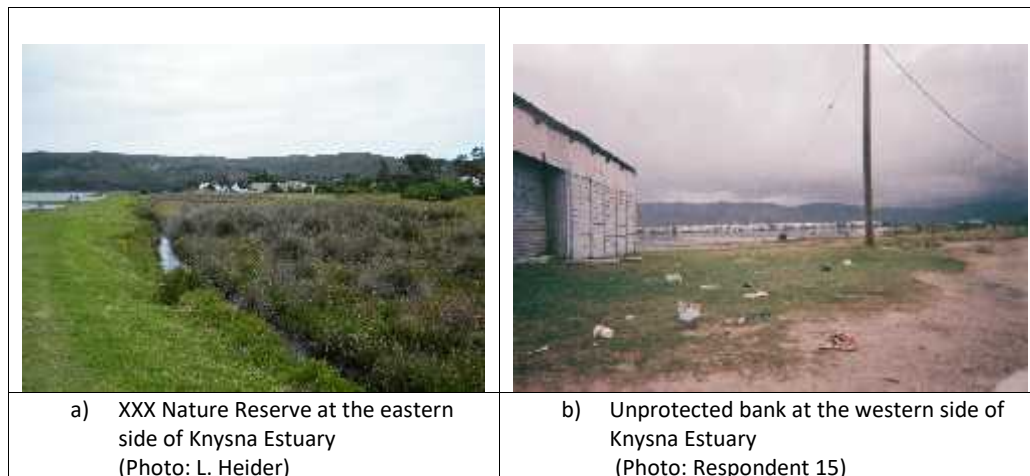


Figure 29: Photographs illustrating vulnerability transfer through human exclusion and preservation in ecological islands

The other maladaptive consequence of Nature despite People's meaning of stewardship applies to the connectivity of ecosystems. I have outlined previously that the value of biodiversity motivates the preservation of single species or of habitat in a fashion that is disconnected from the broader landscape and influential processes. The best example is the case of the endemic and endangered animal species which has motivated the establishment of a reserve in a settlement near Knysna. The initiator of the reserve explains:

"This area is getting warmer. The (species) used to be more widespread during cooler eras. Warmer climate will also favour thicket to take over Fynbos. Also sea level rise has claimed a significant portion of the (species') habitat, and it will continue to decrease terrestrial area for the species to thrive. We can mitigate the external climate change risks by manipulating the vegetation. Here in the reserve, we prevent thicket encroachment. The (species) lives in the ecotone, between thicket and Fynbos. The additional problem here is that the mutually dependent species in the ecotone no longer exist or are very scarce. Especially the animals that assist in creating the physical structure of the ecotone are not here anymore. We then need to create it manually, artificially."

(Respondent 11)

From an ecological perspective, this is a concern for the future of the local ecosystem. The drastic mitigation of external changes and risks arguably interferes with natural succession and with the ability of the ecosystem to adapt.

Also from a social point of view this example of species preservation indicates maladaptation. Residents in the settlement have referred to this project as 'controversial' and as being driven by an individualistic interest in a forceful manner. This not only stifles the buy-in and support for ecological protection but has also stirred conflicts in the residential area, which were self-reported by Respondent 11.

The other example of ecological fragmentation also comes from a private nature reserve. One active supporter of the reserve told me about the following problematic:

"It is terrible that we have to use this drastic approach with a fence. I am unhappy with it. We didn't have this security system at XXX initially, but as the threats kept on increasing and increasing, from people without money and no places to stay, bad ones coming in with drugs. The reserve is a good place to hide. Then, somebody wanted to bring bushbuck in. When it was open bushbuck ran through there. Some environmentalists in the area pushed for reintroducing the animal into such a small, enclosed area. Luckily they came to their senses. I don't know how to connect islands of conservation in the greater Garden Route National Park. I think the smaller our population, the lesser the likelihood for silly things like that to happen. It is difficult."

(Respondent 9)

This shows once more that the fence-approach unintentionally interferes with the protection of biodiversity which it sought out to achieve.

Remarkably, when stewardship meant to take ownership of the protection of single species, maladaptation was predictable. One example is a renowned animal sanctuaries in this study. As I have presented in Section 5.2.1., the goal of the sanctuary is to protect and rehabilitate wild cats which are put at risk by hunters, farmers, traffic and housing development. In an interview with the owner, I found that the sources of these risks are poorly considered by taking the animals out of their habitat. The maladaptive problematic that arises is that the general public learns that it is acceptable to keep

animals in cages and that there is no ownership to change their own behaviours in such a way that the animals can persist in the wild.

A similar example comes from the area of Lake Brenton, near Brenton on Sea, which has become a haven for bushbuck, birds and animal-lovers alike. As a concerned and informed resident, respondent 9 has observed the following maladaptive trajectories:

“The bushbuck at Lake Brenton roams free and should be left to do so- no human interference needed. Unfortunately misguided humans think they do animals a favour by feeding them or "protecting" young ones behind fences. The bushbuck in Lake Brenton are free roaming and can take care of themselves. But we have so many good-doers. They loooove the buck, but they love them by feeding them to death. I keep telling everyone 'don't feed them'. SANParks and Cape Nature are so alarmed when they hear that this is happening. One of the babies died, and they'd found bread in its stomach. The one lady who feeds them the most, is mad about the animals. She's over the top! She told me how a man came into her garden and tried to stab a bushbuck with a screwdriver, to take it away for food. She has not made the connection that she has made the animal so tame that it would not run away”

And:

“There is another lady who looooved cats, but also liked her birds. She spent 300 Rand a month to feed the birds. She made them scrambled eggs, because birds like scrambled eggs! Some people here feed the Drongos with cheese. I don't, but one day when all the birds came to my garden, I tested what would happen if I'd put grated cheese on my hand. I had 35 birds sitting on my arm, fighting, flying around, stealing, grabbing, just trying to get some of the cheese. I couldn't believe it. People thing there is no food for them out there. But you can't make animals reliant on people and people's food. I also don't like when people feed the sunbirds with Marmite and other crap. I do get upset. People don't think further and I don't know how to make them understand that all of this was made for the animals. Why must we interfere with it?”

I further found that the stewardship paradigm which highlights preservation unintentionally aggravated the anxiety and fear which typically motivated disconnects amongst research respondents. This was shown in the numerous statements about perceptions of risks to ‘endangered species’ and ‘critical biodiversity’ which led to the overall perception that nature conservation means

‘preservation’. This fear and anxiety has left a legacy amongst the public which became obvious in the norm for private access control, as it is experienced by the fishing ladies in Sedgfield.

Another maladaptive process is triggered by those individuals who perceive stewardship as a political endeavour. I found that the idea of membership and participation in a politically oriented conservancy could evoke injustice. I hereby mainly draw from the findings of a conservancy which promotes the relocation of the informal settlement. I found that this goal was driven by some of the leading actors in the conservancy, and conformed to by others. None of the seven members I have spoken to during meetings and personal engagements doubted the fact that one of the greatest risks to the natural environment is ‘this settlement’.

The maladaptive process which becomes evident here is that stewardship can provoke power conflicts and cultural suppression. The conservancy is prestigious and well supported by the Department of Environmental Affairs, SANParks and other influential conservation agencies. These ties are meant to strengthen environmental protection, but they can unintentionally aggravate a situation of exclusivity, injustice and, hence, arguably irresponsible relationships with the natural environment which arise through peoples’ despair.

In my many conversations with residents from the informal settlement, it was suggested that their interpretation of nature conservation is highly influenced by what they are exposed to through the conservancy. A sentiment is that conservation is a function of the rich and White conservancy members. This was confirmed by a woman who has been involved in environmental education in a previously disadvantaged community near Plettenberg Bay:

“Conservation in Black or Coloured communities has really been seen as something for the White people. Something that...’we don’t have money to go to National Parks. It’s the White people’s thing.’”

(Respondent 18)

In the example of the previously mentioned conservancy, past activities have fed a lack of interest and willingness to engage in conservation or collaborate with associated conservation agencies, and secondly a sense of social divide, hierarchy and anger.

Related to a problematic of membership is the participation in certain externally designed conservation mechanisms. Particularly the Working for Water programme stands under scrutiny for being a maladaptive solution which degrades the responsibility and ownership of landowners to manage and control Invasive Alien Plants. Two of the respondents have also raised this concern due to experiences in their neighbourhoods. The one said:

"We came here 30 years ago. We wanted to improve the surrounding of our house aesthetically, especially that special place down at the XXX River. We cleaned it up from invasive species, and also other little areas around. Sometimes the invested areas are so huge. Impossible for landowners to do it alone. Working for Water has really made a difference. But it is also tempting to overly rely on Working for Water. Some landowners are too afraid of the burden of maintenance and follow-ups after first clearing."

(Respondent 8)

The second one stated:

"I value the sense of enjoyment that I get from a natural environment- walking through the forest on my land. The sight of invasive species somehow spoils that value, so I do something about it. I don't work with Working for Water. I can do it myself. Relying on others for conservation degrades the sense of responsibility and efficacy."

(Respondent 3)

My data holds evidence of this maladaptive process. In a conversation with a financially prosperous landowner in Rheenendal, he said: *"My property is just too large to qualify for the Working for Water programme...So, alien control must just take a backseat."*

A member of a conservancy similarly indicated an overreliance on Working for Water as a means to stewardship:

"...getting Working for Water here as well. I wondered, is it going to be a security risk? But they came for two weeks working, very responsible and self-sufficient. Now, I am leaving the clearing entirely to them. They do a follow-up every year or so. Legally, there is responsibility for me then to keep it up. So that after they finish, they won't spend more money on this. So

maybe not me physically but we take care that it gets done, is my responsibility as a landowner. That is part of your actual signing up. We don't pay, Working for Water do."

(Respondent 10)

This shows that the provisioning of nature conservation as a service, and the interpretation of stewardship as an uptake of it, does little to resolve the problem of individual ownership, responsibility and pro-active change.

The next example relates to the idea that stewardship means recycling and maintaining a clean, tidy and aesthetically pleasing environment. Two cases in my research have had the idea to economically incentivize poor communities to clean up their settlements from litter. The one is the Swop Shop in an informal settlement near Plettenberg Bay, the other a woman in a small conservancy in Noetzie. The interviewee from the Swop Shop (Respondent 21) told me that she is very disillusioned with her own approach. The people in the settlement now intentionally produce rubbish from cheap products to gain more valuable items from her donated goods. Moreover, she said that the community is fighting over and stealing rubbish from each other.

This was echoed by the experience in the small conservancy of which its leader reflects:

"Every bag you get you give to me, and in hours' time, I'll give you R2. Eventually it got to 200 bags I had to take to the dump. The mothers started fighting over the bags. So, we stopped that."

(Respondent 2)

This suggests that the overly simplistic ideas of firstly, conservation means a clean environment, and secondly monetary incentives are a suitable mechanism, can be maladaptive.

This links with the last example of maladaptive pathways, which were provoked by the idea that stewardship means the purchasing of eco-labelled products or the recycling of waste. I found that this meaning was exclusive to wealthy individuals who valued security and social esteem. The maladaptive process which became evident was that their strong tie to an economic market motivated consumption in disregard of planetary boundaries. Instead of drawing from renewable and local materials, the buy-in into a 'green' and sustainable market puts further pressure on the biosphere.

These are the characteristics of a red loop system, which I have shown in Section 3.2.2., is inherently disconnected from the biosphere.

5.3.2. Transformative pathways

The transformative pathways which became most visible in my study related to lifestyles that are tied to ecosystems and within the capacity of the planet to sustain life. One of the respondents for instance states that she organizes her life based on principles of biomimicry:

“As long as we live under the capitalism economy regime, we’ll never reach sustainability. Because capitalism rests on inequality...Biomimicry is a paradigm for development which is not based on economy or money...it’s got to do with the intrinsic value that nature has as a closed cycle. For instance, if nature uses poisons, like a snake or spider, it is specific poison, and you don’t have to worry about that poison for anything else. Like our poisons do. Everything fits in. The tree with leaves, they’re all independent but dependent on the tree. That tree creates a habitat, and when it dies, it becomes re-created”.

(Respondent 2)

One further individual used Biomimicry to symbolize her lifestyle of an exploration for closed resource cycles and Connectedness with the Biosphere. These pathways in the Garden Route are embedded in a green loop system, understood by Hamann et al. (2015) as being connected to the biosphere (see Section 3.2.2). The green loop system, as part of a transformation to greater resilience in SES, highlights the importance of self-sufficiency and tight couplings to ecosystems.

Transformative pathways were also recognized amongst three individuals who established a permaculture set-up on their properties. This quote depicts the motivation for pro-active change and Critical Connectivity which I observed amongst them:

“I came to the Garden Route 15 years ago...to live my life differently. In tune with the energies of the environment...A meaningful life. Expressing myself, absorbing and observing, living simply and content, but also working on the land...I bought this property when it was full of wattle and spent a great deal clearing the land. It took continuity and patience. I then began to introduce fruit trees, exotic and indigenous, and started preparing the vegetable area up there. This land is teeming with animals and flowers and it is the greatest pleasure to see it awakening. I know that it comes from the rich soil. It was so depleted before...The land

is abundant as well. I can spent weeks on end without going to a shop...I am always busy, it is a huge commitment.”

(Respondent 29)

The transformative elements in this motivational orientation are twofold. First, individuals' dedication and long-term commitment to primary production systems can improve fertility of soils, phase out Invasive Alien Plants, improve water and nutrient cycling, and establish niches and habitat for a diversity of species. Second, permaculture represents a lifestyle in which the emphasis is on independence from an economy which negatively effects planetary boundaries. All three individuals aim to live as self-sufficiently as possible, and also barter food and materials with their neighbours and friends.

Also broader social changes could be observed as a result of this individual-scale motivation. During the snowballing of research respondents, and as part of the observation method, I took part in a Permaculture Fest in Nature's Valley in 2014. I observed that its 200 attendants constituted two broad categories of individuals from the Garden Route: The ones who are already well established and self-sufficient on private or communal land, and the ones who aim to get started on smallholdings. The transformative impacts of this festival derived from experiential learning, knowledge exchange, social networking and bartering of skills to assist each other in the near future.

The next example of transformative pathways stems from individuals motivation for collaborations. Collaborations were the most striking characteristic of Nature for People/Nature and People in this research, and they held evidence for transformative impacts. For example the director of the NGO Nature's Valley Trust told me:

“I am also on the committee of Birdlife in Plettenberg Bay. I try and make the most of all these partnerships. For example, Nature's Valley Trust in collaboration with Birdlife Plett has developed the 'Birding Master Programme'. Some of the master birders, mostly English retired folks, have agreed to take on an 'apprentice' from the rural local communities, or disadvantaged schools. They train youngsters that they would normally never get in touch with in birding. Everyone loves these outings, this interaction and is enticed by the reward- a certification. In fact, Birdlife Plett members enjoy it so much that they invest a lot of funding to keep the project operating.

Generally, the lack of funding and appreciation for what Nature's Valley Trust does is the biggest challenge in our work."

(Respondent 17)

The Environmental Educator of Nature's Valley Trust has also experienced this willingness for collaborations as the greatest asset of an organisation with immense educational, research and management impacts in the Plettenberg Bay area:

"We bring people together that might know each other. Help people connect and realize if they're doing same things, they could collaborate. We have good relationship with people. I can call anyone; Cindy from Nature's Valley Trust, can you help me with this? They don't point out something we didn't do for them, but instead they're ready to help. This relationship with people is something very important for us. To keep that close network. Help people where we can. We've been established for almost 15 years now, and know that we can't do it on ourselves...It's hard work, but it's worth it! Putting in the effort to help someone else. Where morals come in."

(Respondent 18)

These examples show the transformative impacts that environment and social communities can experience through individuals motivation to collaborate.

Also in People in Nature, an example of this became evident through the Rastafarian community:

"We began with education and awareness in the community about invasive plants. We then also engaged with many scientific institutions, but also other knowledge types, for example Traditional healers. We learned how to combine different knowledge to get the most out for the environment. We want to cultivate our own Rooiwortel. Rastafarians use this plant, here and in KwaZulu Natal. But it is overharvested and we want to reduce the pressure on the plant in the wild. We also want to use this nursery to continue building community skills and capacity. We collaborate with SANParks and so many others to do research and put the knowledge into practice... We also collaborate with Department of Environmental Affairs. They provide lots of training such as about effective meetings, computer skills or capacity building. The interaction with all these institutions has made the significant difference. We

were no longer the “disadvantaged” community that we were seen as before...Since then, we have built a church, a crèche, a band, many projects tackling conservation and education, we have created our own nature reserve- a place to harvest our own resources sustainably. Slowly people come to understand more about our mother nature. This shows in the way they cooperate.”

(Respondent 14)

This confirms that the beneficial outcomes for environment and people depend on individuals’ willingness and effort to collaborate with a diversity of actors.

The next theme which stood out as an element of transformative pathways was experiential education. The Knysna Basin Project for example hosts regular group outings for the public to foster experiential learning in the estuary. Even though the uptake of these outings is only growing slowly, enthusiastic children and their parents always come back to them and thus ensure their sustainability. The transformative effects as regarded by the guide of these outings and the parents is to see the children “*learning eagerly*”, “*falling in love*” and “*talking about the environment*”.

Similar effects of experiential education were also reported by the leader of an annual youth camp aimed at environmental education:

“Each June school holidays, 400 school children and 100 adults camp. They are taught by some local environmentalists about coastal conservation efforts... It is wonderful to get involved with enthusiastic people and feeling that I have made a difference in some of their lives, making them ambassadors for our wonderful natural assets. This kind of education makes a difference, because you can see, you can touch and you can experience... I hope I've made an impact on these children. I've gotten quite a lot of awards that said I've made a difference. Even if it is only for 10 people, that great. If it is 10000, wonderful!”

(Respondent 9)

The continuity of education was also mentioned as a critical driver of transformation, such as by Nature’s Valley Trust’s environmental educator:

“Seven years working in a school. It is my pride and joy. Most of the kids there, when I walk in there... such a sense of, being appreciated...Teachers, kitchen ladies, children. All of them

know me, and sometimes have TOO much respect for me. Feel I may let them down. I think they've grown tremendously since I've been there. The teachers especially. The people of Kurland village told me in one interview and article that Nature's Valley Trust's after-school program has definitely helped their children's behaviour, and kept them out of trouble. I feel there are many schools in the area, where the sense of being environmentally aware is strong. But that's the school where I say, I don't know what I'm doing, but you're going to help me make this happen."

(Respondent 18)

Also experiential education in the realm of citizen science seems to have had transformative impacts beyond the generation of ecological data for management. For example, on an outing with the Custodians of Rare and Endangered Wildflowers, which I joint as an observer, one of the leading citizen scientists told me as an additional informant:

"We have chosen to include some skills training into our work. We chose about one individual a year, from mainly previously disadvantaged communities and prepare them for better job perspectives. We teach them, train them, get them enthusiastic about plants and help them network for environmental jobs. We've had some major successes: for example a matric student now working for South African National Biodiversity Institute, or a B-Tech student now working at the Nelson Mandela University in the Botany department."

This shows that individuals' belief in and motivation for an educational approach which integrates experiential learning, can be transformative.

This also became apparent within a personal family context. All my interviewees with children mentioned that their personal passion for experiences in nature has had an imprint on their children or grandchildren. Moreover, every single respondent mentioned to me that, in turn, their own first interest in and love for the natural environment was stirred by an influential family member. The important role of grandparents and parents hereby seemed to have been that they exposed the respondents to nature experiences in early childhoods.

These changes through education then also suggest that the Rastafarian culture has transformative impacts on the way people experience and love environment and community:

“We Rastas are not about any appearance or habits like smoking ganja. We are about feeling and heart. It is about loving the world. Ethiopia and the origin of our faith is important, but in essence it is about the world and not a particular location...Judah square is a place to learn. We try and make the younger people aware of the importance of growth. It starts with a few crucial things, like oxygen. But then it is all about letting it be and grow. That is why we don’t eat meat, why we don’t cut our beards...”

(Respondent 14)

For the Rastafarians, morality underpins cultural relationships with environment and community and includes empathy, reciprocity and inclusivity:

“We don’t consider anything ‘ours’. When we say our place, it is the place of our creator...People need to communicate in order to understand each other, to cooperate and to form unity! Unity is the most important thing. One Love. How can there be One Love if we don’t communicate and understand?”

“There are no boundaries of ‘we’. Judah square is the ‘house’ and houses here are rooms in the bigger house. But what actually holds us together is the mutual support, community, leadership... It is all about learning and growth and everyone has to expand their mind. We grow like that. Our crèche is not only for our kids anymore. This community also became the first spot in the location that white people wanted to visit. And we choose to trust...So to send your kids to this community’s crèche, shows some trust by the general community. In that sense we initiated “one love” across communities and races. The message of Bob Marley about love, community and good vibes: it naturally ignites and spreads.”

(Respondent 14)

I also observed that the Rastafarian community invests a considerable amount of time and effort into nurturing a sense of worthiness in the general community. Importance is given to the development of artistic skills, the creation of playgrounds and recreational areas, the fixing of eroded paths, the creation of traffic-free zones and the support of community members through jobs in any way they can. Figure 30 is a visual display of Judah Square, the communal area, and of the efforts the Rastafarians have put into it as a home for the entire local community.



Figure 30: Photographs depicting the efforts of the Rastafarians to create a sense of community and worthiness

The case of the Rastafarian community shows particularly well that the enablement of autonomy can transform vulnerable SES into resilient ones. The area to which the Rastafarians have been granted tenure is located in the midst of a large township in Knysna, which is locally perceived as socially and ecologically problematic. Situated right along the national highway, the social community is physically quite disconnected from natural areas. Arguably, this has contributed to a lack of environmental awareness and interest in keeping the residential area clean from litter, the streams free from pollutants, and the communal green spaces indigenous and biodiverse.

Since the Rastafarians were granted title deeds and subsidized dwellings by the Knysna Municipality for a small section of the area in 1993, the ecological and social problems in the township have been addressed by the community itself. Even though the Rastafarians believe that *“People need not be owners of land to feel ownership. We are all managers of nature, and we care for what we have”*, autonomous land-use was critical to instil a sense of custodianship and responsibility.

A final example for a transformative pathway stems from the Precious Tree Planting Project which facilitates shared experiences in favour of the environment. The project was started by two individuals from Wilderness Heights with a passion for growing and planting trees. Formally operating since 2014, the project gained significant momentum in terms of project leaders, public attention, numbers of volunteers and the pace of tree plantings. Within less than one year, the project grew from an informal two-man operation to a remarkable community initiative with significant impact on social-ecological

robustness in Wilderness and surroundings. At this day, the Precious Tree Project has planted close to 2000 trees.

The positive ecological impacts include the restoration of degraded land, counteraction of Invasive Alien Plants, creation of wildlife corridors and habitat and enhanced air quality. During interviews with all the current volunteers, it was suggested that these positive impacts reinforced the motivation for them to participate. However, more importantly, individuals were driven to partake due to the shared experience in nature and to the advantage of the environment at large.

5.4. Summary

In this chapter I have described different motivations for stewardship against the backdrop of trajectories of change in SES. I have shown that individuals give meaning to stewardship on the basis of fear and anxiety which motivates prevention of losses, or on the basis of trust and optimism which motivates the promotion of a better future. These different orientations explain to what degree individuals regard themselves as responsible for pro-active change and resilience.

Anxiety and fear motivates a meaning of stewardship which highlights the 'Protection of nature from human influence'. Optimism and trust promote meanings which state 'Work together and communicate' or 'Be the change you want to see in this world'. These meanings emerged as three groups which were distinct in their attitudes, cultural worldviews and identity. The overarching difference appeared to be a basic conservation paradigms, which emphasizes Nature despite People, Nature for People/People and Nature or People in Nature in the three groups respectively.

Between the groups, I found differences in individuals' consciousness and behavioural norms in the physical landscape and the biosphere. These emerged along a scale of Critical Connectivity. Anxiety- and fear- based motivation show a significantly lower degree of Critical Connectivity than the two groups motivated by optimism and trust.

The nuances in Critical Connectivity and the variation across groups could be explained by Schwartz's Basic Human Values. Nature despite People valued power, conformity, security, hedonism and achievement. Nature for People/Nature and People valued universalism, benevolence, security, conformity, achievement and tradition. People in Nature valued universalism, benevolence, hedonism, achievement, autonomy and tradition. Also spirituality was valued in People in Nature, which is a missing value in Schwartz's framework.

A few new value combinations which are not recognized by Schwartz emerged from my data of People in Nature. The important ones were firstly universalism and hedonism, which motivated individuals to experience sensuous self-gratification through feeling connected within a harmonious social community and environment. I also identified holistic health as a value which is missing in Schwartz's framework. Lastly, the value combination autonomy and tradition emerged as part of cultures who value independent thought and creation as a custom. These deviations from Schwartz's value framework were unique to People in Nature.

My findings provided the evidence that individual motivation drives maladaptation or transformation in SES. Maladaptation was primarily found in Nature despite People, showing that anxiety- and fear-based motivation transfers vulnerability. The unique characteristics of maladaptive pathways are preservation and human exclusion, protection of aesthetics and of solitude, a focus on single-species or particular biodiversity assets and on green consumption. Individuals' strong tie to a mainstream economic and social system aggravates these processes. They were linked to values for conformity, power, wealth and security.

Transformation stemmed from trusting and optimistic individuals who pro-actively managed the resilience of the SES, instead of impeding change." Transformation was recognized as a result of collaborations which were pronounced in Nature for People/Nature and People, but also in People in Nature. The other transformative mechanism which occurred in both groups was environmental education which is long-term and based on the experience of relationships between people and with nature. For example a transformative pathway could be recognized as a result of shared experiences which benefits oneself as part of a community that is pro-active in the restoration of the environment. Some of the distinct characteristics in transformations were emotions such as love, joy and empathy. It also included moral paradigms which motivate inclusivity and reciprocity. The other critical component of a transformative pathway is individual's motivation for self-sufficiency, green loop systems and conscious consumption. This was distinctive to People in Nature and underpinned by autonomy and commitment to place.

In this chapter I could link the level of motivation with resilience consequences in a dynamic system. Maladaptation can be traced back to disconnects in consciousness, behavioural norms and the general relationship with the landscape and the biosphere. Transformation is driven by individuals who are

oriented towards Critical Connectivity. This suggests implications for leverage points which can induce transformations. This argument features as the discussion in Chapter 6.

6. Recognizing and articulating maladaptive and transformative pathways

In this chapter I discuss how maladaptive and transformative pathways in SES can be recognized and articulated at the scale of individual motivation. In Chapter 5, I demonstrated how basic values motivate individuals to shape the place they inhabit in such a way that it meets their self-interest. Stewardship is hereby used as a behavioural outlet which expresses unique desires for a relationship with nature and community. Values can constrain the social-ecological awareness that is needed to support SES resilience and a sustainable future. In the field of common pool resources management, this obstacle is well known as the bounded rationality which interferes with the collective goals in a resource-dependent community (Ostrom 1990).

Stewardship discourses in social-ecological research begin to recognize the shortcomings of the individual motivational scale as a driver of change at other scales. Some authors propose an ethical paradigm shift which ensures resilience, but remain vague as to how this translates into the day-to-day experiences of the individual (eg. Folke et al. 2011; Chapin et al. 2011). This chapter, through reflections of my results set out in Chapter 5, addresses knowledge gaps as they relate to pathways that link individual motivation to SES scales.

This research has shown that stewardship essentially is the act of 'place creation', and it occurs in individual consciousness, physical landscapes and the biosphere. A normative view on a transformative pathway is an individual who is motivated to pro-actively shape the resilience of a local and global social-ecological community. In the first section of my findings, I have looked at the variable Critical Connectivity to gain an initial understanding of motivational orientations towards or away from resilience. I have provided evidence from respondents that this orientation drives vulnerability transfer or transformative change. The main finding is that Critical Connectivity and transformative pathways are linked, and are ultimately traced back to the level of consciousness of individuals. The aim of this chapter is to discuss these findings in light of a stewardship theory that has the potential to induce transformation in society.

The discussion is set out in six sections. I begin by providing a conceptual model which serves to evaluate stewardship on the basis of maladaptation and transformation. I then explain in detail the evaluative elements that are stipulated by this model, while extracting transformative and maladaptive features. In Section 6.3., I discuss how Basic Human Value theory relates to the application of this model by motivating transformation or maladaptation. This leads to the discussion

of maladaptive and transformative stewardship pathways in Section 6.4., followed by a synthesis in Section 6.5. Finally, Section 6.6. addresses the implications of findings for research and practice which targets sustainability transformation through an impact on the individual-motivational scale.

6.1. Evaluating stewardship motivation and diagnosing SES resilience

Resilience depends on desirable connectivity within a SES (Folke 2006; Biggs et al. 2012). In line with thoughts from Political Ecology (discussed in Section 2.5.1), this firstly stipulates an individuals' consciousness of being connected and interrelated within a community of life. Secondly, it depends on behavioural norms which strengthen ecological connectivity and connectedness between people and with nature in the physical landscape. Lastly, it incorporates Connectedness with the Biosphere and an individual lifestyle which is in concert with planetary boundaries, in other words within the ecological limits to growth.

My study has shown that the degree of Critical Connectivity in consciousness correlates with Critical Connectivity in expressions in the landscape and the biosphere. Individuals who perceive themselves as an integral part of SES displayed empathy, reciprocity and inclusivity in the immediate surrounding and considered planetary boundaries in their own actions. Motivational behaviour theories support this claim of correlation, as they recognize that motivation is a function of reinforcing feedbacks between cognition, affect and consequences (Agyris 1982; Shah & Gardner 2008; Clayton & Myers 2009). Critical Connectivity at all three levels thus emerged from this study as a criteria for a motivational orientation towards resilience.

This study has brought forward a variety of concepts through deductive and inductive analysis. These were *relationships with place, risk perceptions, stewardship meaning, responsibility, Connectivity with Nature, Connectedness with the Biosphere, sustenance and identity*. These concepts explained Critical Connectivity and thus act as diagnostic indicators for motivational orientation towards resilience.

This study contends that Basic Human Values underpin motivation. Values explained different configurations of Critical Connectivity, and manifestations of the elements. Basic Human Values thus are a core feature of resilience as they drive individuals' meaning of stewardship.

I present this complexity of motivation in a conceptual model shown in Figure 31. This model evaluates stewardship at the individual level and diagnoses consequences for SES resilience.

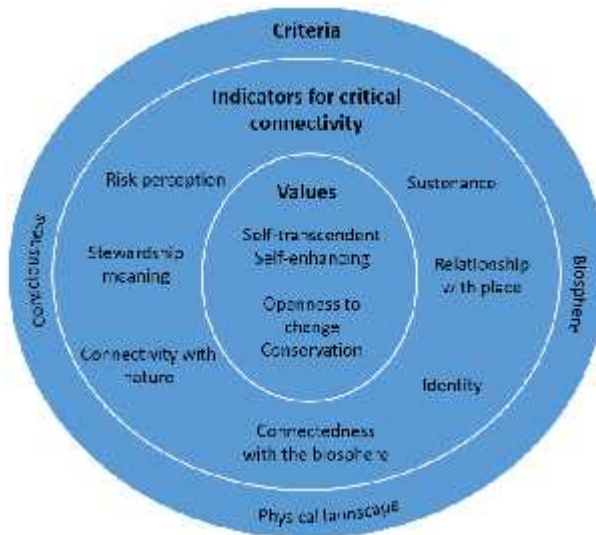


Figure 31: Conceptual model to evaluate stewardship pathways and diagnose SES resilience

The outer band depicts the criteria as Critical Connectivity in consciousness, the landscape and the biosphere. As I have made explicit in Section 5.2., these three levels of connectivity are co-dependent in SES resilience and must be evaluated as interlinked criteria. The second band of the model shows the elements that have proven relevant from my findings and the literature review. The inner band, the core of stewardship pathways, shows the underlying value orientations self-enhancing, self-transcendent, conservation and openness to change as formulated by Schwartz (2012).

In this chapter, I am applying this model to maladaptive and transformative pathways in a SES. I will discuss elements and values, while extracting the features of each pathway. This knowledge makes feasible the ability to identify the early warning signs of maladaptation and to formulate mechanisms which can induce change and transformation.

6.2. Elements of maladaptive and transformative stewardship pathways

This section is dedicated to an in-depth discussion of the elements for stewardship pathways, which are oriented towards or away from SES resilience. These elements have been deductively inferred from the literature review and then proven important in this study. Other elements, such as sustenance and identity have inductively emerged from the data as a variable of motivation in a SES. The following section discusses the elements as presented in the second band of the conceptual model.

6.2.1. Risk perceptions

My data has shown that maladaptive and transformative pathways were explicitly linked to the level of risk perception. Amongst my participant profiles, I have identified two different motivational orientations. The first one was an anxiety-based orientation. Through the analytical lens of Sense of Place, this reflected in the individuals who made explicit that they are motivated by the risks to what is valued most. As it is predicted by Schwartz (2012), anxiety-based motivation highlights the prevention of loss goals and the self-protection against threat. I found this to be the particular case in Nature despite People, a group which sought to prevent the loss of aesthetic values, biodiversity, and pristine nature, and who consisted of individuals who valued their personal security. Devine-Wright & Howes (2010) have found that the attachment to aesthetic nature values is linked to a fear of loss, overly protective behaviours and opposition to sustainable change.

Also power often featured in Nature despite People as a value that motivated the exclusion of a 'bad human element', the reversing of ecological processes or the effects of climate change, and the control over people and ecosystems. Anxiety and fear-based motivation thus contradicts some critical resilience principles, such as a tolerance for social diversity, desire for connectedness between humans and nature, a cohesive social community and the acceptance of change (Olsson et al. 2014; Biggs et al. 2015; Abson et al. 2016).

Other scholars recognize that perceptions of risk are prone to evoke rigidity and stagnation in SES as they impede the flexible management of the future system (Hansen 2014). When individuals perceive risks at a scale which is beyond the scope of individuals' confidence to have an impact, the perceived capacity to adapt to social-ecological change diminishes (Grothmann & Patt 2003; Brown & Westaway 2011). Scannell & Gifford (2011) for example have found that a risk frame and the fear of personal losses discouraged individuals to pro-actively address climate change. According to the authors, this was contrasted by optimistic individuals who believed that they gain and enrich themselves when they become pro-active in climate-related issues.

These findings align with Schwartz theory which states that the bipolarized motivational orientation is anxiety-free, promotes gain goals, and self-expansion and growth. Nature for People/Nature and People and People in Nature were motivated by the experience in place and by those very pro-active stewardship experiences that resilience is sourced from. Both groups indicated optimism and trust in a better future of the Garden Route and the biosphere, as well as in their own ability to have a positive impact. More specifically, Nature for People/Nature and People held a wish for sustainability of

natural resources which was pro-actively pursued through the investment into better communication, management and research structures. Self-expansion and growth, and the personal benefits that may motivate stewardship, however, did not feature in the conversations. This is arguably due to the value for tradition which stipulates humbleness and modesty.

People in Nature, in contrast, placed an emphasis on the pro-active management of SES in such a way that natural resources are sustained. Moreover, individuals pro-actively changed the assets of the system in such a way that the benefits to ecosystems and people can be enhanced. This included experiential education, biodiverse and productive food gardens, and the fostering of social cohesion. The wish for self-expansion and growth was pronounced and significantly related to the values autonomy, hedonism and achievement.

Risk perceptions are indicative of maladaptive and transformative pathways. According to Ryan & Deci (2004), anxiety and fear evoke pessimistic attitudes that constrain individuals to generate the will-power to liberate a troubled mind and to engage in transformative action. In contrast, positive emotions empower individuals in complexity-thinking, decision-making and skills development (Fredrickson & Losada, Marcial 2011), which is critical in resilience management (Rogers et al. 2013; Biggs et al. 2012).

6.2.2. Stewardship Meaning

The configuration of risk perceptions was related to the meaning that individuals assigned to stewardship. Stewardship meaning is indicative of maladaptive and transformative pathways because it implies individuals' perceived responsibility in SES dynamics. Nature despite People perceived a responsibility to mitigate the behaviours of others. In SES resilience theory this is understood as responding to the fast drivers of change which pose risks to specific valued assets (Biggs et al. 2015).

Responding to fast drivers of change for example occurred through physical exclusion, monitoring, sanctioning and enforcing of rules. Specific examples from my study included the 'war on weeds' which entails the radical eradication of Invasive Alien Plants. Another response to fast drivers such as resource use, squatting or pollution, was the fencing off of vulnerable natural areas. A third example involved the preservation of endangered species through the manipulation of ecological processes and habitats, such as in the case of a reserve established for an endemic and endangered animal.

While responding to fast drivers is not necessarily un-important, it is the exclusive focus on it which can make stewardship maladaptive. Stewardship which overemphasizes fast drivers can cause delayed responses and burdens to ecosystems. According to Pascual et al. (2017, p. 2) the effects of stewardship can be *“(i) systemic and affect multiple ecosystem properties beyond the realm of any single resource or sector; (ii) more difficult to identify as they can alter the flows and trade-offs among multiple ecosystem services in the non-intervening ecosystem; (iii) more uncertain due to diffuse and cumulative cross-scale impacts in the context of ecosystem threshold effects or tipping points, (iv) potentially irreversible through effects on biodiversity; (v) able to affect people’s quality of life, directly and indirectly, through complex pathways; and (vi) difficult to measure using existing approaches and methods.”*

In the literature about adaptation to global change, it is understood that mitigation is prone to maladaptation because it fails to address the root causes of risks and change (Brown & Westaway 2011; Magnan 2014). Using the examples from my study, maladaptation is anticipated for the interference with natural succession which will require increasingly unrealistic management effort at a later stage; for the reactive response to Invasive Alien Plants which are clear-felled once, but not continuously managed; for the physical exclusion of people from sensitive ecosystems, who are then pushed into adjacent ones; or for the fight for endangered species whose habitat continues to be threatened by the unaddressed symptoms of individuals’ disconnect from the biosphere.

With particular reference to population growth, two of the female interviewees’ response is to ‘not have children’. This is arguably an important consideration in a time of declining natural resources and degradation of the planet. However, unsustainability is only addressed at its roots if each individual takes responsibility in transmitting appropriate values to the future generation. The transformative stewardship pathway in this study has shown that individuals are positively influenced and motivated by personal role-models and family members in sustaining resilience. I argue that, while certainly not everyone *has* to have children, responsible-minded parenting is also a possibility for transformative change.

In a transformative pathway, the resilience principle ‘managing slow variables’ (Biggs et al. 2012; Walker et al. 2012) stood out as important. Slow variables are the qualities of a SES which configure it in such a way that it is well prepared to respond to fast drivers of change. Fast drivers of change, for example species invasion, habitat transformation or natural disasters can be buffered by slow variables such as fertile soil, integral water catchments, intact forests, appropriate values and efficient

co-learning and management structures. It is the investment into slow variables which prepares the system for resilience, and it takes individuals' long-term commitment of time to a particular place.

In this regard, Nature for People/Nature and People's meaning of stewardship to 'Work together and communicate' becomes critically important for the SES. Collaboration is one of the stipulated SES resilience principles, as it strengthens the social network and improves the decision-making in the conservation of a common landscape. Another positive impact on slow variables emerged from the group's motivation for experiential education. My data has shown that experiential education can be transformative by having long-lasting impacts on other peoples' awareness, values and attitudes. Individuals in Nature for People/Nature and People highlighted their social responsibilities in the resilience of the system.

Responsibility was slightly differently framed in People in Nature who indicated motivation to invest into social *and* ecological properties of the system. Amongst People in Nature, a transformative pathway is for example permaculture which by its defining features requires considerable investment of time into restoration and maintenance of soil, water, plants and pollination. Moreover, my data suggests that permaculture set-ups in the Garden Route are established through long-term observation and experimentation, and the integration of local, traditional and scientific knowledge to optimize the flow of nutrients and water in the system.

It is also the transmission of place-based knowledge which supports adaptation and resilient SES. For example, in the case of the Rastafarian community, the long-term experimentation with harvesting practices has led to a substantial knowledge base of the ecology and sustainability of indigenous herbs, such as the so-called Rooiwortel (*Bulbine natalensis*), which is nationally conceived as vulnerable to overharvesting. According to the members of the community, the transmission of sustainability values, and associated knowledge and practices forms a normative part of Rastafarian culture. These cultural rituals and traditions strengthen the resilience of places.

The common attitude to 'Be the change you want to see in the world' is thus a disguised role of the individual to take ownership in the extinction of resilience which I have problematized in Section 2.5. The anthropogenic pressures on the environment seemed well understood in its global complexity and featured the explicit discussions around change. However, this was always followed by individuals' reference to ownership and responsibility. Individuals' attitudes and behaviours highlighted

‘sustaining’ the functionality of landscapes, primary production systems and the life-supporting systems of soil, air, and climate.

Behaviours were thus preventative and driven by the good intentions for all people and all of nature. This constituted the value universalism, as in the *“Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature”* (Schwartz 2012). The kind of self-responsibility which stems from universalism is probably the most important precondition for individuals to engage in the pro-active management of SESs, and the lack of which commonly stifles resilience (Abel et al. 2016).

6.2.3. Connectivity with Nature

The next indicator which can be used to diagnose maladaptive and transformative pathways is Dutcher et al’s (2007) concept of Connectivity with Nature which I have introduced in Chapter 2. Individuals’ perceived dissolution of boundaries between all beings in SES was fundamentally different between the three groups. The first anxiety and fear-based group, indicated that the ecological component of the system is fragmentally perceived and managed. Stewardship was expressed as preservation of aesthetic values and biodiversity in ecological islands, such as private nature reserves, upmarket homesteads or sanctuaries. Moreover, prejudices and judgements of different people and cultures reflected social fragmentation and they contradict principles of community resilience, such as communion, tolerance and respect (Berkes & Ross 2013). In this study, the separation of entities within SES provoked maladaptation and was motivated by disconnects in consciousness.

Optimistic, trusting and pro-active individuals on the other hand, recognized the importance of connecting humans with nature. Nature for People/Nature and People and People in Nature were empathic towards different lifeforms, and were positively oriented towards reciprocity, equality and justice. The worldview in People in Nature has a remarkable resemblance with the well-known Gaia Hypothesis. This hypothesis proposes that organisms interact with the inorganic surroundings to form a mutualistic and self-regulating system that sustains and enhances the conditions for life on earth (Lovelock 2009). This worldview has defining characteristics of Ecological Solidarity, and is a critical precondition for resilience management (Mathevet 2014).

The variables in consciousness manifested in the expression in the physical landscapes. A core indication of resilience and transformative pathways is how functional ecology is considered in stewardship. Hansen & DeFries (2007) point to the importance of managing the ecological

mechanisms which link protected areas to the surrounding area. Thompson et al. (2011) refer to the factual element of Ecological Solidarity as it must be applied in ecosystem management.

According to these authors, there are at least six ecological principles underpinning resilience management: (1) ecological functions occur beyond physical boundaries, (2) decreasing populations and habitat indicate risk of extinction, (3) species with limited dispersal require spatial variation in species composition, (4) species require disjunctive habitats for movement and migration, (5) demographic stability occurs through a balanced process of population colonization and extinction, and (6) migration across environmental gradients enables the capacity to respond to change. In the resilience literature, these are said to be guiding principles for management of protected areas and Biosphere Reserves (Mathevet et al. 2016). According to SES theory, resilience is dependent on the enhancement of connecting biophysical structures which allow resources and species to disperse, and social structures which strengthen communication, learning and efficient co-management of shared landscapes (Biggs et al. 2012). As I have stated in Section 5.1.1., private properties owned by respondents in Nature despite People are physically or visually linked to formally protected areas, and principles of social-ecological connectivity pertain to the way these are managed for resilience to be achieved.

In Section 3.1.4.1., I have outlined Cape Nature's biodiversity stewardship programme which is aimed at establishing agreements with land users around protected areas to adhere to ecological principles as much as possible. However, only one respondent in Nature despite People had signed such an agreement to contribute to a conservation corridor initiative. For the rest of the respondents in Nature despite People the principles of 'island conservation' guided the management of private nature reserves and upmarket homesteads.

This research was not set out for a nuanced understanding of how Ecological Solidarity guides individuals in their stewardship choices. However, my data shows a significantly greater consideration of functional ecology amongst Nature for People/Nature and People and People in Nature, who understood the need for ecological corridors. In Nature for People/Nature and People, spatial connectivity was even made the emphasis of stewardship functions, as could be seen in the establishment of initiatives which conserve integrated landscape and seascape, such as the Blue Ocean Hope Spots and Eden-to-Addo Corridor Project. Also the social sphere of solidarity was considered in both groups, indicated by the explicit wish for harmonious coexistence between people, cultures and the environment, and by the integration of education and social upliftment. This pro-

active concern for spatial connectivity and for other beings can be regarded as an element of the transformative pathway, guided by Ecological Solidarity.

6.2.4. Connectedness with the Biosphere

My data illustrates that different configurations of Connectedness with the Biosphere indicate maladaptive and transformative pathways, respectively. I hereby mainly draw from my finding that distant processes, such as resource depletion, climate change, atmospheric pollution, and the political, economic or cultural sources of these, were considered to varying degrees. Some individuals understood that resilience inevitably requires that humans innovate the relationship with nature to conscious and sustainable use of resources. This relationship was portrayed by those individuals who put an emphasis on education in Nature for People/Nature and People. The underlying motivation for this were tradition and benevolence, as the pronounced value for the welfare of all people and a humble and moderate acceptance of humans' limits to growth.

Secondly, Connectedness with the Biosphere was also directly expressed in People in Nature by means of conscious use of local and renewable materials, a pro-active influence on a sustainable local economy and the opposition to an import- and- export economy (see Dorninger et al. 2017). The critical values which supported this were tradition and autonomy. Similarly to Nature for People/Nature and People, tradition illuminated as individuals' pursuit for humble and moderate lifestyles which are in respect of the biosphere and consider its essential functioning. The value for autonomy was closely linked to tradition. Individuals believed that autonomy is needed to live humble lifestyles independently from unsustainable social development structures.

In Nature despite People, a controversy became apparent in individuals who supported the paradigm for preservation of nature. While direct resource use and 'overharvest' by less wealthy people was scorned, their own indirect tie to food and raw materials through a global economic market was not taken into consideration. In other words, meaning of stewardship did not include the responsibility for conscious, reduced and local consumption. Only the conformity to social rules such as recycling and the purchasing of eco-labelled products was mentioned.

Disconnects from the biosphere were exclusively the case in individuals who valued financial and materialistic wealth. This suggests that the upbringing in developed conditions or in a red loop system (see Section 3.2.2.) has suppressed an awareness of human embeddedness in the biosphere, and can

motivate maladaptive pathways. In this study, the main values which motivated disconnects were security, conformity and arguably power as it is derived from wealth.

6.2.5. Relationship with place

The place literature recognizes that individuals have unique relationships with places. The impacts of these relationships on SES resilience are mostly implied rather than explicitly addressed. The two relationships which became important in this study were placelessness and sense of continuity. Building on the review of the term in Section 2.5., by placelessness I mean individuals with an affection for a particular locality, but overriding values for mobility and flexibility. I found this to be the case amongst some individuals in Nature despite People. Even though individuals perceived the Garden Route as a special place due to its 'natural feel', this did not ensure a long-term commitment to its functionality and system dynamic. Particularly the perceptions of risks to a political or economic security motivated individuals to consider new places to live in. I identified a 'pack-up-and-leave' mentality which further underlines the response to fast drivers of change, and the lack of commitment to invest time and energy into slow variables.

This commitment was apparent in Nature for People/Nature and People and People in Nature and can be explained on the basis of *sense of continuity*. In empirical studies of place attachment, Lewicka (2011a, p.687; 2013) identified sense of continuity "*as a tendency to view the present as part of a larger, historical, continuous whole*" and further states that it is "*an important part of stewardship identity which highlights the temporal dimension of individual existence*". According to Lewicka (2011a) this is indicated by local knowledge, tradition and an interest in history.

Individuals in Nature for People/Nature and People and People in Nature showed this inclination. Optimism, trust and the perceived responsibility to invest into slow variables strengthened individual's commitment to a specific locality. This enabled the continuity of for example educational programmes, social communication platforms, leadership and ecological restoration and the phasing out of Invasive Alien Plants. Also permaculture is fundamentally dependent on long-term commitment to a place, and hence motivated by a sense of continuity. Lewicka (2011a) found that sense of continuity is prevalent amongst individuals' who have made a self-conscious decision to live and invest into a particular landscape. This was particularly obvious in People in Nature, in which individuals had consciously chosen the Garden Route in search for autonomous and self-sufficient lives.

The other advantage which derives from this relationship with place is that it enhances individuals' capacity to adapt to environmental changes. My study has shown that individuals with a sense of continuity paid close attention to the natural environment. This translated into the monitoring of changing biodiversity, composition, population dynamics, and behavioural ecology. The monitoring of ecosystems occurred on private properties or in special places which were continuously re-visited by participants. Moreover, individuals who lived partly or entirely self-sufficient showed a significantly greater concern and awareness of shifts in climate, hydrology, biomes or invasions.

The observation of ecological functioning is a requirement for individuals to better understand, respond and adapt in favour of resilience (Chapin et al. 2012). It stipulates foremost an individual's interest in the surrounding environment and the associated perception skills (Grimm & Needham 2012). Secondly it depends on observation which is locally nuanced, consistent and long-term (Berkes et al. 1995; Biggs et al. 2012). For those reasons, a commitment to place is seen as an important part of stewardship and resilience management (Raymond et al. 2011; Devine-Wright et al. 2010).

Sense of continuity was only pronounced in individuals who hold self-transcendent values and who are self-sufficient. It suggests that firstly self-transcendence inherits a degree of passion and interest in the study of ecology. Secondly, paying attention is elevated in self-sufficient individuals who depend on local knowledge and their own observational skills to adapt. This was in contrast to individuals, who in the absence of self-transcendent values, responded to knowledge from third parties, such as scientific experts, conservation agencies or the media.

6.2.6. Sustenance

An indicator which has inductively emerged from my data is sustenance. I have described in Section 5.2.1. that sustenance reflects how individuals frame their dependence on SES to fulfil his or her needs. This sense of dependence is a critical driver of stewardship, as it creates a positive reliance on a place and motivates expressions of care (Scannell & Gifford 2010; Lewicka 2011b).

How individuals frame sustenance in relation to SES is indicative of transformation or maladaptation. An individuals' perceived dependence can integrate quite specific isolated, or a whole range of interconnected ecosystem services (Raymond et al. 2015; Caceres et al. 2015). Services such as clean drinking water, intact forests, and Sense of Place are not simply provided by nature in a linear fashion, but co-produced through human investment (Bennett et al. 2015; Palomo et al. 2016). This means that motivation needs to concern the holistic system in order to insure a multiplicity of services.

According to resilience scholars, this is the 'management of feedbacks' which contributes to the configuration of the SES and enhances its adaptive capacity in the face of stress (Biggs et al. 2015).

Individuals with fear and anxiety perceived a dependence on their peace and solitude in a pristine natural setting. This was symbolized by aesthetic and recreational values and intricately linked to the value security. This suggests maladaptation purely because these values do not diagnose motivation to take care of water, air, soil and other existentially important services.

Optimistic and trusting individuals in Nature for People/Nature and People, on the other hand, felt dependent on provisioning services. This was driven by the concern for the well-being of all people, and by the value benevolence. In People in Nature, individual's existence was framed in the context of holistic health and as dependent on the health of all people and the environment. This value is the most transformative one in the sense that it motivates individuals to care for SES holistically.

These findings raise the importance of a scientific discipline known as existential psychology (Koole et al. 2006). Existential psychology studies the existential concerns of humans and how they influence day-to-day lifestyle choices. According to Koole et al. (2006) individuals are motivated in their actions by the awareness that death is inevitable, their place values uncertain, and their subjective experience of place can never be shared with another being. Thus, how sustenance is framed by individuals illuminates to what degree self-reflection occurs. Individuals in People in Nature stood out for the ability for existential self-reflection, and for a consideration of actions which concern society and the biosphere at large. These reflections revolved around life after death, existential identities and meanings of life, and they were intricately linked to the value spirituality.

6.2.7. Identity

All the above elements already hint at the importance of identity as the final indicative element emerging from this study. I hereby refer to the identities which were mentioned by individuals when they rationalized their engagement in stewardship. I found that anxiety and fear-based motivation in the maladaptive pathway were directly linked to individualistic identities. These identities related to specific interests, to expertise, or to socio-economic or socio-political status. In Nature for People/Nature and People, identities were also mainly individualistic, and related to their professional functions as conservationist or researchers.

The obvious problem which emerged from Nature despite People is that the attachment to individualistic identities evoked fear and motivated the protection of loss in maladaptive pathways. In Nature for People/Nature and People, I found that individualistic identities provoked a rigidity in mindsets, about the types of knowledge and rules which apply to the conservation of nature. Despite Nature for People/Nature and People's intention for inclusivity, the predominant stewardship identity runs the risk of excluding traditional, local or alternative knowledge.

This was contrasted by an existential identity which emerged in the discussions with People in Nature. Individuals conceptualized themselves as an intricate element of the universe, and as connected to all other beings and the inanimate world across time and space. These identities were linked to the value spirituality and universalism, and to individuals' pronounced ability and willingness for existential self-reflection.

Samuelson et al. (2003) illustrated the role of individualistic identities on finding consensus about the restoration of a watershed amongst a local community. The authors found that individualistic identities underlay biased knowledge and value perspectives, rigid mindsets and defensive attitudes, thereby impeding collective decision making and pro-active ways forward. The negative consequences of individualistic identities are implied in other studies. Marshall et al. (2012) for example have found that the attachment by farmers to their occupational identity stifles change and transformation in an unsustainable agricultural system.

In contrast, Koole et al. (2010) state about spiritual identities that they *"facilitate a self-regulatory mode that is flexible (and) efficient"*. This suggests implications on the adaptive capacity of the SES, as the pillar for resilience and transformation. In this study, existential identities were primarily motivated by spirituality and universalism.

6.3. The role of Basic Human Values in stewardship pathways

The evaluative elements discussed in the previous section must be regarded as interlinked with values. Individual values are part of the level of consciousness which underlies decision-making and stewardship action (Stern 2000). The consensus about the origin of values is that it has a static and a dynamic element to it. The static element is personal and includes values which are deeply instilled since early childhood, and have been influenced by parenting and culture (Boudon 2017). The dynamic element considers that values are continuously shaped by individual experiences which are situational (Corraliza & Berenguer 2000), place-based (Norton & Hannon 1997) and socially embedded (Adams &

Marshall 1996). This is why value changes are targeted through educational approaches to social learning and experiential learning (Giroux 2018).

In this study, basic Human Values represent individual self-interest and appear to explain how a bounded rationality for the environment evolves. This assumption aligns with scholars who argue that the natural world serves as a loci to which fundamental values are assigned (Norton 1984). I identified at least three different meanings of stewardship which were each underpinned by different sets of priority values. In Nature despite People, stewardship referred to experiences in nature, with an emphasis on stimulating aesthetically pleasing, pristine and biodiverse states. This occurred in isolated spatial units such as private land, reserves or in sanctuaries. It also implied a social function of sanctioning, monitoring and exclusion. Lastly, it meant to 'participate' in stewardship and conservation as it is presented by mainstream paradigms. This meaning of stewardship was underpinned by the priority values power, security, conformity, achievement and hedonism.

Nature for People/Nature and People featured stewardship predominantly as a social experience with an emphasis on social networking, knowledge generation, education and communication. This meaning of stewardship was motivated by the values of universalism, benevolence, conformity, tradition and achievement. In People in Nature, stewardship meant the direct interaction with nature and with people in such a way that Critical Connectivity is enhanced. The underlying motivation in People in Nature were the values universalism, benevolence, spirituality, autonomy, achievement and hedonism. The intentions of individuals in Nature for People/Nature and People and People in Nature were similar and related to the sustainable management of ecosystems. However, the distinct difference is that People in Nature portrays a pro-active biophysical experience, while Nature for People/Nature and People focusses on social mediation to induce these goals.

Maladaptation in this study was predominantly provoked by individuals in Nature despite People. Transformation was apparent among individuals in People in Nature. Some of the individuals' expressions in Nature for People/Nature and People were maladaptive and some were transformative. The values that both pathways had in common were achievement and hedonism, suggesting that they are values which are inherent to the practice of stewardship. In this section, I highlight these priority values and discuss how they are linked with the different pathways.

6.3.1. Self-transcendent and self-enhancing values

The value-orientation of self-transcendence or self-enhancement depicts the bipolarity which motivates the concern for the welfare and interests of others or those that motivate pursuit of one's own interests, relative success and dominance over others (Schwartz 2012). As it could be anticipated from environmental behaviour studies, maladaptation occurred in the absence of self-transcendent values and a priority for self-enhancing values.

Dambrun et al. (2012) have shown that self-enhancing values trigger fear, anger and defence while self-transcendent values affect an individuals' sense of harmony and continuity. The latter being indicators for Critical Connectivity in SES, the presence of self-transcendent values seems important. This holds true for the transformative pathway in this research. Transformation was fundamentally based on the self-transcendent values universalism and benevolence. Universalism and benevolence for example are closely related to Ecological Solidarity. This value combination highlights the consideration of other beings and the wish for harmony, balance, unity and equity.

A study by Smith et al. (2011) shows how self-transcendent values support a collective vision for resilient change. The authors found that the value of community positively affected holistic and mutually agreeable goals for natural resources and ecosystems in a landscape in Maine. In contrast, self-enhancing values motivated individually distinct and controversial visions for change.

My data however also shows that self-enhancing values are not necessarily redundant or undesirable for resilience. The interesting finding is that self-enhancing values, when tightly coupled with self-transcendent values, underlie transformative pathways. In *People in Nature* and partly in *Nature for People/Nature and People*, the values achievement and hedonism motivated experiences which ultimately benefit SES as a whole. Examples include the self-gratifying experiences to connect with others, spread compassion and enjoy shared experiences in nature. Moreover, it included the sense of achievement of living in Connectedness with the Biosphere or having nurtured a more harmonious and inclusive social community.

Achievement is important for resilience because it is found that feelings of pride and self-efficacy enable spill over from simple Environmentally Responsible Behaviours to stewardship in a more complex sustainability context (Bissing-Olson et al. 2016; Lauren et al. 2016; Tabernero & Hernández 2011). Achievement thus relates to individuals' ability for Complex Adaptive System- thinking and management of connectivity, which are stipulated principles for SES resilience (Biggs et al. 2015).

The field of psychology shows why self-enhancement is important for motivation. It is described as a product of cognitive dissonance, which occurs when an individual holds values, attitudes and norms that cause internal conflicts and discomfort. Self-enhancement represents the resolution of this individual dilemma, and is essentially an act of self-love (Festinger 1962).

Gregg et al. (2008) state that *“moderate self-enhancement often promotes psychological and physical well-being”* (in Stephens 2008, p. 305). This is in line with Taylor & Sherman (2008) who support that self-enhancement generates physical and mental health, but also optimism and trust (in: Shah, J & Gardner 2008). These being the indicators for transformative stewardship in this study proves that self-enhancing values are critical.

From empirical studies it is commonly concluded that self-transcendent values motivate and self-enhancing values discourage Environmentally Responsible Behaviours. I challenge these findings, as they apply differently in the context of SES research and qualitative analysis of stewardship meanings. I selected my study participants on the basis that individuals already engaged in some specific or in a combination of Environmentally Responsible Behaviours. I found that all individuals were motivated by self-enhancement values to various degrees. This firstly suggests that self-enhancement is a critical and arguably undeniable motivational driver in stewardship. Secondly, it shows that a more nuanced outlook on Basic Human Values is necessary when Environmentally Responsible Behaviour is evaluated against resilience in a SES.

Nature for People/Nature and People and People in Nature showed that the combination of self-enhancing and self-transcendent values is a key to resilience. The specific value combination that emerged from my analysis is universalism, benevolence, achievement and hedonism. This stands in stark contrast to Nature despite People whose main priority value was power and dominion over others and resources. The value power emerged as a fundamental impediment to the resilience in the Garden Route, and suggests similar implications for the future of society and the biosphere.

6.3.2. Openness to change and conservation values

The second theme which describes bipolarized motivations across cultures is openness to change and conservation. According to Schwartz (2012, p.8) *“this dimension captures the conflict between values that emphasize independence of thought, action, and feelings and readiness for change and values that emphasize order, self-restriction, preservation of the past, and resistance to change”*. This

statement portrays the sentiment that conservation values are inherently counterintuitive to transformative change and resilient dynamics. This assumption is drawn from the fact that SES scholars place considerable importance to the ideas of acceptance of change, adaptability, foresighted thinking and pro-activism. These are traits which emphasize openness to change and de-emphasize conservation values.

From one perspective, my study supports that conservation values are questionable as a driver of SES dynamics. In the maladaptive pathway, conservation values such as conformity explained major obstacles to resilience. As discussed in Section 5.2.1., Nature despite People considered recycling and the use of eco-labelled products as a form of environmental care. I have also explained that this view is an overly simplistic form of stewardship which does not change the fact that current patterns of consumption in society puts pressure on the biosphere. Stewardship in Nature despite People also meant to 'participate' in existing conservation schemes, such as economic incentives or the Working for Water programme, which tend to degrade intrinsic motivation and ownership in the resilience challenge. This hints at the maladaptive consequences of conformity.

This pattern is further supported in Nature for People/Nature and People which depicted conformity to a mainstream conservation paradigm. I observed that, due to the close collaboration with conservation agencies and scientific researchers, Nature for People/Nature and People conformed to professional and scientific ideals for stewardship. In this regard, conformity can impede the acceptance of a diversity of knowledge types and openness to change which is necessary for resilience (Tengö et al. 2014).

This evokes the historical development of scientific worldviews of human-nature relationships (Mace 2014), which were outlined in Section 3.1.4. The wish to conform to preservation ideals in the Garden Route adequately portrayed the stickiness of conservation paradigms, namely 'Nature despite People'. I also observed conformity to an emerging paradigm highlighting 'People and Nature', which is embedded in scientific ideas such as SES, resilience and adaptive stewardship (Mace 2014). Particularly those individuals who were tied to the conservation agencies SANParks, Cape Nature or to NGOs supported these ideals.

The problem which arose in Nature for People/People and Nature was that individuals adopted an attitude that resilience is the responsibility of others. Hence, personal meanings of stewardship constituted education and incentivizing of other people, highlighting two major concerns. Firstly,

individuals with this belief can lose a sense of ownership of their own ability to prevent the loss of resilience. Secondly, there is the risk of unintended consequences which are predicted for externally incentivized stewardship. One example of this is tax rebates for biodiversity conservation, or eco-certification for marketable products, that replace intrinsic values with solidarity for materialistic values (Rode et al. 2014; Raymond, Raymond, et al. 2013). Financial or materialistic values in turn trigger anxiety, fear and prevention of loss, as they are vulnerable to uncertain political and economic developments.

Materialism also strengthens security as a second conservation value in the maladaptive pathway. Security in Nature despite People was partly defined in materialistic and financial terms, suggesting that it is a value which motivates lifestyles in disconnect from the biosphere. The desire for personal security explained how anxiety and fear evolved, and it underlay mitigation and responses to fast drivers of change.

Security in combination with power motivated the avoidance of threats by controlling relationships and resources, behaviour which is predicted by Schwartz (2012). This was portrayed by individuals who excluded people from accessing nature, fragmented ecological systems through fences or impeded sustainable change through preservation practices. The desire for personal security led to fragmentation in the physical landscape and was thus a main driver of maladaptive pathways through stewardship in Nature despite People.

Enhancing personal security through building physical structures such as fences and housing estates can lead to vulnerability transfers in SES. Firstly, the exclusion of people from nature furthers the ethical and normative disconnects between society and ecosystems and undermines conscious and direct relationships (Restall & Conrad 2015; Zylstra et al. 2014). Secondly, the physical fragmentation and creation of ecological islands disrupts the spatial connectivity required to support ecological function, and potentially furthers the unsustainable human settlements which form such a great challenge to the Garden Route.

Amongst Nature for People/Nature and People, security represented the desire for a national system which insures health care, and provides economic stability, democracy, and sustainability of natural resources. While no direct links to maladaptive outcomes were observed during this study, there are potential impacts on future development in the Garden Route. Individuals who rely on external systems to provide existential services are highly vulnerable in the face of change. The security or

insurance provided by external parties or processes can outweigh autonomy by degrading individual motivation, skills and responsibilities.

The role of conservation values in resilience is ambivalent. For instance the value tradition, observed in Nature for People/Nature and People and People in Nature, made an important contribution to transformative pathway. Tradition motivated the concern for the well-being of others, a harmonious co-existence with nature, and the sustainability of natural resources which underpins resilience. Tradition also motivated Connectedness with the Biosphere, due to individuals' humble acceptance of their moderate portion in life.

These positive impacts only arose from tradition as linked to the values universalism and benevolence. This was confirmed in the case of the Rastafarian community, whose cultural rules and norms were fundamentally based on the principle 'One Love'. The loyalty to Rastafarian culture and commitment to its customs showed that tradition can reinforce self-transcendent values and transformative pathways.

In the Rastafarian community, who emphasize the paradigm of 'People in Nature', I also identified the unique situation in which the conservation value tradition strengthened autonomy, as an openness to change value. Autonomy has emerged as one of the most important values underlying transformation. Autonomy motivated Connectedness with the Biosphere, solidarity, sense of continuity and the investment into slow variables, such as change of human mindsets and development and the long-term management of Alien Invasive Plants. The reason for this is that autonomy was linked to self-sufficient, creative and place-based lifestyles which were centred upon the conscious awareness of dependence on ecosystems for survival.

From People in Nature I gathered that the perception of oppression by mainstream society triggered a form of resistance towards greater autonomy. I found that a greater value for autonomy was reflected by the choice to be dependent on natural resources, as an oppositional response to socio-economic and socio-political confines. Individuals find freedom for expression, learning and efficacy in the management of ecosystems and natural landscapes. This direct experience of autonomy in the landscape explains how accountability evolves.

The critical role of autonomy in resilience has been recognized in empirical studies. At the individual scale of consciousness, autonomy is an important feature of agency, ownership and motivation to

affect meaningful and positive change in the environment (Ryan & Deci 2004; Henssen et al. 2014; Speranza et al. 2014). From an economic perspective, local autonomy which allows for the diversification of livelihoods and food production systems, is a major contributor to global sustainability (Bellows & Hamm 2001; Speranza et al. 2014). Lastly, autonomy in culture or worldviews is the prerequisite for self-organized stewardship which is based on learning how to adapt to environmental crises without sacrificing resilience (Cocks & Wiersum 2014; Berkes & Turner 2006; Plummer & Armitage 2007).

Davidson-Hunt & Berkes (2003) for example have studied traditional ecological knowledge systems to test the relationships between place-based learning and resilience. The authors have found that learning for resilience is a creativity which evolves from social memory of human-nature interactions and consequential landscape dynamics. This social memory inherits the motivation to absorb new knowledge in the face of change in order to adapt without sacrificing the functionality of the place. This openness to change was significant in People in Nature who chose autonomous lifestyles and indicated a sense of continuity.

One final point for discussion relates to Schwartz's inner layer of his framework, which shows the specific values (refer to Fig.2). I found that spirituality underlies Critical Connectivity, but it is missing in Schwartz's theory. According to Schwartz, this is because spirituality is not a value which is universal to all cultures. I support this claim, because I found that spirituality was unique to People in Nature.

By spirituality I mean the implicit knowledge that the individual exists beyond a physical existence and is connected to all of life through a spiritual force. Spirituality can include religions which are fully internalized by individuals as opposed to merely idealistic standpoints. The advantage of considering spirituality is that it promotes a consciousness of connectivity which is not limited to a specific time or place scale. Spiritual individuals inherit a belief in eternal existence, unity and a value for true sustainability. By stating that *"We are reincarnated souls. What we stand for is ancient and is continuously passed on to our younger generations"*, the Rastafarian community leader indicates that spirituality motivates Connectivity with Nature, sense of continuity and the investment into slow variables.

The role of spirituality is marginalized in conservation sciences, despite increasing evidence of its importance. Kaufman (2012) for example has found that organic rice farmers in Thailand frame stewardship in the context of the Buddhist belief system. Farmers associate the nurturing of soil as an

externality to bountiful harvest, holistic health and general qualities of Buddhist life. According to his study, individuals develop a physical connection with nature thereby strengthening a collective ecological worldview. Similarly, Pavlovich & Doyle Corner (2009) have found that certain spiritual groups explicitly portray connectedness of humans, the natural environment and ecological functioning. The authors suggest that spirituality supports an awareness of connectivity at a deep ecological level.

Koole et al. (2006) regard spirituality as an aspect of identity, and as such, a locus of reinforcement and self-regulation. The new domain of existential psychology has revealed the pervasive influence of spirituality on thought and behaviours in some individuals. A spiritual identity is characterized by a search for meaning, continuity, coherence, communion, and agency, of which its experiences are the individuals' perceived sources of well-being (Stephens 2008). Also in Conservation Psychology, it is understood that spiritually-oriented identities are the motivational core which drives feedbacks between consciousness, behaviours and outcomes in the natural environment (Shah & Gardner 2008; Devine-Wright & Clayton 2010; Clayton 2012).

In this study, spirituality reinforced the motivation for resilience principles. It was associated with an existential identity which motivates optimism, trust and self-responsibility. The lack thereof in Nature despite People and in Nature for People/People and Nature seems to be related to the entrustment in individualistic identities, which can trigger anxiety, fear, mitigation or closed-mindedness and rigidity. Spirituality is perceived by Schwartz as an additional self-transcendent value. However, my findings show that they have conservation and openness to change elements to it, which are in favour of resilience.

Resilience scholars tend to highlight the importance of openness to change in the management of SES. This is shown by the calls for learning and Complex Adaptive System- thinking (eg. Mostert et al. 2007; Curtin 2014). My study suggests that openness to change values are not a sole prerequisite for resilience. While autonomy is critical to enable resilience management, tradition is important in sustaining resilience and related customs. This discussion suggests that transformative pathways are motivated by a combination of conservation and openness to change values. This is contrasted by a maladaptive pathway driven by the conservation values conformity and security.

6.4. Recognizing transformative and maladaptive stewardship

Based on the discussion of the findings, I present the applied version of my conceptual model which aids in identifying the critical features of maladaptive and transformative stewardship pathways. My research findings and the literature in Conservation Psychology and SES resilience have shown that the proposed elements are valid in assessing stewardship motivation and action. These are driven by certain sets of Basic Human Values which are interlinked and mutually reinforcing with certain elements.

Figure 32 summarizes the identifying features of a transformative pathway that have become transparent through this empirical study. Based on the criterion of Critical Connectivity in consciousness, the physical landscape and the biosphere, the following elements emerged: *Optimism and trust*, *Self-responsibility for slow variables*, *Solidarity for humans and nature*, *Self-sufficiency and reduced consumption*, *Existential identity*, *Sense of continuity* and *Holistic health*. The above is closely interlinked with a set of priority values based on Schwartz (2012). This transformative value combination is *universalism* and *benevolence*, coupled with *hedonism*, *achievement*, *autonomy*, *spirituality* and *tradition*.

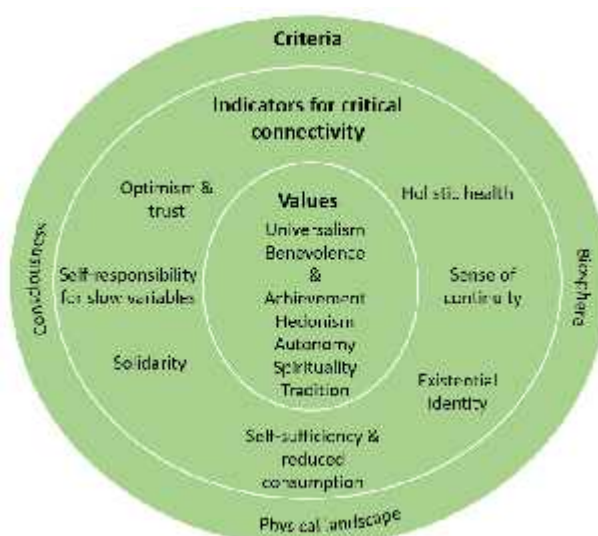


Figure 32: Recognizing and diagnosing transformative stewardship pathways

In stark contrast, maladaptation as it is depicted in Figure 33, was indicated by *Anxiety and fear*, *Mitigation and response to fast drivers of change*, *Preservation, exclusion and ecological islands*, *Wealth and materialism*, *Individualistic identity*, *Placelessness* and *Aesthetic and recreational values*. The values underlying maladaptation was a combination of *achievement*, *power*, *security* and *conformity*.

These applications of the conceptual model present the recognizable features of stewardship pathways, and diagnose transformation or maladaptation. I use this output to reflect, in the following section, in which way I have achieved my research objectives.

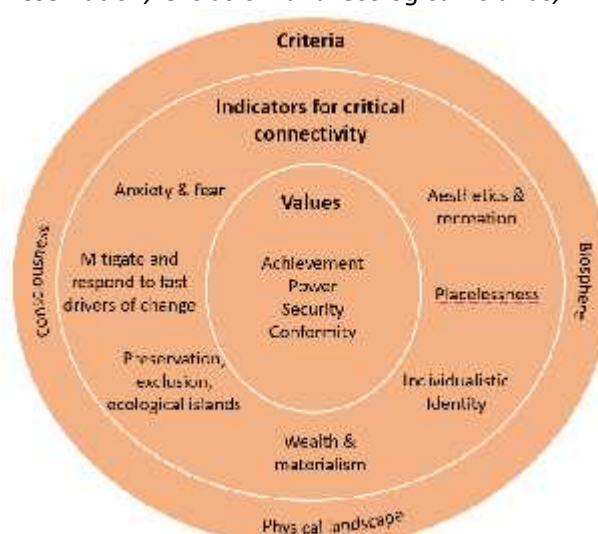


Figure 33: Recognizing and diagnosing maladaptive stewardship pathways

6.5. Individual motivation mediates SES resilience

The purpose of this study was to advance a transformative theory for landscape stewardship. I have pursued the objective to explore how individual motivation for stewardship mediates trajectories of social-ecological change. This was done by implementing the following research questions in a qualitative SES study:

- a) Which theories facilitate greater understanding of alternative stewardship pathways?
- b) How can a transformative pathway be recognized?
- c) How can transformative pathways be pursued?

In this section I reflect and synthesize in which way my study has performed in achieving its goals.

This research has shown how individual motivation for landscape stewardship can mediate trajectories of change in SES at various scales. I have provided the evidence that individual's good intention to care for the environment can transfer vulnerabilities to nature, to people or the relationships between them. I have also shown that individuals can be oriented towards transformation due to their motivation for pro-active resilience management.

The empirical findings of transformative and maladaptive pathways could be further substantiated by the literature. Other research around the issues of adaptation and stewardship practices helped me conceptualize social-ecological consequences that can be anticipated from different motivations. These findings have substantiated how and why the individual scale must be considered in SES resilience research and practice.

The theories and concepts which have become relevant in explaining the individual role as a mediator of change came from a variety of different disciplines. Firstly, the field Conservation Psychology provided useful thoughts around the issue of Connectedness with Nature and identity. Also place theory proved important in explaining differences in Sense of Place, place relationships and meanings. Moreover, SES resilience theory was the necessary addition to conceptualize the individual motivational context in the broader environment. Resilience assets as they relate to community, agency, ecosystems and biospheric functioning are crucial enablers of transformative change.

Lastly, Basic Human Value theory proved an invaluable lens on the underlying motivational drivers of social-ecological change. Basic values have explanatory power for Critical Connectivity and stewardship motivation which is oriented towards or away from resilience. Schwartz's Basic Human Value framework attended the goals of this qualitative study. What was important however is that the framework was loosely applied and given room for meanings and symbols to emerge inductively. I found that individuals sometimes interpreted values differently than predicted by the framework. Moreover, new value combinations emerged which then diffused the categorisation of self-transcendence, self-enhancement, conservation or openness to change.

I have shown that transformative pathways can be recognized on the basis of Critical Connectivity. Individuals who show awareness and a sense of being interrelated with all people and all of nature are more inclined to invest into the Critical Connectivity of a social-ecological landscape. They also tend to live humble and modest lifestyles in consideration of the boundaries of the planet to sustain life.

The particular elements for a transformative pathway are *Optimism and trust, Self-responsibility for slow variables, Solidarity for humans and nature, Self-sufficiency and reduced consumption, Existential identity, Sense of continuity and Holistic health*. The value combination which predicts transformation is *universalism, benevolence, hedonism, achievement, autonomy, spirituality and tradition*. These elements and values, and its maladaptive counterparts, guide the evaluation of stewardship in SES.

The last research question, 'How can transformative pathways be pursued?', represents the question about leverage points for sustainability transformations. What is important here is to illuminate certain or potential mechanism which can be used by decision-makers to change the direction of motivation amongst individuals or groups of people. The most important levers which seem relevant against the backdrop of my findings are discussed in the implications section of this chapter.

6.6. Implications for transformative stewardship

The main implication of this study is the knowledge that a transformative meaning of stewardship is needed. This meaning needs to recognize that self-interest and bounded rationality is inevitable and will always motivate unique and informal expressions of environmental care. Stewardship must be seen by its advocates as an ethic and not only a blue-printed mechanism, which is based on stipulated values and goals. Based on the findings of this study, I assert that this new meaning of stewardship must nurture self-transcendent values and steer individual values away from power and security.

The ideas around stewardship in SES theory are continuously evolving, thereby providing ample opportunities to reflect on meaning, motivation and consequences. This is important because the SES discourse has a major influence on stewardship interpretations at global scales (Fischer et al. 2015). I claim that the current call for stewardship as in ‘to pro-actively shape SES to sustainable trajectories’ is still immature. It invites interpretations of disconnects, for example about insiders and outsiders of the system, and about sustainability terms which are not actually in favour of the biosphere. It can also further the power conflicts which are already frequently encountered in collective stewardship endeavours (Lebel et al. 2006; Fabinyi et al. 2014).

Based on this study, stewardship meaning must affect the intrinsic motivation for practice which enhances resilience. This means to appeal to ethics, identity and emotions which evoke pathways towards a different way of being. This is a responsibility which applies to conservation researchers, practitioners in the field of environmental education, management and policy, and every single citizen.

6.6.1. Role models and leadership for sustainability

Academics and practitioners in the field of conservation are important role models for the public and part of their responsibility is to portray an ethic which is conducive to life, to environmental justice and to individual ownership in the resilience challenge. This study has shown that many people value conformity and react to the accepted environmental messages of conservation professionals. Evidence is the commitment to governmental conservation schemes, volunteering for conservation agencies and the frequent reference to sustainability issues addressed in the media. Also the entrenchment of historically influential conservation paradigms, be they ‘Nature despite People’, ‘Nature for People’ or ‘Nature and People’, portray the influence of role models on mindsets and trajectories of change. This fact presses the optimistic circumstance that academics and practitioners can be leaders for, and simultaneously agents of, leadership for sustainability amongst the general public.

The opportunity provided by conformity has implications on the way conservation scientists and practitioners engage with the public. What is needed is firstly a greater recognition that the future of landscapes and the biosphere is paved forward by individual values and behaviours. Secondly, transformative change depends on the acknowledgement that resilience is an existentially human function and responsibility and not a solely professional endeavour. In order to exploit the opportunities for leadership for sustainability, scientists and practitioners must engage in self-

reflection about their own function and purpose as citizens of the planet. Only then, implicit messages about trust, optimism, self-transcendence and Critical Connectivity can be authentically portrayed.

The negative knock-on effects or maladaptive consequences of ontological pitfalls have become evident in some processes of self-organization in the Garden Route. Even the participation in a stewardship programme that is well-intended and professionally guided is subject to individuals who negotiate their own rules and who may value security, conformity and power. Particularly the uptake of the NACSA conservancy model or the establishment of private nature reserves revealed negative consequences on people and nature. The fishing ladies in this study have exemplified how the conservation paradigm 'Nature despite People' can lead to the exclusion of resource-dependent communities, increase their despair and push them into conditions whereby resource-harvesting regulations are disobeyed. I stress that stewardship programmes are currently uncritically evaluated by conservation agencies.

The noble intention to care for the environment is sometimes naively supported and unrightfully empowered on maladaptive pathways. A main implication of these findings is that transformative change through stewardship occurs fundamentally on the basis of values and socio-cognitive processes, which must be targeted in the debates and strategies for the future of society and the biosphere. This applies to global scales and influential Sustainable Development Goals, as well as to conservation agencies, educators or scientists in regional SES.

6.6.2. Changing values through experiential education

A practical mechanism which can lever transformations is to directly promote appropriate values. In this study, the most critical values which motivate resilience are self-transcendent ones. This means that all educational messages or calls for participation in stewardship should engage in cautious framing which nurtures an individual's strive for connectedness, harmony, meaning in life and the welfare of other beings. This finding then supports the concern by scholars (eg. Kumar & Kumar 2008; Tengberg et al. 2012; Daniel et al. 2012; Raymond et al. 2013) that the common approach of economic incentivising is inadequate, as it raises the financial benefit to oneself above the well-being of the collective.

The motivation which arises from economic incentivizing is more short-lived than the motivation which stems from self-transcendent values. I found that individuals who value universalism, benevolence and spirituality also have a more fore-sighted and long-term outlook on the welfare of the system. Self-transcendent values were linked to a belief in an existence beyond the immediate

time and place scale. This meant that the care for the environment is an individuals' purpose in life that is transmitted over generations and persists in response to external change. This is not the case for self-enhancing motivations which are easily lost in the face of changes in environmental, political or economic contexts.

I suggest using experiential education as an alternative approach to external incentivizing. In Chapter 2, I have introduced the issue of an 'extinction of experience' which concerns unsustainable human-nature relationships worldwide. I have described that direct experiences are the essence of learning (Kolb & David 2008), underlie awareness of interrelatedness and stimulate the formation of relational identities (Schultz et al. 2004; McGinnis 1999; Dutcher et al. 2007; Vining 2007). My research has illuminated benefits of experiential education in transformative pathways. Most educational structures however insufficiently address the experiential component of learning, but place an emphasis on knowledge transfer.

The question that needs attention here is what kind of experiences need to be fostered and how can external agencies motivate them? Based on my own findings, the key is to illuminate to the individual the positive benefits of relational experiences. Chan et al. (2016 p.1462) suggest that such experiences evoke relational values which they define as values that *"pertain to all manner of relationships between people and nature, including relationships that are between people but involve nature"*. This resembles what Zylstra (2014) has coined 'meaningful nature experiences', a concept which I have introduced in Section 2.5.1. in this thesis. Meaningful nature experience entail a sense of wonder, affection and synchronicity, and are dependent on the experience of interrelatedness and connectedness. According to Zylstra et al. (2014) meaningful nature experiences act as a motivation for sustainability leadership in SES.

The motivational driver in relational experiences is reciprocity, and the individuals' recognition of the benefits of such relationships to 'self'. McAllum (2014) for example shows that organizational volunteerism is motivated by the sense of satisfaction and fulfilment through assisting others and the environment. The author found that individuals perceive a reciprocal function of behaviour, which serves self-development and personal relationships with, and to the betterment of, others. Comberti et al. (2015) has come to the similar conclusion that stewardship is a reciprocated service, benefitting the health of ecosystems and well-being of people. Some individuals in this study have confirmed these empirical findings by showing that the pro-active management of resilient social-ecological relationships is motivated by hedonism and the self-gratifying experience thereof.

Some scholars describe how relational experiences create a virtuous cycle. For individuals who feel deeply connected with other people and the environment, meaningful nature experiences are the reinforcement of identity, morality and sense of 'care' (Nassauer 2011; Clayton 2012). Tidball (2012) regards this a form of 'urgent biophilia', which means that individuals fulfil an intrinsic need to engage with community and nature in a restorative manner.

In an increasingly populated and urbanized world, experience can no longer be addressed as one of solitude in wilderness, but its transformative power lies in the embeddedness of nature in human culture (Cocks & Wiersum 2014). My findings have clearly shown that the exclusion of humans from nature is the source of maladaptive pathways. This means for conservation agencies and environmental educators to create opportunities for individuals to engage with culture and nature in a holistic manner and to explicitly raise values of universalism and benevolence.

From the literature, the most common propositions are for environmental agencies to enable recreation based on extended exposure to nature and people from different backgrounds (Nisbet et al. 2009; Smith et al. 2017). These are experiences which nurture conscious bonding and emotional attachment to life in general. Moreover, they have the additional advantage that they can nurture spiritual values and self-transcendent identities. Unsworth et al. (2016) states that these positive benefits on well-being and relational self-awareness can be significantly enhanced by directing individual's attention, for example by introducing mindfulness meditations. Facilitating such experiences is currently a common form of health intervention for the relief of trauma, depression and illness (Capaldi et al. 2015).

Moreover, there is still plenty to learn from existing biocultural diversity. Community gardens, sustainable subsistence, agroforestry and permaculture are examples of reciprocated and resilient ties between individuals, cultures and ecological systems. Also the field of civic ecology and urban stewardship (Krasny & Tidball 2012; Svendsen 2009) provide inspiration for pro-active strategies which integrate relational experiences.

Relational experiences also depend on a space in which power and security cannot thrive. Practices that facilitate the interaction amongst groups from a diversity of cultures can have a positive influence. A key in this group-internal process is communication which is inclusive, adaptive and on-going. Samuelson et al. (2003) has found that impediments to resilience management caused by

individualism, could be mediated through communication and collective vision building. This can be facilitated by conservation agencies in public forums and stewardship platforms.

6.6.3. Policy and spatial planning for enhanced autonomy

My study has shown that individuals and groups who enhance Critical Connectivity and slow variables of SES do exist. However, due to rapid social change and immense pressures on the landscapes, this form of stewardship tends to lose face and importance in political responses. The Garden Route would benefit from greater recognition of existing resilience in the form of conscious, committed and humble stewardship cultures.

The two values which play a particularly important role are tradition and autonomy. Tradition has stood out as an important driver of transformative pathways. Nature for People/Nature and People and People in Nature both indicated tradition in the way humbleness and modesty was ritualistically displayed. The Rastafarians have also shown that tradition can relate to a cultural belief system which inherits resilience principles.

Nurturing tradition amongst culture has to include a consideration of autonomy. A mechanism which can induce transformation is to enable autonomy of individuals or cultures with self-transcendent values. At the individual scale, autonomy has numerous beneficial effects which are of considerable importance in a resilient SES. These are for example intrinsic and sustained motivation, perceived agency, enhanced self-belief and mental well-being, all of which enhance performance and creativity in response to complex challenges (Ryan & Deci 2004).

Cultures have powerful internal mechanisms for resilience which are however not easily influenced through external intervention. Cultures for example are significantly shaped by social or environmental changes which may be out of the scope of conservation agencies' influence. A positive example of culture, change and resilience comes from a study of human-wildlife interactions in North America. Manfredo et al. (2015) has found that a cultural value change occurred due to modernization and urban development in the local landscape. This has motivated that dominant values for materialistic gain and domination over wildlife were explicitly negotiated and gradually replaced by values for mutualism and harmony. This shows that stewardship meaning can change from being self-enhancing to being self-transcendence as a result of culturally-internal processes.

The disempowerment and silencing of public voices, and a paradigm which portrayed stewardship as an exclusive profession, has aggravated a 'catch-22 of conservation' (Holt 2005). This now majorly

reflects in an apathy for nature and pro-active conservation on public and private land- and seascapes (Elmendorf 2003; Bennett & Dearden 2014). These motivational impediments can directly or indirectly be traced back to the loss of autonomy of resilient cultures in resilient ecosystems (Wiersum et al. 2014; Parr 2009; Berkes et al. 1995; Dasmann 1984).

The issue of autonomy raises the critical importance of access to land which in the Garden Route is either scarce, or ecologically highly sensitive. My research holds one success story whereby the government has let go of the fear of loss, and granted control over communal land and common pool resources to a motivated local community. This local community, being the Rastafarians in my study, has since then been praised by Cape Nature and SANParks for their contribution to biodiversity and corridor conservation, environmental education, and the bridging between public, science and management.

Individuals with the highest degree of connectedness were the ones who had consciously chosen to live in direct dependency on the ecosystem services provided by the landscape. This awareness of dependency, in turn, motivated that local and renewable materials were used and unsustainable consumption opposed.

This has implications for the policies for the spatial development in the Garden Route. Each municipality is required to design Spatial Development Frameworks which must be updated every 5 years. The goal of these frameworks is to plan physical development in alignment with national and environmental legislation and to take into consideration sustainable development goals. This means that the planning of rural development, towns and build infrastructure takes into consideration environmental requirements and socio-economic needs.

Updating Spatial Development Frameworks occurs through the consultation of the public. This process must be improved to better include voices of disadvantaged communities, who lack the rights to land and natural resources. One urgent socio-economic need is to provide opportunities for self-sufficiency and for creative entrepreneurial leadership through property rights and independence. Regional planning for policy development must assist in this process. This takes a change of mindsets in decision-makers from linear sustainability goals to the goal for a resilient and living landscape.

Similar considerations apply to an international level and sustainable development in other countries. What can be seen in the Spatial Development Frameworks is that the global discourse around

sustainability pays considerable focus on the economic pillar of society. The aim to alleviate poverty, create jobs and tie people to an economic market is widespread. The fact that the desired economic system is 'green' and based on environmental concern does not change the fact that they are pathways towards red loop systems which grow societies' disconnect from the biosphere.

6.6.4. Application of the model

The above already hints at the importance of culture in stewardship. This study has shown that maladaptive or transformative pathways are entrenched in and reinforced by cultural paradigms. The wish to belong to a social group is arguably an intrinsically human feature which cannot be denied. I have found that certain cultures may evoke self-generative processes which strengthen a stewardship pathway into a certain direction. This included the Rastafarian culture whose strive for autonomy and an opposition to consumption and political power supports a pathway of justice and Connectedness with the Biosphere. It also included social groups who value social superiority and esteem and base stewardship action on exclusion and defence.

In an article called "The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct" Ungar (2011, p. 10) stresses that: *"Culturally distinct strategies to promote resilience will only be seen as successful when a cultural minority is able to negotiate with cultural elites for recognition of their solutions to problems"*. This article is a review of the environmental antecedents of positive individual growth and resilience.

The author emphasizes that individual values, competencies and motivation are affected by the values the culture one relates to most. The article draws from studies that have found that the process of globalization blurs boundaries of local cultures yet increases individuals' relatedness to cultural elites, in other words education, policy and media. Cultural elites which tend to emphasize economic values and achievement can suppress individuals ability to respond to risks and stress in the environment (Ungar 2011).

These individual scale properties scale up to the motivation on a community scale. The opportunity for autonomous decision-making is the precursor for self-organization among local communities in resilient ecosystem management (Ostrom 1990; Lebel et al. 2006). In contrast, centralization and formalization of conservation has historically contributed to the neglect and degradation of ecosystems outside of protected areas worldwide (eg. Cumming et al. 2015; Brockington et al. 2008; Goldman et al. 2003; Agrawal & Gibson 1999).

The findings of this research also raise the critical importance of social research in conservation management. Research conducted by conservation agencies directly influences environmental management and adds immense value in transforming unsustainable to sustainable SES. The problem, however, is that conservation research by local agencies conventionally focusses on ecological studies and tends to view the conservation of biodiversity, soils, water or vegetation in isolation of the social drivers (see Roux et al. 2015). This study shows that social factors, such as the motivational context in conservation, is intricately linked to the outcomes on ecological systems. This suggests that interdisciplinary research and SES paradigms is still insufficiently applied at local SES scales.

Qualitative analysis of stewardship motivation is critical to understand the linkages between individuals and SES dynamics. Conventional studies of motivation tend to assume that the intention to care for the environment is the key to the global sustainability challenge. This is portrayed by the common quantitative approaches to assess the presence or absence of Environmentally Responsible Behaviours. My study has shown that the future is predicted by nuances in motivation which affect Critical Connectivity in complex and not always desirable ways. These nuances can be measured through the qualitative analysis of Basic Human Values and on the backdrop of SES resilience theory.

The findings of this study have implications for research of leverage points for sustainability transformation. The knowledge of levers at the individual motivational scale enable scientific research of appropriate interventions which can induce transformations. This could occur through participatory action research in which interventions targeting changes in values or Critical Connectivity are tested and monitored for their impacts in SES.

6.7. Summary

This discussion has shown how transformative and maladaptive pathways can be recognized in the evaluation of stewardship. Through the lens of a conceptual model which has been inspired by this research, I have discussed the different levels at which stewardship pathways can be assessed. I have shown that firstly an evaluative lens on Critical Connectivity in consciousness, the physical landscape and the biosphere is needed. These are interlinked in a SES and need to be considered in order to make meaningful predictions about resilience. I have secondly provided elements which help distinguish maladaptive and transformative stewardship. These elements are *relationships with place*, *risk perceptions*, *stewardship meaning*, *responsibility*, *Connectivity with Nature*, *Connectedness with the Biosphere*, *sustenance* and *identity*.

My study has shown that each indicator is differently configured in the practice of stewardship. Based on my findings and other empirical sources *Anxiety and fear, Mitigation and response to fast drivers of change, Preservation, exclusion and ecological islands, Wealth and materialism, Individualistic identity, Placelessness* and *Aesthetic and recreational values* are associated with vulnerability transfers in SES. Resilience on the other hand is linked to *Optimism and trust, Self-responsibility for slow variables, Solidarity for humans and nature, Self-sufficiency and reduced consumption, Existential identity, Sense of continuity* and *Holistic health*. These elements can be recognized at the individual scale of consciousness and behavioural norms.

The above is intricately linked with Basic Human Values which motivate individuals. A core finding of this research is that resilience is motivated by the combination of self-transcendence, self-enhancing, openness to change and conservation values. Transformative pathways were driven by the interlinked values universalism, benevolence, spirituality, autonomy, tradition, hedonism and achievement. Maladaptive pathways occurred in the absence of self-transcendent values and the dominance of security, power, conformity and achievement.

The assumptions which can be made from this study is that individual motivation does mediate trajectories of change in SES at local and at other scales. The conceptual model presented in this chapter provides a useful analytical lens which helps understand this mediation process and the basic antecedents of motivation that is conducive or counterintuitive to resilience. The knowledge of elements and basic values assists conservation science, conservation practitioners, educators and decision-makers in the prevention of maladaptation and the promotion of transformation.

The findings of this research have implications on the meaning of stewardship as it is portrayed in the scientific discourse and conceptualized in conventional stewardship strategies. The incentivizing of 'participation' in stewardship can degrade intrinsic motivation and commitment at individual scales. The individual scale is embedded in communities and cultures and has ripple on effects on Critical Connectivity in the landscape and the biosphere.

The most important responsibility of practitioners in the environmental field is to steer intrinsic motivation towards self-transcendent values. This can be done primarily through educational practices which are experiential and relational in a SES. It can also be achieved through messaging,

framing and leadership which portrays individual ownership in the environmental challenge of the Anthropocene.

Nurturing intrinsic motivation however means little if individuals or communities are suppressed by mainstream paradigms which portray dependencies on political and economic structures. In order to mobilize self-transcendent values, two potential mechanisms are important: The one is to enable the autonomy of individuals and cultures who already inherit the motivation for resilience. The other is to change the underlying values of the structures which impose the rules to conform to in society. In both cases, the implication is that every individual, decision-maker, leader, conformist or autonomist, must be able to engage in self-reflection about their own existence on the planet.

The ultimate goal is to facilitate a transition from a social paradigm that states that SES resilience is a theory or a professional practice. An alternative meaning of stewardship makes explicit that the well-being of all living things, the integrity of landscapes and the functioning of the biosphere are an existentially human responsibility. This is the role of leverage points for sustainability transformations as I view it in the context of this research.

7. Conclusions

The intention of this thesis, through its study of individual motivation for landscape stewardship as a driver of change, is to make both contributions to academia and practice. The contributions to academia are presented in Section 7.1. Several conclusions could have been expanded on, such as the usefulness of mixed methods to approach a research phenomenon which poses a wicked problem, or the importance of a social qualitative research to inquire about the nuances of individual motivation and the linkages with SES scales. For example, the qualitative analysis of Basic Human Values has led me to an innovative engagement with Schwartz's framework which was necessary to gain an insight into motivation which is implicit instead of self-reported by the respondents. However, I contain this chapter to core conclusions which are most relevant to the current academic discourse around stewardship in the Anthropocene.

In Section 7.2. I summarize the most important findings for conservation practitioners and decision-makers who seek to engage in resilience management or require direction in the induction of sustainability transformations in local landscapes. Section 7.3. addresses an area of future research which concerns socio-political change in South Africa. With Section 7.4., I end this chapter with reflections of possible futures of the Garden Route. As social and environmental change triggers individuals to adapt and respond, stewardship shapes trajectories of change. It is my sincere wish that the findings of this study are helpful in forecasting scenarios of resilience in the Garden Route.

7.1. Academic contributions

This study has advanced academic and theoretical perspectives on the interface of SES resilience, stewardship in the Anthropocene and the role of the individual. I have reviewed the interdisciplinary literature to show that contemporary SES discourses around stewardship poorly conceptualize the individual as a driver of resilience. Individuals who act in the name of the environment are inevitably motivated by unique and constantly changing perceptions, goals, terms and conditions. The sympathy and good intentions for a particular asset, such as a species or an indigenous and pristine stretch of land, can backfire on ecosystems, on people or on the relationship between them. The impacts of stewardship can negatively configure the dynamic of the system, in which the desired target is embedded. This study sought to identify the common ground for stewardship which promotes and sustains the resilience of SES from local to biospheric scales.

The key to resilience is to appeal to the motivation which is universally human and in concert with the existential services and functional processes which sustain all of life. In Chapter 2, I have presented

theories from a variety of disciplines which provide this alternative view on stewardship motivation. They include firstly the notions around Sense of Place and the relevance of individuals' beliefs and meanings about the world around them. Other important concepts are for example Ecological Solidarity as an ethical paradigm which stems from Political Ecology, and that deals with justice, reciprocity and equality in a community of life. It also includes theories around Connectedness with Nature which recognize that motivation is a function of symbiotic processes between consciousness, emotions and behaviours. Lastly, alternative stewardship theory must include the consideration of individuals' perception of 'self' in relation to all other beings on the planet, and it stresses the importance of identity theories.

Most importantly, however, this study has highlighted that Basic Human Values play a pertinent role in a common ground for SES resilience. This study has confirmed the aptness of Schwartz's theory by showing that at least 10 different values underlie a bipolarity of motivational orientation in the social community of the Garden Route. These highlight the well-being of self, the welfare of other beings, the acceptance of change and conservation in a common biosphere.

The theories and concepts above have the potential to help induce a sustainability transformation in society, through an impact on the intentions of the individual. Crucial in this process is that the respected science which underpins future trajectories in education, policy, conservation management and the media, conveys appropriate messages to the members of society. This message must symbolize SES resilience, and at the same time portray individual ownership and responsibility for it. The process from ontology to meaning in society cannot occur without critical self-reflection of the researcher and science communicator, and his or her own function in the biosphere. I am of the hope that this thesis has stimulated such self-reflection in the reader and will have an impact on the stewardship discourse in SES theory.

7.2. Practical contributions

The practical contributions this study has made rest on the findings of individuals' bounded rationality and self-interest which motivates SES resilience. I have provided empirical evidence that individual motivation for resilience foremost depends on a degree of consciousness of being interrelated with a community of life at immediate and at distant time and place scales. A sense of boundless connectivity motivates stewardship which enhances the Critical Connectivity in ecological systems, as well as between people and nature in the landscape. Moreover, the level of consciousness motivates

stewardship which respects planetary boundaries and in some cases even enhances the capacity of the biosphere to sustain life.

Examples from this study include the planting of trees which restores landscapes, offsets carbon emissions, and fosters a sense of communion which is derived from the pro-active care for the environment. It includes experiential education which exposes people to the wonders of nature, thereby nurturing empathy and love for all life-forms; or citizen science which, apart from the experiential benefits, also generates learning and knowledge in ecology which assists conservation management. From a perspective on the social function in stewardship, this study has shown that individual leadership, which brings together the variety of responsible actors in a shared ecosystem, to negotiate pro-active and inclusive conservation, is a source of resilience. These are examples of what I have termed transformative stewardship pathways in this study.

I have elicited the critical motivational features of these transformative pathways. It appeared that the combination of values which postulate a pursuit for self-enhancement, self-transcendence, openness to change and conservation is the key to transformation. This finding is of interest to Conservation Psychology and SES resilience theory. On the one hand, both disciplines tend to problematize the fact that individuals act upon self-interest as it tends to contradict common goals and well-being.

This study has shown that the enactment upon self-interest is an inevitable part of motivation and is an important part of transformation. Individuals have a self-interest in actualizing and reinforcing their own values through expressions in their environment. As the transformative pathway has shown, it is fundamentally guided by the values universalism and benevolence, in other words the enhancement of others and transcendence of selfish interests.

The maladaptive pathway has portrayed the difference between self-interest and selfish interest. The absence of the values universalism and benevolence, and the overpowering value for self-enhancement motivate a self-interest which is in conflict with common goals and well-being. In this study, this value was power. In combination with the two conservation values conformity and security, self-interest can fragment landscapes, stir conflict within social communities, disconnect people from nature and pose a burden to the boundaries of the planet.

I have illuminated the elements which can be used by conservation practitioners and researchers to identify maladaptation. This knowledge assists in diagnosing undesirable consequences in the SES, before they become potentially irreversible. In my understanding, the specific role played by conservation practitioners and decision-makers is one of transitional intervention, which bridges the artificial gap between management and sustainability and encourages individuals to engage in transformative pathways.

In Section 6.6.2., I have proposed mechanisms which can induce transformations through positive effects on individuals' intentions, values and motivation. These relate to education which is experiential, relational and reciprocal in a social-ecological community. They also apply to the fostering of an alternative stewardship meaning which symbolizes self-transcendent values. The possible conduits for this is the media, education, outreach and public engagement. Mechanisms must also be pro-active in counteracting values such as power, security and conformity, in phasing out anxiety and fear, and in nurturing an existential identity.

Inducing transformation can also be targeted at individuals and cultural groupings who already indicate self-transcendent values as part of their morality. These mechanisms mainly apply to policies which govern rights to land and opportunities for autonomy, self-sufficiency and tight couplings to ecosystems. These are the mechanisms which enable Connectedness with the Biosphere, and they have to begin at the individual and local SES scale.

7.3. Recommendations for future research

The findings of this research press research questions related to social development in post-Apartheid South Africa. If individuals' relationships with the environment direct trajectories of SES change, the socio-political processes which empower individuals deserves reflection. South Africa is finding itself in the critical phase of 'Transformation'. In this case, the term refers to a political process which seeks to reverse the negative consequences of Black African suppression. During the Apartheid regime, Black people were denied access to education, jobs and land, and current poverty, poor living conditions and unequal educational opportunities are relics of that regime.

'Transformation' means that socio-political strategies are redesigned to target Black empowerment, through financial aids, free education, distribution of land and superior rights over potentially available jobs. Colloquially termed the 'Millennials', Black South Africans are going to have a major

influence on the trajectories of change in the country. This is a fact in line with the political strategy of the ruling party ANC.

The issue of empowerment and leadership in South Africa raises a major question about environmental change and stewardship. What has emerged in my research is that the notions of voluntary conservation and care for the environment is a Western paradigm which predominates amongst White cultures. Despite my efforts to increase the amount of Black participants in my study profiles, I could not identify relevant individuals in the Garden Route. Arguably, some of the White respondents are right in saying that Black people are too overwhelmed in dealing with the knock-on effects of suppression before they can turn their conscious interest to the conservation of nature.

Studies of the Millennials might indicate that their focus is based on self-advancement and self-gratification with limited concern for environmental issues. The attributes are not unlike the maladaptive pathways discussed in the thesis and highlights the need to transcend racial categorisation of issues, and to rather see them as challenges faced by all in South Africa.

My data did not provide the knowledge needed to predict pathways of stewardship from a viewpoint of the Millennials. Sense of Place and values are potentially different amongst Black African cultures who have been significantly shaped by a different background in South Africa. The example of the fishing ladies from Sedgefield, who have been suppressed as Coloureds during Apartheid, merely hints at the fact that different ethnicities also have fundamentally different worldviews and relationships with nature. Meanings of stewardship amongst Black culture is a knowledge gap and is my recommendation for further research.

7.4. Future scenarios for stewardship in the Garden Route

In Chapter 3, I described current social-ecological dynamics and trajectories of change. The important ones which pertain to hypothesized future scenarios in the Garden Route are abrupt and uncertain environmental change, the Garden Route Biosphere Reserve, and immigration and population growth with implications on spatial development. These changes motivate stewardship and can provoke further vulnerabilities or provide opportunities for transformation in the Garden Route. In line with the results of motivation and leverage points in this study, I present hypothesized future scenarios for the Garden Route.

7.4.1. Uncertain environmental change

Two uncertain environmental changes which concern the Garden Route are fires and floods, and they are intricately linked with the local pressures felt due to climate change (Midgeley et al. 2005). Fires and floods have affected the study area majorly in the last century, and they have left a legacy in the mindsets of people and in the physical landscape. The concern of such environmental events is that they are unpredictable in its scope and its extent. On the one hand, this raises anxiety and fear amongst the general public, which is very apparent at current times.

Some individuals are reactive in the response to uncertain environmental change. Since the fires in 2017 (refer to Box 2), individuals have begun to resettle in areas which are less fire prone. This is visible in the countless properties in Knysna, which are now on sale, and on the high demand for land and houses in surrounding towns and settlements. This is a manifestation of placelessness, which I have identified as a motivation for maladaptation, and it shows the linkage to anxiety and fear which featured majorly in this study.

One current example of placelessness as a driver of maladaptation concerns housing development along the coastline. A reoccurring concern by policy-makers and a great part of the public in the Garden Route is the insensitive development which ignores coastal set-back lines, dune systems and the ecological infrastructure which protects people from storm floods and sea-level rise. A majority of these houses belong to the so-called 'swallows', individuals who only spend a few weeks of the year in the Garden Route as a holiday destination. This example of maladaptation is driven by the influence sourced through financial wealth. As several individuals in this study made evident, wealth is linked to power and security, two values which are likely to flourish in the face of uncertain environmental change.

The anxiety and fear triggered by uncertain environmental change in financially prosperous individuals paves vulnerabilities in the system of the Garden Route. From the experiences of floods and beach erosion, property owners have become reactive in addressing perceived risks. The coastline shows numerous examples in which individuals have tried to protect themselves through walls and gabions. The problem with many of these structures is that they transfer the vulnerability to neighbouring properties that now suffer from the effects of erosion.

The above suggests that the development of policies which direct individual's relationship with place is not enough. These rules are bent or ignored, as can be seen in the illegal placement of houses on

the sensitive coastline. It also does not address the 'pack-up-and-leave' mentality identified in this research, and the problems that individuals might cause in their next place of residency.

One anticipated future scenario in the Garden Route is that these maladaptive processes are aggravated. The recently published integrated coastal management plan shows an overemphasis on policy solutions to target sensitive development along the coastline. One of the solutions is the rezoning of coastal set-back lines as a means of adaptation to climate change. In line with the findings of this study, policy does not resolve some of the root causes of individually-induced maladaptation, namely anxiety, fear, values and relationships with place. A more appropriate strategy would be to invest into appropriate education and public engagement. Transformative solutions and the investment into the slow drivers of maladaptation however feature marginally in current policy discourses.

On the other hand, the Knysna fires in 2017 have shown that abrupt and uncertain environmental change also triggers pro-active responses and self-organization in the public which benefits ecology and the social community. This was for example seen in the many WhatsApp groups which had formed to communicate the fire risks and hazards and to ask and offer assistance for extinguishing fires. Beyond the immediate tragedy of the fires, WhatsApp went viral with offerings of donated food and clothes, temporary housing, animal rescues and the general organization of a support structure for fire victims.

The George Herald reports in a newspaper article about one local residents' experiences with a WhatsApp group which he formed to help people with emergency support (www.knysnaplettherald.com, accessed on 28th of September 2017). The local states that "*Within a few hours the group multiplied and went viral, add three close friends as administrators who very rapidly became superdudes too, with over 5 000 individuals being guided to safety and sanity across the region, country and the world. Yes, the world; people from abroad with loved ones, homes and pets in the area were tuning in for updates and support as very little information was available from local infrastructure or mainstream media.*". This particular WhatsApp group has subsequently led to the formation of a bottom-up initiative called 'Eden Be Needin'. This initiative now aims to restore habitat and assist wildlife and biodiversity affected by the fires, through generous financial support from private and public sectors. As a stewardship initiative, it symbolizes optimism and trust in the solidarity amongst people and towards the landscape they depend on.

Due to the predicted increase of abrupt and uncertain environmental change, the norms by which individuals adapt will become increasingly relevant. The future is likely determined by both, reactive and proactive responses of people. These two trajectories of change occur simultaneously and are a result of the prevailing bipolarity of values. Unless local policy, education and conservation outreach begin to invest into the change of values, maladaptive pathways will prevail and potentially outweigh the transformative impacts of pro-active forms of stewardship.

7.4.2. Immigration, population growth and implications on spatial development

In Section 3.2.1., I have emphasized that the Garden Route is currently experiencing an overwhelming influx of people. In search for jobs, land, recreational opportunities and basic services, including hospitals and shops, population growth forms an immense challenge for spatial planning in the local municipalities. Based on the overall goals of the National Development Plan and Integrated Development Plans, the Spatial Development Frameworks are designed around the delivery of basic services, such as water, electricity, hygiene, jobs and staple foods. This is most easily achieved by establishing densified residential areas which can benefit from bulk infrastructure.

As I have problematized in Section 3.2.2., these are characteristics of a red loop system, and it basically portrays urban development which is environmentally contested. SES resilience would depend on spatial development which contains urbanisation and invests into fringes which can transition from urban to sustained rural habitats, such as portrayed in the transformative pathways through permaculture and conscious, subsistence resource use. One of the problems with an apparent lack of governmental support is the loss of autonomy of people who currently live self-sufficiently and in a restorative or conservative interaction with ecosystems and primary production systems. As this study has shown, autonomy and self-sufficiency is a main source of ecological resilience, of which its loss will backfire on the well-being of people in the Garden Route.

The practical obstacles of spatial planning on autonomy can be exemplified by what I have observed in the study area. Five informants in this research, who aim to live in a green loop system were significantly discouraged by the legal stumbling blocks put in place by local municipalities. The building plans for self-sufficient houses are immensely difficult to be approved. The participants all experienced a series of turn-downs by the municipalities with regards to innovation and energy efficiency in the buildings, rainwater harvesting or composting toilets. This is in stark contrast to the legal and financial support for housing development in red loop systems.

A crucial role of local policies is to encourage and motivate individuals to live responsibly and proactively in the name of ecosystems. One way of doing this is to facilitate autonomy and green loop systems through better legal and financial support for self-sufficiency. At this current point in time, this is a goal unspoken in Spatial Development Frameworks, predicting a legal trajectory towards disconnects from the biosphere. However, given the optimism, trust and self-efficacy which I have observed in transformative stewardship pathways, it can also be anticipated that many motivated individuals bypass or overcome legal obstacles, and with hope, eventually help change the system of spatial development.

7.4.3. The Garden Route Biosphere Reserve

A final point for reflection about future scenarios in the Garden Route is dedicated to the influential impacts of the Garden Route Biosphere Reserve. The Garden Route Biosphere Reserve is a landscape scale initiative which seeks to reconcile conservation goals in protected areas and surrounding land uses. The initiative hereby targets private landowners, business owners, policy-makers and professional conservationists to find a common ground for resilience.

Based on the philosophy of UNESCO's Man and the Biosphere program, the initiative emphasises connectedness between humans and nature, and with the capacity of the biosphere to sustain life. In my personal communications with the directors and steering committee, it was indicated that this paradigm is prevalent and likely to influence how nature conservation is viewed in the eye of the public.

Due to the involvement of a company called Biowise in Knysna, the Garden Route Biosphere Reserve has chosen Biomimicry as the underlying guideline for the implementation of its plans. Biomimicry is an ethos for a life-centred human existence which uses ecological principles as a mentor and model for technology, build infrastructure, institutions and human behaviours. Biomimicry is based on the idea that ecological systems have no waste and recirculate energy and nutrients efficiently in a closed system. It presumes that humans are part of this system, yet have need of remembrance of this fact in order to achieve sustainability (Wahl 2006).

The ethos of Biomimicry resembles the principles of green loop systems, described by Hamann et al (2015), as SES which are connected with the biosphere. It, however, also recognizes that not everyone is interested in living self-sufficient lifestyles based on direct ties to ecosystems and autonomy from economic markets and dominant social structures. The implementing agents of the Garden Route

Biosphere Reserve thus aim to provide a compromise in which interests of economic, political, environmental and private sectors can be aligned with the functioning of ecosystems and the biosphere.

Part of the implementation plan is to nurture a conservation paradigm which stipulates that development must be conducive to life. Foremost, this includes the plan for a Biomimicry centre in which its principles are studied, taught and communicated to businesses, educators, scientists and the public. Biomimicry is also meant to be the ethical cornerstone of all communication strategies with policy-makers, for outreach programs for the public and engagements with conservation agencies. This implementation plan is regarded as an experiment which has the ability to transform unsustainable trajectories in the Garden Route.

In Section 5.3.2., I have shown that Biomimicry is a paradigm held by some individuals who engage in transformative stewardship pathways. It certainly depicts a fundamental shift of a conservation ideal which has been influential in the history of professional conservation in the Garden Route. Biosphere Reserves in principle target cultural landscapes which function as a dynamic and interrelated system and they provide a contrast to the overreliance on protected areas as a mechanism to preserve nature and manage people. My study has shown that the emphasis on separation between and control of humans and nature is still prevalent amongst the public and underlies maladaptive pathways.

The advocacy of the Garden Route Biosphere Reserve, and Biomimicry as its underpinning ethic, can nurture a shift in peoples' mindsets, by conveying that conservation is not a professional function, but an individual responsibility which pertains to all spheres of life. In this sense, the Garden Route Biosphere Reserve, influential and internationally recognized, is expected to positively shape a meaning of stewardship which motivates resilience and Critical Connectivity.

8. Research reflections

I dedicate this chapter to my own research reflections. In Section 4.3. I have referred to the concern raised by Moon et al. (2016) about the validity of qualitative social research as it is applied in ecological and conservation sciences. Moon et al. (2016) critique that current publications negligibly account for dependability, credibility, conformability and transferability, as the four quality criteria in social research. The authors provide principal guidelines for the researcher to ensure that these measures are in place. In Sections 8.1. to 8.4., I reflect how my own research ensures dependability, credibility, conformability and transferability. In Section 8.5., I state the limitations of this research and disclaim the scope of my study.

8.1. Conformability

In citing Guba (1981), Moon et al. (2016, p.17) provide a definition for conformability:

“How can one establish the degree to which the findings of an inquiry are a function solely of the subjects (respondents) and conditions of the inquiry and not of the biases, motivations, interests, perspectives and so on of the inquirer?”

Conformability stems from the transparency of the researchers’ predispositions, beliefs, and assumptions upon which the methodology was build. With regards to this quality measure, it is important to reflect on my ontological and epistemological positioning, and how it has evolved throughout my research journey.

During the course of my fieldwork, I experienced immense personal growth and expanded my knowledge paradigm of conservation. As indicated in Section 4.2.1. I began my research with the idea that it is important to further the understanding of motivations for voluntary conservation at the individual scale. Due to a personal interest in and inspiration from the literature of Conservation Psychology, I hoped to contribute to the predictive value of motivational theory.

However, once I began engaging with the most renowned volunteers in the study area, I learned that not all conservation is desirable, particularly in the face of SES resilience principles, which formed a major part of my theoretical framing. I observed that individual’s motivation was linked to processes which constrained ecological integrity and harmonious relationships between people and with nature. These observations stemmed from personal communication and interviews with stakeholders in the study area who described how protective behaviours in the name of nature had negative

consequences on their well-being and on the ecosystems which they treasure. This meant that my research paradigm changed from an initially pragmatic to a critical one on the conventional understanding of conservation.

This imposed a change of my epistemological underpinnings. I began to question the theoretical conceptualization of Sense of Place as a motivation for stewardship. My initial observations in the Garden Route had stewardship emerge as a dynamic process, which integrates the reinforcement of Sense of Place through behaviours and the consequences on social-ecology and a resilient future. I observed this as a phenomenon which I have termed 'place creation' in this thesis. While place constructs such as attachment, identity and meaning significantly featured as the motives to engage in conservation, they poorly explained the dynamic process of stewardship from individual to social-ecological scales.

I then expanded my literature search, which led to a perspective that integrates the individual scale in social-ecological resilience thought. Firstly, maladaptation theory became a major part of my epistemology. Maladaptation theory highlights how human decisions to protect nature values at a specific point in time, can transfer their vulnerability to other places and times (Barnett & O'Neill 2010). From this discourse around rapid and uncertain social-ecological change, maladaptation theory links every individual's motivation to the functioning of landscapes and the biosphere. This consequently had me let go of place theories which positions the individual in the context of a bounded biophysical place and fixed sustainability scale.

It motivated me to include schools of thought which address the individual embeddedness in the biosphere (eg. Cooke et al. 2016). Through for example theories of environmental identity, human agency and human values, I learned how cognition and experiences encourage individual learning in a SES. I also delved into theories from Deep Ecology and Political Ecology to consider how genetic predispositions and evolution might play a role in this. These are for example arguments that individuals have an implicit knowledge of being connected to all life forms (Schultz et al. 2004), and that all humans possess an 'ecological intelligence' which postulates that nature must be treated with respect and consciousness (McCallum 2005). My firm grounding in interdisciplinary sustainability sciences encouraged me to draw from these multiple epistemologies, to zoom into the phenomena of 'place creation'.

8.2. Dependability

The second quality measure is dependability, defined as a question by Guba (1981), and cited by Moon et al. (2016, p.17) as:

“How can one determine whether the findings of an inquiry would be consistently repeated if the inquiry were replicated with the same (or similar) subjects (respondents) in the same (or similar) context?”

One of the important considerations for dependability is the sampling procedure of the researcher. I regard the nature of my participant profiles as an indication for dependability. On the one hand, I ensured that I use the snowballing technique with key informants who represented the varieties of cultures and worldviews around nature and voluntary conservation in the Garden Route. On the other, within each of these broader worldviews, I interviewed, observed and engaged with individuals until a saturation point was reached; that is that the meanings of stewardship deflected enough resemblance to be seen as repetitive. Moreover, I chose an analytical outlook on stewardship as the norms of interacting with nature, as opposed to single and potentially non-reoccurring behaviours or events. Saturation is recognized criteria for validity of social research in practice (Guest et al. 2006).

8.3. Credibility

Credibility is a quality which refers to the degree to which the research portrays the actual meaning which the participants sought to portray. Moon et al. (2016, p. 17) hereby ask the question:

“How can one establish confidence in the “truth” of the findings of a particular inquiry for the subjects (respondents) with which and the context in which the inquiry was carried out?”
(Guba 1981).

I considered credibility in the sense that my data collection build on mixed methods and my analysis on triangulation of these sources. This meant that I allowed participants to use multiple forms of communicating to me, for example abstractly through art, verbally through interviews and conversation, and physically through expressions of stewardship. I recognized that all these communicated pieces of one truth value, which I intended to reconcile in the analysis.

The second precaution I took with regards to credibility was to reflect regularly with peers and the local community about the truth value of my data. For one, I gave regular feedbacks of my research

to my colleagues at the Sustainability Research Unit to enable that potential biases in my interpretation could be discussed. I also gave several presentations at public events, where my research findings were exposed to debate with the local community. Due to the fact that I did not encounter significant objections to my interpretations, I claim credibility of this research.

However, a few notes on credibility need to be added, as they pertain to the procedure of the photo-voice technique. I was faced with various levels of enthusiasm for the photographic exercise amongst the participants. About three quarters of the interviewees portrayed motivation and considerable care in choosing subjects and taking photographs which answered my research questions. The other respondents, while being intrigued by idea of photography as a research method, made lesser of an effort to visit places with the disposable camera. I noted that particularly busy and professionally occupied individuals lacked the motivation to invest their free-time into an arguably time-consuming exercise. Some respondents thus provided fewer photographs, or drew primarily from the ones they already had. This concerned me, as it suggested that the photographs vary in their credibility as a data source.

I used two strategies to overcome this variability. On the one hand, I was more aware and attentive to verbal and body language in these interviews and made notes when I sensed mismatched meanings in the photographs provided. On the other, I then drew more heavily from the written transcripts when analysing data. I believe that this flexible research approach accommodated variability amongst participants, without compromising credibility.

8.4. Transferability

With regards to the fourth quality measure for qualitative research, Moon et al. (2016, p.17) ask the following question:

How can one determine the degree to which the findings of a particular inquiry may have applicability in other contexts or with other subjects (respondents)? (Guba 1981).

Partly I argue that by using a universal Basic Human Value theory in describing my data, I naturally operated within a context of transferability. In a culturally diverse study area such as the Garden Route however it is likely that values depict both, the universality of Schwartz's theory, and some of the outliers identified by Schwartz himself. In such cases of deviation from my theoretical framework, I

searched for explanation by at least one other empirical study. Due to this adaptive application of Basic Human Value theory, I claim the transferability of this place-based study.

8.5. Limitations of the research and disclaimer

In this section, I describe the limitations and disclaim what could not be addressed in this research. Firstly and most importantly, I disclaim universality of my research findings. The Garden Route is an area where a diversity of cultures from developing and developed countries meet. They include subsistence communities from African countries or rural South African provinces, and communities from the economically prosperous Cape Region, Gauteng, or European and American countries. Everyone in the Garden Route lives in dependency on a place which is ecologically unique. This means that values, stewardship meaning and motivation, as well as the consequences on social-ecological change are place-specific and cannot be universally applied to other parts of the world.

I am aware that the differences in values, meaning and stewardship motivation are deeply embedded in the cultural diversity of the Garden Route. The differences in belief systems, political affiliation, education, wealth, nationalities, language and race are among the many features which delineate cultural groupings in the Garden Route. Culture shapes the informal institutions which guides social communities in their interactions with people and nature.

Culturally nuanced features and processes shape individual motivation. Basic Human Values are features of culture and an analysis thereof inevitably has explanatory power beyond the individual. I postulate that the individual unit of analysis has distilled the essential cultural variables which play a role in motivation. However, I disclaim that it has captured the implications of culture in its full complexity.

Moreover, I disclaim my data's reflection of the distribution of individual values and motivation in the study area. During my participant selection I included individuals with loud and silent voices and voices from a diversity of cultures. However, I do not attempt to present dominance, tacitness or demographic variation of stewardship in the Garden Route. Instead, I have captured representative diversity through strategic sampling and selective presentation of key sentiments.

In a study which deals with maladaptation and transformation, negative and positive connotations of different actors and groups could not be avoided. My critical research lens stipulated my openness about research findings which constituted mindsets, values and actions. However, to the best of my

ability, I have guarded the anonymity of research respondents, by censoring localities and contextual details in maladaptive pathways.

Despite my consideration of the quality criteria, I am aware that the analysis and interpretation of the data might be subject to personal bias. I have used a normative approach to science which inherits a value-based research lens. The values which have influenced the interpretation of the data were stipulated by SES resilience principles and included connectedness, diversity and adaptability of a dynamic system. Consequently, judgements about maladaptation and transformation were made. The value-base for this work is personal but was put forward adequately in the theoretical framework.

The cross-cutting edge between objectivity and subjectivity in normative science is an on-going debate and includes topics such as quality (Lincoln 1995), ethics and power (Dowling 2005). Normative science is value-laden and inherits a subjectivity which is often critiqued (Rescher 2014). However, according to Mantzoukas (2005), bias in interpretive research is unavoidable and by no means a constraint to validity. The most important consideration is for the researcher to be transparent about his/her personal position and worldview. This Section 8 has provided transparency and shone a light on my paradigm and potential sources of biases.

Some scholars state that normative sciences, with subjective processes in the research methodology, actually enable researchers to comprehend psychological processes and human values more objectively (Ratner 2002). I have used a mixture of unconventional methods, including photographs, communications and observations, through which maladaptive and transformative elements have emerged. The key to managing the issue of bias is for the researcher to ensure that the interpretation of the results occurs objectively on the basis of his/her value-lens (Ratner 2002). I believe that I have done this and adequately substantiated where, when and why SES resilience principles were opposed or enhanced.

9. Literature cited

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Appendix 1: Letter with instructions for photo-voice exercise



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January 2015

Dear Research Participant

RE: PHOTOGRAPHIC EXPLORATION OF PLACE ATTACHMENT (PHD RESEARCH PROJECT: LISA HEIDER)

Our immediate surroundings and the places that we live in have unique meanings to all of us.

These meanings have grown from who we are, where we come from, why we are here and how we see the world. They influence our experiences of places and frame the way we see, smell, touch and feel them. The use of photography offers a creative and meaningful way of sharing daily life experiences and feelings. The purpose of this exercise is for you to reflect on your meanings of your environment.

Firstly, choose **five** physical places that are most special to you and take a picture of each.

Secondly, consider carefully the subjects that have contributed most to your experience of your surroundings. The experiences may be positive or negative and the subjects may be personal, social, cultural or ecological. Some of the subjects may be physical and easy to capture in a photograph; others may be more abstract where you are encouraged to use your creativity and imagination to portray them. Produce a set of **ten** pictures depicting subject matter contributing to your experience of your surrounding environment.

Thirdly, consider carefully what you consider to be the greatest risks to what really matters to you. Once again, risks may be physical or abstract subjects and your creativity and imagination are required to depict them. Produce a set of **ten** pictures that best portray your perceptions of risk in your surroundings.

For each photograph that you take, record your motivations for capturing the meaning you are attempting to convey, on paper. These notes will be our starting point for a conversation about your photographs during a follow-up interview in approximately one month's time.

Thank you very much for your participation in this research project. Your time, effort and consideration are greatly appreciated. I am very curious about the outcome and look forward to discuss your place experiences as the motivation to care for them.

Yours sincerely

Lisa Heider
PHD student