Exploring the Challenge of Financial Sustainability of the Publicly Managed Terrestrial Protected Area Estate in New South Wales, Australia

by Louise O'Flynn

Thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

under the supervision of Dr Stephen Schweinsberg and Dr Stephen Wearing

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Louise O'Flynn, declare that this thesis is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Business School at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

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Dedication

I dedicate this thesis to my daughters, Juliette Edna, and Emmeline June. May they enjoy the rich tapestry of national parks across NSW and come to know the true value of nature. I also hope that they follow *their* dreams and understand beyond a shadow of doubt that girls and women can do anything!

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List of Abbreviations

CBA	Cost-Benefit Analysis
CBS	Climate Bond Standards
EIB	Environmental Impact Bond
GEF	Global Environment Facility
GIIN	Global Impact Investing Network
IUCN	International Union for the Conservation of Nature
KPI	Key Performance Indicator
NPWS	National Parks and Wildlife Service
NSW	New South Wales
PA	Protected area
PPP	Public private partnership
PTA	Parameter and Technical Adjustment
SBB	Social Benefit Bond
SIB	Social Impact Bond
TOC	Theory of Change
UK	United Kingdom
UNDO	United Nations Development Program
UNEP	United Nations Environment Program
U.S.	United States
WCB	Wildlife Conservation Bond
WCPA	World Commission on Protected Areas

List of Publications

The following papers have been published in the Journal of Park and Recreation Administration on a range of topics explored in this thesis.

Paper	Topics covered
O'Flynn, L., Schweinsberg, S., & Wearing, S. (2021). Financing protected areas: The social and environmental impact bond's role in terrestrial protected area sustainability. *Journal of Park and Recreation Administration*. https://doi.org/10.18666/JPRA-2021-10870	• Challenges for sustainable financing of PAs • Potential conservation finance mechanisms • Terrestrial PA financial sustainability. • Diversifying the funding portfolio for terrestrial PAs • Conditions that can help to achieve financial sustainability • Assessing the feasibility of the impact bond as an alternative finance mechanism • Lessons for financing terrestrial PAs • Commonly cited challenges associated with impact bonds.
O'Flynn, L., Schweinsberg, S., & Wearing, S. (2022). Applying theory of change to the sustainable financing of protected areas. *Journal of Park and Recreation Administration*. https://doi.org/10.18666/JPRA-2022-11309	• Defining and drafting a ToC • Theory of Change for the sustainable financing on the PA estate in NSW • Impediments to financial sustainability for publicly managed PAs in NSW • Enabling conditions for financial sustainability for publicly managed PAs in NSW • Research methods applied to this research study • Pathways to change for publicly managed PAs in NSW • The interconnections between enabling conditions, impediments, and pathways to change • Management and policy lessons and implications.

Abstract

The purpose of this qualitative action research study is to explore the challenge of financial sustainability of the publicly managed terrestrial protected area (PA) estate in New South Wales (NSW) under the care and control of the National Parks and Wildlife Service. It also seeks to understand the feasibility of the impact bond as a finance mechanism to complement existing funding sources for terrestrial PAs. Data sources include interviews with PA specialists and impact investment specialists, secondary data analysis, and the research literature. The mechanics of the thesis follow Coghlan and Brannick (2014)'s action research cycle, comprising a pre-step followed by four basic steps: (1) construction, (2) planning action, (3) taking action, and (4) evaluating action. The thesis is designed to encourage collaboration between the researcher and participants throughout the action research cycle.

The thesis reveals eight impediments and 13 enabling conditions regarding the financial sustainability of the publicly managed terrestrial PA estate in NSW. Identifying the impediments helps to understand the current financial situation in NSW, while identifying the enabling conditions assists in visualising what a financially sustainable terrestrial PA estate would look like in NSW. A Theory of Change for the financial sustainability of the PA estate in NSW is developed, distinguishing six interlinked pathways to change: (a) government support; (b) institutional effectiveness; (c) an appropriate business model; (d) strategic planning and innovation; (e) communication and advocacy; and (f) collaboration and partnerships. A red thread that weaves its way through the thesis is the action of diversifying the PA funding portfolio, specifically how the social and environmental impact bonds can help to finance publicly managed terrestrial PAs. The thesis finds that while the impact bond is not a panacea for the funding needs of PAs, it can be a feasible finance option in certain situations. To this end, a feasibility checklist is developed to assist PA practitioners in determining the suitability of the impact bond to their funding needs.

The thesis also presents the practice-oriented theory generated through the action research study, which includes a conceptual framework for the financial sustainability of terrestrial PAs. It is intended that the conceptual framework will help practitioners to define and understand the key concepts relevant to PA financial sustainability and to address the challenge of financial sustainability.

While the research study has completed the first action research cycle, the recommendations presented for future research and practical actions offer a framework for the cycles to follow.

Chapter 1 Introduction

1.1 Background of the Problem

> Natural habitats are being destroyed every day. We risk losing around a quarter of most plant and animal species. These drastic losses have a grave impact on life and quality of life, including for us humans. And so we must step up our efforts to protect biodiversity and natural habitats – not some time or other, but now, and not somehow or other, but monumentally. If we do not, the consequences will soon be irreversible. (Angela Merkel, Federal Chancellor, Germany, 2021).

Earth is the only place in the Universe where we are certain that life exists. Yet, Earth – our only home – is experiencing a mass extinction of flora and fauna at a rate estimated to be faster than the extinction of dinosaurs (Hance, 2016). Climate change together with habitat loss and degradation are endangering Earth's biodiversity and the ecosystem services such as fresh air, fertile soil, and clean water that sustain human life. Protected areas (PAs) are the key investment that humans have made in the conservation of nature; they contribute to the United Nations Sustainable Development Goals and are vital to human health and wellbeing (IUCN, 2010b). The ecosystem services provided by PAs have an estimated annual economic value of up to US$145 trillion (Meyers et al., 2020) while PAs also minimise biodiversity loss, sustain cultural connections and economic livelihoods, and make an important contribution to the global economy (Watson et al., 2014). They also host millions of visitors each year; for example, despite travel restrictions and intermittent park closures due to the global pandemic, national parks in the United States (U.S.) received 237 million visitors in 2020 (Morton, 2021).

The International Union for the Conservation of Nature (IUCN) defines a PA as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2008, p.8). At the time of writing, almost 16% of Earth's land area was defined as PA (Protected Planet, 2022). With Earth experiencing environmental change at an unprecedented scale and speed, PAs offer humans a level of security and stability – people need PAs now more than ever (IUCN, 2010b). However, despite their vital role, PAs continue to be severely underfunded. In 2020, global spending was estimated to be US$24.3 billion per year which equates to one third of the financial support required to effectively manage these irreplaceable treasures (an estimated US$67.6 billion per annum) (Waldron et al., 2020). Additionally, it is estimated that between US$35.5 billion and US$110 billion is required annually to expand the PA system to cover 30% of the global land surface by 2030, in accordance with the Convention on Biological Diversity's target expansion for PAs cited in the Global Biodiversity Framework 2022 (Waldron et al., 2020; CBD, 2022).

1.2 Statement of the Problem

New South Wales (NSW) is a state in south-eastern Australia and home to more than eight million people (ABS, 2022). The terrestrial PA estate under the care and control of the National Parks and Wildlife Service (NPWS) covers over seven million hectares of land or 10.2% of the state's total land area, including more than 890 national parks and nature reserves, four World Heritage-listed sites, and 17 Ramsar wetlands (NPWS, 2022c; SMH, 2023). NSW PAs are important habitats for native flora and fauna with around 85% of all threatened species in NSW represented in PAs while the most intact and largest examples of many threatened ecosystems are also preserved in the NSW PA estate (NPWS, 2021i). Furthermore, PAs are an important carbon store, with 900 megatonnes of forest carbon stored within NSW PAs – the equivalent of 41% of the state's total forest carbon (NPWS, 2021i).

The NSW PA estate is a popular tourist and visitor destination attracting 60 million domestic visitors annually, contributing over A$17.85 billion to the NSW economy each year and supporting 74,000 jobs (Chung, 2021). The estate experienced a visitation boom during the COVID-19 pandemic. With overseas and interstate travel restrictions in place, NSW residents turned to PAs as holiday destinations and places to exercise and recreate (Hannam, 2020; Chung, 2021). PAs became so popular during the height of the pandemic that visitor capacity limits were introduced at busy visitor precincts, with temporary precinct closures used to control visitor numbers, for example, at Wattamolla Beach in Royal National Park (Hannam, 2020).

The health and wellbeing benefits associated with the state's PAs have also been acknowledged during the pandemic, with visits to national parks recognised as being "good for the soul" (Hannam, 2020, n.p.). In fact, the annual health services value of Australia's PAs is estimated at A$145 billion (Rosengreen, 2019). Further, Aboriginal and Torres Strait Islander people maintain an enduring connection to their ancestral lands, with NSW PAs conserving over 40,000 years of living and physical Aboriginal culture, such as knowledge and cultural practices, stone engravings, and rock art (NPWS, 2021b).

Like PAs around the world, an obstacle to the effective management of the publicly managed terrestrial PA estate in NSW is financial sustainability. In my work for NPWS, I have experienced this challenge firsthand; however, I did not fully appreciate its severity until I managed a priority project for NPWS in one of Sydney's most culturally significant and visited national parks. Initially, my brief was to deliver infrastructure upgrades for the park; however, during my conversations with the traditional landowners, the community strongly advocated for an active role in the management of and decision-making for their ancestral lands.

I worked collaboratively with the local Aboriginal community to meet this request, and together we developed a Social Capital Program (DPE, 2018). Both the federal and state government praised the social capital program for its foreshadowed benefits to community; however, the funding received was to cover infrastructure works only (DPIE, 2022). While I welcomed the funding, I also felt disappointed because I knew that without secure funding, it would be difficult to continue the social capital program, its benefits would be diminished, and the relationship with community would be tarnished. This experience highlighted the struggle that park managers face in sustainably financing PAs and the debilitating consequences of insufficient funding. It also sparked a desire to address this challenge.

Initially, I discussed the issue with PA practitioners working both inside and outside of the NSW context. I wanted to validate my assumption that financial sustainability is a system-wide challenge and a major obstacle to the effective management of PAs. During these discussions, practitioners shared their experiences of receiving funding for new infrastructure projects and the difficulty faced in securing funds for day-to-day management activities, including funding to cover the maintenance costs associated with existing infrastructure assets. It was also during these discussions that the concept of an impact bond was discussed as a new finance mechanism in social sectors, such as criminal justice and education. Furthermore, the impact bond was a topic of interest for the NPWS executive team, and through discussions with executive team representatives and PA practitioners more broadly, the question arose: how could the impact bond help to finance publicly managed terrestrial protected areas?

Following this, I commenced preliminary research into the funding of PAs and into impact bonds as a subset of impact investment. The literature on impact bonds revealed that the impact bond market had only focused on financing programs looking to solve social challenges and, at the time of my investigations, had not been adopted anywhere in the world to help finance PAs. The literature on PA financing and my informal discussions with practitioners confirmed my initial assumption that financial sustainability is a system-wide challenge and a major obstacle to the effective management of PAs. However, the preliminary research also revealed that there is limited literature on the challenge within the NSW context, in particular the impediments and enabling conditions that exist for the financial sustainability of publicly managed PAs in NSW and the pathways to change.

Therefore, this action research study was born out of my own professional experience and the experiences of other practitioners, and it sought to address a gap in the literature on the funding of terrestrial PAs and impact bonds in relation to their feasibility as a finance mechanism to complement existing funding sources for PAs.

1.3 Purpose of the Thesis and Research Questions

This thesis was undertaken as part of the Industry Doctorate Program at the University of Technology Sydney (UTS). The Industry Doctorate Program aims to deliver "research solutions to real and pressing problems for organisations" by partnering students with industry organisations to address the pressing problem through their PhD (UTS, 2018, p.2). My industry partner was NPWS, and the dual purpose of the thesis was to:

- Address a real-world challenge – the financial sustainability of the publicly managed terrestrial PA estate in NSW under the care and control of NPWS.
- Make an original and important contribution to knowledge by addressing a gap in the literature on the funding of terrestrial PAs and impact bonds as a feasible financing mechanism for PAs.

The research sought to answer the following four questions:

1. What are the impediments to the financial sustainability of the publicly managed terrestrial PA estate in NSW under the care and control of NPWS?

2. What are the enabling conditions for the financial sustainability of the publicly managed terrestrial PA estate in NSW under the care and control of NPWS?

3. What are the pathways to change for the financial sustainability of the publicly managed terrestrial PA estate in NSW under the care and control of NPWS?

4. How could the social and environmental impact bond help to finance publicly managed terrestrial PAs?

1.4 Significance and Contribution

1.4.1 Contribution to Knowledge

Herr and Anderson (2005, p.34) explain that "insider accounts generate important knowledge to be shared among practitioners, just as case studies reported by academic researchers do. In fact, they begin to build a knowledge base that can inform the research community about the actions and beliefs of practitioners – a knowledge base that is otherwise unavailable". On commencing the Industry Doctorate Program at UTS, I set out to study the publicly managed terrestrial PA estate in NSW, a context that I had worked in for over a decade. My intention was to explore the challenge of financial sustainability, and in doing so, I wanted to improve the management of PAs in NSW. I anticipated that through my action research study, I would generate new knowledge that would benefit my practices as a PA manager and hopefully benefit the practices of other PA managers.

As explained in Section 1.2, prior to this research study, there was limited literature on the challenge of financial sustainability of the publicly managed terrestrial PA estate in NSW, particularly in relation to the impediments and enabling conditions that exist for PA financial sustainability and the pathways to change. There was also limited literature on the feasibility of the impact bond as an alternative finance mechanism for terrestrial PAs. Nevertheless, the thesis is founded on the work of other people and institutions, notably the IUCN and its decades of research into the effective management of PAs (see IUCN, 1994; 1998; 2010b; 2013; 2020; IUCN ESARO, 2020); the Conservation Finance Network and its research on funding mechanisms and sources for nature conservation (see Flanagan & Woolworth, 2019; Lewis, 2019; Meyers et al., 2020); the Office of Social Impact Investment and its work on impact investing in NSW; Quantified Ventures and their involvement with environmental impact bonds (EIBs); Emerton et al. (2006)'s work on the sustainable financing of PAs; Waldron et al. (2014)'s investigation into the costs and benefits associated with protecting 30% of Earth for nature; Costanza et al. (2014)'s research into changes in the global value of ecosystem services; and Dasgupta (2020)'s independent review on the economics of biodiversity. By building on this work and the work of many others, the research has generated knowledge in relation to:

- The impediments to and enabling conditions for the financial sustainability of the PA estate in NSW under the care and control of NPWS. The impediments and enabling conditions are presented in Chapters 4 and 5 and summarised in Chapter 8.
- The six interlinked pathways to change that exist for the financial sustainability of the PA estate in NSW under the care and control of NPWS, which are presented in a Theory of Change for the Financial Sustainability of PAs in NSW. The pathways to change are discussed in Chapter 6 and summarised in Chapter 8.
- The establishment of a benchmark for the current financial situation for the PA estate in NSW that can be used to track changes in the financial situation and progress towards financial sustainability over time. This was achieved by adapting the United Nations Development Program (UNDP)'s PA Financial Sustainability Scorecard template to the NSW PA estate and populating the scorecard for the 2020–21 financial year. The scorecard data is referenced throughout the thesis.
- A better understanding of how the impact bond can help to finance terrestrial PAs and, to this end, the development of a checklist to assist PA practitioners in determining the suitability of the impact bond as a finance mechanism for their funding or project/program requirements.

The research findings related to the impact bond are presented in Chapters 2 and 7 and summarised in Chapter 8.

The thesis seeks to make a practical contribution by helping PA practitioners in NSW and NPWS to address the challenge of financial sustainability for PAs under their care and control. The generation of knowledge was a collaborative process with the research participants actively engaged in the collection and analysis of data, for example, through the drafting of the Theory of Change (ToC) and the population of the financial sustainability scorecard. Given the data was collected in real-time as recommended for action research studies (Huxham, 2013, p.240), it was possible to present the findings to NPWS and the PA industry more broadly by publishing the research findings in a peer-reviewed journal in a timely manner. This is important because research has shown that PA practitioners require rigorous peer-reviewed research that is timely, accessible, and meaningful to support their work in the field (see Lemieux et al., 2019; 2021).

As is often the way at the conclusion of an action research cycle, a set of comprehensive recommendations for future research and practical actions was prepared to address the challenge of financial sustainability for publicly managed terrestrial PAs in NSW. Preparing the recommendations was an important part of the research study's reflective process, and the recommendations are expected to underpin the next cycle(s) of action research.

1.4.2 Contribution to Theory

Action research is considered useful in developing a theory about practice (Dick et al., 2009; Eden & Huxham, 1996; Eisenhardt, 1989; Glenn, 2022; Huxham, 2003; Somekh, 1995). The work of Huxham (2003) on "action research as a methodology for theory development" (p.239) was an important guide for identifying, analysing, understanding, and communicating the theory generated in this thesis, which emerged from and is grounded in both action and experience. The resultant practice-oriented theory consists of five elements, which are described below.

1.4.2.1 Theoretical Element 1: A New Perspective on the Phenomenon of PA financial sustainability

The research has helped to view the phenomenon of PA financial sustainability in a new way, particularly within NSW. The research has highlighted the importance of understanding the context of PAs when addressing the challenge of financial sustainability. It explored the enabling conditions that exist for the financial sustainability of the PA estate in NSW and argued that this is necessary for understanding what financial sustainability looks like within a particular context. The research further revealed that the challenge of financial sustainability is about more than the amount of money allocated to PAs and that there is no fast or straightforward way to achieve financial sustainability. Thus, the process of change is not necessarily linear, and it is possible to have multiple interlinked pathways to change. This view of the phenomenon under study is reflected in the conceptual framework developed for the financial sustainability of terrestrial PAs (see Chapter 3) and the ToC drafted for the financial sustainability of the PA estate in NSW (see Chapter 6); it is also detailed throughout Chapters 2 to 8.

1.4.2.2 Theoretical Element 2: The Identification of Problems and the Generation of Strategies to Mitigate Them

The second theoretical element is focused on identifying problems, namely those associated with the broad challenge of PA financial sustainability, and then generating strategies to mitigate them. The impediments to PA financial sustainability within the NSW context were analysed and enabling conditions explored with the expectation that the enabling conditions would assist in dismantling the identified impediments. The ToC[1] that was drafted for the financial sustainability of the PA estate in NSW identified pathways to change and articulated the inputs, actions, outputs, and outcomes associated with each pathway that will assist in achieving the shared overarching impact of the "effective management of the protected area estate with respect to conservation and other objectives" (O'Flynn et al., 2022, p.11). The ToC provides the foundation for an informed response to the problem of financial sustainability. It also delivers a framework for strategic decision-making and communication while each recommendation (presented in Chapter 8) for future research and action is connected to one or more of the pathways to change and the elements of financial sustainability articulated in the conceptual framework (see Chapter 3).

1.4.2.3 Theoretical Element 3: A Conceptual Framework

As alluded to in Theoretical Elements 1 and 2, a conceptual framework (see Chapter 3) was established to define the key concepts relevant to the financial sustainability of terrestrial PAs and in addressing the challenge of financial sustainability. The aim was to develop a theory that would help practitioners to make sense of the challenge of financial sustainability within their context and from which to make considered choices about action. To this end, the conceptual framework reflects a process that a practitioner or researcher could adopt to help address the challenge of PA financial sustainability.

The thesis was structured in such a way to explore and discuss three critical components of the conceptual framework in Chapters 4, 5 and 6 ('impediments', 'enabling conditions', and 'pathways to change') and the interconnections between them, whilst drawing on the publicly managed terrestrial PA estate in NSW as a working example. Further to this, Chapter 2 (Literature Review) emphasised the

[1] The ToC published by O'Flynn et al., (2022) was titled "Theory of Change for the Sustainable Financing of the Protected Area Estate in New South Wales"; however, the title was amended for the purposes of this thesis to better reflect the role of the ToC in addressing the broader challenge of the financial sustainability of the protected area estate in NSW.

importance of context for understanding PA financial sustainability, which is a key concept identified in the conceptual framework. The framework itself is presented and discussed in Chapter 3 (Methodology).

1.4.2.4 Theoretical Element 4: Generalisation from Detail

The fourth theoretical element is focused on generalising from the detail (Huxham, 2003). The research findings may be transferable (although not necessarily generalisable) to PAs outside of the publicly managed terrestrial PA context in NSW, and in this way, they can potentially be seen as part of the change process for PAs in NSW and further abroad. For example, the conceptual framework (see Chapter 3) was designed to be generalisable to terrestrial PAs irrespective of their location or context, while Chapter 6 shares a series of broad management and policy lessons and implications drawn from the drafting of the ToC presented in the chapter. Furthermore, in Chapter 7, the criteria for the social and environmental impact bond feasibility checklist were designed to help PA practitioners both within and outside NSW determine the suitability of the impact bond as a finance mechanism for their funding requirements.

1.4.2.5 Theoretical Element 5: Practical Implications from the Conceptualisation of the Data

The fifth theoretical element is focused on the practical implications drawn from the conceptualisation of the data that can help practitioners to address the challenge of financial sustainability within their PA context. These practical implications are discussed throughout the thesis and summarised in Chapter 8 (Conclusion). An example of one such conceptualisation is that there is no simple or quick way to achieve financial sustainability and the process of change is not necessarily linear. This conceptualisation led to the identification and articulation of six interlinked pathways to change for the financial sustainability of the publicly managed terrestrial PA estate in NSW. The pathways are designed to encourage practitioners to critically consider the challenge of PA financial sustainability, including potential alternative funding models and mechanisms.

In reflecting on the theory developed through action research, Huxham (2003) explains:

> Although the concepts may not have been acknowledged in advance, because the theory derives so closely from practice it can be encapsulated in a way that is instantly recognisable to practitioners, even though they have not been part of the researched situation. In this respect, the theory produced may be in contrast to theories that are couched in more abstract terms, or which are formed through a priori reasoning. Although the aim is to produce a theory that can influence practice, descriptive theory of this sort does not directly prescribe courses of action. Instead, it can provide practitioners with a means to make sense of their situations and a platform from which to make considered choices about action. It has clear potential for informing policy decisions. (p. 247)

Based on Huxham (2003)'s view of what constitutes theory generated through action research and its potential value, the theory built through this research study provides new insights into the challenge of PA financial sustainability, particularly within the NSW context. In turn, this has contributed to a meaningful and rich picture of the current financial situation for PAs in NSW and the challenge of PA financial sustainability itself. The theory also has the potential to inform management and policy (and possibly political) decisions, thereby contributing to its usefulness as a practice-oriented theory.

1.5 Research Design

The thesis adopted an action research methodology to improve researcher and participant understanding and, in doing so, address the challenge of financial sustainability for the NSW PA estate under the care and control of NPWS. Action research, as formulated by social psychologist Kurt Lewin in the early 1940s, encourages social action through the active participation of practitioners during the process of research (Coghlan & Brannick, 2014).

Action research is described by Reason and Bradbury (2001) as:

> a participatory, democratic process concerned with developing practical knowledge in the pursuit of worthwhile human purposes…It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities. (p.1)

A simpler definition is provided by Eden and Huxham (1996) who explain that action research is research where "the researcher enters a real-world situation and aims both to improve it and to acquire knowledge" (p.9). To date, action research has been adopted in a diverse range of fields, including management, organisation development, economics, sociology, education, nursing, and anthropology (Brydon-Miller et al., 2003). The generalised features of action research include "collaboration between researcher and practitioners, a focus on the solution of practical problems, change in practice, and the development of theory" (Simmons, 1995, p.842). Action research also aims to raise practitioner's shared understanding of assumptions, values, and problems (Simmons, 1995).

For the purposes of this thesis, I have been situated as an 'insider' action researcher, having worked for the NSW NPWS in a range of roles since 2007. Action researcher positionality and bias are discussed in Section 1.7.

A core question behind action research is how to generate knowledge "that is both valid and vital to the well-being of individuals, communities, and for the promotion of larger-scale democratic social change" (Brydon-Miller et al., 2003, p.11). To answer this question within the context of this thesis, I employed Coghlan and Brannick (2014)'s action research cycle. It provided a logical guideline for the thesis, which aimed to involve other practitioners in addressing the challenge of financial sustainability of the publicly managed terrestrial PA estate in NSW. It also provided a process for the participants and researcher alike to improve their knowledge of the situation and devise implementable solutions. The action research cycle included a pre-step (context and purpose), followed by four components: (1) constructing; (2) planning action; (3) taking action; and evaluating action (Coghlan & Brannick, 2014). The action research cycle and how it was applied in this thesis are detailed in Chapter 3.

The process adopted to collect and analyse data and develop solutions to the challenge of financial sustainability for publicly managed terrestrial PAs in NSW involved three phases, including (1) interviews; (2) the analysis of secondary data, the review of literature, and the population of a PA financial sustainability scorecard for the 2020–21 financial year; and (3) the drafting of a ToC. The three phases of data collection and analysis are discussed in detail in Chapter 3 together with Braun and Clarke (2006)'s six-phase approach to thematic analysis, which was used to analyse the data collected. Furthermore, systems theory as devised by Ludwig von Bertalanffy was employed as an anchoring term and framework to contextualise the action research methodology of the thesis. It shows that a holistic approach is necessary to understand the challenge of financial sustainability of the publicly managed terrestrial PA estate in NSW and that a financially sustainable PA estate can be viewed as a system of interrelated components which work together towards a common end goal (Blanchard & Fabrycky, 2014).

1.6 Assumptions and Limitations

1.6.1 Methodological Assumptions

As an employee of NPWS and an active member of the IUCN's World Commission on Protected Areas (WCPA) for many years, I have a pre-existing professional relationship with many of the PA research participants. To manage the risk of coercion, a consent process was devised wherein potential participants were invited to discuss their participation with someone other than the researcher. It was emphasised that participation was voluntary, and participants could withdraw from the study at any stage. The Participant Information Sheet also clearly stated that if someone decided not to participate in the study, it would not affect their relationship with the researcher, UTS, or NPWS. Furthermore, if a potential participant did not respond to the introductory email inviting them to participate in the research study, a follow-up request was not made, to ensure that no one felt pressured to participate.

Conducting research in any organisation is political; however, as Coghlan and Brannick (2014) have explained, conducting research within your own organisation can be particularly political and every decision made throughout the research study can have political implications. Therefore, it is necessary for an action researcher to be politically astute and manage the multitude of political relationships that might arise during the research study. To manage the politics of the research, I followed Roth and Bradbury (2008)'s four strategies:

1. "Anchor the project in the organization and find the right stakeholders and sponsor".
2. "Be 'street smart' and know how to get things done".
3. "Ensure that the first interventions and changes in the project have a wide impact on a wide range of organizational members".
4. "Describe action research projects as organizational change programmes".
   (Roth & Bradbury, 2008 in Coghlan & Brannick, 2014, pp.152-153)

An underlying assumption of the action research methodology is that the research findings will make a practical contribution to a real-world problem by improving practice in addition to contributing to knowledge. Herr and Anderson (2005) have stated that "unlike traditional research, action research produces knowledge grounded in local realities that is also useful to local participants" (p.98). Therefore, I assumed that my inquiry into the identified real-world problem would act as an intervention or catalyst for change and, in doing so, influence the system and phenomena under study.

Furthermore, in accordance with the values of action research, I was conscious of meaningfully collaborating with the research participants throughout the action research cycle and assumed that my behaviours would likely impact the type and quality of data collected. To ensure this impact did not compromise the validity and rigour of the research, I adopted Herr and Anderson (2005)'s validity criteria for action research (discussed in Section 1.8). A related assumption was that the validity criteria used to judge naturalistic and positivistic research would not be appropriate for this research study, thereby justifying the adoption of validity criteria specifically designed for action research.

Finally, as Herr and Anderson (2005) have explained, "while action research is often best done collaboratively, dissertations are typically individual undertakings" (p.73). Thus, it was assumed that as the researcher and a doctoral student, I would take responsibility for producing a written document (the thesis) for public consumption that was based on the collaborative inquiry.

1.6.2 Topic-Specific Assumptions

It was assumed that participants would base their responses to interview questions on their professional experience, knowledge, and expertise. It was also assumed that PA practitioners participating in the research would want the NSW PA estate to be financially sustainable and would therefore be interested in actively participating in the research. However, while the research study was not an evaluation of a participant's work, the NPWS, or any other organisation, it was assumed that participants might be concerned about giving their honest opinions or examples which might not be entirely supportive of current NPWS or broader government policy and actions. Furthermore, it was assumed that participants would have time constraints and competing priorities and that the research would need to be flexible so as not to become a time or resource burden for participants.

While the interviews were treated confidentially, and participants were given a pseudonym, it was assumed that given the nature of action research, there was still a slight risk of deductive disclosure of participant identity through contextual identifiers. Participants were made aware of this risk prior to signing the Participant Consent Form.

1.6.3 Limitations

One limitation of the thesis is the small sample size of impact investment specialists recruited to the research study. The aim was to recruit seven specialists to the research study to benefit from their professional experience and knowledge of the impact bond and to understand their views on how this funding mechanism could help to finance publicly managed terrestrial PAs. However, the recruitment strategy did not recruit the desired number of participants. This was partly due to some impact investment specialists' reluctance to go 'on the record'. In the end, four people agreed to participate in an interview, and an additional two people participated through 'off the record' discussions. At the time of the interviews/discussions, the participating impact investment specialists were working either within or outside of government on a range of impact investment-related matters including:

- planning, developing, and implementing impact bonds to address social and/or environmental challenges, including for PAs and nature conservation more broadly
- leading and overseeing the implementation of impact investment policy in collaboration with government agencies and non-government stakeholders
- drafting and reviewing impact investment-related policy and legislation
- providing advice to senior government officials on impact bonds and other impact investment-related matters, for instance, the feasibility of identified interventions and projects/programs for funding through an impact bond.

Notwithstanding the small sample size of impact investment specialists, comparisons across the interviews and off-record discussions identified common themes while the literature reviewed on social and environmental impact bonds corroborated the views and opinions expressed by participants.

Secondly, all PA specialists who participated in the research study were based in Australia at the time of data collection, and each specialist was working within or familiar with the publicly managed terrestrial PA estate in NSW. The participants were asked to focus on the challenge of financial sustainability within the publicly managed terrestrial PA estate in NSW – to the exclusion of other Australian states and territories and international jurisdictions, privately managed/owned terrestrial PAs, and marine PAs. Thus, while the thesis findings may be transferable to other PA contexts and settings, they are not necessarily generalisable.

In recognising that it was beyond the scope of this thesis to document the entire multicycle change process, the research study was designed to complete the first action research cycle and establish the foundation for the cycles to follow. As Herr and Anderson (2005) have explained, this is to be expected in the case of an action research thesis because the ongoing nature of action research means the inquiry will continue beyond the life of the thesis.

Finally, I recognise that my subjectivity as a researcher will have had an impact on all aspects of the thesis, including its design and questions posed as well as the data collected, analysed, and reported. The chosen methodology of action research accepts that from this position, the thesis is unavoidably limited by its own biases and perspectives, even with my attempts to explicitly acknowledge and problematise them (Coghlan & Brannick 2012; Herr & Anderson, 2005).

1.7 Action Researcher Positionality and Bias

As previously mentioned, for the purposes of this thesis, I was positioned as an 'insider' action researcher. I began my career with the NSW NPWS in 2007 and have since worked in various positions from park planner and senior project manager to acting executive officer. Each position has helped me to develop a greater understanding of the role and value of PAs. I also took some time away from NPWS to work at the international level with the IUCN and as a research officer in the NSW Parliament, which provided a fascinating insight into the inner workings of government. Despite these sojourns, I have always returned to NPWS.

Joining the Industry Doctorate Program at UTS placed me in the fortunate position of being able to take a three-year study leave from my role at NPWS to concentrate full time on the thesis. This helped to clearly delineate my work as an NPWS employee from my role as an action researcher, thereby reducing potential confusion or misunderstanding by research participants.

I understand that as an insider action researcher, I entered the thesis with a viewpoint based on my personal experiences (Coghlan, 2017). Herr and Anderson (2005) have explained that "bias and subjectivity are natural and acceptable in action research as long as they are critically examined rather than ignored" (p.60). I have, to the best of my ability, articulated my biases and personal perspectives, and I have consciously taken steps to incorporate critical reflexivity into the thesis. This approach prompted me to question how my values, beliefs, and background might influence the research and shape my interpretation and knowledge making. Keeping a reflective journal throughout the research process was a powerful strategy to build critical reflexivity into the research. Other strategies that I adopted included collecting several types of evidence (documentation, archival records, interviews), reviewing the literature, and asking interviewees to review their interview transcripts and the draft financial sustainability scorecard and provide corrections or comments.

I found the collaborative and iterative nature of the ToC process a useful mechanism to prevent my bias and subjectivity from having a distorting effect on the research outcomes. Through the iterative process of drafting the ToC and in populating the Financial Sustainability Scorecard for the 2020–21 financial year, research participants actively contributed to the review and analysis of data and in doing so helped to validate the research findings.

1.8 Validity and Rigour

Action research "rejects the notion of an objective, value-free approach to knowledge generation in favor of an explicitly political, socially engaged, and democratic practice… it challenges the claims of a positivistic view of knowledge which holds that in order to be credible, research must remain objective and value-free" (Brydon-Miller et al., 2003, p.13). Instead, action researchers support the view of knowledge as a social construction and research as set within a values system (Brydon-Miller et al., 2003). As such, Brydon-Miller et al. (2003) explained that action researchers "commit themselves to a form of research which challenges unjust and undemocratic economic, social and political systems and practices" (p.13).

Herr and Anderson (2005) suggested that "action research should not be judged by the same validity criteria with which we judge positivistic and naturalistic research" (p.53); instead, they believe that "a new definition of rigor is required that does not mislead or marginalize action researchers" (p.53). For the purposes of this thesis, I have adopted Herr and Anderson's validity criteria for action research. Table 1 outlines Herr and Anderson's goals of action research and validity criteria, and it also provides a brief description of the indicators recommended for quality action research studies and how they were applied to this thesis.

Table 1 Herr and Anderson's Goals of Action Research and Validity Criteria

Goals of action research	Quality/validity criteria	Indicator description
1) "The generation of new knowledge"	Dialogic and process validity	"When the dialogic nature of practitioner inquiry is stressed, then studies can achieve what Meyers (1985 [p.5]) calls goodness-of-fit with the institutions of practitioner community, both in its definition of problems and in its findings (in Herr & Anderson, 2005, p.57). The criteria may be satisfied through research reports passing through a process of peer review, i.e., peer review process associated with publishing in academic journals or through participating in "critical and reflective dialogue with others" (Herr & Anderson, 2005, p.57). In the case of this thesis, two articles based on the research findings went through a peer review process and were published in an international academic journal (see O'Flynn et al., 2021; 2022).
2) "The achievement of action-oriented outcomes"	Outcome validity	"The extent to which actions occur…Action researchers must be competent at both research procedures and moving participants toward successful action outcomes" (Herr & Anderson, 2005, p.55). In this thesis, the reflective journal helped to track the achievement of outcomes, while the drafting of the ToC and population of the financial sustainability scorecard also demonstrate the achievement of action-oriented outcomes.
3) "The education of both researcher and participants"	Catalytic validity	Researcher and participants "deepen their understanding of the social reality under study and should be moved to some action to change it (or to reaffirm their support of it)" (Herr & Anderson, 2005, p.56). In this thesis, keeping a reflective journal helped to satisfy this criterion as the journal was a way for the action researcher to "monitor their own change process and consequent changes in the dynamics of the setting" (Herr & Anderson, 2005, p.57). Similarly, the process involved in drafting the ToC and populating the sustainability scorecard together with the publication of two articles based on the research findings in academic journals helped to deepen researcher and participant understanding of the situation under study.
4) "Results that are relevant to the local setting"	Local validity	"The degree to which the constructs and products of the research are relevant to the participating group" (Herr & Anderson, 2005, p.56). In this thesis, the focus on collaboration between the action researcher and the participants, for example, through the process of drafting the ToC,

		in populating the financial sustainability scorecard, and in the review and analysis of data helped to satisfy this criterion.
5) "A sound and appropriate research methodology"	Process validity	The "extent to which problems are framed and solved in a manner that permits ongoing learning of the individual or system" (Herr & Anderson, 2005, p.55). In this thesis, triangulation of data was used to meet this criterion.

Source: Adapted from Anderson and Herr (2005, pp.55–57)

1.9 Ethical Considerations

In accordance with UTS policy, ethics approval from the UTS Human Research Ethics Committee (HREC) was received prior to commencing data collection. NPWS approved the research study in August 2020, and approval from the UTS HREC was granted in November 2020.

Before conducting interviews, each participant received a copy of and read the Participant Information Sheet and Consent Form. The information sheet provided participants with information on the researcher, the research institution (UTS), and research supervisors; the purpose and aims of the research; what participating in the research study would involve; why they had been asked to participate; potential risks or inconveniences from participating; benefits of the study; confidentiality measures; and how and where to raise concerns or make a complaint. The information sheet further explained that participation was voluntary and incentives to participate would not be offered while the decision not to take part would not affect a person's relationship with the researcher, UTS, or NPWS.

The Participant Consent Form was signed by each participant prior to the interview, and by doing so they agreed to participate in the research study. At the start of the interview, the study's purpose was explained again, this time verbally by the researcher. The researcher also answered questions and reminded participants that their involvement in the study was voluntary and that they were free to leave the research study at any time. Similarly, if participants felt uncomfortable about being recorded during the interview, they could request the audio recording be paused or turned off. The researcher further explained that participants could choose not to answer questions if they did not feel comfortable.

To ensure the confidentiality of data collected prior to, during, and following the interviews, data was saved on UTS' research data management platform, accessible only to the researcher and her two supervisors. This included signed consent forms, interview audio-recordings, transcripts of audio-recordings, handwritten notes, and email correspondence. All data collected through the research study was archived in compliance with UTS policy and will be kept for five years from publication. The data has been stored to ensure maximum privacy for participants and reliability and retrievability of data.

1.10 Definition of Terms

Table 2 provides a definition of the key terms used throughout this thesis.

Table 2 Definition of Terms

Term	Definition
Protected area (PA)	"A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2008, p.8).
Protected area financial sustainability	Often referred to as "the ability to secure stable and sufficient long-term financial resources, and to allocate them in a timely manner and appropriate form, to cover the full costs of PAs (direct and indirect) and to ensure that PAs are managed effectively and efficiently" (Emerton et al., 2006, p.15).
Protected area sustainable financing	A mechanism that addresses the challenge of PA financial sustainability.
Elements of protected area financial sustainability	Emerton et al. (2006) define the elements of financial sustainability as "building a diverse, stable, and secure funding portfolio: minimizing funding risks and fluctuations"; "improving financial administration and effectiveness: ensuring that funding is allocated and spent in a way that supports PA finance needs and conservation goals"; "taking a comprehensive view of costs and benefits: covering the full range of PA costs, ensuring that those who bear PA costs are recognised and adequately compensated, and that those who benefit from PAs make a fair contribution to their maintenance"; "creating an enabling financial and economic framework: overcoming market, price and policy distortions that undermine PAs or act as obstacles to PA financing"; and "mainstreaming and building capacity to use financial tools and mechanisms: factoring financial analysis and mechanisms into PA planning processes" (p.16).
Impediment	A hinderance or obstruction to achieving terrestrial PA financial sustainability and the key elements of PA financial sustainability.
Enabling conditions	Those conditions or requirements which are necessary for achieving terrestrial PA financial sustainability.
Action research	"The researcher enters a real-world situation and aims both to improve it and to acquire knowledge" (Eden & Huxham, 1996, p.9).
ToC	"A theory-based approach to planning, implementing, or evaluating change" (Liang & Todd, 2015, p.3).
Pathway to change	In the context of a Theory of Change, these are the change pathways that may help to achieve a desired impact or end goal. Each pathway includes inputs, actions, outputs, outcomes, and an impact. Actions refer to what needs to be done to achieve the desired change, outputs articulate what is delivered, outcomes stipulate the desired change, and impact refers to the end goal (Biggs et al., 2016).

Systems theory	"Provides explanations for real-world systems. These explanations increase our understanding and provide improved levels of explanatory power and predictive ability for the real-world systems we encounter" (Adams et al., 2014, p.116). It is a way of studying the connections between the different components of a system and how they work together to create a whole (Walton & Naimi, 2009).
System	In the context of systems theory, a system can be defined as "a set of interrelated components working together toward some common objective or purpose" (Blanchard & Fabrycky, 2014, p.2).
Impact investment	"Investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return" (GIIN, 2019, n.p.).

1.11 Organisation of Remainder of the Thesis

Table 3 provides a brief overview of the remaining seven chapters of the thesis.

Table 3 Overview of Thesis Chapters

Chapter	Description
Chapter 2	Chapter 2 provides a discussion of the financial sustainability of terrestrial PAs, particularly the literature related to the role and values of PAs in the context of biodiversity conservation and in safeguarding human health and wellbeing. It also reviews the literature on diversifying the terrestrial PA funding portfolio and, within this context, the literature on social and environmental impact bonds as an alternative funding instrument for the social and environment sectors.
Chapter 3	Chapter 3 describes and provides a rationale for the methodological approach taken by the thesis. The chapter begins with a discussion of the research purpose and design, followed by an overview of the theoretical orientation of the thesis, and a discussion of the conceptual framework developed for the thesis. The Chapter concludes with an overview of the linkages between the key methodological components of the research.
Chapter 4	Chapter 4 analyses and discusses existing impediments to the financial sustainability of the publicly managed terrestrial PA estate in NSW as described by research participants and supported by secondary data and research literature.
Chapter 5	Chapter 5 analyses and discusses current enabling conditions for the financial sustainability of the PA estate as described by research participants and supported by secondary data and research literature.
Chapter 6	Chapter 6 explores the ToC developed for the financial sustainability of the PA estate in NSW and the six different yet interlinked pathways to change.
Chapter 7	Chapter 7 explores one action identified in the ToC for the financial sustainability of PAs – diversifying the funding portfolio – and how social and environmental impact bonds could help to finance publicly managed terrestrial PAs.
Chapter 8	Chapter 8 reviews the thesis' answers to the research questions and its contribution in addressing the challenge of financial sustainability for the terrestrial PA estate in NSW. It summarises the research reported in Chapters 1 through to 7 and presents a comprehensive set of recommendations for future research and practical actions to address the challenge of financial sustainability for the PA estate in NSW.

Chapter 2 Literature Review

2.1 Introduction

This chapter provides a discussion of the challenge of terrestrial PA financial sustainability, with a focus on those under the care and control of government agencies. It investigates the role and value of PAs in the context of biodiversity conservation and human health and wellbeing and traces the origins of the modern global terrestrial PA estate from 1873 to 2021. The challenges in sustainably financing terrestrial PAs are explored through the literature, and a range of conditions that could assist in addressing the challenge of financial sustainability are outlined.

This chapter also examines the importance of diversifying the PA funding portfolio, and in this context, the emergence of the social and environmental impact bond is outlined as an alternative finance mechanism for addressing social and environmental challenges. The chapter analyses the literature concerning the impact bond, as a subset of impact investment. It further discusses the criticism presented in the literature that market-based finance mechanisms such as the impact bond are neoliberal strategies that direct parks in a negative way.[2] Table 4 provides a conceptual outline for the structure of Chapter 2.

Table 4 Conceptual Outline of Chapter 2 Structure

Section	Description
Section 2.2	Terrestrial Protected Areas in the Context of Biodiversity Conservation and Human Health and Wellbeing
Section 2.3	Tracing the Origins of the Modern Global Terrestrial Protected Area Estate
Section 2.4	Challenges in Sustainably Financing Terrestrial Protected Areas
Section 2.5	The Financial Sustainability of Terrestrial Protected Areas
Section 2.6	Diversifying the Terrestrial Protected Area Funding Portfolio
2.6.1	- The Social and Environmental Impact Bond – A new Finance Mechanism
2.6.2	- Mechanics of an Impact Bond
2.6.3	- A Role for Neoliberalism in the Terrestrial Protected Area Funding Portfolio?
Section 2.7	Summary

[2] The chapter draws extensively on the co-authored work with PhD supervisors published in the Journal of Park and Recreation Administration in 2021 for which the researcher was the lead author. See O'Flynn et al., 2021.

2.2 Terrestrial Protected Areas in the Context of Biodiversity Conservation and Human Health and Wellbeing

In Chapter 1 it was explained that nature is crucial for human health and wellbeing. The ecosystem services that support human life around the world are valued at up to US$145 trillion per year (Costanza et al., 2014; Meyers et al., 2020). These services are fragile and when damaged or destroyed, human health and wellbeing are jeopardised, and biological diversity may be damaged and potentially lost forever (Costanza et al., 2014; IUCN, 2010a). While it is impossible to accurately calculate the full value of nature, economists have demonstrated that the loss of ecosystem services has economic ramifications (Dasgupta, 2020). Between 1997 and 2011, the world lost between US$4.3 trillion and US$20.2 trillion per annum in ecosystem services due to human-induced land-use changes, such as the logging of forests, mining and other extractive activities, and the continued expansion of cities among many others (Costanza et al., 2014). Furthermore, biodiversity is declining at its fastest rate in the history of humans, and the seriousness of biodiversity loss together with ecosystem collapse has been recognised by the World Economic Forum as "one of the top five risks" to the global economy (Dasgupta, 2020, p.3).

The world's human population is growing faster than at any other period in history, trebling in size between 1950 and 2019 from approximately 2.5 billion to 7.7 billion people (Dasgupta, 2020). The world is also becoming increasingly urbanised and disconnected from nature (Hughes, 2020). Population and economic growth place extreme pressure on the world's natural capital (Ward & Lassen 2018). In 2019, 40% of the land around the world was in a degraded state, which had economic, cultural, social, and environmental ramifications (Funnel, 2019). Between 2010 and 2015, 38 million hectares of native forest were cleared globally. Clearing native vegetation is the leading cause of land degradation and biodiversity loss around the world; it also causes salinity and a decline in water quality (Department of Agriculture, Water and the Environment, 2020; Watson et al., 2014). It has been estimated that the continued degradation and loss of ecosystems has resulted in a 60 – 90% reduction of the world's flora and fauna populations over the last 50 years (Meyers et al., 2020). More species are at risk of disappearing forever, with the IUCN's Red List of Threatened Species identifying over 13,000 species as threatened (IUCN, 2020).

In Australia, the *State of the Environment Report 2021* presented alarming findings about the deterioration of the nation's environmental health. Over the past five years the impacts of climate change, habitat destruction, intensified weather events, ocean acidification, and soil condition decline have severely impacted the health of Australia's environment and in turn the health and wellbeing of its people (Australian Government, 2022). Sir David Attenborough and Christine Lagarde (2019), President of the European Central Bank, have explained that "in nature, everything is connected. This is equally true of a healthy environment and a healthy economy" (n.p.). Supporting Attenborough and Lagarde's comment is a study by Griffith University in 2019, which calculated the global "economic value of protected areas derived from the improved mental health of visitors" at US$6 trillion each year (Buckley et al., 2019, p.1).

Change is urgently required to protect the environment for the future, with landscapes, oceans, and waterways requiring active management, protection, and restoration (Australian Government, 2022; Plibersek, 2022). Despite the declining health of the environment and the continued loss of the natural world, there is still plenty that can be done to turn the situation around. PAs such as those under the care and control of the NPWS in NSW have a critical role to play in addressing this challenge: they are the key investment that humans have made in the conservation of nature; they support human health and wellbeing; they sustain cultural connections and economic livelihoods; and they make an important contribution to the global economy, for example, through the tourism industry (Buckley et al., 2019; Watson et al., 2014; Wearing & Schweinsberg, 2019). Furthermore, PAs contribute to achieving the Sustainable Development Goals set by the United Nations and articulated in the *2030 Agenda for Sustainable Development* (UN, 2020). Specifically, they contribute to Goal 14: Life Below Water and Goal 15: Life on Land; however, PAs also help to achieve other goals, including Goal 1: No Poverty; Goal 3: Good Health and Well-Being; Goal 5: Gender Equality; Goal 6: Clean Water and Sanitation; Goal 11: Sustainable Cities and Communities; and Goal 13: Climate Action (UN, 2020; UNEP-WCMC et al., 2016).

2.3 Tracing the Origins of the Modern Global Terrestrial Protected Area Estate

PAs are an ancient concept, created by Indigenous and other traditional custodians to preserve sacred forests, mountains, waterways, and caves across the landscape (Beltran, 2000; Stevens & De Lacy, 1997; Watson et al., 2014). Some historians suggest that the notion of a PA dates back two thousand years to when land was set aside in India to protect natural resources (Eagles et al., 2002). While in Europe, land was first designated as "royal hunting reserves" by national rulers and royal families in the early years of the Renaissance. Over time, this land was made available to the public for their use and enjoyment, which in turn paved the way for tourism activities and community participation (Eagles et al., 2002).

Philosophical musings about the modern notion of a 'national park' began in the nineteenth century when English and American poets and writers first articulated a vision for a national park. English poet William Wordsworth described the English Lake District in 1810 as "a sort of national property" (Brigham Young University, 2013; Wordsworth Trust, 2016), while author, poet, artist, and explorer

George Catlin is said to have been the first American to raise the idea of a national park. In 1832, Catlin wrote of the need for "…a nation's park, containing man and beast, in all the wild and freshness of their nature's beauty" (in Eagles et al., 2002, p.5). Catlin's desire for a "nation's park" was in response to the loss of Indigenous peoples and their cultures in the eastern part of the U.S. due to the rapid development of land in the 1800s (Eagles et al., 2002).

A historical timeline of the modern global terrestrial PA estate is provided in Figure 1. The timeline traces the global terrestrial PA estate from its early beginnings through to the present day (2021). The timeline is not intended to be exhaustive; instead, its purpose is to present a snapshot of the growth of the global estate, including the attainment of key milestones and challenges faced during its evolution. The timeline further provides the historical context for the PA estate in NSW and, in turn, the existing impediments to and enabling conditions for the financial sustainability of PAs under the care and control of the NSW NPWS and the pathways to change.

Figure 1 Historical Timeline of the Modern Global Protected Area Estate

1783	Bogd Khan Uul, Mongolia recognised as a 'protected site' – a prelude to the establishment of contemporary national parks a century later.
1800	First modern philosophical musings about notion of a national park by British and American romantic poets and writers, including William Wordsworth and George Catlin (Eagles et al., 2002; Wordsworth Trust, 2016).
1866	2,000 ha of land, including Jenolan Caves in NSW, Australia set aside for protection and tourism (now known as Jenolan Caves Cast Conservation Area).
1872	World's first national park established (Yellowstone National Park).
1879	Australia's first national park established (Royal National Park).
1885	Canada's first national park established (now known as Banff National Park).
1894	First national park established in New Zealand (Tongariro National Park) as a place of spiritual importance (Eagles et al., 2002). Also in late 1800s, several forest reserves were established in South Africa (Eagles et al., 2002).

Figure 1 Historical Timeline of the Modern Global Protected Area Estate (continued)

1900s	Advent of protected areas as a key contemporary biodiversity conservation strategy.
1909	First national parks established in Europe (a group of nine parks in Sweden).
1911	Canada established the world's first national parks service.
1925	Democratic Republic of Congo's first national park established (Virunga National Park – formerly Albert National Park). Also, first national park established in Southeast Asia – Angkor Wat Park National, Cambodia (for the protection of archaeological monuments).
1934	Argentina's first national park established (Nahuel Huapi National Park).
1939	King George V National Park established in Malaya as Southeast Asia's first national park reserved for the protection of fauna, flora, and wilderness.
1948-1951	International Union for the Conservation of Nature (IUCN) established; United Kingdom's first national park gazetted (Peak District National Park).
1958	World Commission on Protected Area (WCPA) established with 15 members (originally known as 'Committee on National Parks').
1962	First World Conference on National Parks held in Seattle, USA; 1,000 protected areas reserved globally (IUCN, 2013).
1971-1972	Ramsar Convention on Wetlands of International Importance takes place in the town of Ramsar, Iran; World Heritage Convention adopted by UNSECO in Paris on 16 November 1972; second World Conference on National Parks held in Yellowstone National Park (IUCN, 2010b).
1975	World Heritage Convention comes into force; first publication of IUCN's *World Directory of National Parks*; Convention on the International Trade in Endangered Species adopted; IUCN Zaire Resolution on Protection of Traditional Ways of Life – a call for governments to ensure protected areas allow for Indigenous peoples' access and tenure rights to traditional lands.

Figure 1 Historical Timeline of the Modern Terrestrial Protected Area Estate (continued)

1979	Convention on the Conservation of Migratory Species of Wild Animals (Convention on Migratory Species or Bonn Convention) adopted.
1982	Third World Congress on National Parks held in Bali, Indonesia; 400 WCPA members; emerging interest in management effectiveness of protected areas (IUCN, 2010b).
1985	3,514 parks (423,774,398 ha) recorded on the "United Nations list of national parks and protected areas" (UN, 1985).
1986	Ottawa Charter for Health Promotion advocated for environment protection as a health promotion strategy – a prelude to the Healthy Parks Healthy People initiative.
1990	6,940 parks (651,467,597 ha) recorded on the "United Nations list of national parks and protected areas" (UN, 1990).
1992	Fourth World Congress on National Parks and Protected Areas held in Caracas, Venezuela (IUCN, 2010b); IUCN Caracas Declaration encourages protected area policies to be cognisant of Aboriginal customs and traditions – preservation of social and cultural values (Lawrence, 1996); UN Conference on Environment and Development, Rio de Janeiro – Chapter 26 of Agenda 21 reemphasise the "role of Indigenous people and their communities" in participating "fully in sustainable development practices on their lands (UNSD, 1992, p.279).
1993	The Convention on Biological Diversity is opened for signature at Earth Summit in Rio de Janeiro, Brazil and adopted by the end of 1993 (CBD, 2020); protected areas and supporting legislation in place in 169 countries; over 500 WCPA members from 120 countries (UN, 1993).
1994	UN Protected Areas List available online – major technological advancement in park management; IUCN agrees on single definition of a "protected area"; IUCN adopts "protected area management categories".
1997	13,321 parks (6,145,310 km2) or 8.9% of global land surface on "United Nations list of national parks and protected areas" (UN, 1998); 1500 WCPA members from 160 countries (UN, 1998); limited information available on funding indicates that "investments in protected areas frequently fall far short of that required to sustain effective management" (UN, 1998, n.p.).

Figure 1 Historical Timeline of the Modern Terrestrial Protected Area Estate (continued)

1998-1999	IUCN Protected Area Best Practice Guidelines initiated; World's first global study of protected area budgets and staff (James et al., 1999).
2000	Launch of Best Practice Guideline on Management Effectiveness Evaluation; estimated that parks and protected areas receive "2.6 billion days of use" per year in Canada and the U.S. (Eagles, 2001, p.9); Healthy Parks Healthy People initiative launched by Parks Victoria, Australia.
2001	Estimated global annual spending on protected areas is US$6.5 billion (Emerton et al., 2006).
2002 - 2003	"Absolute funding amounts increased" between 1992 and 2002; however almost two-thirds of sampled managers consider their budget insufficient for effective management of their protected areas and consider securing funding one of the main "governance needs for the future" (Dearden et al., 2005, p.96); fifth World Parks Congress held in Durban, South Africa, (IUCN, 2010b).
2004	CBD Conference of Parties 7 Decision VII/28: Protected areas (Articles 8 (a) to (e)): a Program or Work on Protected Areas is adopted including a working group. This places renewed emphasis on the contribution of PAs to the CBD's objectives. A priority topic for the working group is the sustainable financing of protected areas (CBD, n.d., n.p.).
2005	Almost 60% of sampled protected area managers consider their protected area budgets to be inadequate and cite that extra funding is needed (Dearden et al., 2005).
2008	World Database on Protected Areas re-launched online; 12.2% of global land area protected (Jenkins & Joppa, 2009).
2010	Convention on Biological Diversity and its strategic plan for biodiversity conservation – Aichi Target 11 – call for protection of at least 17% of terrestrial regions and 10% of marine areas by 2020; in a global first, information compiled from over 8,000 assessments of PA management effectiveness (Leverington et al., 2010).
2013-2014	190,000 protected areas covering 14.6% of global land surface (excluding Antarctica) (IUCN, 2013); estimated that up to 80% of protected areas globally are under-funded (Watson et al., 2014); sixth World Parks Congress held in Sydney, Australia; the IUCN's Green List of Protected and Conserved Areas is launched.

Figure 1 Historical Timeline of the Modern Terrestrial Protected Area Estate (continued)

2015

"Management effectiveness, on average improved in 722 protected areas" (out of a sample of 1934) from 74 countries; however, "measures on biological condition assessments did not improve over time" (Geldmann et al., 2015, p.692).

2018

Only 20% of protected areas have been assessed for management effectiveness; IUCN Red List of Threatened Species launched; U.S. national parks record 318 million visitors in a single year and 1.6 billion recreational visits between 2014 and 2018 (National Park Service, 2019).

2019

Global "economic value of protected areas derived from improved mental health of visitors" estimated at US$6 trillion/year (Buckley et al., 2019, p.1).

2020

15% of global land surface defined as protected area – equating to 20 million km2 (Protected Planet, 2020) – 2% short of Aichi Target 11 (at least 17% terrestrial regions); 46 areas in 14 countries included on the IUCN Green List; an estimated US$24.3 billion/year is allocated for protected area management costs (Waldron et al, 2020); an estimated US$67.6 billion/year needed to cover protected area management costs; Convention on Biological Diversity's draft Post-2020 Global Biodiversity Framework proposes a target of protecting 30% of the planet by 2030 (Waldron et al., 2020); an estimated US$35.5 billion to US$110 billion/year needed to cover PA expansion to meet target of 30% of planet protected by 2030 (Waldron et al., 2020).

2021

COVID 19 pandemic continues to impact protected areas and their funding, including tourism/visitation numbers and the opportunity for protected areas to generate funding (Basecamp Explorer Foundation, 2020; Equilibrium Research, 2020; Schweinsberg & O'Flynn, 2021); IUCN World Conservation Congress and UN Biodiversity Conference (COP15) held.

As documented in Figure 1, the modern terrestrial PA estate originated in the nineteenth-century in countries including Australia, the U.S., New Zealand, South Africa, and Canada. Throughout the twentieth century, the PA concept grew in popularity, resulting in the reservation of new PAs around the world. Over time, countries adopted their own management approach, which in turn prompted the need for a coordinated management structure with shared terminology and standards for PAs (Eagles et al., 2002; Dudley, 2008).

Resultantly, in 1973, the IUCN introduced a category system for PAs based on their management objectives. The system was revised in 1978 again in 1994, providing an internationally recognised standard for the management, establishment and planning of PAs (Juffe-Bignoli et al., 2014; Dudley 2008). Today there are seven categories of PAs outlined in the IUCN Best Practice Guidelines Series No. 21 (Table 5). What is evident is that biodiversity conservation, which encompasses natural, historic, cultural, and socio-economic aspects, underlies all seven categories (Emerton et al., 2006).

Table 5 IUCN Protected Area Categories

Category	Description
Ia – Strict Nature Reserve	PAs that are "strictly set aside to protect biodiversity and also possibly geological/geomorphic features, where human visitation, use and impacts are strictly controlled and limited to ensure protected of the conservation values".
Ib – Wilderness Area	"Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed to preserve their natural condition".
II – National Park	"Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristics of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities".
III – Natural Monument or Feature	"Protected areas set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value".
IV – Habitat/Species Management	"Protected areas aiming to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirement of particular species or to maintain habitats, but this is not a requirement of the category".
V – Landscape/ Seascape	"A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values".
VI – Protected Area with sustainable use of natural resources	"Protected areas that conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area".

Source: Dudley, 2008.

Table 6 summarises the terrestrial PA statistics by region (as designated by the UNEP-WCMC). While the coverage of terrestrial PAs has expanded, the current level does not meet the Aichi Target 11 requirement for 17% of global land surface protection by 2020 (Greenfield, 2020; Waldron et al., 2020). Furthermore, PA coverage is not on track to conserve 30% of Earth by 2030 in accordance with the Global Biodiversity Framework 2022 set by the Convention on Biological Diversity.

Table 6 Terrestrial Protected Area Statistics by Region

Region	No. countries	No. protected areas[3]	Land area protected (km^2)	Total land area (km^2)	% Coverage terrestrial protected areas
Africa	58	8,770	4,244,844	29,926,592	14.18%
Asia & Pacific	56	35,474	4,788,319	31,130,454	15.38%
Europe	62	162,391	3,778,522	27,811,406	13.59%
Latin America & Caribbean	52	10,036	4,982,724	20,541,462	24.26%
North America	3	52,728	2,500,573	19,445,662	12.86%
Polar	5	34	904,615	2,166,285	41.76%
West Asia	12	380	137,982	3,533,476	3.9%
TOTAL	**248**	**269,813**	**21,337,579**	**134,555,337**	**15.86%**

Source: UNEP-WCMC (2022a,b,c,d,e,f,g).

2.4 Challenges in Sustainably Financing Terrestrial Protected Areas

A range of operational, management, and other costs are associated with establishing and managing PAs and expanding the global PA system (Baral & Dhungana, 2014; Emerton et al., 2006). By way of example, in the 2016–17 financial year, the NPWS in NSW, Australia, was budgeted AU$543.9 million in government funding (the primary funding source for the PA estate). This amount was split into AU$40.8 million for capital expenses and AU$503.1 million for non-capital expenses (NSW Treasury, 2016). Countries and state jurisdictions around the world have also ratified international conventions related to biodiversity conservation and PAs, with most of the conventions calling for the Contracting Parties to fund biodiversity conservation (Emerton et al., 2006).

In 2001, spending on PAs globally was estimated at US$6.5 billion each year (Emerton et al., 2006). This estimate was revised upwards by Waldron et al. in 2020 to US$24.3[4] billion each year to cover management costs. While the methods used to calculate the 2020 funding estimate differed from the

[3] Includes terrestrial and marine protected areas.
[4] Waldron et al. (2020, p.29) calculated current global spending on protected areas as "$17.2 billion collated from primary sources for 124 countries, $4.5 billion invested by local communities, and $2.6 billion imputed for countries with no data".

2001 method, Waldron et al. (2020) believe that the funding difference "does suggest a broad, consistent political willingness to increase spending on the protection of nature" (p.29). Nevertheless, this funding increase represents just one third of the funding required to effectively manage these irreplaceable treasures (Waldron et al., 2020). Additionally, between US$35.5 billion and US$110 billion is required to increase the PA system to cover 30% of the global land surface by 2030 in line with the Convention on Biological Diversity's expansion target (Waldron et al., 2020).

A principal reason for the shortfall in funding is that PAs continue to be supported for the most part by domestic governments and by national and international donor agencies in developing countries, while the role of non-government organisations (NGOs) in the funding of these PAs is on the rise (Baral & Dhungana, 2014; Equilibrium Research, 2020; Mansourian & Dudley, 2008; Stolton et al., 2021). Furthermore, the sources of finance (and their amounts) tend to differ between countries. In 2005, for example, Finland received over 80% of its PA funding from the national government, 11% from income, and the remaining funds from the European Union (3%) and "other funding" sources (1%) (Mansourian & Dudley, 2008). In contrast, in 2005 Madagascar received most of its PA funding (71%) from overseas development assistance with smaller funding sources including a PA trust fund (19%), the Government of Madagascar (6%), and income from entrance fees (4%) (Mansourian & Dudley, 2008).

Table 7[5] highlights that other finance strategies and mechanisms that may be suitable for the funding of PAs exist, with examples sorted into five finance categories. Each of the funding strategies and mechanisms has its own advantages, disadvantages, and characteristics, which may help gauge the suitability of a particular mechanism for the specific funding requirements of PAs (WCPA, 2000).

Table 7 Potential Conservation Finance Mechanisms

Category	Mechanisms and strategies	Brief description
Government mechanisms	• Budget allocations • Grants • Fiscal transfers • Payment for ecosystem services	"Historically, governments have been a main funding source for PAs and nature conservation more broadly" (CFA, 2020).
Grants and non-repayable funds	• Philanthropy • Donor support • Conservation trust funds/ environmental funds • Debt-for-nature-swaps	"Grants are another critical funding source; however, donor funding can be inconsistent and vulnerable to shifts in donor priorities and interests. Long-term funding is not a given with donors often providing short-term support for projects while some attach

[5] For a comprehensive discussion on the range of finance mechanisms available for conservation, including advantages and disadvantages of each, see CFA, 2020; Credit Suisse, 2016; and Gobin & Landreau, 2017.

		their priorities to how the money should be spent" (CBD, 2007).
Return on investment	• Debt, equity, and hybrid - debt/equity funds • Impact investments, i.e., social/environmental impact bonds and Green/Blue/Park Bonds • Peer-to-peer investing and crowdfunding	"These mechanisms strive for positive environmental impacts alongside financial returns for investors (Meyers et al., 2020). Example: Poland issued a Sovereign Green Bond in 2016 to fund new projects and the refinancing of existing eligible projects. National parks were identified as an 'eligible sector' for funding under the Green Bond Framework with EUR54,054,019.13 spent between 2016 and 2018 on projects focused on conservation and restorative activities and educational activities (Ministry of Finance, 2018)."
Economic instruments	• Taxes • Fiscal instruments • Park revenue • Fines and penalties • Biodiversity offsets • Tradable resource use permit • Subsidies	"Economic instruments can influence behaviour (i.e., through fines and penalties) or generate revenues (i.e., park fees, eco-tourism) or achieve both (i.e., environmentally related taxes)" (CFA, 2020).
Revenue-generating activities	• Entry fees • Concession fees • Leases, licences • Ecotourism	"In addition to being the recipients of funding, PAs can be revenue-earning entities, with revenue helping to supplement other funding sources" (Waldron et al., 2020).
Financial efficiency measures	• Management effectiveness • Integrated accounting • Public–private partnerships • Mainstreaming biodiversity in development	"Includes strategies and mechanisms that produce enhanced conservation results relative to cost" (CFA, 2020).

Source: O'Flynn et al., (2021, p.5).

While PAs are recipients of funding, they can also generate their own revenue and in doing so make an important contribution to the economy (IUCN, 1998; Waldron et al., 2020). For example, in Australia, it was estimated that in 2014, visitors to national parks and nature reserves spent more than AU$23.6 billion, which in turn generated AU$2.36 billion dollars in tax revenue for state and territory governments (Taylor et al., 2014). This considerably exceeded total spending by Australian governments on PA management and expansion in 2014, which was estimated to be AU$1.28 billion (Taylor et al., 2014).

The challenge of financial sustainability for PAs is not a new phenomenon. Dearden et al. (2005)'s survey of "changes in governance of protected area systems between 1992 and 2002 based on responses from 41 countries" (p.89) found that significant changes in PA budgets had occurred during this decade. The study found that almost 66% of respondents considered their PA budget to be inadequate and that extra funding was needed to better address the growth and additional use of the PA system (Dearden et al. 2005). Over half (54%) of the respondents reported that the PA funding portfolio had diversified between 1992 and 2002, with increased funding from the private sector and "a smaller proportion of income coming from government sources in 2002" (Dearden et al. 2005, p.89). The study further reported that despite absolute funding amounts having increased between 1992 and 2002, almost two thirds of respondents considered their budget insufficient for the effective management of their PAs and described secure funding as one of the three main governance needs for the future (Dearden et al. 2005, p.89).

In 2010, Leverington et al. undertook a "global analysis of protected area management effectiveness" (p.685). The analysis involved the compilation of information from over 8,000 assessments of management effectiveness of PAs in 100 countries, with data analysed for "4,092 evaluations from 3038 protected areas" (Leverington et al., 2010, p.687). The analysis found that the weakest aspects of PA management included 'resourcing', which encompassed "funding reliability and adequacy, staff numbers and facility and equipment maintenance" together with community benefit programs and management effectiveness evaluation (Leverington et al., 2010, p.685). Nevertheless, Leverington et al. concluded that "in spite of inadequate funding and management process" (p.685), there were still indications that PAs globally were contributing to both community wellbeing and biodiversity conservation.

Following the global analysis of PA management effectiveness by Leverington et al. (2010), a study by Watson et al. in 2014 cited government funding cuts as an example of declining government support for PAs over the previous ten years. The same study also estimated that as many as 50–80% of PAs globally were poorly managed (Watson et al., 2014). More recent research by Coad et al. (2019) found that less than 25% of the sampled 2,167 PAs reported having adequate budget or staff. The study further estimated that "only 4–9% of terrestrial amphibians, birds and mammals are sufficiently represented within the existing global protected area estate, when only adequately resourced, protected areas are considered" (Coad et al. 2019, p.259). These findings suggest that the effective management of terrestrial PAs relies in part on the ability to secure sustainable finance. Furthermore, in 2020, IUCN ESARO estimated that current funding for African PAs only covered around 10–20% of their funding needs.

As previously discussed, self-generated revenue is an important funding source for some PAs, for instance, income generated through ecotourism and visitor use fees (Wearing & Schweinsberg, 2018). With a supportive policy and legislative environment, self-generated revenue can be reinvested into a PA or PA estate in addition to other funding sources (Waldron et al., 2020). For example, U.S. national parks keep 80% of all fees collected and use the money for visitor services, capital upgrades, and park management among other uses (National Park Service, n.d.). However, as the COVID-19 global pandemic has highlighted, self-generated funding can fluctuate and be an insecure source of funding (IUCN, 2020; Spenceley et al., 2021). For instance, the loss of ecotourist revenue due to the pandemic in locations such as Africa, Australia, and the Democratic Republic of Congo jeopardised the financial viability of ongoing conservation programs (Schweinsberg & O'Flynn, 2021). By way of example, the Mara Naboisho Conservancy in Kenya represents the primary income for more than 600 Maasai families and delivers important benefits to over 5,000 people (Basecamp Explorer Foundation, 2020). Without tourism during the pandemic, the Conservancy did not receive the income needed to support its conservation activities or pay the rangers (Basecamp Explorer Foundation, 2020). This example highlights the vulnerability of PAs that rely on tourism to subsidise their conservation endeavours (Equilibrium Research, 2020).

Furthermore, funding allocations to PAs can be "short term and focused on capital investment, with very limited support for sustaining PA structures and institutions over time" (Emerton et al., 2006, p.5). This can be challenging because it can jeopardise long-term conservation outcomes (Benham et al., 2014; Emerton et al., 2006). Further, funding limitations can also see agencies narrow their focus to what they perceive as core business activities (Margerum & Whitall, 2004; Robins & Kanowski, 2011).

2.5 The Financial Sustainability of Terrestrial Protected Areas

PA financial sustainability is typically defined as "the ability to secure stable and sufficient long-term financial resources, and to allocate them in a timely manner and appropriate form, to cover the full costs of PAs (direct and indirect) and to ensure that PAs are managed effectively and efficiently" (Emerton et al., 2006, p.15). As this definition suggests, the dollar amount allocated to PAs is only one component of financial sustainability; it also includes the type and sources of funding, how effectively the funding is spent in addition to the timing and quality of the funding, and the benefits delivered to local stakeholders (CBD, 2007). Further to this, as outlined in Table 8, Emerton et al. (2006, p.16) have identified five key elements of PA financial sustainability.

Table 8 Five Key Elements of Protected Area Financial Sustainability

Element	Brief description
1. Broad range of funding sources	Building a diverse, stable, and secure funding portfolio: minimizing funding risks and fluctuations.
2. Effective financial administration and effectiveness	Improving financial administration and effectiveness: ensuring that funding is allocated and spent in a way that supports PA finance needs and conservation goals.
3. Recognition of all PA costs and benefits	Taking a comprehensive view of costs and benefits: covering the full range of PA costs, ensuring that those who bear PA costs are recognised and adequately compensated, and that those who benefit from PAs make a fair contribution to their maintenance.
4. Financial and economic framework that supports PA financial sustainability	Creating an enabling financial and economic framework: overcoming market, price and policy distortions that undermine PAs or act as obstacles to PA financing.
5. PA practitioner ability to use financial tools and mechanisms	Mainstreaming and building capacity to use financial tools and mechanisms: factoring financial analysis and mechanisms into PA planning processes.

Source: Emerton et al., 2006, p.16

In addition to the key elements of PA financial sustainability as outlined in Table 8, "strong and effective institutions for PA management are necessary" (Emerton et al., 2006, p.15). Table 9 highlights several additional conditions that can also help to achieve PA financial sustainability. While the table does not provide an exhaustive list of conditions, it does offer a starting point for considering financial sustainability.

Table 9 Conditions That Can Help to Achieve Protected Area Financial Sustainability

Financial condition	Description
Diverse funding portfolio	PAs are financed through a range of mechanisms in addition to traditional sources of funding (i.e., government budget allocations and grants) (IUCN ESARO, 2020). This is considered "a powerful strategy to reduce vulnerability to external shocks and dependency on limited government budgets" (Bovarnick, 2010, p.21).
Financial security	Funds managed to promote long-term financial planning, security, and predictability (Meyers et al., 2020).
Cost-effectiveness	Funds managed and spent in an efficient and effective way to achieve greatest impact (Meyers et al., 2020).
Effective planning and administration	Systems, policies, and procedures are in place to support the distribution of the "right type and amount of funding…at the right time, in the right place, and for the right purposes" (Meyers et al., 2020, pp.8-9). Opportunities and incentives should exist for PA practitioners to make and keep funds at the PA level (Turpie et al., 2010). The IUCN (2000) recommends adopting a business-style approach to identify/secure sustainable finance, including financial and business plans. Financial planning may also encourage managers to consider financial sustainability from both a supply and demand perspective (Bovarnick, 2010).

Targeted funds and instruments	Budgets and financial instruments should be aligned with PA needs and priorities, and "geared towards overcoming key threats, drivers and financing constraints" (Meyers et al., 2020, pp.8–9).
Institutional, legal, and regulatory frameworks	Robust and successful institutional, legal, and regulatory frameworks exist that support PA financial sustainability and management (Bovarnick, 2010).
Staff knowledge and capacity	Staff knowledge of and capacity to use financial tools with support and training networks in place (Turpie et al., 2010).
Supportive policy and economic environment	Fiscal, economic, price and market conditions, circumstances, and instruments exist to support and incentivise conservation goals. Identifying and addressing the impediments to PA financial sustainability may be necessary, for instance market, price and institutional and policy barriers (Meyers et al., 2020).
Self-generated revenue	Self-generated revenue is encouraged with funds generated reinvested into PAs" (Emerton et al., 2006).
Other enabling conditions	An enabling environment means financial sustainability is a policy priority and there is political support, social acceptance, and adequate technical and organisational capacity "to ensure that the identified financing solutions will work in practice, and conservation will be financed effectively" (Meyers et al., 2020, pp.8–9)

Source: Adapted from O'Flynn et al., (2021, p. 7).

While Table 9 offers a launch pad for considering the financial sustainability of PAs, it does not take into consideration the specific financial situation or context of any one country or state jurisdiction. This is an important distinction because the financial situation of PAs can vary between states and/or countries. This variation may be evidenced through a plethora of potential contextual differences across PA estates, including but not limited to:

- the conceptualisation of PAs
- different cultures and historical experiences
- legislative, policy, and planning frameworks in place
- governance and administrative arrangements and practices
- various economic challenges
- revenue-generating opportunities
- level(s) of political, government, and community support and expectations
- size and coverage of PA estates
- adoption of management effectiveness (including monitoring and evaluation) systems
- biodiversity coverage of PAs
- impediments and enabling conditions that exist for financial sustainability
- differences in the sources of finance and their amounts (see Boer & Gruber, 2010; Bruner et al., 2004; Emerton et al., 2006; Mansourian & Dudley, 2008; Taylor et al., 2009; Slocum, 2017).

With so many potential variables, understanding the current financial situation and what financial sustainability looks like within a particular context can assist in identifying change pathways that may help to achieve PA financial sustainability. For example, in an investigation of the sustainable financing of PAs in Myanmar, Emerton et al. (2015) undertook an assessment of the country's "financing status, trends, constraints and opportunities" (pp.ii–iii). Based on this assessment, the research team put forward several options for sustainable financing in Myanmar and discussed the "enabling conditions and next steps for taking PA sustainable financing forward" (Emerton et al., 2015, p. iv). While these research findings may be transferable to PAs in other parts of the world, they are not necessarily generalisable. This is because the financial situation of the Myanmar PA estate is unlikely to exactly reflect the situation in other countries and the change pathways that could be taken to achieve financial sustainability in Myanmar may not reflect the change pathways suited to PAs elsewhere.

Finally, while ongoing government support (financial and non-financial) for PAs will remain critical in the future, as documented in Table 9, a diverse funding portfolio is an important condition for achieving PA financial sustainability. With this condition in mind, the chapter now turns to the literature on diversifying the PA funding portfolio and the emergence of the impact bond as an alternative finance mechanism to address social and environmental challenges.

2.6 Diversifying the Terrestrial Protected Area Funding Portfolio

While each funding mechanism potentially suited to PAs has unique advantages and disadvantages, a diverse funding portfolio can reduce the over-reliance of a PA management institution on one funding mechanism. In doing so, the institution can minimise risks from external shocks, for example, the downturn in international tourism and thus in visitor revenues due to the global pandemic (Baral & Dhungana, 2014; Emerton et al., 2006).

As Kathleen Fitzgerald of Conservation Capital explained, the COVID-19 pandemic has "exacerbated the gap in funding for protected areas and provides a harsh reminder of the need for revenue diversification" (IUCN, 2020). Thus, establishing diversified and sustainable revenue sources and mechanisms is essential for the long-term preservation of PAs and for safeguarding ecosystem services (IUCN, 2020). It is therefore timely to consider opportunities to diversify the PA funding portfolio, including new finance mechanisms such as the social and environmental impact bond to complement existing funding sources for PAs.

2.6.1 The Social and Environmental Impact Bond – a New Finance Mechanism

Around the world, impact investment has been introduced as an alternative funding method in policy areas such as the poverty and environment sector, criminal justice, education, and health (Social

Finance UK, 2020). The Global Impact Investing Network (GIIN) defines impact investment as "investments made with the intention to generate positive measurable social and environmental impact alongside a financial return" (GIIN, 2019). Impact investment is not expected to replace government funding, grants, or philanthropy; however, it can play a role as a complementary finance mechanism in using market-based approaches to leverage existing money (OECD, 2015).

In 2020, GIIN (2020b) estimated the value of the global impact investment market at US$715 billion and projected the market's potential growth to US$1 trillion by 2030 (GIIN, 2019). Furthermore, in 2016, Forest Trends reported on survey findings from impact investors which revealed that between 2004 and 2005, US$8.2 billion in capital was invested in projects looking to achieve both a financial return and measurable environmental benefits (Hamrick, 2016). In 2020, GIIN (2020a) explored the potential consequences of the global pandemic, which at that time was just unfolding, on the global impact investment industry. The survey revealed that 57% of surveyed investors intended to "maintain their 2020 investment plans" notwithstanding the pandemic (GIIN, 2020a, p.2). Moreover, a report by the International Finance Corporation (2020) found that "impact investing continued to draw strong investor interest in 2020 amid the turbulence caused by COVID-19" (n.p.).

In 2010, the Peterborough Social Impact Bond was launched to fund a prisoner rehabilitation program in the UK (United Kingdom). This was the world's first social impact bond (SIB), and it was launched at a time when austerity measures and recession were heavily impacting the government funding available for social programs (Murray, 2018). Philanthropic investors funded the Peterborough SIB in the belief that a return on their investment would tempt private investors by demonstrating that the theoretical principles attributed to the SIB could work in practice (Murray, 2018). The philanthropic investors further believed that if successful, the SIB could demonstrate the capacity of private investment to "transform the way social programs were funded" (Murray, 2018, p.11). By mid-2017, the SIB had reduced reoffending across the program by 9%, thereby exceeding the 7.5% target. Consequently, in addition to the repayment of investor capital, investors received an annual return of just over 3% for the investment period (Murray, 2018).

SIBs, unlike traditional bonds, are not debt instruments; instead, they see third-party investors, such as charities, foundations, superannuation funds, and high net-worth individuals, provide finance upfront for interventions that are expected to produce a financial return alongside positive social and/or environmental outcomes (Justice Connect, 2018). Investor repayment is dependent on the intervention meeting its predefined outcomes, with the outcome funder (often government) responsible for repaying investors their capital (Government Outcomes Lab, 2020). In the situation where an intervention's performance exceeds expectations, investors will receive full repayment in addition to a return on their investment (Government Outcomes Lab, 2020). However, where an intervention fails to meet its predefined outcomes, investors stand to lose their capital; therefore, from the investor perspective, impact bonds could be viewed as a higher risk investment.

Since the launch of the first SIB, more than 140 impact bonds around the world have generated over US$441 million in capital, impacting the lives of over 1.7 million people (Social Finance UK, 2020). While a capital works program for PAs in NSW has been included in the asset pool for funding through the State government's Sustainability Bond Programme, at the time of writing, the only impact bond to have been launched anywhere in the world with the sole purpose of helping to finance terrestrial PAs was the Wildlife Conservation Bond launched by The World Bank in South Africa in March 2022 (The World Bank, 2022).

To date, impact bonds have mostly financed interventions focused on addressing social challenges (Dear et al., 2016). One example is Utah's seven-year, US$7 million High Quality Preschool Program. The program, which was launched in 2013, aimed to prevent school children from requiring special education or remedial assistance by improving the educational experience of preschool children up to two years prior to entering kindergarten (Dear et al., 2016). 3,500 children from low-income families participated in the preschool program, and of the first 595 children (cohort one), "110 tested as likely to need special education services" (Dear et al. 2016, p.30). At the end of their preschool year, only one of the originally identified children needed special education upon commencing school (Dear et al. 2016). Resultantly, it was determined that the program had saved Utah's public education system US$281,550, "based on a state resource special education add-on of $2,607 per child" (Dear et al., 2016, p.30). Therefore, based on the first cohort's success, an outcome-based payment equivalent to 95% of the cost savings was paid to investors (Dear et al., 2016).

More recently, the impact bond has been adopted as an alternative finance mechanism in the environment sector (Quantified Ventures, 2018). The EIB, like a SIB is a pay-for-success or results-based contract that can financially support interventions looking to address environmental problems by mobilising upfront private investment in environmental solutions that may otherwise have been considered unfeasible without large-scale upfront investment (Quantified Ventures, 2018). The mechanics of the EIB and SIB are comparable as are the main players; the key difference is the focus of the impact bond, with EIBs focused on the environment and SIBs on a particular social issue.

2.6.2 Mechanics of an Impact Bond

The general process for establishing an impact bond can be divided into five stages: (1) sourcing opportunities for new programs/projects/interventions; (2) joint development phase; (3) sourcing investors; (4) implementation; and (5) evaluation and repayment. Table 10 summarises the five-stage process for establishing an impact bond with specific reference to the process followed in NSW for government-launched impact bonds.

Table 10 Five-Stage Process for Establishing an Impact Bond

	Stage	Description
1	Sourcing opportunities	The first step in initiating an impact bond involves undertaking a feasibility study to identify social and/or environmental challenges that may be suited to an impact bond financing model. In NSW, the usual procurement approach for government-launched impact bonds is an open, public tender where service providers express their interest by submitting a response to the tender (Department of Prime Minister and Cabinet, 2020; Gustafsson-Wright et al., 2015; Justice Connect, 2018).
2	Joint development phase	The proposed program and its timing, measurement, key performance indicators, and outcomes are refined. Payback periods, government reimbursement, and benchmarks or counterfactuals will also be agreed on, and the program should be designed with enough flexibility to deal with operational challenges as they arise (Berlin, 2016; Justice Connect, 2018). Following this, in the case of a government-launched impact bond in NSW, the service provider and state government will negotiate and finalise the contract.
3	Finding investors	An intermediary will identify suitable investors and raise the necessary capital (Department of the Prime Minister and Cabinet, 2020; NSW Government 2015). The investors provide finance for the program with the expectation of financial (except for grant makers) and social and/or environmental returns on their money (Gustafsson-Wright et al., 2015; NSW Government, 2015).
4	Implementation	Following the execution of the impact bond, service providers receive investment capital, which is a prearranged amount of money known as 'principal' paid by the investors in multiple instalments or on an agreed date. The service provider then applies the principal to the program and the services officially commence. A program's performance is managed throughout stage four (Department of the Prime Minister and Cabinet, 2020; Gustafsson-Wright et al., 2015; Justice Connect, 2018).
5	Evaluation and repayment	An evaluation of the program is conducted by an independent third party, such as an evaluation firm, research institution, university, or government agency. The evaluation will report on the achievement of pre-established outcomes and determine whether investors are to be repaid by the outcome funder. Usually, the outcome funder is a government agency, but it can be a foundation or development agency. An independent validator will then endorse the rigour of the program/intervention's evaluation to assess outcomes (Gustafsson-Wright et al., 2015). The outcomes achieved should be monetisable; meaning governments can identify savings gained in the budget (OECD, 2016). If the program is successful, these savings will pay for the investor's return (Department of the Prime Minister and Cabinet, 2020; Justice Connect, 2018).

The options going forward for a successful impact bond may include refinancing the program to serve a bigger population or larger geographic area or the government choosing to take on the expanded program without the help of impact investment (Berlin, 2016; OECD, 2016).

2.6.3 A Role for Neoliberalism in the Terrestrial Protected Area Funding Portfolio?

The review of the literature on the financing of terrestrial PAs has established that leading conservation organisations and conservationists are supportive of a diversified PA funding portfolio that includes market-based alternative finance mechanisms. Take Emerton et al. (2006) who believe that "there is no reason why the public sector should have sole or direct responsibility for funding and managing PAs, their facilities and services" (p.48). This sentiment indicates a shift in the perceived and actual role of the state in PAs and biodiversity conservation more broadly, and a level of acceptance of neoliberal conservation strategies. However, some commentators are critical of neoliberal conservation strategies – including impact bonds (see Roy et al., 2018; Sinclair et al., 2019). To this end, the thesis will now discuss the concepts of neoliberalism and neoliberal conservation strategies within the context of the sustainable financing of terrestrial PAs and the challenge of PA financial sustainability.

Neoliberalism is an economic concept invented between the first and second World Wars (Castree, 2010). It is a set of ideologies that preference private enterprise, free and open trade, and reduced state involvement (Castree, 2010; Pitas et al., 2015). The main features of neoliberalism are summarised in Table 11.

Table 11 Summary of Main Features of Neoliberalism

Main feature	Description
Privatisation	Privatisation or the provision of "legally enforceable private property rights to hitherto unowned, state-owned, or communally owned aspects of the social, cultural, and/or natural worlds" (Castree, 2010, p.10).
Marketisation	Marketisation or the allocation of prices that enable market exchange (Castree, 2010).
Deregulation	Deregulation or the "rollback" of state involvement in markets (Castree, 2010, p.10).
Policy environment supportive of privatisation and marketisation	Reregulation or "market-friendly regulation" (Castree, 2010, p.10), which involves the "deployment of state policies to facilitate privatisation and marketisation" (Robinson, 2015, p.11). This is where the state's role becomes one that supports that of the free market putting in place regulations to ensure they can operate without interference (Castree, 2010).
Market proxies	The "use of market proxies" where the residual public sector is managed like a for-profit business (Castree, 2010, p.10).
Expanded role for civil society	"Strong encouragement of 'flanking mechanisms' in civil society" to undertake the roles previously carried out by the state, for example,

	the provision of services by non-government agencies and charities (Castree, 2010, p.10).
Less societal reliance on government and public services	The "creation of 'free', 'self-sufficient', and self-governing individuals and communities" that encourages people, organisations, and communities to rely less on "public services and state agencies for life's necessities" (Castree, 2010, pp.9–10).

According to Castree (2010), "since the late 1970s, neoliberal ideas and ideals have gradually made their way into the domain of environmental policy as part of a wider change in the global political economy" (p.5). 'Neoliberal conservation', as it is often referred to, takes the key features of neoliberalism, and applies them to nature conservation. Castree (2008) argued that in a "capitalist world, attempts to neoliberalise nature can be understood as 'environmental fixes' that are, in theory at least, 'rational' for private producers and also the state" (p.2). Holmes (2015) further explained that "neoliberal conservation is generally understood as a blend of ideology and practices — both ways of thinking about how to save nature in capitalist terms, and specific projects, structures, and techniques that use capitalist approaches to conserve biodiversity" (p.852). The rollback of the state's involvement in PAs has consequently "facilitated an increased role for the private sector and civil society in conservation by creating market structures, incentives, and other supportive measures" (Holmes, 2015, p.852).

Conservation and resource policies that meet one or more of the main features of neoliberalism have been introduced into various locations and contexts (Castree, 2010), including terrestrial PAs. The purported benefits of neoliberal conservation strategies include:

- The use of "market signals" to enact a positive influence over environmental behaviour and impact, for example, by establishing new markets for environmental goods/services or by altering prices (Pirard, 2012, p.62).
- Better protection of resources through private property rights (Castree, 2010, p.15).
- Promotion of long-term conservation through the conversion of environmental services into tradable commodities and, thus, the introduction of pricing (Allen, 2018; Boyd & Banzhaf, 2007).
- Opportunity for entrepreneurs to profit from currently "unowned or unpriced portions of the biophysical world" (Castree, 2010, p.15).
- Opportunity to use private capital to fund environment-focused projects in the face of government budget cuts and austerity policies (Lang & Rothenberg, 2017).
- Better value for money when managing natural resources (Castree, 2010, p.15; Pitas et al., 2015).

- Improved efficiency in managing and delivering "resources and environmental amenities and/or services" through the introduction of "commercial principles into state bodies" (Castree, 2010, p.15).

Countering the purported benefits of neoliberal conservation strategies, critics point to empirical evidence, warning that these strategies can be harmful to both people and nature (Castree, 2008; Holmes, 2015). Scholars studying the neoliberalisation of nature have examined "the outcomes that neoliberal measures/policies have had on actual environmental phenomena and the results are as varied as the regions and case studies in which they were examining" (Macaraig, 2011, p.362).

Castree (2008) has presented a useful comparative analysis of a suite of empirical research on the effects of neoliberalisation on different aspects of nature. Most (but not all) of the research that Castree (2008; 2010) reviewed, identified negative environmental and/or social outcomes resulting from nature's neoliberalisation, for example, the marginalisation of the poor and powerless, regional water shortages, civil unrest in part caused by neoliberal reform of policies, drinking water pollution, and loss of CO_2 absorption globally (see Bakker, 2005; Heynen & Perkins, 2005; Martin, 2005; Perreault, 2005, 2006; Prudham, 2004). However, through the comparative analysis, Castree (2008) also observed that the researchers had adopted different evaluation methods and did not always explain or justify the selected evaluation method. This makes it difficult to "draw wider lessons" (Castree 2008, p.26) and Castree (2008) has explained the significance of this omission by the researchers, stating:

> Though researchers aim to mirror the world they are investigating faithfully, they also actively make choices that require justification and reflexivity. These choices include: which effects will be monitored; how much data about these effects will be gathered; whether this data will be quantitative or qualitative; the temporal and spatial scales at which the effects will be tracked; the comparative weight given to effects where different kinds are being investigated simultaneously, and so on. These decisions that researchers make about these and related issues greatly affect what readers of their work – in academia or the policy world – come to know about various neoliberalisations of nature. (p.18)

Another important revelation from Castree's comparative analysis is that, to date, "little (if any) of the research…has suggested clear and workable ways of removing the neoliberal measures being evaluated" (Castree, 2008, p.21).

The literature on the neoliberalisation of nature suggests that the outcomes of neoliberal strategies will differ depending on the context (for example, geographic setting or environmental and social circumstances). In Martin (2005)'s comparative analysis of neoliberalism in two Mexican neighbourhoods, she found that "although in theory a common set of ideas underpins neoliberal ideology and policy, in practice the way in which neoliberal projects are materialized in specific locations is differentiated, segmented, and highly uneven" (p.203). Similarly, based on Castree (2008)'s comparative analysis of empirical research, he argues that the effects of nature's neoliberalisation should not be over-generalised, stating that "particular neoliberalisations produce the effects they do in specific social and ecological circumstances", and as such should be taken on a "case by case basis" (p.11).

The consequences of neoliberalism specific to PAs have been a topic of discussion in the literature for some time (see Nyahunzvi, 2016; Rytteri & Puhakka, 2012; Slocum, 2017). Nyahunzvi (2016) suggested that the adoption of neoliberal conservation strategies reflects the ongoing reduction in government funding allocations to PAs and the existence of policies that encourage the outsourcing of activities previously undertaken by PA management agencies. It is possible that the outcomes of neoliberalism will vary from one PA to the next depending on their context and individual ecological and social situations (Castree, 2008). Nevertheless, to understand the potential role of neoliberalism in the terrestrial PA funding portfolio, it is helpful to draw on a case study where neoliberalism has been introduced to PAs.

In Rytteri and Puhakka (2012)'s research into the expansion of a privately owned hotel facility in Finland's Pallas-Yllästunturi National Park, they discussed the reported consequences of neoliberalism in Finland's PAs (with reference to the Pallas-Yllästunturi National Park case). The reported outcomes can be summarised as:

- Tourism in PAs is increasingly justified on the grounds of regional development and the quantifiable contribution they can make to the economy, for example, through increased tourism activity (Rytteri & Puhakka, 2012, p.259).
- In the case of Pallas-Yllästunturi National Park, legislative changes were enacted to make the park more accommodating of private business interests/needs, with a Bill passed in 2010 permitting the expansion of an existing privately owned hotel facility in the national park.
- Changes to government policy to facilitate tourism growth in PAs with Finland's PA management agency "now more focused on creating new possibilities for tourism entrepreneurs; the policy of denials and restrictions has been replaced by one of active co-operation and the management of tourism within the limits of acceptable criteria" (Rytteri & Puhakka, 2012, p.259).

- Changes in park governance are made to “integrate socio-economic goals of nature-based tourism with ecological goals of conservation by implementing principles of sustainability” (Rytteri & Puhakka, 2012, p.259).
- “The ideas of growth and profitability are accepted as integral parts of national park governance” with Finland’s PA management agency committed to increasing the economic impact of nature-based tourism and visitor numbers in PAs; there has also been an increase in visitor infrastructure investment (Rytteri & Puhakka, 2012, p.259).
- Numbers of private businesses running tourism activities in PAs have increased. For example, around 100 businesses were providing recreation services in Finnish PAs in 2012.
- Tourism activities and visitor numbers in PAs have increased.
- Political support by certain parties for neoliberal ideas, such as market guidance and increased privatisation, has increased.
- The risk of monopolisation by one business is exemplified in the Pallas-Yllästunturi National Park case, where the original Bill presented to Parliament offered one company (the private hotel owner) the opportunity to substantially increase the accommodation capacity in the national park, thereby potentially creating a monopoly on visitor accommodation in the region. While this Bill was superseded by a revised Bill in 2010 that permitted a smaller increase in the hotel’s accommodation capacity, the case highlights the potential risk of monopolisation.
- Concerns by some stakeholders in the Pallas-Yllästunturi National Park case that the proposed legislative changes would result in the overdevelopment of a tourism facility in a national park setting to the detriment of the park’s environmental, cultural, and historic values. Other stakeholder concerns related to the commercialisation of PAs, and the role of markets and private business in PA management.

Rytteri and Puhakka (2012, p.260) argued that these outcomes are “in line with the neoliberal logic of ‘sell nature in order to save it’”, which assumes that the value of nature will increase when it is commercialised because it brings about “additional resources and incentives for nature conservation”. However, they warned that “universal neoliberal discourse can work as a fashionable disguise to promote interests of certain interest groups”, which may not reflect the neoliberal ideas presented in textbooks (Rytteri & Puhakka, 2012, p.265).

Furthermore, in her paper on “operationalising both sustainability and neo-liberalism in protected areas”, Slocum (2017, p.1853) wrote that a by-product of neoliberalism for publicly managed PAs in the U.S. is the redefining of stakeholders towards “corporate customers and franchise holders seeking profitable market structures”. A consequence is the potential weakening of the role of conservationists and community in PA governance (Slocum, 2017). The research further revealed that “the process of neoliberalism” has increased collaboration between the U.S. National Park Service and on-park tourism concessionaries and fostered a reliance on these concessionaries to supplement declining government budgets (Slocum, 2017, p.1861).

While the research by Slocum (2017) and Rytteri and Puhakka (2012) does not suggest ways to remove neoliberalism from U.S. and Finnish PAs, Rytteri and Puhakka do recommend that neoliberal policies, processes, and projects considered problematic be critically analysed to determine whether they are “truly liberal”. They explained:

> If it creates monopolies, serves just a few actors’ interests, gives priority to a certain branch of industry, is based on very close connections between politicians and economic actors, it hardly follows liberal ideals. When the convincing disguise of false justification is removed, it is easier to discuss whose interests the process is really serving. (Rytteri & Puhakka, 2012, p.266)

In the Australian context, the private sector is actively involved in PAs with licenced commercial/ tourism operators providing accommodation, educational courses, guided tours, and other recreational activities (see Baker 2019; QLD Government, 2022; NPWS South Australia, 2023; NPWS, 2023). For example, there are over 400 licenced tourism operators operating in Queensland PAs, and around 275 operating in Tasmanian PAs (Baker, 2019; QLD Government 2022). Underdahl (in Gillespie, 2022) traces the growth in private sector involvement back to the release of the Federal Government’s ‘Jackson Report’ in 2009. The Jackson Report, which was prepared on behalf of the Steering Committee informing the National Long-Term Tourism Strategy, recommended that “the latent tourism potential” of Australia’s national parks be assessed and harnessed (Australian Government, 2009, p.30).

Since 2009, Australia has experienced a growing number of public-private partnerships (PPP) operating in PAs with more in the pipeline. A PPP involves a business paying the territory/state government to lease land in a PA for commercial purposes (Gillespie, 2022). For example, in 2022, the NSW government sought expressions of interest from commercial ecotourism operators to construct and operate the proposed ‘Wollemi Great Walk’ together with a zipline and serviced accommodation (Gillespie, 2022; Gregory, 2022). While in Tasmania, 30 commercial leases include private accommodation sites (Gillespie, 2022). However, concerns have been raised by local communities, conservationists, traditional owners, and ecotourism experts over the perceived privatisation of PAs (see Rose, 2018; Morton, 2021; Buckley & Chauvenet, 2022; Gillespie, 2022). To this point, in 2018, a ‘change.org’ online petition was launched by a concerned citizen in response to the NSW government’s proposed construction of hard-roofed accommodation in Ben Boyd National Park as part of the existing ‘Light-to-Light’ walk offering. The petition organiser who urged people to sign the petition to “stop the privatisation of our national parks and wilderness areas” (Rose, 2018, n.p.), raised the following concerns with the proposal:

- Possibility that the proposed accommodation would be run by a commercial operator and the “luxury camping experience” could cost hundreds of dollars per night
- The proposed ‘luxury’ accommodation would be unlikely to benefit current visitors/campers at Ben Boyd National Park
- Limited local community and broader public consultation on the proposal
- The proposal overshadowed potential opportunities to upgrade existing camping grounds in the national park
- Unacceptable ecological impacts resulting from the proposed development (Rose, 2018, n.p.).

By February 2023, four years after its launch, more than 6,300 people had signed the online petition, a sample of the reasons given for signing the petition include:

> “Privatization of public space is a gross infringement on the public’s rights and property.”
>
> “National Parks are NOT for private profit and social LOSS.”
>
> “Access to the Parks should be the right of all citizens…not just those with a cool $500 per person per night. Camping is a great family activity that everyone can afford!”
>
> “It’s a National Park and should not be for commercial development.”
>
> “Private enterprise should not be given exclusive rights to public land which belongs to everyone!” (change.org, 2023).

While the government maintains that all accommodation along the Light-to-Light walk (camping and huts) will be managed and owned by NPWS (2022d), it has acknowledged that privatisation of the national park was one of the main concerns raised during public consultation on the proposal (Doherty, 2019). If approved, the Light-to-Light walk would become NSW’s first hut-to-hut walk, however, it is one of over 100 government identified projects which aim to generate income from PAs (Doherty, 2019). Buckley (in Gillespie, 2022, n.p.), warns that “the general public is not in favour of these kinds of development” and together with Chauvenet (2022), they argue that such developments can have significant ecological impacts and compromise public access to national parks and in turn the health benefits that people experience when spending time in a national park setting. On the flip side, Ecotourism Australia's chief executive officer, Elissa Keenan (in Gillespie, 2022) believes that these types of projects can increase a visitor's appreciation for nature and raise awareness for conservation issues. Keenan (in Gillespie, 2022) further cites economic benefits to national parks together with local communities and regions as additional benefits. Clearly, the role of neoliberalism in the funding, management and delivery of services in terrestrial PAs in Australia remains contested and the topic of ongoing debate.

These findings are relevant to PA practitioners who experience inadequate funding from traditional sources to effectively manage PAs and, notwithstanding the criticisms, are actively encouraged to adopt market-based strategies and engage with the private sector to address the challenge of insufficient funding (see CFA, 2020; Emerton et al., 2006; IUCN, 2000; Watson et al., 2014). Evidently, practitioners face a difficult decision – do they choose the status quo and continue to manage PAs with insufficient resources? Or, whilst acknowledging the criticisms of nature's neoliberalisation, but with limited practical alternatives, do they explore neoliberal conservation strategies, such as the SIB and EIB, as alternative finance mechanisms to help achieve financial sustainability? A related yet under-explored research area is the attitudes of PA practitioners towards neoliberal conservation strategies and whether these attitudes influence their willingness to adopt such strategies as alternative finance mechanisms.

2.7 Summary

The purpose of this chapter was to make an initial contribution to the study of the financial sustainability of terrestrial PAs, with a focus on those under the care and control of government agencies, and the emergence of the social and environmental impact bond as an alternative finance mechanism to address social and environmental challenges.

The role and values of terrestrial PAs in the context of biodiversity conservation and in safeguarding human health and wellbeing were discussed and a history of the evolution of the modern global terrestrial PA estate was traced from its early beginnings through to the present day (2021). The historical timeline provided the context for the discussion that followed on the challenges in sustainably financing terrestrial PAs.

The challenge of financial sustainability for terrestrial PAs is not a new phenomenon, with studies revealing that despite the important role of PAs, they do not receive the funding needed to cover management costs (including expansion costs) and to effectively manage PAs or the PA estate (see Dearden et al., 2005; Emerton et al., 2006; Waldron et al., 2020; Watson et al., 2014). One of the primary reasons for this challenge is that terrestrial PAs are overwhelmingly supported by public money, donor agencies, and funding from NGOs (Equilibrium Research, 2020; Mansourian & Dudley, 2008).

Some terrestrial PAs can generate their own revenue, which can complement other funding sources (Waldron et al., 2020). However, self-generated revenue can be insecure and subject to fluctuations as exemplified by the COVID-19 global pandemic and its impact on the Mara Naboisho Conservancy in Kenya (Basecamp Explorer Foundation, 2020; Equilibrium Research, 2020; IUCN, 2020; Spenceley et al., 2021). The allocation of funds to PAs can also be short term and focused on capital investment, which can make it difficult to achieve long-term outcomes (Emerton et al., 2006, p.5).

It was revealed that the financial situation for PAs can vary between state and territory jurisdictions and/or countries as evidenced by a plethora of potential contextual differences across PA estates. With so many potential variables, understanding the current financial situation and what financial sustainability looks like within a particular context can assist in identifying change pathways that may help to achieve the financial sustainability of a PA or PA estate.

While there is a suite of funding mechanisms and sources that may be suited to the funding of terrestrial PAs, the systemic nature of the challenge of financial sustainability justifies the consideration of new finance mechanisms. In this context, the chapter considered the action of diversifying the terrestrial PA funding portfolio to help PA management institutions reduce their over-reliance on one funding mechanism and in doing so minimise risks from external shocks.

The environmental and social impact bond – a subset of impact investment – was introduced as a new finance mechanism that has been adopted in social and environment sectors to address major challenges. The chapter discussed the adoption and growth of this new finance mechanism and the mechanics of the impact bond. It found that while a capital works program for PAs in NSW is earmarked for funding under the state government's Sustainability Bond Programme, at the time of writing, the only impact bond to be launched anywhere in the world with the sole purpose of funding conservation strategies in terrestrial PAs was the Wildlife Conservation Bond, launched by The World Bank in South Africa in 2022.

The chapter concluded with a discussion of the impact bond as a neoliberal strategy and the notion of the neoliberalisation of nature. It also considered whether there is a role for neoliberal conservation strategies in the PA funding portfolio. It found that despite a plethora of literature on the neoliberalisation of nature, there is little discussion in the literature about the attitudes of PA practitioners towards neoliberal strategies and whether these attitudes influence their willingness to adopt mechanisms such as the impact bond to help fund PAs under their care and control. This thesis seeks to address this gap by exploring through interviews the attitudes of the PA practitioner participants towards alternative finance mechanisms such as the impact bond (Chapter 7).

Importantly, Chapter 2 has provided context for the discussion that will follow on the impediments and enabling conditions (Chapter 4 and Chapter 5) that exist to the financial sustainability of the PA estate in NSW, on the 'pathways to change' (Chapter 6), and on diversifying the funding portfolio and how the impact bond can help to finance terrestrial PAs (Chapter 7).

Chapter 3 Methodology

3.1 Introduction

The purpose of this chapter is to rationalise and describe the methodological approach adopted by this thesis. The chapter begins with a discussion of the research design, followed by an overview of the theoretical orientation of the thesis, and it concludes with a discussion of the conceptual framework for the financial sustainability of publicly managed terrestrial PAs developed for this thesis.[6] Table 12 provides a conceptual outline for the structure of Chapter 3.

Table 12 Conceptual Outline of Chapter 3 Structure

Section	Description
Section 3.2	Purpose of the Research Study
Section 3.3	Research Design
Section 3.4	Data Collection and Analysis
Section 3.5	Participant Recruitment
Section 3.6	Participant Confidentiality
Section 3.7 3.7.1	Theoretical Orientation of the Thesis - Theory Building Through Action Research
Section 3.8	Conceptual Framework
Section 3.9	Linkages Between the key Methodological Components of the Research
Section 3.10	Summary

3.2 Purpose of the Research Study

The dual purpose of the research study was to:

1. Address a real-world challenge – the financial sustainability of the publicly managed terrestrial PA estate in NSW under the care and control of NPWS.
2. Make an original and important contribution to knowledge by addressing a gap in the literature on the funding of terrestrial PAs and impact bonds in relation to their feasibility as a finance mechanism for PAs.

[6] Chapter 3 draws extensively on the co-authored work with PhD supervisors published in the *Journal of Park and Recreation Administration* in 2022 for which the researcher was the lead author. See O'Flynn et al. (2022).

3.3 Research Design

An action research methodology was employed for this thesis to improve participant and researcher understanding and address the challenge of financial sustainability for PAs under the care and control of NPWS in NSW.

Initially, action research was established by Kurt Lewin, a social psychologist in the 1940s, who advocated for social action through practitioners actively participating in the research process (Coghlan & Brannick, 2014). Action research can be defined as research where "the researcher enters a real-world situation and aims both to improve it and to acquire knowledge" (Eden & Huxham, 1996, p.9). Given that I have worked for NPWS since 2007, I am positioned as an 'insider' action researcher for the purposes of this thesis.

Action research differs from more conventional research methods in that it concentrates on "research *in* action rather than research *about* action" (Coghlan & Brannick, 2014, p.6). Smith (2021) explained that "action research is a more active involvement and collaboration between researchers and practitioners, allowing you to shape your research study 'at the coalface' and adapting it to new information – so what you develop theoretically works in practice" (n.p.). Furthermore, it can break down obstacles between researchers and participants, thereby leveraging theory to solve problems in industry (Smith, 2021).

Coghlan and Brannick (2014)'s action research cycle was used for this thesis. It provided a logical approach to the research, which aimed to engage other people looking to address the challenge of financial sustainability of the PA estate in NSW under the care and control of NPWS. It also provided a process for the participants and researcher alike to improve their knowledge of the challenge and devise implementable solutions. The action research cycle as it was applied in this thesis is summarised in Table 13.

Table 13 Coghlan and Brannick's Action Research Cycle

Action Research Cycle Component	Application
Pre-step: context and purpose	"The purpose of the pre-step is to understand the context of the project, articulate why it is necessary, assess the external context and internal forces driving change, and seek agreement on the desired impact. It involved informal discussions with PA practitioners and conducting a preliminary review of relevant literature" (O'Flynn et al., 2022, p.5). The pre-step was initiated in 2019, prior to the researcher commencing the Industry Doctorate Program at UTS.
1. Constructing	"The purpose of Step 1 is to outline the theoretical and practical foundations of the proposed action. Research questions were

	revised, and a comprehensive review of literature undertaken" (O'Flynn et al., p.5). This step commenced in January 2020.
2. Planning action	"The purpose of Step 2 is to determine the theoretical framework, methodology, and methods of inquiry. The research design was finalised in collaboration with the project reference group, and Ethics approval for the research was granted" (O'Flynn, et al., 2022, p.5). This step commenced in mid-2020 with UTS granting ethics approval in November 2020.
3. Taking action	"The purpose of Step 3 is the collaborative implementation of plans and interventions" (O'Flynn et al., 2022, p.5). As detailed in Table 14, data collection and analysis involved a three-phase process which helped to develop solutions to the challenge of financial sustainability. Data collection and analysis was completed in the first quarter of 2022.
4. Evaluating action	"The purpose of Step 4 is to observe and reflect on the implemented changes and to evaluate the intended and unintended outcomes of the actions taken…Also, throughout each phase of the study, the researcher kept a reflective journal as a written record of her reflections, observations, insights, and interview notes" (O'Flynn et al., 2022, p.5).

Source: Adapted from O'Flynn et al. (2022, p.5).

3.4 Data Collection and Analysis

A three-phase process was adopted in Step 3 of the action research cycle outlined in Table 13 for the purposes of data collection and analysis and to devise solutions to the challenge of financial sustainability for publicly managed terrestrial PAs within the NSW context. Table 14 details the data collection and analysis processes adopted.

Table 14 Three-Phase Process for Collecting and Analysing Data

Phase	Application
1. Individual interviews	"Phase 1 involved in-depth semi-structured interviews with 20 Australia-based PA specialists with at least five years of experience working within NPWS and practitioners working in the non-government sector. Participant experience ranged from administration, community engagement and species experts, economic and finance specialists, and PA advocates through to park management directors and executive directors. A set of open-ended questions was developed with the ToC methodology playing an important role in the design and sequencing of the questions asked" (O'Flynn et al., p.6). Secondly, in-depth semi-structured interviews were conducted with four Australia-based impact investment specialists in addition to off-the-record discussions with an additional two impact investment specialists. A set of open-ended questions was developed and centred around the social and environmental impact bond and its feasibility as an alternate finance mechanism to complement existing funding sources for terrestrial PAs. The interview schedules prepared for the PA

	specialists and impact investment specialists were both reviewed and approved by the UTS Human Research Ethics Committee prior to commencing data collection and analysis. Data analysis in Phase 1 was underpinned by the conceptual framework developed for this thesis.
2. Secondary data analysis and additional review of literature	"Phase 2 involved the analysis of secondary data including budget papers, visitation data, economic analysis reports, and newspaper and journal articles and other historic records. This information was used to confirm and corroborate the views expressed by participants during interviews. Phase 2 also involved the review of literature relevant to major themes emerging through the data collection and analysis process. Furthermore, as part of this phase, the UNDP PA financial sustainability scorecard template was adapted for the NSW PA estate, and with the assistance of selected research participants, the scorecard was populated for the 2020–21 financial year" (O'Flynn, et al., 2022, p.6). This process took place over a series of video conference meetings and email discussions. During the video conference meetings, the researcher shared her screen and with the participants worked through each section of the scorecard, populating the document at the same time. The draft populated scorecard was emailed to participants for comment and revision before finalisation. "The information collected through the scorecard provided further insight into the current financial situation, and it helped to verify and supplement evidence from other sources" (O'Flynn et al., 2022, p.6). Data analysis in Phase 2 was underpinned by the conceptual framework developed for this thesis.
3. Drafting the Theory of Change	ToC was selected to complement the "action research methodology, which emphasises collaboration between the researcher and research participants, because ToC as a process encourages collaboration, particularly through its iterative nature" (O'Flynn et al., 2022, p.6). When ToC is embedded within action research, it can foster deeper program/project or situational learning and adaptation based on the real-life experiences of the participants (Apgar et al., 2017). ToC was also used as the basis of a series of recommendations for future research and practical actions in addressing the challenge of financial sustainability for the PA estate in NSW, with each recommendation associated with one or more of the pathways to change identified in the ToC. Like in Phases 1 and 2, data analysis in Phase 3 was underpinned by the conceptual framework developed for this thesis.

Source: Adapted from O'Flynn et al. (2022, p.6).

As outlined in Phase 3 of the data collection and analysis (see Table 14), the action research methodology was complemented with ToC, which is "a theory-based approach to planning, implementing, or evaluating change" (Liang & Todd, 2015, p.3). ToC emerged from program theory, which looks to explain the contribution that an intervention makes to the chain of results which in turn generate positive and negative impact(s) (Funnell & Rogers, 2011; Vogel, 2012). In this sense, program theory can illustrate the change process, including how to improve performance (Funnell & Rogers, 2911). Within this setting, ToC is both a tool and methodology used "to map out the logical sequence of an initiative, from activities to the changes it seeks to influence… [as well as a] deeper reflective process: a mapping and a dialogue-based analysis of values, worldviews and philosophies of change that make more explicit the underlying assumptions of how and why change might happen as an outcome of the initiative" (Vogel, 2012, p. 9). Different names are sometimes used for this methodology and tool, including program logic, logic model, program theory, intervention logic, results chain, outcomes hierarchy, and causal model (DPC, 2022a).

Establishing a ToC is sometimes compared to generating a "roadmap" that summarises the process involved in achieving an end goal or desired impact (Nesta, 2011, p.2). Specifically, the roadmap can assist a change maker (i.e., government, organisations, researchers) in:

- stipulating the situation/ problem to be addressed
- communicating necessary change(s)
- studying the problem's real-world context or setting
- determining the pathways to change that may assist change makers in achieving the desired impact (Anderson, 2009).

ToC has been used, mandated, or encouraged by many organisations, including global aid and environment agencies such as United States Agency for International Development (USAID) and the United Nations Environment Program (UNEP), international NGOs like IUCN, and funding agencies including the World Bank Group (see IUCN, 2016; UNEP, 2017; USAID, 2013; Vaessen, 2016).

ToC is increasingly being used as a tool to address conservation challenges (Baylis et al., 2016; Margoluis et al., 2013; van Eeden et al., 2020). Examples of ToC application within a PA and nature conservation context include engaging local communities in addressing illegal wildlife trade (see Biggs et al., 2016); growing African rhino numbers in PAs (see Balfour et al., 2019); evaluating the impact of the IUCN Red List of Threatened Species (see Betts et al., 2020); protecting wildlife (see USAID, 2016); and identifying key risks to the performance of privately managed PAs (see Retief et al., 2022).

As part of the NSW Government's 'Evaluation Toolkit', which promotes a standard approach to program evaluation across the public sector, ToC is recognised as the primary method to evaluate programs, projects, or policies and, in doing so, promote evidence-based policy and decision-making in government (DPC, 2022a, 2022b). Consequently, ToC has been adopted by a range of NSW government departments such as the Department of Education, NSW Health, Transport for NSW, Family and Community Services, and the Department of Planning, Industry and Environment (for examples, see AAEE NSW, 2019; Bennett & Muir, 2015; DoE, 2021; DPIE, 2021d; Ministry of Health, 2017; URBIS, 2021). While the adoption of the ToC methodology by NPWS to date has been limited, the application of ToC to the financial sustainability of the PA estate in NSW is justified given the NSW Government's advocacy for the tool's use across the public sector.

As summarised in Table 15, Vogel (2011)'s five-stage process for establishing a ToC was followed when developing the ToC presented in this thesis.

Table 15 Vogel's Five-Stage Process for Establishing a Theory of Change

Stage	**Application**
1. Analyse context of problem to be addressed	During the first stage, existing literature together with secondary data (including the NPWS financial sustainability scorecard 2020-21) and participant interviews were used to examine the problem of PA financial sustainability in the NSW context. This involved an analysis of the current financial situation, how it has changed over the past ten financial years and the actors capable of influencing change (O'Flynn et al., 2022). The impediments and enabling conditions that exist for financial sustainability were also documented.
2. Define desired impact	The second stage involved defining the desired impact or the end goal (Vogel, 2011). The one-line statement was designed to be measurable, realistic and can be time bound (Tolmie, 2014). The wording reflects the objects of the *National Parks and Wildlife Act 1974* and the views of participants shared during interviews.
3. Determine steps involved in achieving impact	The third stage involved mapping out the steps or the "sequence of changes" (Vogel, 2011, p.8) involved in accomplishing the impact within the context analysed in the first Stage. To develop the ToC, Vogel's (2011, p.8) recommendation of "mapping backwards from the impact" was used to "establish logical and conceptual links" by asking participants the questions "what happens next? and what else needs to be happening to support this change?"" (Vogel, 2011, p.8). Through this process, six 'pathways to change' emerged. Each pathway consists of "inputs, actions, outputs, and outcomes that are connected sequentially and lead to the same overall Impact" (O'Flynn, et al., 2022, p.7).
4. Articulate assumptions	The fourth stage involved critically reflecting on the change process and articulating the assumptions that exist along each step of the ToC, for instance from outputs to outcomes or outcomes to impact. The Global Environment Facility (GEF) (2019, p.5) defines an assumption as the "beliefs that are accepted as true or taken for granted in defining the casual links in the causal pathways". Assumptions were drawn from published literature and the practical experience of PA practitioner research participants.
5. Prepare ToC diagram and narrative	The fifth stage involved writing a narrative for the ToC and drafting an accompanying diagram (Vogel, 2011). According to Vogel (2012, p.6) the ToC narrative and diagram are "acknowledged as subjective interpretations of the change process… [and should be used as' evolving 'organising frameworks' to guide implementation and evaluation, not rigid predictions or prescriptions for change". Thus

	like the ToC methodology, no correct or incorrect way exists to represent a ToC with ToC diagrams varying from highly complex to simple.

Source: Adapted from O'Flynn et al. (2022, p.6).

Braun and Clarke (2006)'s six-phase approach to thematic analysis was used to analyse the data collected, as summarised in Table 14. The six phases as they were applied in this thesis are summarised below.

Phase 1: Familiarisation with Data

Phase 1 involved transcribing the audio-recorded interviews. Each transcript was printed and read multiple times with initial ideas written down. The intention was to increase familiarity with the entire data set prior to coding in Phase 2. The audio-recording transcripts were also emailed to individuals for review and verification of accuracy.

Phase 2: Generate Codes from Data

Once familiar with the data, the transcripts were re-read multiple times (and in some cases the audio-recorded interviews listened to again) to generate an initial set of codes – or a brief description of what was said in the interview extract. The codes highlighted "interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code" (Braun & Clarke, 2006, p.87). The data was hand coded using key words and short phrases as codes to capture the meaning of specific quotes. Examples of codes included 'the role of politics/ election cycle'; 'self-promotion'; 'independence'; 'stakeholders'; 'natural disasters'; and 'private sector involvement'. More than 55 codes were identified across the data and applied to sections of the transcripts that represented the same meaning. The codes were handwritten in the margins of the printed transcripts next to the relevant quotes, which were underlined or circled in the text.

Phase 3: Identify Potential Themes

Phase 3 involved analysing codes and sorting them into potential themes. Braun and Clarke (2006, p.86) define themes as "patterns of meaning" across a data set that help to address a particular research question. Relationships or connections across the data set were captured and an understanding developed of how the themes fitted together to create narratives from the data. Phase 3 was an iterative process with the researcher moving between the different codes to identify commonalities. Ten themes were identified, and a master table of themes was established, listing each of the grouped codes under the relevant theme.

Phase 4: Review Themes

In Phase 4, the identified themes were reviewed and refined by re-reading the data extracts, ensuring that there were identifiable differences between the themes, and considering whether they formed an understandable pattern. Where data extracts did not form an understandable pattern, the researcher considered whether the theme itself was problematic, whether the data extract would be a better fit in a different or new theme, or whether it should be disregarded from the analysis (Braun & Clarke, 2006). Each transcript was also re-read to ensure relevant quotes had not been left out or themes missed. Again, this was an iterative process and involved ensuring that the themes were logical, the data supported the themes, and the codes were aligned with the correct theme.

Phase 5: Define and Name Themes

In Phase 5, the "essence of what each theme is about (as well as the themes overall) and determining what aspect of the data each theme captures" was identified (Braun & Clarke, 2006, p.92). This involved reviewing again the transcripts and selected quotes for each theme and "organising them into a coherent and internally consistent account, with accompanying narrative" (Braun & Clarke, 2006, p.92). Thus, for each theme, a detailed analysis was undertaken, and the 'story' told by each theme was written up. Consideration was given to how one theme's 'story' fitted within the overarching 'story' told about the data in relation to the research questions to minimise repetition or overlap between themes (Braun & Clarke, 2006). Some themes contained sub-themes, which helped to give structure to the unfolding data stories.

Phase 6: Report and Analyse Data

With a comprehensive set of draft themes, the thesis was then written in a way that weaved the different themed stories together into a coherent overarching story about the data in relation to the research questions. Selected quotes were used to emphasise and support the points made and capture the essence of the themes. Key quotes related to the themes were extracted from the transcripts and included in a Word document for easy access (Braun & Clarke, 2006). To ensure that the full data set was introduced and linked to the themes, the researcher took care to ensure the same quotes were not repeatedly used throughout the thesis.

3.5 Participant Recruitment

To recruit participants for the research study, a snowball sampling strategy was employed. The snowball sampling strategy involved research participants helping to recruit other participants for the study. For the purposes of this thesis, the snowball sampling strategy consisted of two steps: (1)

identifying potential participants for the study and (2) requesting that participants help to recruit other people for the study, noting that participants were made aware that this was not mandatory.

In qualitative studies which involve interviews, the sample size is sometimes justified by interviewing participants until data saturation is reached. In this research study, the two-step process previously mentioned was repeated until data saturation was achieved. Faulkner and Trotter (2017) refer to data saturation as "the point in the research process when no new information is discovered in data analysis, and this redundancy signals to researchers that data collection may cease. Saturation means that the researcher can be reasonably assured that further data collection would yield similar results and serve to confirm emerging themes and conclusions" (p.1).

The recruitment strategy involved six steps:

1. The study employed a snowball sampling strategy, which initially involved the researcher identifying an easily accessible number of potential participants for recruitment to the study.
2. The initial participants were asked to help recruit other people to participate in the study; however, the researcher emphasised that this was not mandatory.
3. Possible participants were requested to contact the researcher directly using the email or phone contact information supplied in the invitation if they were interested in participating or required more information about the research study.
4. The researcher emailed a Participant Information Sheet and a Participant Consent Form to people interested in participating in the study.
5. The researcher contacted participants via email to discuss interview details.
6. Prior to commencing the interview, the researcher asked the participants to sign the Participant Consent Form. At the beginning of the interview, the researcher reminded participants that they were under no obligation to participate and could withdraw from the study at any point during the interview or request that the audio recording be stopped.

As explained in Table 14, the second phase in the process of collecting and analysing data involved adapting the UNDP PA financial sustainability scorecard (Bovarnick, 2010, p.1) to the PA estate in NSW and then, with the assistance of selected research participants, populating the scorecard for the 2020–21 financial year. The strategy used to recruit existing research participants for this activity involved four steps:

1. The researcher identified potentially suitable PA practitioners who had already agreed to participate in the action research study to assist in populating the scorecard template. Participant suitability criteria included (a) current tenure in a senior management position at

NPWS and (b) demonstrated knowledge and expertise in the topics covered by the financial sustainability scorecard, including:

- the overall financial status of the PA estate
- existing institutional financial systems and processes
- legal, regulatory, and institutional frameworks
- business and operational planning and tools
- tools for revenue generation.

2. Possible participants were emailed directly by the researcher about the opportunity to help populate the financial sustainability scorecard for the 2020–21 financial year. Participants were requested to contact the researcher directly by email or phone if they were interested in participating or required more information.
3. Prior to the first video-conference meeting, the researcher emailed the financial sustainability scorecard template to the people who agreed to participate.
4. The researcher also reminded participants prior to commencing the video-conference meetings that they were under no obligation to participate and could withdraw from the study at any point during the meeting or request that the audio recording be stopped.

3.6 Participant Confidentiality

Participation in the study was voluntary and incentives to participate were not offered. Participants signed a Participant Consent Form agreeing to participate in the research study prior to their interview. Each interview lasted between one hour and two and a half hours and was audio-recorded and transcribed. Participants also had the opportunity to review and make comments and amendments to the transcript. Due to the COVID-19 pandemic and in the interest of the participants' and researcher's health and safety, interviews were conducted remotely either on the telephone or via Zoom with video capability.

The interviews were treated confidentially, and participant names were not identifiable on research transcripts, handwritten notes, or any subsequent publications, including this thesis; instead, each participant was given a pseudonym. However, given the nature of action research, there is a slight risk of deductive disclosure of participant identity through contextual identifiers. For example, the data contained in some published quotes and examples reference specific places, programs, and projects which may be used by others to deductively identify individual participants. Participants were made aware of this deductive risk prior to signing the Participant Consent Form. Participants also had the opportunity to withdraw from the study at any time, although none did so.

3.7 Theoretical Orientation of the Thesis

The theoretical orientation of the thesis underpins the entire research design, and it was specifically selected to complement the collaborative nature of action research. As touched on in Chapter 1 (Section 1.5), systems theory was employed as an anchoring term and framework to contextualise the action research methodology of the thesis. German biologist Ludwig von Bertalanffy founded systems theory in 1948 and was the first to propose that systems are interdependent and not independent of one another (Hammond, 2011). Von Bertalanffy observed the interconnectedness and interdependence between the components of a system, which act in nonlinear ways, and determined that any change to the system has an impact on the whole (Hammond, 2011). Since its inception, scholars from different disciplines have applied systems theory to solve problems for example in the disciplines of sustainability, business, and public health (see Peters, 2014; Forrest, 2018; Plaza-Úbeda, 2020; Monat, 2020). Adams et al. (2014) believe that "practitioners can benefit from the application of systems theory as a lens when viewing multidisciplinary systems and their related problems" (p.116).

A system can be defined as "a set of interrelated components working together toward some common objective or purpose" (Blanchard & Fabrycky, 2014, p.2). Further, according to Adams et al. (2014), "systems theory provides explanations for real-world systems. These explanations increase our understanding and provide improved levels of explanatory power and predictive ability for the real-world systems we encounter" (p.116). It is a way of studying the connections between the different components of a system and how they work together to create a whole. Organisations, for example, can adopt systems theory to address complex problems to understand biological and social issues and identify failures in inputs, outputs, and feedback channels that interconnect the organisation (Walton & Naimi, 2009).

In relation to the challenge of nature conservation, Inger Anderson (2020), Under-Secretary-General and Executive Director of the UNEP, stated that "we must accelerate and scale-up collaboration for nature-positive outcomes – conserving, restoring and using biodiversity fairly and sustainably" (p.5). In rising to this call for collaborative action, that is, developing a system of inquiry that involves a collaborative effort with research participants, the thesis was designed to address the challenge of financial sustainability using a holistic approach. NPWS has recognised that a problem in the financing of PAs exists, and by combining action research with systems theory, it has been possible to thoroughly explore the challenge of financial sustainability within the NSW PA context through this thesis.

Action research when combined with systems theory becomes a more flexible and collaborative process. For example, at first glance, the issue of financial sustainability is focused on NPWS, as the institution responsible for the care and control of the publicly managed NSW PA estate, receiving insufficient funding to manage these lands. However, as discussed in Chapter 2, viewed holistically, the issue of financial sustainability encompasses more than the money available; it includes "building a diverse, stable, and secure funding portfolio", "improving financial administration and effectiveness", "taking a comprehensive view of costs and benefits", "creating an enabling financial and economic framework", and "mainstreaming and building capacity to use financial tools and mechanisms" (Emerton et al., 2006, p.16) and the interconnections between each of these elements.

According to Coghlan and Brannick (2008), while systems theory involves many parts, it can produce a linear development of thought; thus, when each of the parts of organisational complexities becomes compartmentalised, each becomes less intimidating and more manageable. In the context of this thesis, a financially sustainable PA estate can be viewed as a system of interrelated components which work together towards a common end goal (Blanchard & Fabrycky, 2014). Meanwhile, action research seeks to engage participants throughout the research process, including in decision-making based on the research findings. For this reason, the researcher and research participants worked collaboratively throughout the research study, including during data collection and analysis as discussed in Sections 3.3 and 3.4. Therefore, the combination of systems theory and action research provided a clear framework and context for the thesis and a useful bridge between theory and practice.

3.7.1 Theory Building through Action Research

Glenn (2022) described action research as a "bridge between theory and practice" and emphasised the expectation that action researchers "can and should generate theory from their learning and over the course of their research" (n.p.). Building on the idea that theory is generated through action research, Dick et al. (2009) argued that "it makes sense that theory is part of action and therefore of action research. When people act, they often intend that their action will have outcomes. They choose actions that they think will produce the outcomes they want. In other words, before they act, they have a theory, perhaps informal, connecting actions and outcomes. They may think of it as 'knowledge' or 'understanding', which are other words for theory… 'Theory' is a grand word for these everyday activities of knowing, understanding and making sense" (p.7).

In action research, the researcher engages in the organisation or industry under study and works with organisational/industry members on issues of concern to them. This situation allows the collection of "rich data…about what people do and say – and what theories are used and usable – when they are faced with genuine need to take action" (Huxham, 2003, p.240). Action research seeks to achieve good outcomes for research participants, and to this end, Dick et al. (2009) ask "if *informed* action is the goal, how is the action to be informed if not by theory?" (p.7). In this way, because data is collected in “real time” – that is, as it happens – theory developed through action research has the potential to yield unexpected or new insights. Furthermore, the revelation of such insights indicates that the process of theory development is inductive and leads to theory that emerges from and is grounded in both action and experience (Dick et al., 2009; Eden & Huxham, 1996; Eisenhardt, 1989; Huxham, 2003).

There is no single agreed-upon methodology for developing theory through action research and most methodologies are not clearly defined in the literature (Bryant & Charmaz, 2007; Dick et al., 2009; Huxham, 2003). One exception is Huxham (2003)’s five-stage process for theory building through action research, an approach that she has adopted in her own research (see Huxham 2003; Vangen & Huxham, 2003). For the purpose of this thesis, I followed Huxham (2003)’s five-stage process, which is summarised below as it was applied in the thesis:

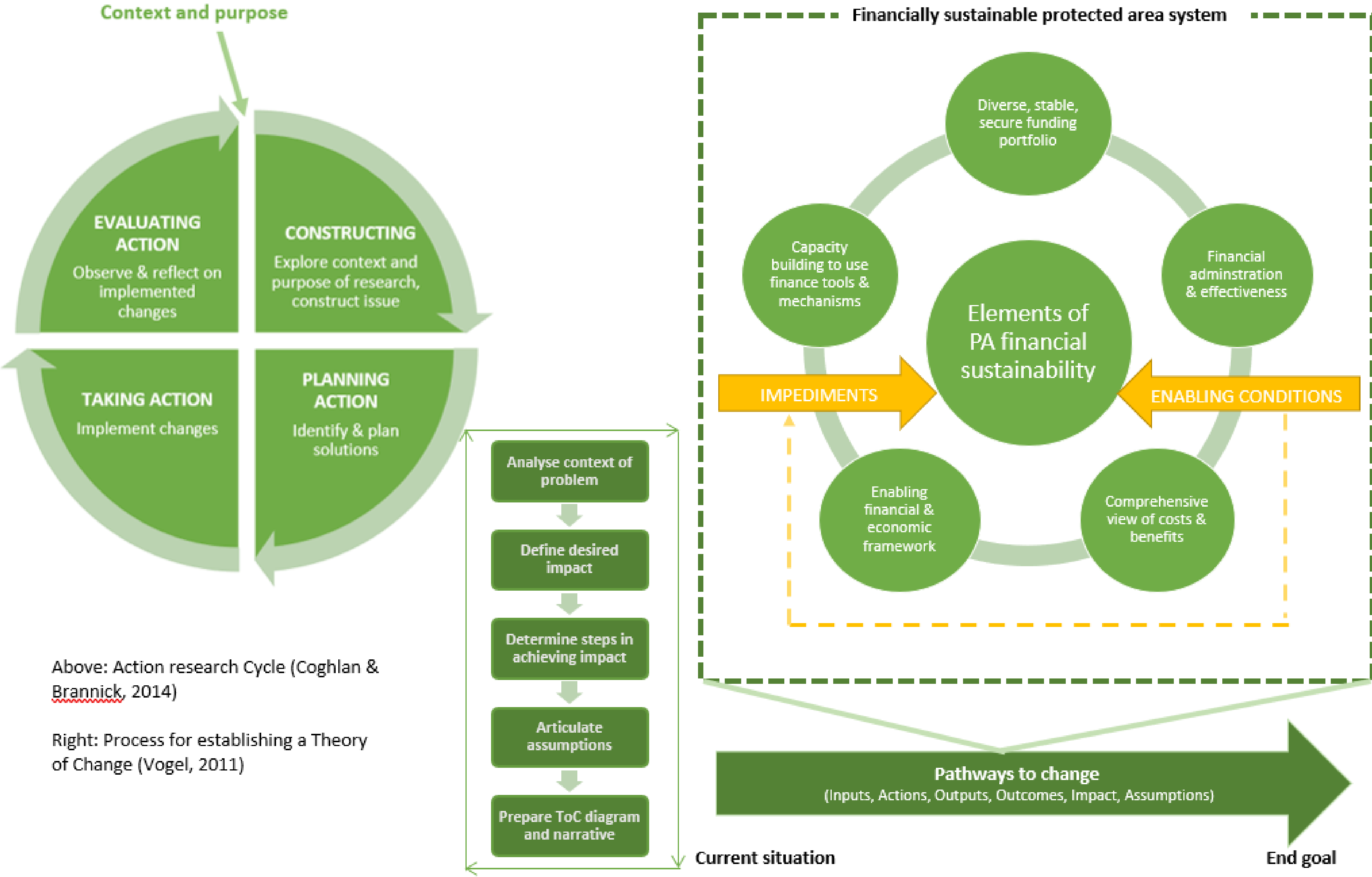
1. Identify items in the data relevant to the research study’s purpose and questions. Examples of identified data items include “culture”, “cluster model”, “communication”, and “strategic planning”. The identified items were generalisations or interpretations drawn from the data.
2. Determine the items to include, cluster the items, and label the clusters. The clusters include “PA context”, “financially sustainable PA system”, “elements of PA financial sustainability”, “impediments to financial sustainability”, “enabling conditions for financial sustainability”, “pathways to change”, “current financial situation”, and “desired end goal/impact”.
3. Review clusters and linkages between them and create an initial conceptual framework.
4. Review relevant literature and data from other studies, then refine the conceptual framework.
5. Invite comments on the framework and revise if necessary. As the conceptual framework is evolutionary, it may be amended over time as it is applied to new action research studies and interventions and as it continues to be the subject of comment and review.

The resultant theory is summarised in Chapter 1 (Section 1.4.2) while the conceptual framework for the financial sustainability of PAs is presented in the following section.

3.8 Conceptual Framework

It has been established in Chapters 1 and 3 (see Sections 1.4.2, 1.5, and 3.7.1) that theory building is an important part of action research (Dick et al., 2009; Glenn, 2022; Huxham, 2003; McNiff, 2013; Whitehead & McNiff, 2006). Following Huxham (2003)’s five-stage process for theory building, the theory that emerged from the data consists of five elements (as detailed in Section 1.4.2), with one of the theoretical elements being the conceptual framework for the financial sustainability of terrestrial PAs presented in Figure 2.

Figure 2 Conceptual Framework for the Financial Sustainability of Publicly Managed Terrestrial Protected Areas



Above: Action research Cycle (Coghlan & Brannick, 2014)

Right: Process for establishing a Theory of Change (Vogel, 2011)

The aim of the conceptual framework is to define, explain, and diagrammatically represent the key concepts relevant to the financial sustainability of terrestrial PAs and the linkages between each of the concepts. It also helps to explain the research process and findings discussed in the thesis. Table 16 defines the key concepts referenced in the conceptual framework.

Table 16 Conceptual Framework – Definitions of Key Concepts

Concept	Definition
PA financial sustainability	Often defined as "the ability to secure stable and sufficient long-term financial resources, and to allocate them in a timely manner and appropriate form, to cover the full costs of PAs (direct and indirect) and to ensure that PAs are managed effectively and efficiently" (Emerton et al., 2006, p.15).
Impediment	A hinderance or obstruction to achieving PA financial sustainability and the key elements of PA financial sustainability.
Enabling condition	Those conditions or requirements which are necessary for achieving PA financial sustainability.
Pathways to change	In the context of a ToC, these are the change pathways that may help to achieve a desired impact or end goal. Each pathway includes inputs, actions, outputs, outcomes, and an impact. Actions refer to what needs to be done to achieve the desired change, outputs articulate what is delivered, outcomes stipulate the desired change, and impact refers to the end goal (Biggs et al., 2016).

The conceptual framework is based on the core elements of PA financial sustainability as defined by Emerton et al. (2006), including:

1. "Building a diverse, stable, and secure funding portfolio: minimizing funding risks and fluctuations."
2. "Improving financial administration and effectiveness: ensuring that funding is allocated and spent in a way that supports PA finance needs and conservation goals."
3. "Taking a comprehensive view of costs and benefits: covering the full range of PA costs, ensuring that those who bear PA costs are recognised and adequately compensated, and that those who benefit from PAs make a fair contribution to their maintenance."
4. "Creating an enabling financial and economic framework: overcoming market, price and policy distortions that undermine PAs or act as obstacles to PA financing."
5. "Mainstreaming and building capacity to use financial tools and mechanisms: factoring financial analysis and mechanisms into PA planning processes."
   (p.16)

The framework shows that when Coghlan and Brannick (2014)'s action research cycle is used as a logical methodology in conjunction with Vogel (2011)'s process for developing a ToC (undertaken in

Step 3 of the action research cycle), the research findings should illuminate pathways to change that may help to address the challenge of financial sustainability for publicly managed terrestrial PAs. The pathways encourage PA practitioners and institutions to critically consider the challenge of financial sustainability including potential ways to shift from a "business as usual" approach to PA financing (O'Flynn et al., 2022, p.17). Each pathway consists of inputs and actions together with outputs and outcomes that are sequentially connected and lead to a shared overarching impact or end goal. Table 17 describes the components of pathways to change.

Table 17 Components of Pathways to Change

Component	Description
Inputs	What is required to operationalise each pathway?
Actions	What needs to be done to achieve the desired change?
Outputs	What is delivered? In this ToC, the outputs reflect the objects of the NSW *National Parks and Wildlife Act 1974* and the NPWS mission.
Outcomes	Stipulate the desired change.
Impact	The end goal.
Assumptions	"The beliefs that are accepted as true or taken for granted in defining the causal links in the causal pathway" (GEF, 2019, p.5).

To determine the pathways to change, it was necessary to understand what financial sustainability looks like within a particular context. In the case of this thesis, it is the publicly managed PA estate in NSW, which covers over 10% of the state's total land area (NPWS, 2021a; SMH, 2023). This involved identifying the impediments to the financial sustainability of the PA estate through in-depth, semi-structured interviews with PA specialists, secondary data analysis, and the review of literature. Similarly, the enabling conditions which play a fundamental role in supporting financial sustainability emerged from the data collected through interviews and during the analysis of secondary data. As the framework indicates, the expectation is that the enabling conditions will assist in disassembling the impediments to financial sustainability.

The conceptual framework recognises that a financially sustainable PA estate can be defined as a system of interrelated components which work together towards a common end goal (impact). In this way, the framework encourages practitioners to address the challenge of financial sustainability by using a holistic approach, and in doing so, it allows for a more thorough exploration of the challenge. In the case of NSW, the impact is "the effective management of PAs with respect to conservation and other objectives" (O'Flynn et al., 2022, p.18). This reflects the impact defined in the ToC drafted as part of this thesis for the financial sustainability of the PA estate in NSW (see Chapter 6).

The framework shows that while it is useful to conceptualise each of the elements of financial sustainability separately, there are important factors and processes represented in the enabling conditions that cut across the different elements of financial sustainability. For example, individual enabling conditions will relate to multiple elements of financial sustainability, while some impediments will be a barrier to more than one element of financial sustainability. These interconnections are important because they represent the networks between the different system components and illustrate how they work together to create a whole and how any change to the system will have an impact on the whole (Hammond, 2011).

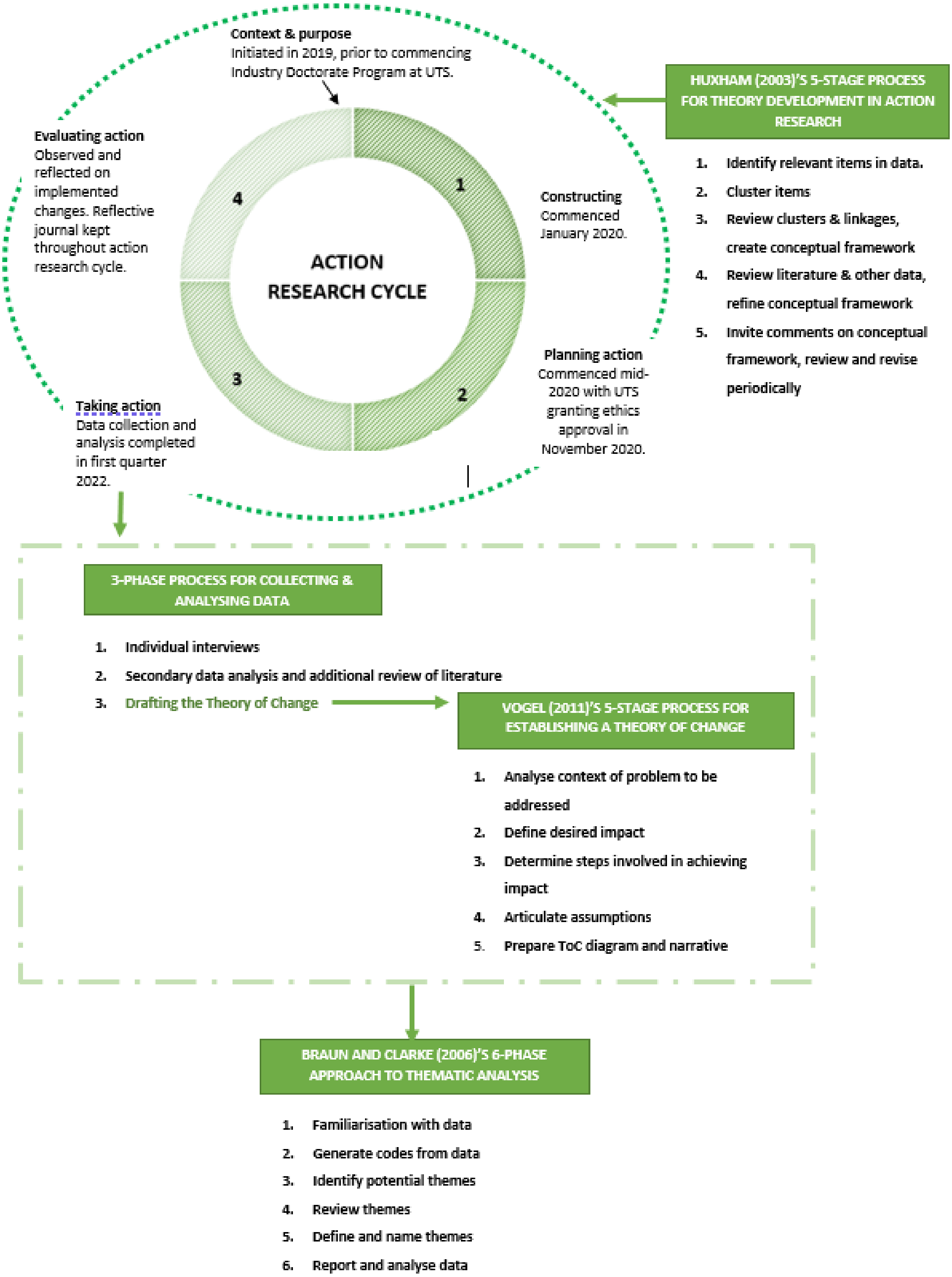
The conceptual framework can also be used to verify that the identified impediments are barriers to the core elements of PA financial sustainability and similarly that the enabling conditions can be expected to support financial sustainability. Also, as the framework illustrates, the action research cycle and the ToC process are cyclical and require evaluation and review over time (Coghlan & Brannick, 2014; Tolmie, 2014). This process should involve the periodic review and revision of the impediments and enabling conditions that exist for the financial sustainability of a PA or PA estate.

Furthermore, the framework has helped the researcher to identify and refine the concepts that were explored through the research study and guide the structure of the thesis. Finally, as explained in Chapter 1 (Section 1.4), the research study aimed to develop theory that would be of value to practitioners; to this end, the conceptual framework was designed to be generalisable to terrestrial PAs irrespective of their location or context, and it reflects a process that could be adopted by a practitioner or researcher to help address the challenge of PA financial sustainability.

3.9 Linkages Between the key Methodological Components of the Research

As highlighted in the previous sections of Chapter 3, there are several key methodological components of the research including action research and Coghlan and Brannick (2014)'s action research cycle, the three-phase process adopted to collect and analyse data, Vogel (2011)'s five-stage process for establishing a ToC, Braun and Clarke (2006)'s six-phase approach to thematic analysis, and Huxham (3003)'s five-stage process for theory building through action research. Figure 3 summarises the research methodology adopted by this thesis and demonstrates the linkages between the key methodological components.

Figure 3 Research Methodology and the Linkages Between the key Methodological Components



3.10 Summary

The purpose of this chapter was to describe and rationalise the methodological approach adopted for the thesis. Coghlan and Brannick (2014)'s action research cycle provided a logical process which aimed to involve other practitioners in addressing the challenge of financial sustainability for the publicly managed terrestrial PA estate in NSW under the care and control of NPWS. It also provided a process for the participants and researcher to increase their knowledge of the problem and formulate effective solutions.

As part of the action research cycle, a three-phase process was adopted in the collection and analysis of data and to devise solutions for the challenge of financial sustainability for publicly managed terrestrial PAs within the NSW context. Data collection techniques included interviews with PA specialists and impact investment specialists and off-the-record discussions with additional impact investment specialists.

The analysis of secondary data and the review of literature pertinent to key themes was the second form of data collection and analysis used in the thesis. Furthermore, with the assistance of selected research participants, a financial sustainability scorecard was adapted for the NSW PA estate and populated for the 2020–21 financial year.

The third method of data collection and analysis was the drafting of a ToC, which was prepared in collaboration with the PA specialist research participants. Vogel (2011)'s process for establishing a ToC guided the development of the ToC presented in the thesis, and the process was found to complement the action research methodology because both ToC and action research encourage active participant engagement. Furthermore, Braun and Clarke (2006)'s six-phase approach to thematic analysis played an important role in the analysis of the data collected.

Systems theory was employed as an anchoring term and framework to contextualise the action research methodology of the thesis. It showed that a holistic approach is necessary to understand the challenge of financial sustainability of the publicly managed terrestrial PA estate in NSW and that a financially sustainable PA estate can be viewed as a system of interrelated components which work together towards a common end goal (Blanchard & Fabrycky, 2014). Finally, Huxham (2003)'s five-stage process for theory building through action research helped to guide the generation of theory through this thesis. The resultant practice-oriented theory consists of five theoretical elements, including the conceptual framework presented in this chapter. The conceptual framework for the financial sustainability of terrestrial PAs shows that when Coghlan and Brannick (2014)'s action research cycle is used as a logical methodology in conjunction with Vogel (2011)'s process for preparing a ToC, the research findings illuminate pathways to change that may help to address the challenge of financial sustainability for publicly managed terrestrial PAs. Finally, Figure 3 helped to summarise the research methodology adopted by this thesis and demonstrate the linkages between the key methodological components.

The thesis will now analyse and discuss the results of the research study over four chapters: Chapter 4 focuses on the impediments to the financial sustainability of the PA estate in NSW; Chapter 5 explores the enabling conditions that exist for financial sustainability; Chapter 6 investigates the pathways to change identified through the analysis of impediments and enabling conditions; and Chapter 7 explores the action of broadening the funding portfolio, specifically how the social and environmental impact bonds could help to finance publicly managed terrestrial PAs.

Chapter 4 Impediments to the Financial Sustainability of the Protected Area Estate in NSW

4.1 Introduction

The purpose of Chapter 4 is to analyse and discuss the eight identified impediments to the financial sustainability of the publicly managed terrestrial PA estate in NSW.[7] This includes a discussion of the linkages between each of the impediments and the interconnections that exist between impediments and the key elements of financial sustainability as defined by Emerton et al. (2006). For the purpose of this thesis, an impediment is defined as a hinderance or obstruction to achieving PA financial sustainability as defined by the IUCN (2008) and the key elements of PA financial sustainability (Emerton et al., 2015).

The conceptual framework for this thesis (see Figure 2, Chapter 3) proposes that an in-depth analysis and discussion of the identified impediments to the financial sustainability of a PA estate are necessary for understanding what financial sustainability looks like within a particular context. This is important because, as explained in Chapter 2, the funding situation for PAs is not the same the world over. Therefore, understanding the impediments specific to the NSW PA estate can contribute to three important outcomes: (1) improved researcher and participant knowledge of the existing funding situation in NSW (the context); (2) identification of the enabling conditions required to dismantle the impediments; and (3) identification of pathways to change to help tackle the challenge of financial sustainability for the NSW terrestrial PA estate.

As explained in Chapter 3 (Table 14), in-depth semi-structured interviews were conducted with 20 PA specialists who were located in Australia (at the time of data collection) and had a minimum of five years of experience working in the non-government sector and/or working within NPWS. Participant experience ranged from park management directors and executive directors, economic and finance specialists, and community engagement and administration officers to species experts and PA advocates.

This chapter draws heavily on the views, observations, and comments made by the participants during these interviews. Participants are referenced throughout this chapter by pseudonyms to protect their confidentiality. Table 18 introduces the interviewees referred to in Chapter 4.

[7] A discussion of the impediments has also been published in an international academic journal (see O'Flynn et al., 2022).

Table 18 Interviewees Referred to in Chapter 4

Interviewee	Description
Hamilton	An experienced PA specialist with expertise across policy and planning, including business planning and park operations.
Emerson	An experienced PA specialist with expertise across policy, planning, park operations, business planning, and asset management.
Briana	A PA specialist with a background in economics and expertise in park planning, policy, and business planning.
Akram	An environmental economist with experience in PA policy and strategic planning and economic research.
Hussain	An experienced PA specialist with expertise across policy, park operations, business planning, and asset management.
Ethan	An experienced PA specialist with expertise across all facets of PA management.
Dara	A PA practitioner with business operations and financial expertise.
Alexander	An experienced PA specialist with expertise across policy and planning, including business planning and park operations.
Rani	An experienced PA specialist with expertise across all facets of PA management.
Sophia	A PA advocate and specialist with expertise in park planning, policy, and partnerships and collaboration.
Edna	An experienced PA specialist with park planning and policy expertise.
Ruth	An experienced PA specialist with community engagement, park planning, operations, and administration expertise.
Cedric	An experienced PA specialist with park operations and administrative expertise.
Cody	An experienced PA specialist with policy and legal expertise.
Asher	An experienced PA specialist with business operations, park planning, and policy expertise.
Jake	An experienced PA specialist with expertise across policy, planning, park operations, business planning, and asset management.
Fred	An experienced PA specialist with business operations and financial expertise.
Oliver	A PA advocate and specialist with expertise across all facets of PA management, both within a government and non-government PA organisation.
Mali	A threatened species specialist with experience as a PA practitioner and expertise in sustainable finance, including the development of a nature-based impact bond.
Bill	An experienced PA specialist with expertise across policy and planning, including business planning and park operations.

Existing literature on the financing of PAs also provides a foundation for the discussion of the impediments. Table 19 provides a conceptual outline for chapter’s structure.

Table 19 Conceptual Outline of Chapter 4 Structure

Section	Description
Section 4.2	Impediment 1: State Budget Processes
Section 4.3	Impediment 2: Political Influence
Section 4.4	Impediment 3: Poor Communication, Messaging, and Self-Promotion
Section 4.5	Impediment 4: Data, Measurement, and Reporting Limitations
Section 4.6	Impediment 5: Governance Challenges
Section 4.7	Impediment 6: Limited Strategic Financial Planning and Innovation
Section 4.8	Impediment 7: Resistance to Change
Section 4.9	Impediment 8: Cultural Mismatch
Section 4.10	Interconnections Between the Identified Impediments and the Elements of Financial Sustainability
Section 4.11	Summary

4.2 Impediment 1: State Budget Processes

State budget processes are the first identified impediment to the financial sustainability of the terrestrial PA estate. "The historical state budget process in NSW including the budget cycle length and inflexibility of the budget process is considered a mismatch for the highly operational, often reactionary, and typically ongoing (or multiyear) nature of most park management activities, projects, and programmes" (O'Flynn et al., 2022, p.12). The ongoing and operational nature of park management activities is reflected in the plans of management prepared for parks across the estate (DPIE, 2019b). As Dara explained:

> A lot of what we do runs over multiple years, and the financial year system doesn't work for long-term projects and investments that we tend to do.

Dara's observation suggests that there is a mismatch between the state's annual budget cycle and the ongoing management requirements for PAs (DPIE, 2019b; NSW Government, 2020b). This is considered an impediment to financial sustainability because it can expose PAs to funding fluctuations and make it difficult for NPWS to secure stable and sufficient long-term funding to meet legislative, policy, and other obligations (Emerton et al., 2006).

Similarly, it can be difficult to maintain momentum and achieve conservation outcomes when the funding for multiyear park management activities and programs such as pest and weed management rely on funding through the annual budget cycle. In this cycle, funding must be expended in the calendar year in which it is received, and typically, unspent consolidated funds cannot be carried forward from one financial year to the next (NSW Treasury, 2021b). Alexander and Asher have experienced this situation through their work with NPWS and referred to it as a "use it or lose it" situation. For example, Asher explained:

> I think the annual budgeting cycle really lets us down as well as the 'use it or lose it' [philosophy]; usually projects take three or four or five years, and there are things that delay projects; so unless you can allocate and mobilise and demobilise, you are always on that hiding.

As Asher's narrative excerpt illuminates, the "use it or lose it" approach to the annual allocation of funds makes it challenging to allocate and spend funds in a way that best supports the financial needs of PAs and conservation goals (Emerton et al., 2006). It can also be challenging to allow for unpredictability in park management, for example, due to fire events, when there is limited flexibility to carry forward consolidated funding across financial years. Fred reflected on the years he spent working for NPWS and puts this challenge into perspective by explaining the timing constraints in undertaking operational activities to manage the PA estate in NSW during a typical calendar year:

> "One of the problems that you get is that because so much of National Parks' work is influenced by weather. You can get money for a project that cannot be carried over to the next year or you get unnecessary delays – it may be that you go into a burning window, or everyone is dedicated to getting something else done whilst your recurrent funding is not being able to be done…When you look at the whole annual budget cycle:
>
> - if you take your school holidays and say you can't do major works during school holiday periods, it is just not feasible in a lot of parks because that is when you are at your busiest, due to concerns with public safety requirements, and
> - you can't really commit to projects during the fire season, so straight away you have gone into a window from September through to the end of March where you can't do anything major; and
> - then you come back into the hazard reduction season, which takes you through to the end of May.
>
> This gives you this three-month window to do your work and, oh, by the way, June is here and that is the end of your expenditure…Then, of course, you come to July and August when we could be doing things, but you haven't actually had head office tell you what your budget is. Then they come to you in November and go, 'here's your capital budget.'"

As Fred's analysis reveals, timing in the delivery of the annual budget allocation and the "use it or lose it" approach to spending funds can make it difficult to manage the PA estate in an effective and efficient way. Ethan who experienced this impediment firsthand through his work for NPWS over many years used the example of the Black Summer bushfires in 2019–2020 to highlight the impediment:

> We had a huge fire season, which went on for five months, so we had to drop all of our business, and we did an awful lot of work on post-bushfire response, but that just came out of work we didn't do; there would have been in a normal model the ability to transition that money between years.

Ethan's example shows that because of the catastrophic bushfire season, where 38% of the PA estate was burnt (NPWS, 2021f), and the scale of the institution's response to the emergency, some scheduled works were not completed in the 2019–20 financial year. This meant that unspent funds were returned to Treasury rather than rolled over to the following financial year, despite the continued need for the works.

NPWS requires a degree of agility and flexibility to account for the operational and reactionary nature of its work; however, as Ethan's example demonstrates, state government budget processes in their current form offer limited flexibility to accommodate budget allocation changes and shifts during the annual budget cycle (NSW Treasury, 2021b). Further to this, Dara described the allocation of funds as an "incremental process" and likens it to sailing a battleship:

> What ends up happening is the government process tends to be more like an incremental process. You kind of get what you got last year, maybe with an efficiency, and then maybe with a little bit on the top for something new, but that's it and so it becomes very much like inertia. It is like sailing a battleship – you can't suddenly change direction – so the amount of money that you got last year is the biggest predictor of how much money we are going to get this year, irrespective of whether we've got a whole lot of other things that we think we could do, and that is the inertia of the state government budget processes.

Dara's narrative excerpt demonstrates that state budget processes offer limited flexibility in accommodating changes and shifts within the annual budget cycle. To further illustrate this point, Dara explained that during the COVID-19 pandemic, the PA estate experienced a park visitation boom which put an "enormous operational cost on the business". Dara reflected that this cost could have been offset by "switching on extra revenue officers" to increase revenue collected during busy periods. Instead, the state budget process required that NPWS lodge a Parameter and Technical Adjustment (PTA) request with Treasury (NSW Treasury, 2014). NSW Treasury defines PTAs as "a material, non-discretionary change in the net cost or timing of expenditure on existing programs or capital projects under existing policy parameters" (NSW Treasury, 2014, p.1). Recurrent PTAs are permitted where "an agency experiences a change in revenues or expenditure outside of its control and has an obligation to meet current service delivery objectives through existing programs" (NSW Treasury, 2014, p.1).

Dara explained that lodging a PTA request is a lengthy process, and by the time a decision is made, the high visitation period may be over and the potential to raise additional revenue to cover operational expenses lost. In this sense, the inflexibility of state budget processes is an impediment to financial sustainability as it inadvertently stifles the ability of NPWS to generate revenue.

The state budget process itself is considered to be complex and time consuming, and the success of a funding business case made to Treasury is not a given (NSW Treasury, 2018). Briana explained that she had been involved in the preparation of many business cases for NPWS, and she described this complexity as "a massive barrier" to financial sustainability, explaining that:

> The process of putting in budget bids, Cabinet submissions to the Budget Review Committee, and saying we need this money to address this risk…the process is so difficult that, surely, that is a barrier to the 'secure' bit of the definition of financial sustainability. It's not secure because everything is year by year, so the structure and governance of public sector financial management is a barrier because it is not long term. You have to prove yourself every year, you have to apply and compete every year. So there is absolutely no security unless you change that – there is no security. It is a massive barrier.

As Briana's narrative excerpt establishes, there are many layers to the state budget process, with numerous actors involved, each with different goals, interests, and professional expertise. This can lead to a high degree of competition among programs and departments over scarce financial resources (Rubin, 2019).

Competition for limited government funds is a major challenge for the PA estate, particularly when competing against what Sophia referred to as "the blockbusters of health and education". Cedric explained that as an NPWS employee he understands the value of parks and the need for additional financial resources but believes that perspective is needed when thinking about the challenge of competition. His view is:

> If you ask any person in the street: 'would you prefer to fund more Health, Police and Education or do you want that to go to Parks?'... you know the reality is those things are all far more important. There's not an endless pit, there's not a bottomless pit; I'm sure we could spend it, but it doesn't exist in the real world.

As indicated by Cedric, when competing against publicly funded portfolios such as Health, Police and Education, PAs often find themselves down towards the bottom of the funding priority list, particularly "when difficult decisions must be made" (Emerton et al., 2006, p.17). Hamilton who has worked in park operations in NSW for over a decade suggested that this is sometimes the case when the "struggles around doing a good job managing the parks 365 days a year is not a high enough priority for them".

Another component of this multifaceted impediment is the NSW Government's preference for land and asset management agencies to adopt an outcomes-based funding model (NSW Government, 2020b). The purpose of this model is to enable government to better understand what it can expect from its financial investment (NSW Government, 2020b). Alexander explained how this approach differs from the traditional funding model adopted by land management agencies:

> Over time, things have evolved towards more program budgeting and so government gives us a bucket of money and says, 'here's money – do this', and that has seen a change in both how we get funding and the amount of funding. And what's happened at the same time is that the leftover general recurrent that just sort of sits there and is discretionary funding gets smaller and smaller, and as I understand it, it's quite a discrete strategy from Treasury to try and move government agencies – all government agencies – towards program-based funding.

Alexander's narrative excerpt illuminates that the transition to an outcomes-based funding model has changed not only the way the PA estate is funded but also the amount of funding received. In line with Treasury's preferred outcomes-based funding model (NSW Government, 2020b), over the last six years, NPWS has commenced its transition towards an outcomes-based approach to the funding of the estate's infrastructure assets such as fire trails and visitor infrastructure.

This transition has led to additional government funding for capital, and in the 2020–21 financial year, the PA estate received the highest level of funding for capital in its history – $257 million for the delivery of 170 new and improved infrastructure projects across the PA estate, including for walking tracks, campgrounds, and picnic areas (Liberal Party NSW, 2021b). The unprecedented investment in new infrastructure reflects the government's self-proclaimed goal through the 2020–21 budget to "build a better NSW" by investing AU$107.1 billion in infrastructure (NSW Government, 2020c). However, money invested today into new infrastructure projects means that additional funding will be needed into the future to maintain these assets. Rani was concerned that this is creating an untenable situation for the next generation of park managers:

> We are in fact creating a situation where we will have more assets and more commitments and not just the same money to manage the land but less money to manage it because of efficiency dividends…We are building ourselves a very difficult future situation; the park managers of the future will curse us.

It is clear from Rani's comment that based on the current downward trajectory for the funding of park maintenance and day-to-day operations, there is no guarantee that the money required to maintain the new assets into the future will be available. Like Rani, Oliver was concerned with this situation:

> Without the guarantee of a cyclical process that will reinvest in the capital component, you are actually spending good money after bad… There is a credibility issue and a linking of capital investment with recurrent that absolutely has to happen, otherwise you are just pissing away good money. From my perspective as a conservation advocate, I'd be happy if they never had another cent for capital investment and I mean that quite genuinely because the reality is that we have got more than enough visitor infrastructure in NSW parks to serve a sustainable level of visitor use; it really should be a recurrent enterprise to manage it from here on, and I wouldn't be building any new shit.

Oliver's comment clearly shows his frustration with the current funding situation and what he considers to be a focus on capital spending.

The challenges raised by Alexander, Rani, and Oliver of reduced funding for park maintenance and day-to-day operations is also a problem in other jurisdictions. For example, in 2022, the deferred maintenance and repair backlog for the 74,000 assets managed by the U.S. National Park Service, was estimated at US$22.3 billion (National Park Service U.S., 2023). The backlog reflects the complex and ageing nature of the large asset portfolio and that current maintenance programs that are unable to keep pace with asset maintenance needs (National Park Service U.S., 2022). This indicates that government funding allocations to the National Park Service are insufficient to cover its ongoing asset maintenance requirements across the 85 million hectares of PA in the U.S. (Regan, 2019).

Furthermore, while NPWS has been effective in adapting to Treasury's outcomes-based funding model for infrastructure projects, it has found it more difficult to adapt this model to the other parts of its business, particularly to nature conservation and the management of Aboriginal culture, which are considered by participants to be more difficult to quantify and more challenging to define and measure in terms of outcomes. Ruth explained the relative ease of securing funding for infrastructure projects compared with other non-infrastructure projects across the PA estate:

> The current flavour of the month is infrastructure, but again it's very tied – the funding is very tied, so it's issued to Park's tied specifically to certain outcomes and those outcomes are generally politically driven and whatever the flavour of the month is…it is really hard to find funding for some of the goodwill projects, those smaller projects, community-driven projects.

Ruth's comment shows that while capital investment is currently at a historic high (Liberal Party NSW, 2021b; NSW Government, 2020c), the funding available for day-to-day park operations is experiencing the opposite fate. Cody explained that NPWS struggles to effectively manage the estate on what he describes as a shoestring budget:

> From what I can tell, we really struggle with operating funding of the protected area system. It is much easier for us to get capital so we can build stuff; we can build a fire trail, we can build a predator-proof fence, we can get money to upgrade a campground or a precinct, but when it comes to actually paying staff to do things, to go and control weeds and to manage visitors, we really struggle with paying salaries and just money for those staff to go and get a contractor in to do XYZ, and managing land comes with a massive cost liability and we have probably been underfunding that side for a long time, we have been running the system on a shoestring budget.

As Cody's narrative suggests, at the heart of the problem is the funding available for day-to-day management activities. Hamilton made the same point, drawing on the example of a "celebration and infrastructure project" at Kamay Botany Bay National Park to explain the inherent limitations of 'tied' funding:

> If we get funding to deliver something at Kamay Botany Bay National Park for a celebration and infrastructure project, it is a lot of money, but it can't be spent on anything other than on delivering that project and we have lots of those. Lots of our money comes in a tied sense and our biggest issue is that the day-to-day management of the national park estate – the 365-day-a-year job – is largely not linked to any tied funding, and it is the part of the budget that is most under threat, and it is the part every year that is subject to the efficiency dividends and the vacancy rates.

As indicated in Hamilton's example, in some situations, operational activities and associated expenses like office rent, electricity, water rates, and fuel for fleet vehicles do not fit neatly into a 'tied' funding program or outcomes-based funding model, leaving many operational overheads underfunded. Alexander believes that this situation also reflects the general nature of PA management, which covers a wide gamut of activities:

Alexander demonstrates that one challenge for NPWS is to find a way to cover its operations-related expenses when the consolidated funding budget is on a downward trajectory.

Akram, Dara, and Oliver believed that the government's preference to fund capital over operational expenses is linked to economic drivers and the state's Triple-A credit rating. For example, Dara explained:

> Capital is so easy to secure because it stays on the state government balance sheet, so therefore it is not an outgoing; it just moves somewhere else in the balance sheet that doesn't jeopardise Triple-A credit ratings and things like that because you are basically turning cash into an asset that

> you work over a period of time, generate revenue or generating social and environmental benefits to the community so you kind of get a return on your investment.

As Dara's narrative shows, capital for infrastructure projects is seen to support the economy through the creation of jobs and because the end product – the 'asset' – remains on the state's balance sheet, with the potential to generate revenue, thereby establishing a return on investment (NSW Government 2020d; QLD Government, 2021). Dara further explained that on the flipside when it comes to operating expenses:

> The state doesn't get an offset in the balance sheet when you make those operating expenses…the government budget process doesn't really cope well with situations where you need to up the ante on operating expenditure for good social and environmental reasons unless you can get a return, then there is more flexibility from the state.

Dara's comment demonstrates the challenge of securing funding for operational expenses when the state budget process preferences the funding of projects and programs that can demonstrate a clear return on their investment (NSW Treasury, 2018).

This challenge is compounded by what Rani described as a situation where "it takes money to make money, and it takes resources to invest in doing the work". Akram gave the example of the work required to value natural capital, which could support funding requests to Treasury for natural capital assets. Akram explained that:

> The difficulty with this is getting any funding for this kind of work in the organisation. It is totally seen as marginal…A lot of people say 'yes, great idea – we love it, but we can't get any extra money or resources to do the work.'

As Akram indicated, although NPWS recognises the benefits of the work, consolidated funding budget cuts and the state's preference for capital funding make it difficult to find the resources necessary to complete program-based work. Rani described the financial situation at the time of writing as "a completely unmanageable and unacceptable situation".

Another side to this challenge stems from natural capital assets being shown on the cost side of the NSW Government's balance sheet while the value of their benefit is not apparent. The consequence of this situation is seven-fold: 1) a lack of investment (capital expenditure) in creating these assets, which are viewed on the government's balance sheet as a cost with no measurable benefits; 2) an inability to recognise the benefits of nature-based assets when compared to standard assets; 3) incapacity to secure funding to maintain nature-based assets (operational expenditure); 4) an inability to generate revenue streams from ecosystem services; 5) an inability to generate the economic evidence necessary to secure new funding from NSW Treasury under outcome/performance-based budgeting, for programs that enhance or maintain nature-based assets for the benefit of NSW; 6) incapacity to attract private finance to fund the establishment or maintenance of nature-based assets; and 7) ambiguity as to who pays for services that generate both public and private benefits (DPIE, 2020e).

The NSW Department of Planning, Industry and Environment explained that when natural capital is not valued (in economic terms), these assets become degraded along with the services, which in turn results in:

- Loss of economic opportunity, such as the ability to attract additional investment.
- Reduced capacity to make sound policy decisions or investment decisions that optimise government spending.
- Reduction of the quality of life and increased health costs for the citizens of NSW.
- Requires continued intervention of government to fund nature-based assets which prohibits the establishment of sustainable market mechanisms which could otherwise attract the funding and finance required.
- Increases the cost of recovery from natural hazards through lack of asset resilience and inability to prioritise effective investment in recovery.

(DPIE, 2020e, p.1)

The financial strain experienced by NPWS is seen to be further exacerbated by the growing portfolio of land acquisitions and associated management requirements. For example, an additional 116,351.68 hectares of land was added to the park estate in NSW in December 2021 (DPIE, 2021a, 2021c). As Dara explained, when land is added to the PA estate, this is not necessarily reflected in the NPWS operating budget. Cedric described the push for the institution to expand the PA estate as "one of the biggest challenges" in achieving financial sustainability:

> One of the big challenges for the Agency is this push to take on more acreage, particularly new estates, and whether the relevant funding comes with that, particularly if we are taking on estates that have been used for something else; there's sometimes a lot of legacy costs and things that come with that, particularly if we take on old heritage buildings and old farm homesteads.

The challenge of an expanding PA estate without the allocation of adequate additional funding, as described by Cedric, is a challenge for PAs around the world, where an increase in the hectares covered by PAs "has historically not correlated with an increase in finance for management" (IUCN ESARO, 2020, p.9). For example, over the last decade, PA estates have been expanded in countries such as South Africa, Seychelles, Rwanda, Ethiopia, and Comoros; however, IUCN ESARO (2020, p.14) reported that "there has not been a correlative increase in financing to cover management and operational costs. In most cases the increase in the number of PAs has meant that the scarce financial resources of the PA authorities are stretched even thinner". This situation is an impediment to the appropriate allocation and expenditure of funds in support of PA finance needs and conservation goals and a barrier to "a comprehensive view of costs and benefits" where funds for PAs cover the full range of costs (Emerton et al., 2006, p.16).

In the NSW context, Rani believed this situation is compounded by the expectations of community and stakeholders:

> The community's expectations of us remain high and we are undoubtedly undertaking work that we are not funded for. The thing that comes to mind immediately is our engagement with marine mammals; the community has a high expectation that someone will do something, particularly about the entangled whales, [but] we do not have funding on a day-to-day basis to do that. The legislation is there, but the other parts of government have just backed away from it saying 'no thanks, too hard, too expensive', and we have been left holding the can, but that is just one example of lots.

Rani's comment shows that in some situations, stakeholders and community expect NPWS to continue undertaking activities for which it does not receive adequate funding.

The impediment of state budget processes is interlinked with a second impediment to the financial sustainability of the PA estate, namely political influence.

4.3 Impediment 2: Political Influence

The second identified impediment to the financial sustainability of the PA estate in NSW is political influence. Political stakeholders play a significant role in shaping funding allocation decisions (Xu et al., 2020), and funding for the PA estate is consequently shaped by political priorities, policies, and support (McNeely, 2015).

Political leaders take on the role of champions of the people, and in order to win an election, they will make promises that impact the existence and management of PAs, which they believe might be favourable with their constituents and, therefore, help them to win electoral votes (McNeely, 2015). Cody described money as "a strategic tool of government to affect change; it's necessarily a political decision – that's the long and short of it. It's a policy tool of government". In administering funds through the state budget process, NSW Treasury is guided by the state and Premier's priorities (NSW Government, 2021; NSW Treasury, 2021a). Dara drew on the example of the historically high investment in infrastructure works to illustrate the influence that political priorities can have on the funding of the PA estate:

> We are in this weird situation where our capital budgets are growing quite dramatically and have been over the last several years because capital investment is a priority for the government.

As Dara explained, capital investment is a current political priority that has resulted in funding for infrastructure projects in parks. However, from Briana's perspective, while one project can have political support and funding, another project of arguably equal value but without the same level of political support will find it more challenging to secure funding:

> Having observed national park policy closely for twenty years…[I] can attest to the strong influence politics has on national park establishment and management. There are persistent, competing agendas, often rooted deep in history, that include allowing grazing in parks; thinning selected trees for timber; building large infrastructure in parks; and protecting feral animals that have a cultural association with Australian folklore – all this despite very strong scientific evidence that they undermine conservation objectives.

Briana's narrative illuminates the "strong influence" that politics can have on PAs and their funding, and she believes that PAs are "increasingly being shaped by politics". To illustrate her belief, Briana drew on the example of the wild horse debate in Kosciuszko National Park, pointing to one particular politician's involvement in the passage of the *Kosciuszko Wild Horse Heritage Act 2018.* She argued that in this example "minority politics…outweighed overwhelming scientific evidence".

To elaborate on Briana's example, in 2016, the NSW Government commenced a review of wild horse management in Kosciuszko National Park (OEH, 2016a). Under the 2008 Kosciuszko National Park Plan of Management, the wild horse population in the park had been controlled for the past eight years by non-lethal methods, such as mustering and removal (Riley, 2019). The 2016 review found that these control practices had failed to effectively reduce population numbers or mitigate the environmental damage attributed to wild horses (OEH, 2016a). In response to the review findings, the Kosciuszko National Park Draft Wild Horse Management Plan 2016 proposed to reduce the wild horse population to around 200 individuals within a 20-year period by using lethal measures (OEH, 2016b; Riley, 2019). However, the plan proved controversial and the proposal to reduce the population using lethal measures remains the subject of a polarised debate (Riley, 2019).

John Barilaro, former deputy premier and Minister for Regional NSW and the then National's member for Monaro, weighed into the debate announcing on 21 May 2018 his intention to protect the cultural heritage of the Kosciuszko wild horses. On 23 May, Mr Barilaro introduced the *Kosciuszko Wild Horse Heritage Bill 2018* into parliament, and less than a month later, on 6 June 2018, the *Kosciuszko Wild Horse Heritage Act 2018* became law (Riley, 2019). Riley (2019, p.675) stated that "[w]hen the *Wild Horse Act* was passed, the legislation was widely seen as a capitulation to business interests, whose political influence had secured the continued presence of horses in KNP [Kosciuszko National Park] for tourism purposes. These accusations were not dispelled by the second reading speech where the Minister praised tourism values in KNP and the associated role of wild horses".

There have been attempts to repeal the *Wild Horse Act 2018* through the introduction of private members' bills into the NSW Parliament by Cate Faehrmann (Greens Party) on 25 October 2018 and again on 18 June 2019 and by Penny Sharpe (Labour Party) on 8 August 2019 (Parliament NSW, 2018, 2019a, 2019b). Furthermore, on 16 August 2021, the NSW Civil and Administrative Tribunal heard an appeal by the Invasive Species Council to obtain access to critical reports on wild horse management in Kosciuszko National Park, including the Wild Horse Scientific Advisory Panel and Kosciusko National Park Wild Horse Community Advisory Panel final reports. The purpose of the panels was to advise the government on a new draft wild horse heritage management plan under the *Kosciuszko Wild Horse Heritage Act 2018* (Mason, 2021; Riley, 2019). The final report prepared by the Kosciuszko Wild Horse Scientific Advisory Panel recommended that "a reduction in wild horse distribution and density is required to minimise the considerable negative impact that wild horses are having on the natural values of KNP" (Kosciuszko Wild Horse Scientific Advisory Panel, 2020, p.4).

A wild horse heritage management plan was eventually adopted by the Minister for Energy and Environment on 24 November 2021. According to the Department of Planning, Industry and Environment, the plan, which was prepared in accordance with the *Kosciuszko Wild Horse Heritage Act 2018*, "identifies the heritage value of wild horse populations in parts of the national park [and] protects the heritage value of wild horses by retaining a wild horse population of 3000 in an area equivalent to 32% of the national park. [It m]aintains the environmental values of the park by reducing the wild horse population from an estimated 14,380 horses to 3000 by 30 June 2027. Under the plan, there will be no wild horses across 68% of the park" (NPWS, 2020a).

Political influence and demands on NPWS and the management of the estate can also lead to politicised decision-making (Lowry, 2009). Oliver made this point when he explained:

> There is lots of stuff that is really about ribbon cutting, and it is about producing opportunities that are, to be blunt, marketable more than they are necessary.

The wild horse management situation in Kosciuszko National Park is again a pertinent example of politicised decision-making. In relation to wild horses, Riley (2015) explained that:

> Criticisms of politicisation largely centre on allegations that the *Wild Horse Act* has surrendered to commercial interests, ignoring the threat of environmental degradation posed by wild horses. These criticisms are exacerbated by the establishment of new governance mechanisms, which

> environmentalists fear will place decision-making in the hands of those not suited to making ecologically relevant determinations. (p.684)

She further argued that the use of political pressure in this example can be seen through the second reading speech for the *Wild Horse Act*:

> … [The Act] identified multiple concerns, including protection of the environment, the unpopularity of culling and the iconic nature of wild horses. However, notwithstanding references to each of these matters, the speech promotes the cultural dimensions of wild horse management. In fact, a large part of the speech is devoted to the benefits of tourism and the positive links to wild horses. The speech acknowledges the passionate advocacy proffered by local communities, including by a former member of parliament who operates commercial tourist activities in the region. The latter, in particular, has engendered public perceptions that the *Wild Horse Act* was designed to safeguard business interests over and above other concerns. If this is the case, wild horses are protected because of their financial benefits, which happen to accompany cultural and heritage considerations. (Riley, 2019, p.684)

It appears that the "advancement of commercial interests" (Riley, 2019, p.684) was a political priority prior to the introduction of the *Wild Horse Bill 2018*. On 17 April 2018, a joint media release by John Barilaro and then Minister for the Environment, Gabrielle Upton, announced AU$27 million in funding for Kosciuszko National Park to be distributed between two projects. The director of the Southern Ranges Branch of NPWS is quoted in the media release stating that AU$17 million was earmarked for the expansion of the Kosciuszko Snowies Iconic Walk and AU$8.9 million for the extension of the Thredbo Valley Track (NSW Government, 2018). The media release also highlighted the purported economic benefits to the Snowy region through the generation of year-round jobs and new business opportunities. Riley (2019) believes that this focus coincided with changes to governance arrangements in the national park, which shows how political pressure and priorities can influence the governance of PAs and related policy and laws in addition to the funding of these areas.

Worboys et al. (2018, p. 369) further explained that "many boundary changes have occurred to protected areas and, in some cases, a protected area's status has changed at the behest of politicians". Alexander described the "political lens" as the "ultimate internal barrier" to the financial sustainability of the PA estate, explaining:

> Often with government, their overriding urge is to get re-elected and so around having negative policy and negative strategies, so we could quite happily go and put in camping fees in every single park across the state and massively increase the amount of revenue for parks and be more sustainable that way and a similar thing for park entry fees. I think we've got 80-odd reserves that collect park entry fees and that's a really random process; it's more historical than any good sense

> and then if you had a courageous government who would look at it and say, 'should we expand this across the state?' But you could imagine the political cost of that and so that is a real fundamental issue for us because that flows directly into the Agency. So anything we do has to have a political lens on it… and it does become the difference between governing and making decisions for the good of the population versus making decisions to keep yourself in power, and so there's that sort of tension at a broader level.

As Alexander's comment illuminates, political decisions, particularly in the lead up to an election in a "quest for votes" (Bunce, 1980, p.373) or following an election, can result in "new policies, a new political style, or a change in government performance and responsiveness" (Bunce, 1980, pp.373, 375). Political change can play an important role in challenging the status quo; it can also result in budgetary priorities and expenditure changes where funding will fluctuate with political changes that are tied to the election cycle (Bunce, 1980). While this could work in favour of PAs where political change results in PAs becoming a higher priority and therefore better positioned to receive funding, Dara considered it more likely to be an impediment to financial sustainability:

> If our objective is sustainable land management, then any financial arrangement where we are reliant on the goodwill of the political process to guarantee our funding puts us at an immediate exposure, not for any sinister reasons but simply because, in a budget-constrained world, state governments are going to make decisions about priority setting.

It is clear from Dara's narrative excerpt that he believes the PA budget, while it remains closely tied to the state government, will continue to be "reliant on the goodwill of the political process" for its funding needs. Yet, the challenge described by Dara is not unique to NSW. In an opinion piece published in Outside, an online magazine, former U.S. National Park Service ranger, Shawn Regan (2019) described U.S. PAs as political pawns whose fate is influenced by political interest and agendas. Regan (2019, n.p.) further explained:

> "No one gets reelected for fixing a leaky wastewater system or for funding routine park operations, and politicians are often more interested in creating new parks than paying for existing ones…. The result: our national parks are weaponized in partisan budget battles and prone to management decisions motivated more by politics than prudence".

The U.S. Property and Environment Research Centre (PERC, 2023, n.p.) has expressed a view like Regan's, it believes that U.S. PAs are subjected to the "whims of political funding decisions". Furthermore, Worboys et al. (2018, pp.369–370) remarked that "politicians have influence over populations, and even when they are unpopular, they still influence or make decisions". Resultantly, if not carefully and strategically managed, the political influence and the electoral cycle can become disruptive to PA management (Worboys et al., 2018) and an impediment to accessing sufficient, stable, and secure long-term financial resources (Emerton et al., 2006). Like political influence and state budget processes, poor communication, messaging, and self-promotion are a key impediment to financial sustainability for the PA estate in NSW.

4.4 Impediment 3: Poor Communication, Messaging, and Self-Promotion

Poor communication, messaging and self-promotion are widely recognised by participants as potential impediments to all five elements of PA financial sustainability (Emerton et al., 2006). It can stymie attempts to build “a diverse, stable, and secure funding portfolio”, it can hamper “financial administration and effectiveness” and the creation of an “enabling financial and economic framework”, and it can also hinder the “mainstreaming and building capacity to use financial tools and mechanisms” and limit the “view of costs and benefits” associated with PAs (Emerton et al., 2006, p.16).

Communication can be defined as the exchange of knowledge, thoughts, ideas, and information and a “tool with which we exercise influence on others, bring about changes in the attitudes and views of our associates, motivate them and establish and maintain relations with them” (Rai & Rai, 2008, p.1). Without effective communication and messaging tailored to the needs and interests of the target audience, it can be difficult to successfully engage, influence, raise awareness, and expand the support base for PAs and develop a strong narrative for future funding needs (Goldstein, 2003).

This impediment relates in part to the difficulty experienced by PA practitioners in communicating effectively with non-conservation specialists, for instance, in speaking the “economic language” of Treasury officials (McNeely, 2015, p.190). Dara described this challenge as NPWS’ “incapacity to speak the language of government or to demonstrate value”. Emerson reflected on his experience in preparing business cases on behalf of NPWS and makes the point that a successful funding business case needs to be backed by financial data:

> Treasury is made up of various types of economists and financial analysts. If you can’t give them the numbers that they need to work with – if you’re giving them concepts – they say, ‘well, it’s a nice story, but I’ve got a fully quantified schedule here that meets all of our test criteria, they’ve shown how they meet it, and it’s presented in a way to replace 26 train carriages a year for the next ten years, and yours is a wordy story with some photos and I don’t know what to do with it’. They might even want that over that [the carriages], but if there is nothing to work with, it doesn’t end up in budget papers.

Emerson's comment suggests that the effectiveness of communication and messaging can be hampered by data, measurement, and reporting limitations, which is discussed as an impediment to financial sustainability in its own right (as Impediment 4) later in this chapter.

The task of effectively communicating to government any request for additional funding is further hampered when capital funding for the PA estate is at an all-time high (in the 2020–21 financial year). Hamilton reflected on this point and acknowledged that without a well-communicated argument any request for additional money in this situation would be hard won:

> Just imagine yourself in a position where you are not in the Parks Service; you are above the Parks Service and you are a decision-maker about these things, and you have got the Parks Service coming to you complaining about a lack of money in one particular part of its business, but you know that the Parks Service has never had more money than it does now; you would surely be tempted to say, 'go away and fix it yourself'. I've got fifty other things to deal with today; you've got more money than you've ever had, and I've got bigger problems.

The scenario described by Hamilton helps to illuminate the complexities of effectively communicating with government. However, communicating within government is only one part of the impediment because communicating with communities and other non-government stakeholders can also be challenging. Sophia believed that while there is a plethora of literature available on the importance of nature, it is not widely read nor understood by people outside of the nature conservation industry. As Sophia explained:

> There's a million things written about the fundamental importance of nature, but that doesn't trickle down to the ordinary people in the street; it's still a fairly esoteric and intellectual conversation.

Sophia's comment highlights a disconnect between the scientific and technical reports that demonstrate the critical importance of nature conservation and the communication of this highly technical information to non-experts in an understandable and convincing way. As Emerson explained, communicating with other PA practitioners or conservation experts is a simpler task than effectively communicating with the rest of society:

> Parks has forever talked to itself. It employs Advisory Committees who are already converted; the Advisory Council is made up of people who are converted. We have been in denial of the fringe groups, how do we talk to them in another way, that's actually the challenge…Anyone can win over a conservationist; I could do that on a text message. But how do I win over the agitators? That is the challenge.

As Emerson's narrative excerpt suggests, the challenge lies in effectively communicating with what he describes as the "audience you need to influence". Jake made a similar point:

> That is the problem at the moment…they are not talking to Mr and Mrs Smith who are going to decide where to put their vote or to decide in fact whether they think this is a good investment of their state funds. That is the true challenge, I think.

Evidently, as Jake suggested, poor communication with stakeholders limits their knowledge of PA values and the support base for the work of NPWS. Similarly, many of the PA practitioners interviewed feel that the work of NPWS is not actively promoted. Sophia considered this a missed opportunity to harness additional support and advocacy for the PA estate, which can translate into support for its funding. She explained:

> You seldom see NPWS getting a good news story in the news…half the time it's the Minister wanting to stand there and say 'hey, we've opened a new park', which most people go 'yawn, yawn.'

Sophia's comment suggests that there is a level of political influence over the stories and information communicated to the public and that what is communicated isn't necessarily of interest to the intended audience. Asher and Oliver have also witnessed this political influence and explained that communication, messaging, and promotion can be vetted by the Minister's office or aligned with political and/or ministerial priorities. For example, Asher explained:

> A low-confidence minister and a low-confidence organisation says nothing. They sit there and huddle in a corner and hope no one notices them; so when something bad goes wrong, you've got no positive news stories out there, and I've said that we need to get the positive news stories out so that you have got so much positive capital amongst the community so they say, 'no, hang on! They might have stuffed up on this one and invariably people do stuff up', but you've got all these good things to fall back on.

Asher's narrative extract indicates the influence that a minister can have over NPWS communication, and it also talks to the importance of having a bank of "positive news stories", which can help to garner ongoing support for the institution and its work. Furthermore, while there are opportunities for NPWS to undertake self-promotion in the park, Bill and Fred believed NPWS is not currently taking full advantage of these opportunities. For example, Bill stated:

> What's the first sign you see when you go into a park? – 'Do not do this', 'do not do that'. It is not 'hey, welcome to the National Park, love to have you here'… So, we've got to change ourselves to make people love the parks more and that will result in a good outcome.

Bill's observation suggests that despite the park entrance being a critical location for self-promotion, some park entrances may give visitors the impression that they are not welcome. Fred made a similar observation explaining that on entering parks you are greeted by "all the 'don't do' signs on the way in". To further illustrate this impediment, Fred drew on the camping and visitor opportunities in Warrembungle National Park, explaining:

> One of the big ones for me is the Warrumbungles; it has so much potential as a camping facility. There is a camping facility there, but no one knows that it even exists. Our branding is rubbish; we need to be out there promoting this sort of stuff. We have school holidays coming up shortly, and I'd be surprised if we don't start to see caravan parks, Big4s, etcetera back advertising on TV – they market themselves.

As Fred suggested through his example, this impediment relates in part to branding and active marketing and promotion of PAs through mass media channels.

The impediment of communication, messaging, and self-promotion also encompasses those tasked with the role of communicating. Emerson, Jake, Sophia, and Mali suggested that relying on people who do not have expertise in communication can hamper efforts by NPWS to effectively communicate. For example, Mali reflected on her own experience in communicating with non-conservation experts:

> I can say to them I am a rhino person; I can talk all day to you about rhinos. If there is anything that you want to know about rhinos, then ask me, but I don't think that is why you are in the room, so talk to that person because they can answer your questions. I think it is the same thing with all of that; it is about thinking literally, like the park managers that can't communicate; well no, they are biologists probably, so they are probably not good communicators to begin with, so they really do need to think about [who] is the other person, not the message that I am trying to get across. But what message grabs that person and how do I put my message inside it? Otherwise, they will just glaze over and tune out because everyone is 'I'm too busy to listen to this; I've got other things to do'. Even if they don't, they will just think it is boring, we are done here, and you have lost them.

Mali's reflection indicates the critical link between an effective communicator and the effectiveness of the message and also the importance of targeting communication for the interests and needs of the intended audience (Le et al., 2015). Furthermore, in support of Mali's point about targeting communication to the intended audience, a study of the attitudes and perceptions of local stakeholders towards the designation of Kamnisko-Savinjske Alps Regional Park in Slovenia reported that poor communication with stakeholders could cancel out previous positive outcomes and achievements (Nastran, 2015).

Finally, as previously discussed, related to the impediment of communication, messaging, and self-promotion are data, measurement, and reporting limitations, which can hamper communication efforts by NPWS.

4.5 Impediment 4: Data, Measurement, and Reporting Limitations

The fourth impediment to the financial sustainability of the PA estate in NSW is data, measurement, and reporting limitations. At the time of writing, the main performance measurement and evaluation framework used by NPWS was known as 'State of the Parks'. State of the Parks is used to evaluate management effectiveness across the park system whereby assessments are conducted on the condition of park values; sufficiency of park management information; extent of planning applied to management approach; severity and extent of threats; and effectiveness of park management, including pest, weed, and threatened species programs (DPIE, 2020b).

Information on park management has been collected by NPWS through State of the Parks every three to five years since 2005, with the results used to evaluate how the institution is tracking against planned outcomes and objectives (DPIE, 2020b). While participants acknowledge the value of State of the Parks as a data collection and reporting tool, its limitations in collecting comprehensive data on the PA estate are also considered an impediment to financial sustainability. Oliver, for example, believed that the strengths and weaknesses of State of the Parks lie in its subjectivity:

> State of the Parks in the NSW context has a crack at doing that [performance measurement]; its strength and its weakness is its subjectivity. Its strength is that subjectivity because you can actually just go out and ask people their opinion and, for the most part, you are asking people who have a reasonably high level of connection to those places and reasonable information. Its weakness is clearly that level of subjectivity; it is really not giving us a very good handle on that relationship between the effectiveness of, say, pest and weed programs and what that is meaning for threatened species or broader biodiversity resilience outcomes.

Oliver's comment indicates that while State of the Parks is an important tool for data collection and reporting, there remains room for improvement, particularly if it is to be a comprehensive performance management tool that can track how effectively NPWS is managing the PA estate and establish what Dara refers to as a "value proposition". As Dara explained:

> We have done some work in State of the Parks as a document that tries to establish that value proposition, but I think it is not quite there yet. We are not at the point where we can link the output to the outcome as scientifically as we might… I suspect that we don't have the tools right now to do it.

The value proposition that Dara speaks of is the promise of value that government and other funders as well as the community and stakeholders can expect NPWS to deliver. Dara is suggesting that the value proposition needs to be founded on rigorous data about the institution's inputs, outputs, and outcomes; however, he believes the tools to collect this data are not yet available.

In addition to data collected through the State of the Parks, NPWS collects information on park visitation through a biennial survey (DPIE, 2019a; Roy Morgan Research, 2017). However, data is not currently available on the amount of funding required to manage the PA estate for basic and optimal park management. This is a significant data gap that many research participants recognise as a major impediment to the financial sustainability of the PA estate in NSW. Dara believed that the calculation of the funding gap is a missing piece of the financial sustainability puzzle. He reflected:

> I don't think that we have always been able to work out the [funding gap] …and I think it is kind of one of the things we are missing in a way because if I can put it this way, you take however many hundreds of millions that the state invests in Parks every year. Is the environment improving or is it still going backwards? It almost requires us to be able to assess what the outcome is and takes us down that pathway of measuring outcomes and working out how much is it costing to deliver that outcome? And are we getting value for money for that? And if we are and if we invest more, will we get more value for money or could we halve that investment and still get the same overall outcome? That sort of stuff I don't think has been done.

As Dara pointed out, while NPWS believes it lacks the financial resources required to adequately manage the PA estate, it is currently unable to articulate the gap between the funding received and the funds required for basic and/or optimal park management or how this funding gap may have changed over time. While attempts have been made to calculate the funding gap for PAs elsewhere, this situation is not unique to the NSW PA estate, with research published in 2019 reporting that "although many of the world's PAs are thought to lack sufficient resources to effectively manage and mitigate key threats to ecosystems and the biodiversity they support, the degree of under-resourcing remains largely unknown due to a lack of collated, comparable management data" (Coad et al., 2019, p.259).

Research participants generally believed that calculating the funding gap is not a straightforward exercise, which may account for why it has not been attempted to date. The following narrative extract from Dara appears to support this supposition:

> There is a scale question about how far you go with something like this. You have got around 900 reserves across the state, 9% of the state by land mass, and somewhere within that, you have to work out what the value is. It is necessarily constrained by the sheer volume of resources to do it at scale, but maybe on a more targeted basis you could do more in that space.

As Dara explained, the perceived scale of calculating the funding gap for the entire PA estate in NSW may be viewed by NPWS as a barrier to undertaking the task, despite it being an essential foundation for building a case for financial sustainability (Bovarnick, 2010). Significantly, this means that currently, it is difficult for NPWS to say with certainty what financial sustainability looks like for the PA estate in NSW because there is insufficient data available on the costs of managing the estate. For example, until the 2020–21 financial year, baseline data on the financial situation of the PA estate at a particular point in time was not available. Without such data and reporting, together with an agreed understanding of what constitutes PA financial sustainability in the NSW context, it is difficult to justify the case for additional financial resources to cover the full range of PA costs.

Hamilton described NPWS' limited understanding of the actual funding required to manage the PA estate as "the first stumbling block" in attaining financial sustainability. He explained:

> At the moment, I don't think we would even know what financial sustainability looks like. If you ask ten different people how much money is needed to run the Parks Service or their Branch or their Area or their park, you would get ten different answers and none of them would be backed with a full suite of information and data to form their view about that. That is a first stumbling block.

Hamilton's comment that NPWS does not know what financial sustainability looks like for the PA estate indicates a major roadblock in addressing the challenge of financial sustainability. Ethan shared a similar view and believed this situation does not help the institution's requests to government for additional funding. He explained:

> How can you argue that you haven't got enough when you can't tell government what they are getting for what they are spending? You have to be able to tell them what they are getting already and then be able to say, 'well, this is what you will be able to get if you gave me more'. I think we have always recognised it; we have just never really known how to solve it.

Ethan's comment not only speaks to the need to understand the funding gap but also recognises the difficulty in making a compelling case for additional financial resources when the data is not available to demonstrate what outcomes, outputs, and impacts are being achieved with the funding that is currently allocated to the PA estate. Ethan's comment further alludes to the risk that if NPWS cannot establish a clear return on investment, then this can curtail its competitiveness for limited financial resources (NSW Treasury, 2018). Edna and Dara both reflected on the difficulty of establishing a return on investment for non-capital activities. For example, speaking about her work for NPWS, Edna explained:

> We can describe what the benefits are, a little harder to measure, a lot more difficult to measure as a dollar saving. For the tourism infrastructure projects, the idea is that we increase the amount of people that come to parks and we can say that if all of those people come to parks, it generates this revenue for us and that allows us to maintain that facility. That might be straightforward, but there is a lot of aspects of managing parks and particularly the environmental side that would be a lot more difficult to measure, but they are important benefits.

Edna's narrative extract illuminates the difficulty faced in measuring and monetising conservation and social outcomes, despite the perceived "important benefits". Similarly, Dara explained that this difficulty means that NPWS struggles to build a competitive business case for its funding needs:

> Being frank about it, when Health put forward a proposal that delivers a whole lot of public health outcomes and it is quite measurable and demonstrable, that is always quite difficult for us to be able to argue. So our capacity to argue, particularly beyond the infrastructure, is a lot more easy because we can establish a return on investment, but once we move into the non-commercial parts of what we do and the non-infrastructure parts of what we do, I think we struggle as well to help build our business case inside the government processes and then have the capacity to report back and say, 'here's what you got for your money'.

As Dara's reflection suggests, this is a challenge particularly for park management activities, including cultural and Aboriginal heritage (artefacts and sites), which are considered more difficult to define and measure, for example, in comparison to hard infrastructure assets. Furthermore, an audit of Australian infrastructure in 2019 reported that investment in non-capital infrastructure (i.e., green, blue, and recreation infrastructure) "is often not prioritised because the true costs and benefits are not well integrated into government decision making" (Infrastructure Australia, 2019, p.430).

Jake found it difficult to fathom that in many instances, NPWS has more data available on easily replaceable assets such as toilet blocks and barbecues than it does on its irreplaceable natural and cultural assets and PA values. Jake explained:

> How is it that the Agency knows when that toilet block was built, how many staff hours go into maintaining it, how many people use it, when it is due for replacement, what maintenance requirements does it have, what is its risk for a changing climate. How can we know that about something we can easily replace when we don't know any of that for something that we can't afford to lose or ever replace?

While Jake's comment highlights the irony of the situation, Brianna explained that in reality, it is more difficult to gather the necessary data on non-capital assets and activities. Briana gave the example of Aboriginal cultural heritage, explaining:

> I think the focus of the metrics at the moment has been on pest and weed activity down to the level of how many hours flown for aerial shooting and how many bullets per Branch for what activity; fire is what is the target, what is our performance and down to different zones and improving the reporting on that and we are also looking at other areas. But difficult things like Aboriginal cultural heritage, what metrics do you have for that? Maybe it is just how many Aboriginal people do you get on Country or how many participate in training programs? I don't know.

Briana's example suggests that until NPWS has sound metrics for non-capital assets such as its Aboriginal cultural heritage, it will remain difficult to collect the data required to establish a return on investment and, in turn, attract funding for these assets and non-capital activities. Emerson further explained that if NPWS cannot provide a business case for the funding of its natural capital assets that is based on data supporting a clear return on investment, the business case is unlikely to be successful. He stated:

> They [Treasury] have like ten tests to put you through to validate your claim and you can't do it with the natural stuff. The only way you can get that is have an engaged or sympathetic Minister or a disaster or something that stimulates something to happen.

As Emerson's narrative extract indicates, demonstrating value for money through economic data can be particularly challenging for natural capital assets, which are complex and not easily quantified or measurable (Deutz et al., 2020). A report by Deutz et al. (2020) stated that "financial markets do not recognise the value of natural capital unless it has a defined cash flow or asset value that can be measured by current economic systems. As a result, the full value, or costs of using, or destroying, natural systems are poorly understood" (p.12). However, work both within NSW and at the global level is underway to find acceptable ways to measure natural capital assets, including those attributed to PAs (Bright et al., 2019), with recent estimates indicating that around US$44 trillion of global GDP is reliant on nature and the services that it provides (World Economic Forum, 2020).

A related data gap identified is the limited data currently collected on ecosystem health across the PA estate. In the absence of ecosystem health assessments and ecological health indicators, Dara explained that it is difficult to measure the outcomes of an activity on ecosystem health. This is an impediment because, as previously discussed, if NPWS is unable to measure outcomes, it subsequently finds it difficult to compete for funding in an outcomes-based funding model against government agencies that have clearly defined and measurable outcomes (NSW Treasury, 2018). While Oliver recognised the need for "broad measures of ecosystem health", he, like Dara and others, believed that such measures do not currently exist. Dara suggested that in the absence of robust outcome measures, it is difficult to determine with certainty the optimum level of service delivery or the level of operational delivery. Dara went on to say:

> …what is the optimum number of feral animals we should be removing every year to optimise our budget investment beyond which for every extra fox we remove it makes no difference for the ecological health of the park but any less than that you can spend a bit more and get a better ecological outcome but presumably it has a marginal rate of return.

Dara's comment alludes to the difficulty of measuring conservation outcomes. Furthermore, it can be difficult to document and thus measure intangible cultural, economic, and social outcomes (Li et al., 2015; Satterfield et al., 2013). Alexander further explained that measuring ecosystem health across a landscape can add a whole new level of complexity to the measurement of conservation outcomes:

> It's really hard to measure biodiversity outcomes because often they are slow; it's very difficult to monitor. We muck around with brush-tailed rock wallabies for decades, monitoring and surveying them, doing controlled plots for baiting, non-baiting, [and] at the end of all of that – literally tens of millions of dollars – there was no definitive science as to did these animals substantially benefit from baiting around populations. And so, how do you do that across landscapes and multiple species and ecosystems? And how do you judge ecosystem health?

Alexander's statement also raises the question of how to determine ecosystem health. Generally speaking, an ecosystem can be considered healthy if it is "stable and sustainable in the provision of goods and services used by human societies" (Burkhard et al., 2008, p.1133). The notion of ecosystem health assessment is not new, having originated in the late 1980s; however, assessment is challenging because "as ecosystem health cannot be measured or observed directly, surrogate measures (indicators) have to be applied to assess it" (Burkhard et al., 2008, p.1133).

Measuring ecosystem health has been flagged as a priority work area for NPWS, and at the time of writing, it had commenced planning for a pilot program, which Ethan described as a "health monitoring program across the state". The four-year, AU$10 million pilot program is "supported by a $7 million grant from the NSW Government's Environmental Trust and philanthropic investment of $1 million" (UNSW & NPWS, 2021). Ethan explained that under the pilot program, eight sites across NSW have been selected, and NPWS in collaboration with the University of NSW and the Australian National University will "develop a series of indicators for ecosystem health within those parks… [and subsequently] monitor them and report on them". Ethan described the purpose of the program as:

> To develop a deep understanding of activity-based budgeting, so what we are spending to get those outcomes. The assumption is you will be able to see where you are getting benefits or not getting benefits or where there is change or no change but actually understand what level of

> investment is delivered. The assumption would be that you can trial a new intervention, know the cost of it, know the time set benefit, and use that to try and shape your decision-making.

Ethan's description of the pilot program suggests that it is a step towards formulating the value proposition previously mentioned by Dara because it will collect data that can potentially improve financial administration and effectiveness, which is essential for financial sustainability (Emerton et al., 2006).

Finally, Briana and Fred stated that collecting data is of little value unless it is used appropriately. For example, Briana explained:

> Everyone is talking about KPIs [key performance indicators] for just about everything and dashboards; there's so much data now there's an acknowledgement that it's not very well integrated, and the better we integrate it the more magic we can do and stories we can tell.

Briana's comment acknowledges the potential power of data when it is "well integrated" into NPWS systems and processes; however, Fred commented that the institution's staff should be able to see how the data they gather is used:

> We collect so much data, [but] you never see anything actually come back out the other end. Not at all. All this stuff that we collect under Sales Force – what actually happens to that data? Do we do any analysis on it? The answer is probably 'yes' – but how much and how much is used? So we need to be looking at that sort of thing.

Fred's comment, like Briana's, suggests that there needs to be a clear rationale for any data collected and that data should be used appropriately and transparently by NPWS and the broader government.

Like data, measurement, and reporting limitations, governance challenges are cited by research participants as another impediment to PA financial sustainability.

4.6 Impediment 5: Governance Challenges

The fifth impediment to financial sustainability for the PA estate in NSW is governance challenges. Whenever decisions are made and authority and power are exerted, a type of governance exists. The "power and the capacity to make decisions influence the achievement of objectives, the sharing of responsibilities, rights, costs and benefits, and the generation and maintenance of support – be it financial, political, or from the communities in and around…protected areas" (Borrini-Feyerabend et al., 2013, p.4). This governance is at the heart of effective and efficient PA management (Borrini-Feyerabend et al., 2013).

In NSW, the NPWS is not a standalone authority; instead, it exists within one of eight large state government 'cluster' departments alongside the agencies responsible for industry, Aboriginal and social housing, heritage, environment, natural resources, urban and regional planning, and regional NSW (DPIE, 2021a). This governance arrangement is considered an impediment to PA financial sustainability; for example, Rani explained that the large size of the cluster department is in itself an impediment:

> Being part of the cluster is a huge impediment to us managing our budget, our current budget; it is a huge impediment in us acting responsibly and planning for the future. I am not criticising, but in order for us to be able to plan for the future we need to work with people who understand our current budget and also have the same objectives that we do in the work that they do, and we don't have that. What we have is some lovely people who work in finance [and] whose allegiances are to DPIE [the Department of Planning, Industry and Environment] [the cluster]; their interests are in serving the needs of DPIE in terms of its reporting to Treasury, but we just don't get the support that we need at all to do this work.

Rani's narrative excerpt illuminates the apparent disconnect between centralised cluster staff who manage the cluster's budget and NPWS staff together with the perception that the centralised financial decision-makers tend to be unfamiliar with the highly operational nature of NPWS. Like Rani, Cody and Ruth believed the governance arrangements impact the budget that is allocated to the PA estate, in that it does not necessarily reflect the full range of PA costs. For example, Cody explained:

> In the cluster model, the people giving us a budget don't understand our business and the whole process to manage land that is very complex.

Cody's comment reiterates that having financial decision-makers with limited understanding of the complexities of land management and the work of NPWS is an impediment to financial sustainability; however, Ruth reflected that this has not always been the situation:

> Branch accountants, they're not there anymore or they're at arm's length from us, whereas you know when we used to have those Branch accountants, we used to have a much more detailed conversation about finance and how we spend it and things like that.

Ruth's reflection, like Cody and Rani's comments, indicates that within the current cluster governance structure, NPWS has limited control or influence over its budget allocation. Ethan also reflected on past governance structures prior to the cluster model and explains that NPWS was an "organisation that used to have very tight financial control…[however] the cluster has just taken all of that away", to the point where Dara explained that under the current cluster governance arrangement, "there is no such thing as the National Parks accounts". Asher is also concerned with this situation. He explained:

> We don't actually have a budget; we get an allocation from DPIE [the cluster] of its budget.

As Asher's comment suggests, while NPWS is aware of the amount of funding the cluster allocates to its individual cost centres, many of the services it uses in the management of the PA estate are now centrally provided by the cluster, thus it is not possible to determine with certainty the true cost of running the PA estate. Examples of centralised services mentioned by research participants include public affairs and communications, legal, human resources, information technology, policy, and science. Briana believed that the centralised services provided by the cluster "have become so general that they are not relevant… [or] able to cater for the specific and unique needs of National Parks".

Jake and Hussain both drew on the example of the cluster's proposal to replace 'pool cars' with a policy that requires cluster staff wanting to use a car for work purposes to hire a vehicle from a car share network. Jake and Hussain were concerned that this policy proposal does not adequately consider the specific requirements of NPWS' highly operational and geographically dispersed park management work and vehicle requirements. As Jake explained:

> [Current operational vehicles are] geographically dispersed, they are specially designed and engineered, they need to be accessible 24/7, and they are aligned to programs and outcomes…where are we going to 'GoGet' the fire trucks? Where are you going to 'GoGet' it from when you are at Burke?

Jakes's example indicates that certain centralised cluster policies, such as the proposed carpool policy, do not reflect the specific needs of the PA estate in NSW.

The existence of NPWS within the cluster has also reduced its budget transparency and accountability. For example, in the NSW Budget Estimate papers for the financial years between 2010–11 and 2017–18, there was a clear budget breakdown for 'NPWS' (or 'Parks and Wildlife' as it was interchangeably referred to) where the total funds allocated to expenses and capital were stipulated. However, in the following three financial years, the Budget Estimate papers did not provide a financial breakdown for NPWS; instead, the papers presented the budget by "outcomes" rather than by agency. Briana saw this as an impediment to financial sustainability because as she explained:

> It is very, very difficult to see whether something has gone up and down or whether one function has gotten more and another function has gotten less, and I think that is part of the whole program funding model.

As Briana's observation suggests, this approach to budget reporting makes it difficult to accurately determine the funding allocated to the PA estate in NSW, which consequently reduces budget transparency and accountability. Like Briana, Dara also saw this decline in budget transparency and accountability as an impediment to financial sustainability, explaining that:

> [it can make it] harder for government itself to see what value it is getting because it is all blurred by the fact that it is just one line in a super department line item.

Dara's comment highlights the difficulty in determining whether the funds spent on PAs represent value for money for the government and the taxpayer when a budget breakdown is not available. He went on to explain:

> If you have got some level of transparency around our accounts then any decisions that are taken on our finances, good or bad, are visible for the world to see and for people to form their own view [...] as to whether that is a good thing or a bad thing. That then, in a way, keeps all of us honest in terms of the way we manage our finances and so on, whereas at the moment it is opaque and I don't think putting a democracy hat on that is necessarily good for democracy because people should be able to assess these things.

As Dara's comment indicates, financial transparency is important because "it keeps everyone accountable". The challenge of achieving financial transparency and the difficulty in obtaining financial information for PAs is a long-standing challenge not only for NSW but for other Australian PA institutions. It was raised as a major issue in a Commonwealth Senate inquiry into national parks, conservation reserves, and marine PAs in 2007, with several witnesses to the inquiry specifically remarking on the challenge of attaining data on funding levels:

> A lot of people have tried to track down this figure [state funding levels] in preparation for this Senate inquiry…Most people have found it extremely difficult to get really clear-cut figures. Part of that is because many park agencies have amalgamated in recent times. Some of their research capacity, for example, is not in a park's agency; it is in a centralised agency. So the overall picture is quite hard to come by. (Quoted in Commonwealth of Australia, 2007, p.248)

> The first time I was able to put together that national park [on funding levels], it was because I was able to contact individuals inside agencies at all levels and ask a series of questions that were basically a template data set, and I was able to get that back. When we tried to repeat that exercise…the difficulty was that the agency had changed or it had added new functions or lost functions along the way, and the accounting system had changed…I am not sure how we can get around that because to compare data sets of course they have to be consistent over time, and if they are adjusted you have to be able to adjust them. (Quoted in Commonwealth of Australia, 2007, p.248)

The selected witness quotes from the Senate inquiry illuminate some of the perceived reasons for the challenge of financial transparency for PAs, including changes in the functions of PA agencies, the amalgamation of park agencies into centralised government departments, the loss and addition of certain functions, and accounting system changes. In the case of NPWS, over the past 18 years, it has been through six departmental amalgamations, as summarised in Table 20, and this has been accompanied by various function and accounting system changes over the same period.

Table 20 Summary of Departmental Changes

Year	Department name
2003	Department of Environment and Conservation (DEC)
2007	Department of Environment and Climate Change (DECC) (NSW Government, 2007)
2009	Department of Environment, Climate Change and Water (DECCW) (Boer & Gruber, 2010)
2011	Office of Environment and Heritage (OEH), which was part of the Department of Premier and Cabinet (NSW Government, 2011)
2018	Department of Planning and Environment (DPE) (NSW Government, 2019)
1 July 2019	Department of Planning, Industry and Environment (DPIE) (NSW Government, 2019)

The budget reporting processes, at the time of writing, were providing for a level of financial transparency by showing the allocation of funding towards specified outcomes. However, because the outcomes are often delivered across two or more government departments, it is extremely difficult to pinpoint the funding allocation for the PA estate per se and therefore to assess whether the funds allocated to PAs represent value for money.

Furthermore, the decline in financial transparency and accountability is said to have reduced the visibility of the 'NPWS' brand. Dara saw this as an impediment to the financial sustainability of the PA estate because it can be challenging to garner support and advocacy with low brand visibility as people will not be as familiar with NPWS or its work. Dara explained:

> When we lose our identity and lose our capacity for people to see what we do, we are losing the ability for people to draw judgement about the value for money that we deliver to the community, good or bad. People can't go, 'how much are you spending on national parks? Oh, it's this many million – is that good value for money for what you get?' Don't know because it is not particularly transparent and it should be, in my opinion, because I think an agency like ours equally needs to be held to account for the investments that we make, the revenues that we earn, and for people to form a view as to whether that all makes sense or not, and at the moment that is a bit masked in the way that the accounts work.

Another component of this impediment is, as Dara and Ethan explained, the situation where salaries and expenses are aggregated at the cluster level, which complicates the calculation of the true cost of running the PA estate. According to Dara:

> We don't really fully know what the true cost of running National Parks is…if you asked me to say what is the true cost [of] running National Parks, I have no idea, and no one really does.

Dara's acknowledgement that NPWS does not know the true cost of running the PA estate is connected to the previously discussed impediment that the institution has not in the last ten financial years attempted to calculate the funding gap for the estate. Ethan suggested that it is difficult to calculate the true cost of managing the PA estate when so much of NPWS work is completed by central cluster staff and therefore the costs associated with these activities are not reflected in the budget allocated to NPWS:

> The other bit about the cluster is that so much of our work now is not in our budget. Legal, policy, and science all sit outside the organisation and deliver services for it, but they are not actually in our framework, and we don't have a 'Parks' budget. The way government works on outcomes-based budgeting they just fund these large programs and they often run across the agency [DPIE], not just Parks, so it is very complex.

Ethan's narrative extract points to the complex nature of the budget for the PA estate and in determining the full costs associated with managing PAs.

Furthermore, NPWS generates around 30% of its own revenue (in 2019–20) (NPWS, 2021d). As Jake explained, this differentiates it from most of the other agencies within the cluster:

> We earn about $80 million a year and we have a complete business. It is really a mistake to bundle us in with someone else who has lots of different things, and some of them are very small, some of them are just little trusts; it is just a disparate mishmash of stuff.

As Jake's comment indicates, NPWS makes an important contribution to its own funding. It also makes a significant contribution to the state's income, approximately AU$17.85 billion annually (Hannam, 2020). However, despite generating 30% of its own revenue and contributing significantly to the state's economy, Dara, Hamilton, Hussain, Rani, and others explained that NPWS is still treated as an 'inner' agency of government, an agency that does not generate significant revenue for the state. This is considered an impediment to stable and secure financial resources to cover the full range of PA costs because NPWS is in effect disincentivised from growing, such as through annual efficiency savings and labour caps imposed by the state government.

Bill gave a detailed explanation of the cumulative effects of the efficiency dividends imposed on NPWS and their impact on PA financial sustainability:

> Efficiency dividends are never handed back to the Agency as an increase in dollars; it's taken from your base. If, for example, you have $100, if your efficiency dividend is 5%, which is generally what it is per annum, then you only get $95. Now the next year, because of the cap on the $95, you get

> another efficiency dividend of 5% – it's 5% of $95 not 5% of $100 – so you are back to $89 and if you consider all those cumulative efficiency dividends, your base is actually eroded every year by more than 5%. So it really impinges on the ability of the Agency to undertake activities. So if you think of a budget, you have fixed costs and tied costs; the fixed and tied costs never go away; in fact, fixed costs, if they are related to building maintenance or lease of a building, they are always increasing annually even if you just took CPI [Consumer Price Index] at a minimal rate of 2%, so you've got a 2% increase on your fixed costs [and] a 5% reduction in your efficiency dividend. The ability then to spend on other things is even worse because you have to spend on your fixed costs, you have to spend on the tied costs, so where do you make those savings? Where do those 5% and 2% come from? It comes from the other components of your budget that enable your weed spraying, all those sorts of things.

Bill's narrative excerpt helps to illustrate the aggregate effects of efficiency dividends and how the required savings tend to come from the operational budget, eating into the funding available for ongoing park management activities like pest and weed management.

Further to this, under the governance arrangements at the time of writing, NPWS is not a legal entity; instead, it is a brand with legislation behind it – the *National Parks and Wildlife Act 1974* (*NPW Act 1974*) – and it operates as part of the cluster department. Dara explains that this governance arrangement means the cluster "effectively runs the National Parks and Wildlife Service". Briana and Hussain were concerned that this is an impediment to the institution achieving its objectives under the *NPW Act 1974*. As Briana explained:

> Other senior people […] are making decisions and their objective is about efficiency and they report to a different Minister; our Minster is responsible for furthering the objectives of the *National Parks and Wildlife Act* and that is the whole of government thing. I get that from a government point of view, but in terms of focusing on achieving Park's objectives […], I think Parks will achieve its objectives better with more independence.

Briana's comment illuminates the competing interests between the different agencies within the same cluster department with objectives that are not always aligned to those of NPWS and the *NPW Act 1974.* Briana also expressed her view that NPWS would be in a better position to achieve its objectives "with more independence". This is a view shared by Hussain who explained:

> The problem is we are still not self-determining in terms of our own destiny because we are just a part of the cluster DPIE agency. National Parks is not even an agency in its own right.

Hussain's comment speaks to the limited financial independence of NPWS, an issue which was further compounded in the 2019–20 and 2020–21 financial years when there was a lengthy delay in the announcement of the budget and the institution did not receive an official budget allocation until the second half of the financial years. Asher explained that this situation made it difficult for managers to understand how much funding they had available and make informed financial decisions for the year ahead:

> It is very difficult to be clear as to who has what and who gets what. You are waiting until the end of the financial year to hear your budget or halfway through or Christmas eve, so you are really managing leanly because you don't know what you've got and then you are given a lot less to manage the same or more, and that's programs [branches] and operations [branches].

As indicated by Asher, the issue of a delay in the announcement of the NPWS budget links back to budget transparency and accountability, which underpin the allocation of financial resources in an appropriate form and timely manner (Emerton et al., 2006). It can be challenging to ensure that funds are apportioned and spent in a way that supports PA conservation goals and needs when the budget available is unclear. Asher's comment also indicates the challenge of undertaking strategic financial planning when NPWS has limited control over the allocation and distribution of its budget and the timing of its delivery. For many research participants, including Asher, limited strategic financial planning and innovation is a major impediment to financial sustainability.

4.7 Impediment 6: Limited Strategic Financial Planning and Innovation

The sixth impediment to the financial sustainability of the PA estate in NSW is limited strategic financial planning and innovation. Without adequate strategic financial planning, it can be challenging to ensure that funds received cover "the full range of PA costs, ensuring that those who bear PA costs are recognised and adequately compensated, and that those who benefit from PAs make a fair contribution to their maintenance" (Emerton et al., 2006, p.16). Furthermore, in the absence of long-term strategic financial planning, it is difficult to make informed decisions around the different sources of funding available or potentially available and understand the right funding option(s) in a particular situation or setting.

While NPWS does undertake strategic planning, including operational planning at the Area level and business planning at the system level (NPWS, 2021g), barriers still exist to effective long-term strategic planning. For example, Rani explained:

> We are in a washing machine of constant change brought about by things outside our organisation that mean we don't have certainty, we can't plan.

As Rani's comment indicates, the constant state of change both within the NPWS organisational structure and in the political priorities that influence and shape its work and funding allocation can make strategic planning (both the planning process and implementation) a challenging exercise. Rani also questioned the worthwhileness of strategic planning when NPWS is in a constant state of change. She reflected:

> The rate of change is now so great… [that you] never get to finish the strategic exercise before everything changes again, and it is very difficult to develop strategic approaches when timeframes are so short.

While Rani's reflection indicates the difficulty faced by NPWS in undertaking strategic planning when the rate of change is "so great", Ethan believed that without strategic planning in place, NPWS risks being "led crisis by crisis", which he regards as an impediment to a financially sustainable model of PA management. Alexander gave the example of the allocation of COVID-19 stimulus funding in 2020 to illustrate the problems that can be associated with managing the PA estate on a crisis-by-crisis basis:

> There's been a massive injection of funds over the next couple of years, which I suspect at the end of the financial year in 2022 when it ends – whether it all comes to a crashing halt then.

Alexander's example of COVID-19 stimulus funding helps to illustrate that while crisis-led funding does provide additional money for the PA estate, it tends to be a short-term allocation rather than an injection of "stable and secure" funding, which is a core element of financial sustainability (Emerton et al., 2006, p.16). A related challenge is the reactive nature of land management, which Cody believed further complicates strategic planning by making it difficult to accurately plan for the future. He drew on the Black Summer fires of 2019-20 to make this point:

> I would say a lot of our business is reactive. Say there is a wildfire, 'Down tools! Everybody is on that'. That was the scenario last summer and […] we do plan for those things, and we have Risk Registers, and with our plan we do map out foreseeable risks, and there is also unforeseen risk.

As Cody's example shows, PA management tends to be reactive and influenced by highly unpredictable weather and other events, including natural disasters, which can make strategic financial planning for the PA estate challenging (although not impossible) (Fannin & Miller, 2013). Another facet of this impediment is the limited time available for NPWS staff to think strategically about financial sustainability and undertake research into best practice and case studies of financial models elsewhere around the world, as Rani explained:

> It is difficult to undertake thorough strategic planning when your time is stretched so thin; our opportunity to focus on anything at all, individually, at any time is virtually nil. The only time I can do it is on the weekend and that is how I manage to get through some work because during the week there is no time at all, and it is constant that requirement to be talking about one thing but to be dealing with something else at the same time.

Rani's comment highlights the difficulty faced by NPWS staff in dedicating time to strategic thinking when their time is already stretched thin. Furthermore, Alexander and Briana explained that staff can see the opportunities for innovation; however, they do not have the capacity – specifically, the time required, and in some cases the skills, to pursue innovative ideas. Alexander used the example of the state government's solar panel installation and solar battery loan offer (NSW Government, 2020a) to illustrate this impediment, stating:

> The State Government got elected on this issue around installing solar panels on roofs and they offer loans, and on the face of it, it looks like a really useful thing because we use a lot of electricity, [but] simply that there's no one with the capacity within the Agency to drive that and it's the same as having the sponsorship stuff.

Alexander's example shows that there are opportunities available for the PA estate to improve cost-effectiveness, in this case by reducing electricity costs through the installation of solar and battery power. However, he argued that NPWS staff do not have the capacity to investigate these types of cost-saving opportunities or potential avenues to diversify the NPWS funding portfolio through sponsorship opportunities.

The quality of financial management by staff is also recognised as a potential impediment to financial sustainability. For example, Hussain believed that NPWS has historically been a poor financial manager and that this reputation impacts the level of confidence the government has for the institution as an independent financial manager. As Hussain explained:

> National Parks has historically been poorly financially managed and as a result of that, what level of confidence would a government have in having them as their own agency?

Hussain's comment indicates that NPWS needs to demonstrate to government that it is a sound financial manager. Further to this, staff financial literacy has a bearing on the adoption and uptake of strategic financial planning, innovation, and the quality of financial management and therefore financial sustainability (Emerton et al., 2006). Cedric described the financial literacy of NPWS staff as "hit and miss", stating:

> Some people pick that stuff up really quickly and then you'll get people who are brilliant in other areas, but they just don't get the finance stuff; they can talk to you about a frog for three hours, but if you ask them to understand how to manage a project or run [financial] reports, they really struggle. I think staff should have some reasonable level of financial literacy.

Cedric's narrative extract illuminates how low levels of staff ability to use financial tools and mechanisms can be an impediment to financial sustainability (Emerton et al., 2006). The Nature Conservancy (TNC, 2001) has also identified PA specialist skills in the area of financial planning as an impediment to PA financial sustainability globally. TNC (2001) explains that while PA specialists are often accomplished biologists and environmental specialists, they can lack the skills of a successful financial planner. To help address this impediment, TNC (2001) published a financial planning guide for PA practitioners to provide practical guidance on the preparation of a long-term financial plan for PAs, including financial projections.

Furthermore, without a supportive policy environment, it can be difficult to explore and plan for the uptake of different financial models. By way of example, Ruth explained that until 2021, NPWS did not have a policy in place to guide decision-making around sponsorship. She reflected:

> We've had a number of people come to us in the past. At Bobbin Head, we had a guy who does turf, and he said 'I'm happy to re-turf the entire picnic area, just put a sign up', we couldn't do it because it was [a] private business and advertising and there would be millions of other examples of that, especially in small communities. I get that there has to be visible and transparent processes, but I think we've boxed ourselves into a corner where there [are] opportunities that we haven't been able to take, [which] has actually impacted our visitors or stakeholders because we're so tied up in the red tape of it.

Ruth's narrative extract shows the importance of a policy environment that is supportive of diversifying the PA funding portfolio (Emerton et al., 2006) and the challenge of becoming financially innovative when the policy environment is not accommodating (Emerton et al., 2006).

The final component of this impediment to financial sustainability relates to the perceived distant relationship between NPWS and its charity arm – the Foundation for National Parks and Wildlife. When NPWS was first established in 1967 (DPIE, 2017), it was founded on the funding model of the United States National Park Service, with two main funding streams identified – government funding through consolidated funds and the Foundation for National Parks and Wildlife.

The Foundation for National Parks and Wildlife was established in 1970 as the charity partner of NPWS, to collect donations and bequests and then administer this funding for select projects, programs, and activities across the PA estate and for the acquisition of land to grow the estate. Over time, the Foundation has redefined its role and purpose, and today it is no longer solely aligned to NPWS and the PA estate in NSW; instead, it funds PA activities Australia-wide. While the Foundation does still work on behalf of NPWS, the impediment identified by some participants is that NPWS no longer has a charity arm solely dedicated to the interests of PAs in NSW. For example, Briana explained:

> The Foundation [is] now national, so they are not really linked to Parks [NPWS] anymore. They are trying to do something in every state. They have really changed. They still take bequests, and they

> still have lots of programs and buy property...They still hold the same principle; they are just very, very broad.

Briana's comment suggests that the changed nature of the relationship between NPWS and the Foundation for National Parks and Wildlife has adversely impacted the financial situation of the PA estate in NSW. Ethan also acknowledged the distant relationship with the Foundation as an issue and explains that there has been some talk within NPWS about establishing its own charity dedicated solely to the interests of the NSW PA estate.[8] Rani gave the example of the Taronga Conservation Society (Taronga Zoo) which has its own charity known as the Taronga Foundation. The Taronga Foundation was established in 2000 to raise funds through philanthropy and sponsorship to support education and wildlife conservation (Taronga, 2021).

Related to the impediment of limited strategic financial planning and innovation is the impediment of resistance to change by NPWS staff and key stakeholders.

4.8 Impediment 7: Resistance to Change

The seventh impediment to financial sustainability for the PA estate in NSW is resistance to change by stakeholders, including NPWS staff, particularly towards diversifying the funding portfolio and adopting alternative finance mechanisms to complement existing funding sources. This resistance to change appears to be founded on the expectation that government is responsible for the funding of PAs. Some participants also believed that there is misunderstanding and concern among certain external stakeholders "about alternative finance mechanisms and their potential role in financing PAs" (O'Flynn et al., 2022, p.13). Ethan, for example, believed that the resistance reflects a "traditional view... [of PAs] as a state service that should be funded by the state as far as possible".

In line with Ethan's comment, some participants express a personal belief that the government is responsible for the funding of publicly managed PAs and further express scepticism that funds received from alternate sources would be truly 'additional' or 'complementary' to the funding received from government. To take the Sponsorship Policy as an example, Cody and Akram questioned whether money raised through sponsorship would simply result in reduced funding from government. As Cody explains:

> We are an arm of government and if we get additional money from Woolworths or Qantas or whoever, are we going to have a lower budget from government? Is it truly going to be additional to our needs?

[8] In the first quarter of 2022, the NSW National Parks and Wildlife Conservation Trust was established under Part 7 of the *National Parks and Wildlife Act 1974*.

While Cody's comment illuminates the type of scepticism expressed by some research participants about the notion of broadening the PA funding portfolio as a means of increasing money available for PAs, other participants disagree. Dara, for example, believed that such philosophical views assume that the state is:

> …duty bound to keep giving us the amount of money that they do and how dare they take it off us because we found new revenue, but this is not how the contract works.

Dara's narrative excerpt indicates the opposing philosophical view of funding the PA estate, and he further believed that:

> Status quo is not the lane that we want to be in, unfortunately, with the way government is, and it is not party political, all governments are facing the same challenges around the world, it is a global issue….We want buy-in from government to become more independent and if the trade-off for that is to say we will be happy to take more control over our own destiny and our own funding but the price of that is to lose some of the consolidated funding, I'd grab that every day of the week.

Dara's comment highlights that financing PAs sustainably is a global challenge and that PA institutions around the world are acknowledging that governments have limited financial resources with many competing funding priorities. As such, PA practitioners are turning to alternate funding sources to meet the costs associated with managing their PAs (Rytteri & Pushakka, 2012; Slocum, 2016).

Furthermore, several participants believe that the resistance to change might stem from staff and other external stakeholders not having a complete understanding of the true financial situation and, as Alexander explains, the "financial imperatives" to change:

> I think in the past you've had people that didn't see any financial imperatives – 'well, government should give us all of our money, we should look after the reserves, we shouldn't have to make money'. So I think there's an attitudinal, cultural thing there around that.

Alexander's comment suggests that when people do not understand the financial situation and the case for change, they are less likely to be supportive of diversifying the funding portfolio. The views of PA practitioners towards alternative finance mechanisms, in particular the social and environmental impact bond, is discussed in detail in Chapter 7.

Although the impediment of resistance to change was predominately discussed within the context of NPWS staff, a few participants, such as Rani, did emphasise that this is "an ideological and philosophical barrier both within the organisation and within the community". Rani gave the example of an article published in WILD magazine (McCormack, 2020, p.24) which stated that "our national parks are under attack. Privatisation, in the form of luxury lodges and other accommodation for walkers, has gained nationwide momentum." The article discussed the 'threat' of "commercialisation of our national parks" with reference to the multiday Green Gully Track in Oxley Wild Rivers National Park in NSW. The article's author expressed dismay that lodge accommodation is available for track walkers at a cost of AU$600 with a cheaper camping option not available (McCormack, 2020). The article continues:

> Despite this being a national park—a public park—if you don't pay or can't pay the $600 (because you're a student, unemployed, or simply not flush with funds), well, you're out of luck. You can't do the walk…I was incensed.
>
> Now I could argue that if my taxpayer dollars are funding this park, I should have the right to access it. But that's not really the point; the unemployed, students and the poor should have equal rights to access this track, whether they pay a dollar in tax or not. This is public land. (McCormack, 2020, p.24)

Rani referred to this article as an example of stakeholder resistance to change. She believed that the author is "basically philosophically opposed to this idea of using different delivery models, about using the private sector and all this sort of stuff…the sort of thing that we are dealing with all the time". Rani further conceded that personally, she can understand the author's point of view and would possibly share this view if she did not work for NPWS. However, Rani qualified this statement by explaining that if she did hold this view:

> It would just be a sign that I wasn't really thinking more deeply about the issues and that I was just having an instinctive response and railing against it because I saw it as a thin end of a wedge that would see privatisation of parks and exclusive use of things by rich people.

Similar to Alexander's comment regarding staff resistance to change, Rani's reflection suggests that when external stakeholders do not understand the financial situation or other pressures such as political pressures placed on NPWS, they are less likely to be supportive of changes within the PA estate.

This resistance to change can also be seen in the response by some stakeholders to the *National Parks and Wildlife Amendment Bill 2021*, introduced into the Legislative Assembly by Matt Kean on 16 November 2021. The object of the Bill was to amend the *National Parks and Wildlife Act 1974* and the regulations (amongst other aims) to "establish a corporate non-profit entity to receive tax deductable donations which can be applied to the conservation and management of national parks" (Parliament NSW, 2021, p.1). Nature Conservation Council chief executive Chris Gambian reacted to the Bill by stating that "nature conservation is an essential service that taxpayers legitimately expect their government to provide. Pushing that responsibility off budget is unacceptable and unsustainable" (Chung, 2021).

Another impediment related to the resistance to change by NPWS staff and stakeholders is that of cultural mismatch.

4.9 Impediment 8: Cultural Mismatch

The final impediment to financial sustainability of the PA estate in NSW is cultural mismatch. This impediment recognises that "PAs are not always viewed through a value lens" (O'Flynn et al., 2022, p.13). For example, some politicians and communities consider PAs to be land that is "locked up" and not available for undertakings such as logging, grazing, and shooting (Hockings et al., 2013). Ethan believed that this is reflected in the government's accounting system, which does not award an economic value to PAs:

> We have always had a value of almost zero on parks; they are just listed as land and because land values were based on development rights in a way and we can't develop parks, so there was a notional value and there was nothing in our accounts linked to that.

Ethan's comment about the economic valuation of the non-capital assets of PAs and the value of the land links back to the impediment previously discussed under data, measurement, and reporting limitations (Impediment 4). Briana further explained that this impediment reflects a cultural mismatch where these assets are not valued in the same way as infrastructure assets would be:

> The lack of valuation of parks…they are not valued to compete with education and health and roads and highway upgrades, so you look at it at the state budget and I think that is the benefit of having an approach with metrics because I don't think we have the benefit of saying, 'Well, we saved this many lives because we upgraded the highway or we saved this many lives because we invested in MRIs in this many hospitals'…there is not the same level of transparency and comparable valuation.

Briana's narrative excerpt, like Ethan's previous comment, talks to the challenge of addressing the perceived cultural mismatch in the absence of economic data about the value of PAs. Alexander further believed that rather than viewing the PA estate as making an important contribution to the state's economy, "a lot of people do have negative connotations about Parks and just see it being locked up and as a resource that's being wasted". Thus, a consequence of the cultural mismatch is that when PAs are not adequately valued, people may be less likely to support and advocate for their existence and for their funding (Secretariat CBD, 2008).

The cultural mismatch also exists in part because of disconnect between PAs and the interests or needs of individuals and communities. Ruth, for example, believed that people do not automatically connect "what they want to achieve with parks", as she explained:

> [People] have not connected what they want to achieve with parks…whether it's rehabilitation of people from prisons getting back into the workforce, whether it's people trying to recover from drugs and alcohol, whether it's people with disabilities learning some skills, whether its Aboriginal communities upskilling in certain areas as well as business ventures, whether it's aged care just coming to visit a park.

Ruth's comment hints at why PAs could be of interest to a broad cross-section of society and thus considered to be of greater value, if only people made the connection between PAs and their needs or interests. Ruth went on to explain:

> While we can't communicate what it is we do, we are also not communicating what the opportunities are either. If that was clearer, then it would be a lot easier to instigate those conversations.

Ruth's narrative illuminates a link between the impediment of cultural mismatch and the previously discussed impediment of poor communication, messaging, and self-promotion (Impediment 3). However, Alexander believed that the cultural mismatch is not felt evenly across the state, with some communities, politicians, and other stakeholders placing a higher or different value on PAs than others. Alexander explained:

> I think there's a bunch of people in Sydney who think we're wonderful, but there's a broad bunch of people who see us as 'greenies' and not particularly highly valued, and that's not to say that they are right, but there's that perception and that does influence their local members because they get all that ministerial correspondence through their local members, and they form a perception around us.

Alexander's comment links back to the previously discussed impediment of political influence (Impediment 2), where in this situation the views of constituents help to shape political views and in turn the funding of the PA estate (McNeely, 2015).

Research into PAs in Germany, has revealed the existence of a cultural mismatch between the views held by PA management institutions and certain stakeholder groups (Dupke et al., 2019). The gazettal of Germany's first national park in 1970 was met with intense and enduring opposition resulting from conflict between the national park's conservation focus and the land's historical use by local residents for recreation, fishing, and hunting (Mayer & Woltering, 2017; Dupke et al., 2019). In their investigation into how public participation shifts German national park authorities away from nature conservation in PAs, Dupke et al. (2019) reported that many German PA practitioners spend considerable time communicating and negotiating with park stakeholders who hold opposing views about PAs. The practitioner's interviewed reported conflicts with fishermen, forest workers and recreation clubs unwilling to change their traditional use(s) within the conserved land as an ongoing challenge (Dupke e al., 2018).

4.10 Interconnections between the Identified Impediments and the Elements of Financial Sustainability

While it is helpful to conceptualise each of the elements of financial sustainability independently, there are also important processes and factors represented in the impediments discussed that cut across the key elements of financial sustainability as defined by Emerton et al. (2006). Furthermore, many impediments are a barrier to more than one element of financial sustainability. Table 21 illustrates the interconnections between the elements of financial sustainability and the impediments identified through the research data for the PA estate in NSW.

Table 21 Interconnections Between the Elements of Financial Sustainability and the Impediments Identified for the PA Estate in NSW

Elements of financial sustainability	Impediments
1. "Building a diverse, stable, and secure funding portfolio: minimizing funding risks and fluctuations" (Emerton et al., 2006, p.16)	• State budget processes • Political influence • Poor communication, messaging, and self-promotion • Data, measurement, and reporting limitations • Governance challenges • Limited strategic financial planning and innovation • Resistance to change • Cultural mismatch.
2. "Improving financial administration and effectiveness: ensuring that funding is allocated and spent in a way that supports PA finance needs and conservation goals" (Emerton et al., 2006, p.16)	• State budget processes • Political influence • Poor communication, messaging, and self-promotion • Data, measurement, and reporting limitations • Governance challenges • Limited strategic financial planning and innovation • Resistance to change • Cultural mismatch.
3. "Taking a comprehensive view of costs and benefits: covering the full range of PA costs, ensuring that those who bear PA costs are recognised and adequately compensated, and that those who benefit from PAs make a fair contribution to their maintenance" (Emerton et al., 2006, p.16)	• State budget processes • Political influence • Poor communication, messaging, and self-promotion • Data, measurement, and reporting limitations • Governance challenges • Limited strategic financial planning and innovation • Cultural mismatch.

4. "Creating an enabling financial and economic framework: overcoming market, price and policy distortions that undermine PAs or act as obstacles to PA financing" (Emerton et al., 2006, p.16)	• Political influence • Poor communication, messaging, and self-promotion • Data, measurement, and reporting limitations • Governance challenges • Limited strategic financial planning and innovation • Resistance to change • Cultural mismatch.
5. "Mainstreaming and building capacity to use financial tools and mechanisms: factoring financial analysis and mechanisms into PA planning processes" (Emerton et al., 2006, p.16)	• Poor communication, messaging, and self-promotion • Data, measurement, and reporting limitations • Governance challenges • Limited strategic financial planning and innovation • Resistance to change.

Source: The impediments identified in column 2 of Table 21 were drawn from O'Flynn et al. (2022, pp.12–13).

As highlighted in Table 21, poor communication, messaging, and self-promotion (impediment 3); data, measurement, and reporting limitations (impediment 4); governance challenges (impediment 5); and limited strategic financial planning and innovation (impediment 6) are a barrier to all five elements of financial sustainability. While political influence (impediment 2) is as a barrier to four of the elements (elements 1,2,3,4) as is resistance to change (impediment 7 and elements 1,2,4,5), and cultural mismatch (impediment 8 and elements 1,2,3,4). Finally, the impediment of state government processes is as a barrier to three of the elements of financial sustainability (1,2,3). While the thesis did not attempt to rank to significance of the impediments in terms of their impact on the challenge of PA financial sustainability in NSW, the findings could provide the foundation for future research in this area.

4.11 Summary

This chapter has analysed and discussed the eight identified key impediments to the financial sustainability of the publicly managed PA estate in NSW. This included a discussion of the linkages between each of the impediments and the interconnections that exist between impediments and the key elements of financial sustainability as defined by Emerton et al. (2006).

The first impediment is state budget processes. Historically, the NSW state budget process, including the inflexibility of the budget process and the length of the annual budget cycle contrasts with the typically multiyear (or ongoing), often reactionary and highly operational nature of most PA management activities (O'Flynn et al., 2022). It is difficult to accommodate the unpredictability in park management through inflexible state budget processes, and while there is money available for capital expenditure, it is challenging to secure the funding necessary to cover the operational requirements of NPWS. Further, the PA estate has seen a continual reduction in consolidated funding over the past ten financial years, and adequate additional funding is not allocated to the growing portfolio of park management responsibilities and land acquisitions.

The state government's transition to an outcomes-based funding model has led to record-high levels of funding for infrastructure projects on park; however, it is difficult to adapt this model to the other parts of NPWS' work, particularly to nature conservation and the management of Aboriginal culture, which are considered more difficult to quantify and outcomes more challenging to define and measure. This can mean that the PA estate is disadvantaged in the annual budget process when competing for limited funding because NPWS finds it difficult to demonstrate a return on investment. Other challenges include the short-term nature of most funding allocations and the need to spend money to make money.

The second impediment is political influence. Politics, including the state's election cycle and political agendas, play an important role in the funding of the PA estate. This impediment includes changing political priorities and shifts in ministerial/ political support for PAs. Furthermore, PAs can often be found towards the bottom of the government's list of funding priorities.

The third impediment to the financial sustainability of the PA estate in NSW is poor communication, messaging, and self-promotion. This impediment relates to limited self-promotion of NPWS' work and generally poor communication and messaging including difficulties in effectively speaking the language of the Treasury Department (O'Flynn et al., 2022).

Data, measurement, and reporting limitations are the fourth impediment to financial sustainability. This impediment focuses on not having the data available or a benchmark estimate of the annual funding gap. NPWS also finds it challenging to effectively measure inputs, outputs, and outcomes, especially for park management activities including Aboriginal and cultural heritage. Furthermore, in the case of non-capital activities, it is challenging to determine a return on investment, especially when NPWS does not always make effective use of the data that is available.

The fifth impediment to the financial sustainability of PAs in NSW is governance challenges. This reflects the existence of NPWS in a large and organisationally complex state government 'cluster' department and its limited financial independence. NPWS' existence within the cluster has also lessened its brand visibility and financial accountability and transparency. Additionally, it must continue to manage the PA estate in the face of labour caps and efficiency dividends which can discourage NPWS from growing (O'Flynn et al., 2022).

The sixth impediment is limited strategic financial planning and innovation where inadequately focused investment on financial innovation is a challenge to financial sustainability. While the distant relationship between NPWS and its charity arm, the Foundation for National Parks and Wildlife, is seen as detrimental to the estate's financial situation (O'Flynn et al., 2022).

Resistance to change by stakeholders, including NPWS staff, is the seventh impediment discussed. The view that funding PAs is a government responsibility is believed to be the origin of much of the resistance to change, and there is misunderstanding and concern among certain stakeholders regarding alternative finance mechanisms and the role they could potentially play in the financing of PAs. Finally, cultural mismatch is the eighth impediment to the financial sustainability of the PA estate in NSW. This impediment recognises that a values lens is not always applied to PAs (O'Flynn et al., 2022).

The analysis revealed that while each impediment is a barrier to the financial sustainability of PAs, there are distinct linkages between the impediments. By way of example, Impediments 2 (political influence) and 8 (cultural mismatch) are linked because when PAs are seen as 'locked up' land or not viewed through a values lens, these attitudes help to shape political views and in turn the funding of PAs (McNeely, 2015).

The analysis further revealed that a multiplicity of interconnections exists between the identified impediments and the key elements of financial sustainability whereby each impediment is recognised as a barrier to the elements of financial sustainability. For instance, as explained in Table 21, Impediment 1 (state budget processes) is considered a barrier to "building a diverse, stable, and secure funding portfolio: minimizing funding risks and fluctuations" (Element 1); "improving financial administration and effectiveness: ensuring that funding is allocated and spent in a way that supports PA finance needs and conservation goals" (Element 2); and "taking a comprehensive view of costs and benefits: covering the full range of PA costs, ensuring that those who bear PA costs are recognised and adequately compensated, and that those who benefit from PAs make a fair contribution to their maintenance" (Element 3) (Emerton et al., 2006, p.16).

While Chapter 4 has helped to improve researcher and participant knowledge of the existing funding situation in NSW, it has also established a solid foundation to explore the remaining three research questions. Chapter 5 will therefore provide an analysis and discussion of the enabling conditions for the financial sustainability of the publicly managed terrestrial PA estate in NSW.

Chapter 5 Enabling Conditions for the Financial Sustainability of the Protected Area Estate in NSW

5.1 Introduction

In Chapter 4, the existing impediments to the financial sustainability of the publicly managed terrestrial PA estate in NSW were analysed together with the interconnections between the key elements of financial sustainability and the impediments. Building on this analysis, the intention of Chapter 5 is to analyse and discuss the existing enabling conditions for the financial sustainability of the PA estate in NSW[9]. For the purposes of this thesis, an enabling condition is defined as a condition or requirement which is necessary for achieving PA financial sustainability.

The conceptual framework for this thesis (see Figure 2, Chapter 3) proposes that an analysis and discussion of the existing enabling conditions is necessary for understanding what financial sustainability looks like within a particular context. This is important because, as explained in Chapters 2 and 4, the funding situation for PAs is not the same the world over. Therefore, understanding the enabling conditions specific to the NSW PA estate can contribute to four important outcomes: (1) improved researcher and participant knowledge of the existing funding situation in NSW (the context); (2) a new understanding of how each enabling condition helps to address existing impediments to financial sustainability; (3) the identification of the interconnections between the enabling conditions and the elements of financial sustainability and similarly the interconnections between the enabling conditions and the identified impediments; and (4) the identification of pathways to change to help address the challenge of financial sustainability for the PA estate in NSW.

This chapter draws heavily on the views, observations, and comments made by the 20 highly experienced, Australia-based PA specialists and to a lesser degree the impact investment/sustainable financing specialists during their interviews in Phase 1 of the data collection for this thesis (see Table 14, Chapter 3). Participants are referenced throughout the chapter by pseudonyms to protect their confidentiality. Table 22 introduces the interviewees referred to in Chapter 5.

Table 22 Interviewees Referred to in Chapter 5

Interviewee	Description
Hamilton	An experienced PA specialist with expertise across policy and planning, including business planning and park operations.
Nate	A sustainable finance specialist with experience working for the NSW Government and a knowledge of PAs and their management within the NSW context.

[9] A discussion of the enabling conditions has also been published in an international academic journal (see O'Flynn et al., 2022).

Emerson	An experienced PA specialist with expertise across policy, planning, park operations, business planning, and asset management.
Briana	A PA specialist with a background in economics and expertise in park planning, policy, and business planning.
Akram	An environmental economist with experience in PA policy and strategic planning and economic research.
Hussain	An experienced PA specialist with expertise across policy, park operations, business planning, and asset management.
Ethan	An experienced PA specialist with expertise across all facets of PA management.
Dara	A PA practitioner with business operations and financial expertise.
Alexander	An experienced PA specialist with expertise across policy and planning, including business planning and park operations.
Rani	An experienced PA specialist with expertise across all facets of PA management.
Sophia	A PA advocate and specialist with expertise in park planning, policy, and partnerships and collaboration.
Edna	An experienced PA specialist with park planning and policy expertise.
Liam	A PA and nature conservation specialist with expertise in sustainable financing, including the development of a nature-based impact bond.
Ruth	An experienced PA specialist with community engagement, park planning, operations, and administration expertise.
Cedric	An experienced PA specialist with park operations and administrative expertise.
Cody	An experienced PA specialist with policy and legal expertise.
Asher	An experienced PA specialist with business operations, park planning, and policy expertise.
Jake	An experienced PA specialist with expertise across policy, planning, park operations, business planning, and asset management.
Fred	An experienced PA specialist with business operations and financial expertise.
Oliver	A PA advocate and specialist with expertise across all facets of PA management both within a government and non-government PA organisation.
Mali	A threatened species specialist with experience as a PA practitioner and expertise in sustainable finance, including the development of a nature-based impact bond.

The existing literature on the financing of PAs offers a foundation for the discussion of the enabling conditions. The NPWS Financial Sustainability Scorecard for the 2020–21 financial year (NPWS, 2021g) provides further insight into the financial situation in NSW while also supplementing and validating evidence from other sources, including interviews. The scorecard was populated by the researcher in collaboration with selected research participants during Phase 2 of the data collection (see Table 14, Chapter 3). Table 23 provides a conceptual outline for the structure of Chapter 5.

Table 23 Conceptual Outline of Chapter 5 Structure

Section	Description
Section 5.2	Enabling Condition 1: Government Support
Section 5.3	Enabling Condition 2: A Diverse Funding Portfolio
Section 5.4	Enabling Condition 3: Financial Security
Section 5.5	Enabling Condition 4: Cost-Effectiveness
Section 5.6	Enabling Condition 5: Effective Planning and Administration
Section 5.7	Enabling Condition 6: Supportive Policy, Legislative, and Economic Environment
Section 5.8	Enabling Condition 7: Self-Generated Revenue
Section 5.9	Enabling Condition 8: An Enabling Environment
Section 5.10	Enabling Condition 9: Financial Independence, Transparency, and Accountability
Section 5.11	Enabling Condition 10: Effective Communication, Messaging, and Self-Promotion
Section 5.12	Enabling Condition 11: Evidence Available
Section 5.13	Enabling Condition 12: Collaborations and Partnerships Fostered
Section 5.14	Enabling Condition 13: Passion and Dedication of PA Staff and Volunteers
Section 5.15	Interconnections Between the Key Elements of Financial Sustainability and the Enabling Conditions and Impediments
Section 5.16	Summary

5.2 Enabling Condition 1: Government Support

The first enabling condition for the financial sustainability of the publicly managed PA estate in NSW is continued government support (financial and non-financial). Like in most parts of the world, the government in NSW has historically been the primary source of funding for publicly managed PAs. The state government is responsible for the terrestrial PA estate, with responsibility for its care and control delegated to NPWS (NPWS, 2021a).

For Hamilton, the historical reliance on government support is an important reason to "continue to look towards government" for the PA estate's ongoing funding needs while Cody described it as a "core responsibility" for government. These comments suggest that government must continue to be involved in the funding, management, and establishment of PAs and in facilitating a supportive policy and legislative environment.

Deutz et al. (2020, p.10) argued that while the private sector "can play a pivotal role…governments need to pave the way. Governments need to put in place the right regulatory environment, smart incentives and market structures to catalyse financial flows from the private sector into biodiversity conservation". Furthermore, government needs to increase its efforts to conserve the natural capital associated with PAs and develop new financial innovations to increase the available funding (Deutz et al., 2020).

Nate explained that the government remains committed to supporting PAs, including their funding. He notes that NSW Treasury would like to be able to "treat" natural capital assets in the same way that it does hard infrastructure. He commented:

> I have just come out of meetings last week with Treasury, and I can tell you if we had an answer for them tomorrow, they would be ready to adopt it. I mean, this isn't all of Treasury, but it is people who are quite influential, balance sheet, policy, budget and they are going 'oh if you guys could help us recognise natural capital then we could treat you like Transport and you would have an actual allocation, and so that is a business case in government that's more a business case mindset.

Nate's comment suggests that while the government acknowledges that it has an ongoing role in the funding of PAs, data on the economic value of natural capital assets could help to support government funding decisions by demonstrating an economic return on investment. Emerson made a similar point, explaining that:

> You need the same rigour around natural capital as the rigour that is applied to a physically produced capital thing, like a train line or a road.

As Emerson suggested through his narrative excerpt, applying the principles of asset management to natural capital may allow government and others to quantify the economic value of the asset, the cost of retaining that value, the investment required to improve the value in addition to the cost of restoring the value if it is impaired, for example, through a flood or fire. Thus, the argument for the sustainable financing for PAs (and nature more broadly) can be bolstered when government can place an economic value on natural capital and recognise it as a depreciable asset in accordance with accounting standards (Deutz et al., 2020). This argument was made in a report published in 2020 which examined the financing of nature and the challenge of "closing the global biodiversity financing gap". The report stated:

> The only way to stop global biodiversity loss is to ensure that nature is appropriately valued in all economies. This will require bold political leadership and transformative policies, mechanisms and incentives that discourage harmful actions and encourage large-scale finance for nature. (Deutz et al., 2020, p. 10).

Yet, “natural capital as an economic concept” (Missemer, 2018, p.90) is not new. In 1909, economist Alvin Johnson distinguished between artificial capital and capital associated with natural resources. He wrote:

> Every increase in population, every improvement in methods of agricultural production, increases the importance, and with it the value, of the natural resources of a country. Measuring the capital represented by these natural resources in terms of value, we see that it is constantly growing with the progress of society. (Johnson, 1909, p.199)

Following this, in 1911, economist Frank Taussig used the phrase natural capital to differentiate “natural agents” from artificial capital, which he described as “instruments made by man” (see Taussig, 1911, v2, p.120). However, it wasn’t until 1988 that economist David Pearce first used the phrase ‘natural capital’ to refer to natural resources and services, an approach that was then widely adopted by ecological economists in the 1990s (Missemer, 2018, p.90). The inclusion of natural capital within economic analysis hasn’t been without criticism with some economists arguing that including environmental constraints in economic analysis encourages “a narrow vision of the environment, reduced to mere assets with economic value” (Missemer, 2018, p.90).

In relation to PAs, the valuing of natural capital was widely discussed at the World Parks Congress held in Sydney in 2014. McNeely (2015, p.190) reflected on the discussions at World Parks Congress and explained that “economic language was heard a lot in Sydney, perhaps to communicate protected area issues more effectively to the politicians who set policies and budgets. Terms such as ‘natural capital’ and the ‘economics of biodiversity loss’ helped to express protected area values. Protected areas were shown to provide ‘public goods’ in the form of ecosystem services, earning a significant return on investments and therefore worthy of greater support as part of public budgets”.

Briana emphasised the importance of what she describes as “new environmental economics” in informing the cost-benefit analyses (CBA) of projects, which can in turn achieve greater support for PAs as part of public budgets. Briana explained:

> New environmental economic research [is] putting the value of national parks on the agenda…NPWS saw significant increases in visitors to reach 60 million domestic visits in 2018, generating $17.9 billion worth of economic activity and 74,000 direct and indirect jobs. New research into other values, such as economic services, will soon inform cost-benefit analyses that

> underpin large infrastructure projects, such as… large new freeways proposing to dissect large natural landscapes.

Briana's comment helps to show how "new economic research" can help to communicate the values of natural capital in a language that speaks to government as well as communities and other potential funders, thereby addressing the impediment of poor communication, messaging, and self-promotion as discussed in Chapter 4 (Impediment 3). Drawing on his background in environmental economics, Akram also believed that communicating the economic benefits of PAs is critical to ongoing government support. He explained:

> I think cost-benefit analysis can help for particular programs, but I think the argument has got to be economic. You can go some distance for cultural heritage – you know, conservation is a good thing for everybody, for mental health, cultural identity, reducing marginality amongst Indigenous and Aboriginal communities, engagement, and so on, but I think demonstrating the economic benefit…is going to be a more powerful argument, regrettably.

Akram's narrative extract indicates that "demonstrating the economic benefit" can make a persuasive argument to government for its ongoing support. Similarly, Emerson believed that for government to invest further in PAs, it is necessary to develop a natural capital assessment methodology to quantify these assets:

> We have also now just started the Natural Capital Assessment Methodology…the opportunity that comes to us is because the policy framework allows us to talk now about natural capital that puts it on the balance sheet. Government is saying to us that we want you to manage these assets properly so they don't create a burden in the future, so Parks shouldn't just have environmental programs that run for four years and then hit a funding cliff. We should be able to say the land has these basic management obligations and it provides this value, and that value is diminished if it burns or degrades, etcetera.

As Emerson's narrative excerpt highlights the NSW Government has shown an interest in awarding an economic value to natural capital. The natural capital assessment methodology described by Emerson will be based on natural capital accounting and, as Tim Connell from CSIRO (2021) explained, "a guiding principle of natural capital accounting is that the valuation of nature can help better conserve it".

Emerson, Jake, Hussain, and Nate all referenced work undertaken in the UK to develop a natural capital accounts methodology explaining that the methodology helped to establish natural capital ecosystem service accounts and in 2019 was used to value the "stock of the aspects of UK natural capital" at approximately £1.2 trillion (Davies & Dutton, 2021). However, Davies and Dutton (2021) emphasised that "asset values are not an absolute 'value' of the price we would accept to sell the entire natural world. The natural world supports all life on earth, and its collapse would precipitate our own, implying infinite value". In line with this view, Connell (2021) explained that the basic principle of natural capital accounting is not to determine an absolute value for nature; instead, he asserted that "there is a benefit to quantifying the inputs from natural capital economically, so that it is expressed alongside and on level terms with other aspects of conventional accounting. In other words, the riches of nature can be measured as assets on a balance sheet, rather than as economic externalities."

A natural capital assessment methodology tailored to the NSW context could aid the government in its consideration of PAs and their natural capital assets "on level terms with other aspects of conventional accounting" (Connell, 2021). Emerson, Jake, Hussain, and Nate also acknowledged this opportunity and believed that the UK methodology has provided a starting point for NSW to develop its own natural capital assessment methodology.

Despite the important and ongoing role of government in supporting PAs, diversifying the funding portfolio is recognised as a second enabling condition for financial sustainability.

5.3 Enabling Condition 2: A Diverse Funding Portfolio

As explained in Chapter 2, leading conservation organisations and conservationists recommend that in the interest of financial sustainability, the PA funding portfolio should be diversified. Take Emerton et al. (2006, p.48), for example, who argued that "there is no reason why the public sector should have sole or direct responsibility for funding and managing PAs, their facilities and services". A diverse funding portfolio would include an array of funding instruments in addition to traditional sources to spread financial risk, meet cost needs, and provide adequate funding to cover the full range of PA costs (IUCN ESARO, 2020; Meyers et al., 2020).

While Hamilton recognised the need to continue to look towards government for the bulk of the PA estate's funding needs, he also acknowledged the importance of "as broad a strategy" as possible to meet the increasing funding requirements to effectively manage the growing PA estate. Similarly, Ethan emphasised that additional funds are urgently required to meet the growing demands placed on NPWS in achieving its legislated obligations to conserve biodiversity. He stated:

> Essentially, there is a view that biodiversity is not improving, so we are not meeting our stated objectives and we are going backwards. We should be investing more – not less; we need stability in our base funding and some growth as well, and whether it comes from inside or outside Treasury doesn't matter.

In Ethan's narrative excerpt, he discusses the state of biodiversity in NSW, which he describes as "not improving". The most recent State of the Environment Report (EPA, 2020) supports Ethan's assertion with the status of the NSW indicator of "number of threatened species, communities and populations" recorded as "poor" and the environmental trend identified as "getting worse". Furthermore, as Ethan's excerpt suggests, to help address the "poor" state of biodiversity in NSW, NPWS could look to diversify its funding portfolio. Dara expressed a similar view in that the risks of continuing to rely on government-allocated consolidated funding outweigh those associated with diversifying the funding portfolio. He argued:

> The river of gold from consolidated funding is drying up, and it is actually not the proposition that others are saying, which is 'we do this and therefore they will take the money away'. They are taking the money away anyway, the money is going anyway, and so my view on it is that we have to get innovative not because it is about augmenting what we have got, the shift away from consolidated funding, particularly for general operations across government, is everywhere.

Dara's narrative suggests that the decline in consolidated funding, although not a challenge necessarily unique to NPWS, presents a persuasive argument for reducing the institution's reliance on one funding source.

The PA estate has already begun to diversify its funding sources (NPWS, 2021d), and Dara suggested that NPWS is in a good position to further broaden its portfolio:

> We are better off than a lot of other agencies in being able to do something about it. We have an offering that I think will be attractive for investors…if we get more savvy with that offering, whether it is through investors or donors or whether it is through direct services where we can charge for those services, I think we have got a unique opportunity. We will probably never get to the point of being able to be self-funding, maybe we could through some of the innovative instruments… but I think we could certainly reduce the reliance on the government component over time.

As Dara's excerpt explains, NPWS is in a stronger position than some other government departments to attract new investors and donors, although he does acknowledge that NPWS is unlikely to ever be fully self-funded. This view is shared by the IUCN (2000), which strongly advocates for a diversified funding portfolio for PAs while also recognising that few PAs are likely to be capable of becoming entirely self-funded. As previously discussed in Chapter 2, there is a range of other funding strategies and mechanisms available that could help to finance PAs. In his comment, Dara cited the potential to charge for the services provided by PAs as a potential funding source. Alexander shared a similar view, drawing on the example of the role that PAs play in carbon sequestration and the potential to generate revenue through carbon sequestration payments. He explained that the NSW Government has acknowledged the role that PAs play in carbon sequestration in its "Carbon Positive by 2028" Plan, which states:

> The current national park estate provides an opportunity for testing innovative natural climate solutions and carbon sequestration projects. NPWS has pilot projects underway that will demonstrate how national park management can sequester carbon in a manner consistent with the effective conservation of biodiversity. These pilot projects are the first of their kind for NPWS and signal a new opportunity for NPWS to generate and trade carbon credits. (NPWS, 2021i, p.7)

Rani and Alexander recommended that if the PA estate's funding portfolio is to be further diversified, NPWS should undertake a CBA for any proposed alternative funding mechanisms or sources for a particular program or project. Alexander described CBA as a process of due diligence to assess the "implications of going down a particular pathway". While Rani explained that it would assist NPWS in understanding the "unforeseen consequences and in some cases actually foreseen consequences…considering whether they are going to work and in what circumstance". A NSW Treasury Policy and Guidelines Paper – TPP 17-03 (NSW Treasury, 2017) – describes CBA as an "approach to appraisal and evaluation of public projects, programs, and policies across the NSW Government" (NSW Health, 2018, p.i) that can assist in understanding the environmental, social, and economic impacts. NSW Treasury (2017) strongly encourages the application of CBA in all government projects, programs, and policies, including those non-capital in nature.

As discussed in Chapter 4, a potential risk identified with receiving funds from alternative finance sources is that the state government will not view these funds as 'complementary' and instead will respond by reducing the funds it allocates to the PA estate as consolidated funding. To this point, Akram described his "first instinct" towards diversifying the funding portfolio as one of "danger". He explained:

> My first instinct is the danger that if the Parks Service begins to find alternative sources of revenue, then the state government will simply reduce its budget… I can absolutely see that happening. I would say it's really likely to happen rather than the opposite.

Part of understanding the implications and potential risks of further diversifying the funding portfolio and of individual funding sources or mechanisms involves "exploring scenarios and business planning – with the goal of finding the most effective mix of finance solutions to address the problems" (Meyers et al., 2020, p.13). Akram advised that NPWS should engage in scenario planning to explore the potential risks and implications, thereby making informed decisions about the suitability of an alternative finance mechanism or funding source. He explained:

> If you are thinking about external sources of finance, one question is: is it going to make any difference given the rest of the things that are happening in the economy in terms of the unexpected – like COVID? If you are doing strategic thinking, you should always be thinking about the unthinkable as well as the wild card, what might happen, what are things that might be happening that could influence whether the strategy of raising money externally for on park or next to park, whether that might be successful, what are the external risks.

As suggested by Akram, through strategic planning, including scenario planning, it should be possible to consider what combination of funding sources might provide the PA estate with the greatest level of financial security and analyse the intended and unintended implications of funding decisions for future financial security.

5.4 Enabling Condition 3: Financial Security

The third enabling condition is financial security, which involves managing funds to encourage long-term financial planning, predictability, and security (Meyers et al., 2020). Financial security is a necessary condition because, as Sophia explained, financial resources will always be limited:

> There will always be so many demands on government, and you are subject to the particular ideologies that government has. And so in a sense, what you don't want is stop–start–stop–start funding according to the politics of the day. What nature really needs is long-term consistency.

Sophia recognised that financial sustainability for PAs requires available funds to be allocated strategically and that a "comprehensive view of costs and benefits" be adopted (Emerton et al., 2006, p.16). To achieve this, strategic financial planning, which is a component of financial security, is critical. Bovarnick (2010, p.16) stated that the "degree of formulation, adoption, and implementation of a finance strategy" is an important factor in the financial sustainability of a PA estate. In Queensland for example, the Queensland Treasury Corporation prepared a PA Financial Sustainability Strategy to help address the mater of PA financial sustainability (QLD Treasury Corporation, 2018). In the NSW context, under the current governance arrangements, NPWS believes it is limited in what it can achieve in terms of strategic financial planning, as it is part of a large state government cluster department and thus integrated into the cluster's finance system (NPWS, 2021g). However, a more strategic approach to financing the PA estate is under development through the 'Eco-Health Project', which will see health monitoring plans and performance scorecards prepared for national parks, covering around 30% of the estate (NPWS, 2021g; UNSW & NPWS, 2021).

Furthermore, it is important that "PA managers have the possibility to budget and plan for the long-term" (ideally over five years) (Bovarnick, 2010, p.18). As part of its strategic planning, Dara recommended that NPWS review its business model:

> We have got to change the way that we look at our business model, and I think an entity like National Parks is more uniquely placed to be able to do that in ways that if you are a pure budget agency, you can't do that. If you are the education department, you can do that [on] the side, maybe get some sponsorships or something like that, but I don't know if there is as much opportunity. We can even do more to just grow visitation or getting money in through tickets or accommodation, there is a whole lot of stuff as well as innovative financing stuff.

Dara's narrative excerpt suggests that a strategic review of the NPWS business model and subsequent changes could help to increase the funding available for PAs. Rani also recommended that the NPWS business model undergo a periodic review. She further suggested that strategic financial planning could assist in the analysis of potential opportunities for and implications of alternative funding sources and mechanisms:

> As a principle, I definitely support constantly looking at ways of being more efficient and cost-effective and clearly having a strategy where we continue to look at the opportunities through technology and questioning our business model and questioning the way we deliver things and ensuring we continue to move and innovate and change and get better.

Rani's comment helps to explain that managing the PA estate cost-effectively is necessary for financial security (Emerton et al., 2006). However, the importance of cost-effectiveness to PA financial sustainability more broadly warrants its classification as an enabling condition.

5.5 Enabling Condition 4: Cost-Effectiveness

The fourth enabling condition for the financial sustainability of the PA estate in NSW is cost-effectiveness. Cost-effectiveness involves managing and spending funds efficiently and effectively to achieve maximum impact (Meyers et al., 2020). Alexander believed that NPWS has room to improve its cost-effectiveness with certain management activities costing the institution more than necessary:

> There's no doubt there's bits of our business that are very expensive and very cumbersome and cost us more than what it should.

As Alexander's comment suggests, a central component of cost-effectiveness is aligning financial instruments and budgets with the priorities and needs of PAs and gearing them "towards overcoming key threats, drivers and financing constraints" (Meyers et al., 2020, pp.8–9). This may involve financial planning and accounting and business planning, which can be "important tools for cost-effective management when undertaken on a regular and systematic basis" (Bovarnick, 2010, p.5). Again, the Queensland PA Financial Sustainability Strategy (QLD Treasury Corporation, 2018) discussed in relation to enabling condition 3 (financial security) is an example of financial planning which can encourage cost-effective management.

NPWS has in the past undertaken strategic planning exercises to address cost-effectiveness, including the use of 'Expert Choice', a decision support tool to identify cost drivers and how they are measured (Expert Choice, n.d.). Edna explained why NPWS has used Expert Choice in the past:

> [To] help guide the allocation of funds so that we are not just allocating based on status quo, but we are actually considering where our costs are when allocating those funds.

As Edna's comment indicates, the Expert Choice methodology helps to ensure that funds allocated to the PA estate are spent appropriately and she further recommended:

> [NPWS] should continue to use and investigate tools like Expert Choice…to make good use of what we are given.

The Eco-health Project is an example of a current approach adopted by NPWS to support cost-effectiveness. Through the introduction of health monitoring plans and performance scorecards, the Eco-Health Project will guide investment towards park management programs with a proven track record of success in achieving set outcomes and positive impact (NPWS, n.d.). Similarly, to ensure cost-effectiveness, Bovarnick (2010, p.21) recommended that any proposed and constructed tourism-related infrastructure investment on park should be "based on analysis of revenue potential and return on investment". While NPWS does, for example, consider return on investment for proposed infrastructure projects when preparing funding business cases for the consideration of NSW Treasury, it recognised that there is room for improvement in this area (NPWS, 2021g).

A cost-effective fee collection system(s) that is "monitored, evaluated, and updated" and supported by estate-wide guidelines for park entry fee collection is also necessary for cost-effectiveness (Bovarnick, 2010, p.21). While there is an established fee collection system for the NSW PA estate, NPWS believes that it is inadequate for the institution's needs and further acknowledges that the system should be reviewed and updated to improve cost-effectiveness (NPWS, 2021g).

Finally, Alexander suggested that technology upgrades have a role to play in improving the overall cost-effectiveness of the PA estate, and he drew on the Digital Parks Pass Program as an example. The Digital Parks Pass Program, once operational, will allow visitors to buy a digital pass for annual entry to PAs across NSW and in doing so reduce costs associated with the physical pass system, for instance, production, distribution, and administration-related costs (NPWS, 2021c). Alexander further suggested that the administrative changes and anticipated cost savings associated with the Digital Parks Pass Program will play a role in improving the planning and administration of the PA estate.

5.6 Enabling Condition 5: Effective Planning and Administration

Managing the PA estate in a cost-effective way relies on effective planning and administration, which is considered the fifth enabling condition for financial sustainability. Effective planning and the effective administration of PAs refer to the "systems, policies, and procedures in place to support the distribution of the "right type and amount of funding…at the right time, in the right place, and for the right purposes" (Meyers et al., 2020, pp.8–9)". Akram recognised that effective planning and administration encompasses the need for long-term strategic planning for the PA estate, which he believed can assist NPWS in understanding "the implications of the operating environment", including those beyond the park boundaries, to determine external influences.

According to Bovarnick (2010, p.5), "effective financial planning requires accurate knowledge not only of revenues, but also of expenditure levels, patterns, and investment requirements". Sound financial planning can assist PA practitioners in making good "strategic financial decisions", for instance, by allocating funds against management priorities and identifying potential cash flow problems and appropriate cost reductions (Bovarnick, 2010, p.5). It can also help to generate additional funding as governments, donors, and investors may "feel more assured that their funds will be more effectively invested in the protected area system" (Bovarnick, 2010, p.5).

As discussed in Chapter 2, not all funding sources will be suited to the financing of every project or program within a PA. Therefore, NPWS needs a way to assess projects/programs against a criterion to help identify potentially suitable funding sources for individual projects/programs. Liam referred to this as a "filtering process" to determine the best funding fit for a project:

> Most people in government…when they are developing a project or looking to solve a problem, they are not really thinking about who could fund it; they are just thinking, 'I need some funding to do this' and in particular they are not thinking about different sources of funding and what they need in order to be able to make it work. So it is really thinking about: okay, these types of projects, there is a really clear return on investment for these particular people or this audience or this outcome, therefore it is more conducive to this type of funding, whereas this bucket of projects they have just got to be funded by whatever because nobody is going to pay for someone to pull out some weeds on the side of a road or whatever even though it is important. It is just a different source of funding that you need to chase for those sorts of things. I don't think any government and most conservation groups understand that filtering process, which ones are good and which ones aren't, and start to look at building portfolios of projects.

In his comment, Liam emphasised the importance of matching projects with the right type of funding, and he mentioned the idea of "building portfolios of projects". Ruth and Emerson also suggested that

NPWS develop an investment portfolio or investment profile to articulate key projects or outcomes that are linked to NPWS priorities and their funding requirements across the PA estate. These could be integrated into the portfolio so that when an opportunity arises or there is community or political support or investor interest in funding particular outcomes, NPWS can select an investment from its portfolio that might be "attractive" to government or other potential funders or suited to a certain funding source. As Hamilton explained:

> You need to find the opportunity and the timing and so forth. If I give you an example, although we have done that successfully with assets, we have tried twice with cultural heritage and failed, essentially that's because there is just not a great appetite at the moment for funding projects and announcements in that part of our business, which is fine. So we need to take that feedback and think given the community and the political climate we are operating in what might be the next best piece of work that we could package up that would be attractive to decision-makers, government and ministers to be 'announcable'.

As Hamilton's example shows, crucial to matching a project/program with a suitable funding source is identifying funding opportunities which may be associated with community, political, and investor interests. If an investment portfolio of projects exists where each project has already been assessed against set criteria to determine potentially suitable funding sources – for example, data supports its expected outputs, outcomes, and impacts and a CBA and clearly articulated funding requirements have been established – then NPWS should be better positioned to take advantage of funding opportunities as they arise.

The literature on PAs recommends that incentives and opportunities should be available to encourage practitioners to generate and keep funds at the PA level (Turpie, 2010). The current institutional and legislative environment in NSW permits the PA estate to retain and reinvest self-generated revenue, for example, through park entry fees, leases, and licences (NPWS, 2021g). Ethan said that this situation makes NPWS relatively unique within the NSW context. He explains:

> [NPWS is] one of the few government departments, generally in the public sector in NSW and, in fact, in all states where revenue goes to Treasury and they give it back to you, whereas all revenue comes direct to us and that is really rare.

The ability of NPWS to keep and reinvest revenue into the PA estate is important for financial sustainability, and the institution should endeavour to retain this legislated right (Bovarnick, 2010; Turpie et al., 2010).

Furthermore, the IUCN (2000) recommended that PA practitioners adopt a more businesslike approach to identifying and securing sustainable finance options, for example, through adopting business and financial plans. Dara suggested that NPWS should be more businesslike in its approach to financing:

> [NPWS] needs to be more businesslike in the way that we approach the question of financing, knowing that this is actually the avenue to doing all of the conservation work that we want to do and the visitor service work that we want to do.

Dara's narrative excerpt, like the literature on PAs, emphasises the importance of adopting a business style approach to PA financial sustainability. A business-style approach would, for example, include "comprehensive financial data and plans for a standardised and coordinated cost accounting system (both input and activity-based accounting)" (Bovarnick, 2010, p.16). In line with this requirement, NPWS is in the process of moving towards an activity-based budgeting and reporting system which is expected to be operational around 2024–2025 (NPWS, 2021g).

Furthermore, revenue generation and fee levels should exist across PAs and be incorporated into a finance strategy (Bovarnick, 2010). The current approach in NSW is described by NPWS as ad hoc; however, the institution has expressed its commitment to developing a comprehensive strategy for revenue (NPWS, 2021g). Additionally, the allocation of budget to PA Management Areas should be based on a set criterion, for example, the size of the Area, threats, business plans and management performance (Bovarnick, 2010). Under its arrangements in the 2020–21 financial year, NPWS allocated to management Areas in a literal sense in that every Area was allocated a budget for the financial year, although this process was not based on a set criterion. However, as previously explained, the Eco-Health Project aims to base future budget investments on performance across the PA estate (NPWS, 2021g).

In this approach, quality plans of management are also important and should be adopted and used across the PA estate, ideally including financial data or associated business plans (Bovarnick, 2010). The development of objectives, actions, and regulations in the NPWS plans of management are "directed by the management principles outlined in the *National Parks and Wildlife Act 1974"* (NPWS, 2021j, p.8). Newer plans of management differ in their content from older plans. For example, in newer plans, such as the Draft Royal National Park Plan of Management, "a management priority… [is] assigned to each action to guide the allocation of resources" (NPWS, 2021j, p.26). NPWS considers that there is satisfactory coverage of plans of management for PAs across the state and adopted plans of management are periodically audited and amended or rewritten as necessary (NPWS, 2021g).

Furthermore, it is important that operations plans are linked to plans of management and conservation objectives (Bovarnick, 2010). NPWS has an operational planning system at the 'Area' level which is implemented across the PA estate and linked to activities but not explicitly linked to plans of management (NPWS, 2021g). However, NPWS is currently designing a new system that will link operations plans to estate-level planning and budgeting (NPWS, 2021g).

Finally, effective planning and administration require that "a clearly articulated vision, priorities, goals, and organisational values be reflected in the PA institution's strategic plans, policies, and procedures and embodied by the leaders and decision makers" (O'Flynn et al., 2022, p.8). For example, Cedric and Ruth would like to see NPWS set "clear goals" that are communicated to stakeholders, including staff, and reflected in the NPWS strategic plans, policies, and procedures, while Cody recommended that NPWS focus on the highest priorities:

> We really should be aiming to address the highest priorities to maintain and manage our protected area system and we need to make the case for that, make that argument.

As Cody's comment indicates, funding should be allocated in order of priority. Similarly, effective planning and administration must be underpinned by a supportive policy, legislative, and economic environment (Emerton et al., 2006).

5.7 Enabling Condition 6: Supportive Policy, Legislative, and Economic Environment

The sixth enabling condition is a supportive policy, legislative, and economic environment. This enabling condition requires "economic, fiscal, policy, price and market conditions, circumstances and instruments [to] act in support of, and as incentives towards conservation goals" (Meyers et al., 2020, p.9). It may also involve recognising and disabling barriers to PA financial sustainability such as price, market, policy, and institutional barriers (Meyers et al., 2010).

An important component of Enabling Condition 6 is that laws and policies exist that facilitate PA revenue mechanisms (Bovarnick, 2010). In NSW, a series of existing legislation and policies facilitate PA revenue mechanisms, ranging from the *NPW Act 1974* and the *National Parks and Wildlife Regulation 2019* to the Filming and Photography Policy and the Visitor Accommodation Policy (DPIE, 2021b). As explained under Enabling Condition 5, a priority for NPWS is the development of a revenue strategy which will look at revenue generation as well as where and how revenue is reinvested into the park estate (NPWS, 2021g). Alexander drew on the example of park entry fees to emphasise the importance of an estate-wide revenue strategy. He explained that the decision to charge park entry fees at around 45 out of more than 870 national parks and reserves (NPWS, 2021h) is "a really random process; it's more historical than any good sense". A revenue strategy could help to guide NPWS strategic decision-making around park entry fees and other revenue-earning opportunities such as park concessions (NPWS, 2021d).

Ethan drew on the Sponsorship Policy adopted by NPWS in 2020 as an example of a policy instrument designed to incentivise sustainable financing (and in doing so financial sustainability) by supporting the broadening of the funding portfolio for PAs (Emerton et al., 2006). Ethan explained:

> The Sponsorship Policy was designed to get a framework around it because we still get funding requests, and we all look at it and go 'err I'm not sure about it', so it was really trying to get a framework around that piece.

As Ethan's example shows, it is crucial that policies are in place that support financial sustainability. Similarly, regulatory, legal, and institutional frameworks that support PA funding should exist at local, state, national, and international levels. This includes international conventions such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora, Ramsar Convention on Wetlands of International Importance, Convention on Biological Diversity, and the World Heritage Convention, (Dlamini & Masuku, 2013) of which Australia is a signatory (Department of Foreign Affairs and Trade, n.d.). In the U.S. for example, there is a clear policy and legislative framework in place to guide the work of the National Park Service and the National Park Foundation in corporate and philanthropic partnerships and collaboration. The National Park Service has also prepared a Partnership Toolkit to help guide P staff in the growth of existing and development of new partnership programs (NPS, 2021).

Furthermore, policies or laws should be in place for benefit sharing with local stakeholders at the PA-site level (Bovarnick, 2010). Benefit sharing is defined by Swemmer et al. (2015) as "the process of making informed and fair trade-offs between social, economic and ecological costs and benefits within and between stakeholder groups, and between stakeholders and the natural environment, in a way that is satisfactory to most parties" (p.7). One form of benefit sharing is revenue sharing, for example, funds "accumulated through levies, permits and/or taxes may be stipulated in law and then allocated to local communities" (Wynberg & Hauck, 2014, p.7). In NSW, joint management arrangements with local Aboriginal communities are an example of revenue sharing at the PA-site level, while PA plans of management provide for "meaningful inclusion of local populations in conservation and tourism" (Spenceley et al., 2019, p.721). Nevertheless, NPWS believes that there is still room for improvement in benefit sharing across the PA estate (NPWS, 2021g).

As previously discussed under Enabling Condition 5 (effective planning and administration), at the state level, the current institutional and legislative framework in NSW permits the PA estate to retain self-generated revenue, which is reinvested into PAs. Dara described this as "a huge benefit to the sustainability of national parks". This situation has been further bolstered with the formal establishment of The National Parks and Wildlife Fund under Part 10, Section 137 of the *NPW Act*

1974. With the establishment of the Fund, all money allocated to the PA estate in NSW will be kept in the NSW Treasury Department in the 'Special Deposits Account' (NPW Act 1974). Dara saw this reform as strengthening the legislative and institutional framework that underpins the PA estate, thereby supporting financial sustainability. He described the Fund as "one of our vehicles to becoming more transparent and so nominally independent." This change will help to address the impediment of governance challenges (Impediment 5), discussed in Chapter 4, by increasing NPWS brand visibility and improving financial accountability and transparency. If the public can see what funding is allocated to the PA estate and how it is spent, the public can determine whether this represents value for money. This also relates to the seventh identified enabling condition of self-generated revenue.

5.8 Enabling Condition 7: Self-Generated Revenue

While PAs receive funding, they also have the capacity to generate revenue, which can supplement other funding sources (Emerton et al., 2006; Waldron et al., 2020; Wearing & Schweinsberg, 2018). Thus, the seventh enabling condition for a financially sustainable PA estate in NSW is self-generated revenue. IUCN ESARO (2020, p.vi) has recommended that "self-generated revenue, especially derived from appropriate and sustainable nature-based tourism, should be fully developed, diversified and maximised.... Adequate funding must be reinvested into the natural assets generating this revenue, the protected areas, wildlife and ecosystems".

In NSW, self-generated revenue is an important component of the available funding for the PA estate. As Hamilton explained, "30 cents of every dollar we spend comes from revenue." Examples of existing revenue streams include leases and licences, camping and visitor accommodation fees, park entry fees, and on-park ecotourism activities, which are then reinvested into the PA estate (NPWS, 2021g). by way of comparison, as explained in Chapter 2, U.S. national parks retain 80% of all park fees collected and use the money for visitor services, capital upgrades, and park management among other uses (National Park Service, n.d.).

To maximise existing ways to self-generate revenue, a system-wide strategy and action plan should be adopted for PA concessions, while new opportunities to generate revenue across the PA estate need to be continually identified and their suitability assessed (Bovarnick, 2010). NPWS has strategically grown its source revenue over the past decade, for instance, through park concessions which generated around AU$4.4 million for the PA estate in the 2020–21 financial year (NPWS, 2021d). Asher drew on the same example, explaining:

> [NPWS has increased] revenue from property by $5 million per annum…through a couple of different mechanisms more or less about lease compliance, quality of tenants and new tenancies – new opportunities.

In this narrative excerpt, Asher illuminates the importance of self-generated revenue to the financial sustainability of the PA estate, and he is also supportive of continuing to grow these revenue streams, explaining:

> Financial sustainability for Parks has to be about being self-sufficient; it has to be less dependent upon the annual appropriation that we get, less reliant on that, so that we are in control of our own destiny.

As Asher's comment indicates, this enabling condition not only encompasses the growth of existing revenue streams, for example, through reviewing the park use fee structure but also exploring potential new revenue-earning opportunities (Bovarnick, 2010; NPWS, 2021g). Rani discussed what she sees as the pressing need to grow the self-generated revenue of NPWS:

> More and more we are raising revenue in order to fund ourselves…We are certainly much more focused on it, and we are working harder at it, I think, and we see it as the way of the future so we anticipate a time where government, apart from program funding, will probably not want to give us any base funding at all, and we have got to find a way to increase our revenue, smart ways of raising revenue without spending it all on raising revenue in order to support our organisation in the future.

Rani's narrative extract suggests that NPWS would benefit from adopting a strategic planning approach to the growth of its self-generated revenue, including consideration of potential growth areas, ways to maximise revenue earning, the appropriate expenditure of revenue, and ensuring that in the process of generating revenue, user groups and stakeholders are not disadvantaged (Bovarnick, 2010). Fred used the example of fast-food advertising signs to illustrate the importance of finding appropriate revenue-generating opportunities, stating:

> We can do better [in terms of revenue generation], but we don't want to be driving through the McDonald's 'golden arches' advertising to every park.

Fred's example illustrates the importance of finding revenue-generating opportunities that are considered in keeping with the conservation objectives of the *NPW Act 1974*. To this end, a strategic approach to self-generated revenue, as recommended by Rani, may also assist NPWS in understanding the political and other implications and appropriateness of proposed revenue streams and help to garner the political and public support necessary to make PA financial sustainability a higher policy priority.

Furthermore, as alluded to, due consideration should be given to the potential intended and unintended impacts of revenue generation on conservation and other PA objectives (Bovarnick, 2010). NPWS plans of management and key legislation, including the *NPW Act 1974*, offer a high degree of protection; however, they do not offer complete protection against the potential intended and unintended impacts of revenue generation (NPWS, 2021g). NPWS anticipates that when adopted, its revenue strategy will provide a comprehensive strategic approach to revenue at the whole-of-estate level, and it will consider both how to raise revenue and how and where revenue is reinvested into the PA estate (NPWS, 2021g).

Finally, it is important to operate a revenue tracking system for each PA within the estate. The revenue tracking system can be used to measure and report on tourism-related financial returns, and where possible a reporting and evaluation system should display how effectively PAs use available funding to achieve set objectives (Bovarnick, 2010). While NPWS does not routinely measure and report on the financial returns on tourism-related investments at an estate-wide level, it does measure and report on a case-by-case basis. NPWS also undertakes economic analysis on the potential impacts of investments at the PA-site level (NPWS, 2021g). Furthermore, NPWS does not currently operate a revenue tracking system; however, it believes the revenue strategy once adopted together with the Eco-Health Project will help to address these requirements for financial sustainability (NPWS, 2021g).

Importantly, related to a supportive economic, legislative and policy environment is an enabling environment.

5.9 Enabling Condition 8: An Enabling Environment

An enabling environment is crucial to financial sustainability and is, therefore, the eighth enabling condition. An enabling environment implies that financial sustainability is a policy priority with political support and social acceptance and that there is adequate organisational and technical capacity "to ensure that the identified financing solutions will work in practice, and conservation will be financed effectively" (Meyers et al., 2020, pp.8–9). IUCN ESARIO (2020, p.vi) further explained that an enabling environment "must be created to ensure that self-generated revenues as well as more innovative financing solutions can be developed and that revenue is used to improve conservation management, secure the natural asset and benefit the local communities living alongside these protected areas".

As part of an enabling environment, government policy should "promote budgeting for PAs based on financial needs" as governed by PA plans of management (Bovarnick, 2010, p.17). Alexander and Dara both explained that the state government's funding of NPWS, which is generally determined by plans of management; is based on historic needs. However, the budget allocation is not specifically driven by park plans of management (NPWS, 2021g).

Furthermore, administrative procedures such as procurement should facilitate budget spending (Bovarnick, 2010). NPWS considers that its administrative procedures, particularly procurement procedures, were well tested in the 2020–21 financial year due to the large budget spend on capital (NPWS 2021d). The NPWS Financial Sustainability Scorecard for that financial year (NPWS, 2021g, p.10) further explained that "NPWS developed a strong and positive partnership with Procurement and flexibility was shown in ensuring that NPWS' budget needs were met". In this sense, administrative budget procedures are supportive of spending across the NSW PA estate (NPWS, 2021g). Administrative procedures should also identify causes(s) of budget underspend and minimise the risk that underspend results in reduced budget allocation (Bovarnick, 2010). Dara explained that in NSW consistent underspend would likely result in a partial budget reduction, although funds allocated to NPWS and self-generated revenue are protected and in theory cannot be taken away from the institution, in accordance with Part 10 of the *NPW Act 1974*.

As part of an enabling environment, government should seek to "increase budget over the long-term, to reduce the PA funding gap" (Bovarnick, 2010, p.17). NPWS (2021g) stated that "the government's 'plan' to increase budget over the long-term to reduce the PA funding gap is not as comprehensive as NPWS would like" (NPWS, 2021g, p.11). The requirements of the Total Asset Management Plan are used by NSW Treasury to inform the annual budget allocation process regarding infrastructure and capital replacement and renewal in PAs; however, there is not an equivalent plan to help inform the recurrent budget for the PA estate. NPWS has also noted that a gap exists between the funding amount that the Total Asset Management Plan identifies, and the annual budget allocated to NPWS (NPWS, 2021g).

NPWS staff knowledge and capacity to use financial tools are critical to an enabling environment, including an understanding of the impediments to financial sustainability and the pathways to change (Turpie, 2010). There should be "sufficient professional capacity to promote financial sustainability" at the Area management level, and Area manager responsibilities, as defined in the role description, should include revenue generation, cost-effectiveness, and financial management (Bovarnick, 2010, p.17). Meanwhile, budgetary incentives should encourage practitioners to promote Area-level financial sustainability (Bovarnick, 2010). From Fred's perspective, the appropriate level of financial literacy will depend on the staff member's role within NPWS, and financial training should be tailored to staff needs:

> Most staff just need to do some very basic financial training. When I started in the public sector, everyone knew what section 12 and 13 of the *Public Finance and Audit Act* [1983] was. The fact that you are working under an Act of Parliament, they just need a basic awareness. I mean, from a field officer's perspective, are you getting value for money? That is all they need to know. They don't need to know how to fill in a purchase order and which one of the million different categories and combination of 'AMS' data that they need.

Fred's narrative excerpt suggests that financial training is necessary to ensure that staff have an adequate level of financial knowledge and capacity relevant to their role and responsibilities. The literature supports this assertion, recognising that it is necessary to have support and training networks in place to build staff knowledge and capacity (Bovarnick, 2010; IUCN ESARO, 2020; Turpie et al., 2010). For example, Kopylova and Danilina (2011, p.xi) argued that the training of PA staff is "a vital component of effective protected area management…the principal goal of protected area staff training is to raise the capacity of protected area managers to adapt to new challenges, using innovative and creative approaches".

While NPWS does not offer bespoke financial training courses for its PA managers, general manager and leadership programs that touch on revenue mechanisms and financial administration do exist, and NPWS also sponsors selected managers to attend external training programs and courses (NPWS, 2021g). Cedric, referring to the training programs and courses that are available, believed that "it is just a matter of people doing them", while Alexander suggested that what is needed is an enabling cultural shift:

> I think that's really important that we should be talking around sustainability and financial sustainability and making sure that people do understand that there's a certain amount of dollars and we work out how best we go about being the most efficient with the dollars we have and also then maximising the revenue that we get in.

Similarly, where volunteers undertake roles that support the work of paid staff, it is important that opportunities exist for volunteer training to maximise volunteers' effective performance of specialised tasks and in accomplishing NPWS goals (Liao-Troth, 2008; Ormsby & Lin, 2021). Oliver recognised the support role that volunteers can play and believes that NPWS should not view volunteers as stakeholders but as "a partnership that offers the opportunity to hugely amplify the effectiveness of the little resources that we do have". He further believed that to maximise the work of volunteers, "some level of training" is necessary:

> I think it is actually about being smarter about the way that you break down jobs and understand which are the bits where you can amplify your effectiveness as an organisation by looking for

> external assistance. That will mean some level of training; it certainly means respect and recognition.

Oliver's comment reiterates not only the value of volunteers in supporting the work of paid staff but also the importance of investing in appropriate training for volunteers to maximise their effective performance.

An enabling environment further refers to NPWS operating within a stable environment, allowing staff the time and headspace to undertake and implement the strategic and financial planning necessary to achieve financial sustainability. Rani explained that she appreciates the necessity of a strategic approach to sustainably funding the PA estate:

> Hopefully, there are underlying principles of sustainability and of the public sector... Hopefully, there is enough stability…that that we can develop a strategic approach to sustainably funding our goals and our parks system.

As Rani's comment indicates, a strategic approach to financial sustainability is vitally important. It is therefore judicious to consider how NPWS could lessen the impact of the state budget processes and political influences on the financial management of the PA estate (Impediments 1 and 2). Furthermore, many of the PA practitioner participants suggest that financial independence, transparency, and accountability have a role to play in establishing an enabling environment for PA financial sustainability.

5.10 Enabling Condition 9: Financial Independence, Transparency, and Accountability

Financial independence, transparency, and accountability are identified as the ninth enabling condition for the financial sustainability of the terrestrial PA estate in NSW. Under this condition, "the PA institution should have control over its finances, including its budget, and decision making regarding the form, allocation, distribution, expenditure, and reporting of funds" (O'Flynn et al., 2022, p.9). Dara explained that financial independence would represent a marked shift from NPWS' current financial situation:

> We should be doing everything that we can to become as independent in terms of our finances and our control over our finances as we can…At the moment what happens is if we are underspent, the money just gets taken back centrally and we are fighting for that saying we might need it next year, and we want to get out of that cycle, I think, if we can.

In this narrative extract, Dara indicates that financial independence would help to address the impediments of the state budget processes (Impediment 1) and governance challenges (Impediment 5), discussed in Chapter 4.

As part of this enabling condition, a transparent and coordinated accounting system is required, together with a system where "accounting data contributes to… [PA estate] level planning and budgeting" (Bovarnick, 2010, p.19). While NPWS does have an operational accounting system, its usefulness from a management reporting viewpoint is described by the institution as limited (NPWS, 2021g). This is because the system is more transactional and not aligned with the institution's reporting requirements. As such, NPWS has identified the need for a budgeting and reporting system that helps with the management of individual park management 'Areas' (NPWS, 2021g).

It is also necessary for the NPWS financial mandate to be clear and agreed on (Bovarnick, 2010). NPWS expects that a clearer mandate and associated institutional arrangements will come into effect in the 2022–23 financial year when the *Government Service Finance Act 2018* reporting requirements for the National Parks and Wildlife Fund are enforced for the first time. The *Government Service Finance Act 2018* specifies that records and other information regarding the operation of the Special Deposits Account in accordance with the *NPW Act 1974* must be kept allowing for the preparation and audit of financial reports and in accordance with the Treasurer's directions to comply with the Act's reporting requirements (NPWS, 2021g).

Furthermore, it is important that NPWS have "sufficient economists and economic planners to improve financial sustainability" of the PA estate and an organisational structure with a dedicated unit "with sufficient authority and coordination to properly manage the finances" of the estate (Bovarnick, 2010, p.7). A dedicated finance branch does exist within the NPWS organisational structure; however, as explained in Chapter 4, under the current governance arrangements, the NPWS accounts are captured as part of the broader cluster department's accounts, which are centrally managed. This arrangement is said to limit the authority and ability of NPWS to coordinate the finances of the PA estate (NPWS, 2021g).

A financially independent NPWS could help to overcome the impediment of state budget processes (Impediment 1) by encouraging the institution to explore alternative finance mechanisms, thereby broadening the funding portfolio (Enabling Condition 2). In doing so, NPWS could reduce its reliance on consolidated funding (Enabling Condition 1) and the influence of the annual budget cycle on the competition for funds and the amount, allocation, timing, and distribution of funds. Secondly, financial independence would assist in addressing some of the governance challenges associated with the existence of NPWS within a large cluster department, including the disconnect from central cluster finance staff. It would do this by separating NPWS finances from the broader cluster department, thereby increasing its control over the PA estate budget and financial decision-making. Briana further suggested that financial independence could help to distance the NPWS core functions from political influence, thereby addressing Impediment 2.

PA practitioner participants expressed two different visions for financial independence. The first vision is for NPWS to become a financially independent statutory authority. Briana strongly advocated for this, describing it as a solution to the challenge of financial sustainability for the PA estate:

> A solution lies in a new model…to establish NPWS as a statutory authority with an independent budget. This would reduce political interference and give budget control to strengthen focus on core objectives.

Briana together with Jake, Fred, and Hussain cited several existing statutory authorities that operate within the same cluster department as NPWS, including Sydney Olympic Park Authority, Taronga, Western Sydney Parklands Trust, Parramatta Park Trust, and the Environment Protection Authority (see DPIE, 2021a; *Parramatta Park Trust Act 2001; Protection of the Environment Administration Act 1991; Sydney Olympic Park Authority Act 2001* (NSW); *Western Sydney Parklands Act 2006; Zoological Parks Board Act 1973* (NSW)). They believe the existence of these authorities provides a precedent for NPWS to become a statutory authority. For example, with reference to Sydney Olympic Park, Hussain stated:

> Even within the cluster model, there is still agencies like SOPA – Sydney Olympic Park Authority is an agency within its own right. […] I just find it crazy that SOPA is an agency and Parks isn't. Even just look at the asset base, the geographical land areas and things like that.

As his comment indicates, Hussain believes that if the Sydney Olympic Park Authority can be a statutory authority when it is responsible for managing a smaller geographic land area and asset base than NPWS, then there is a strong case for making NPWS a statutory authority too.

Fred and Ethan drew on Parks Victoria as an example of a national park management agency operating as a statutory authority. Parks Victoria is a not-for-profit individual reporting entity established as a public authority in 1998 under the *Parks Victoria Act 1998 (*Parks Victoria, 2020, p.70*)*. It is the Victorian equivalent to NPWS, tasked with managing the state's PA estate, which includes 3,000 parks and reserves and covers 18% of Victoria's land area (Parks Victoria, 2021). If NPWS were to pursue the status as a statutory authority, like Parks Victoria, it would require key stakeholder support and political support (Colebatch, 2009; Zittoun, 2014). Dara believed NPWS can only achieve this if it demonstrates the "value of creating a Parks Authority that is incentivised to grow its revenue and to return something back to the state".

The second 'vision' for financial independence expressed by the PA practitioner participants does not require NPWS to become a statutory authority; instead, the focus is on regaining control of the PA estate's finances. While this would likely require some adjustments to the existing governance structure, Ethan considered it a more realistic vision for NPWS' financial independence. He explained that:

> [becoming a statutory authority] is not impossible, but Treasury resists that because it is just another system, another bureaucracy.

Dara and Ethan explained that the National Parks and Wildlife Fund has made important strides for NPWS towards achieving the second vision of financial independence, with Dara describing the Fund as "one of our vehicles to becoming more transparent and so nominally independent".

Connected to financial independence are budget accountability and transparency, which are viewed as "a pillar of good governance" (Carlitz, 2013, p.49). Bovarnick (2010, p.19) stated that "all PA revenues and expenditures… [should be] fully and accurately reported by the PA institution to stakeholders". Dara described what he believes financial transparency means in relation to NPWS:

> [NPWS needs to be] able to demonstrate value for money and whether that is to secure consolidated funding or whether that is to secure investors or whatever, it doesn't matter. It all amounts to the same thing because they are all investors. It is just whether it is the taxpayer or whether it is somebody else, and we need to be transparent, we need to report well and have good KPIs. If we don't, we make it hard for ourselves. Why would you invest in this business if you can't tell anybody anything about it?

Dara's narrative excerpt emphasises the importance of reporting on how the funds allocated to NPWS are spent. This view is shared by Bovarnick (2010, p.19) who stated that "a monitoring and reporting system [should] be in place to show how and why funds" are allocated across an organisation's structure. NPWS does monitor and report on how funds are allocated to its management Areas and Branches; however, it does not monitor and report on the rationale for the allocation of funds (NPWS, 2021g). Instead, the system is used as an internal administrative reporting tool rather than for the purpose of being transparent about why funds are allocated in a particular way. Resultantly, the reporting does not provide in-depth information on how funds are spent to achieve outcomes or to deliver activities; instead, it is reporting for management control at a structural level (NPWS, 2021g).

Dara's previous comment also emphasises the importance of demonstrating value for money irrespective of the source of funding. Thus, "a reporting and evaluation system [should be] in place to demonstrate how effectively PAs use their available finances to achieve management objectives"

(Bovarnick, 2010, p.19). In NSW, the NPWS reporting, and evaluation system is used to generate monthly KPI reports, which report on a range of attributes related to outcome delivery at the PA-estate level, and at the time of writing, NPWS was developing a new system to link KPIs to the institution's finances.

Finally, Alexander highlighted institutional and budget flexibility as a component of financial independence, describing this as "being agile enough to know where the money sits" and having the ability to move the budget as necessary in accordance with the reactive nature of park management work. This view is supported by Borrini-Feyerabend et al. (2013, p.xii) who stated that the PA institution and the rules governing PAs must remain agile and demonstrate adaptive governance despite global change and enduring challenges (Borrini-Feyerabend et al., 2013, p.xii)

An enabling condition related to financial independence, transparency, and accountability is that of effective communication, messaging, and self-promotion.

5.11 Enabling Condition 10: Effective Communication, Messaging, and Self-Promotion

The tenth enabling condition for the financial sustainability of the PA estate in NSW is effective communication, messaging, and self-promotion. Sir David Attenborough (2020) recognised the importance of effective communication and messaging for the conservation of nature, noting that "saving our planet is now a communications challenge… If enough people want change and take action, a sustainable future is within our grasp".

PA practitioners are responsible for managing a wide range of technical environmental issues, such as nature conservation, climate change mitigation, and complex fire regimes (NPWS, 2021a). The success of a strategy to secure and improve funding for PAs is partly dependent on the knowledge and understanding of stakeholders; therefore, effective strategies are needed to communicate with politicians, Treasury officials, and other key stakeholders regarding complex environmental and financial matters (Xu et al., 2020).

Research studies show that "an effective communication strategy should be customized to target different audiences" (Le et al., 2015, p.17) and that the audience may need to be segmented and provided with targeted messages (Le et al., 2015). Mali experienced firsthand that a 'one size fits all' approach to communication and messaging is ineffective. She explained:

> [It is necessary to think about] who is the audience? What motivates them?... [because] what resonates with the park manager is different to the politician, is different to the advisor… [it is necessary to understand] what message grabs that person and how do I put my message inside it? Otherwise, they will just glaze over and tune out.

Mali's narrative excerpt illuminates the importance of tailoring messaging and communication to the intended audience and their interests. Briana also suggested that NPWS should be "drip feeding the information out through all different channels" indicating that different communication channels should be harnessed, including the mass media. For example, Bakaki et al. (2020) stated that the mass media can "attract policymakers' attention and thus potentially shape policy outputs" and it can also "influence the public's views about political issues under some circumstances" (p.1157).

NPWS could consider adopting a multidisciplinary approach to its communication strategy to maximise its effectiveness, an approach which is supported by the literature. Le et al. (2015) for example, recommended that a "multi-disciplinary approach to park management" be adopted in which PA practitioners, economists, scientists, and education and communication specialists "contribute to a concerted effort to identify management issues, develop actions, and educate and communicate" (p.29). Sophia also discussed the need for a multidisciplinary approach to communication in NSW. She explained:

> They [NPWS] shouldn't have earnest young biologists doing their comms; they should have blooming smart marketing gurus.

Sophia's comment highlights the importance of PA practitioners working collaboratively with communication and marketing experts. In relation to park branding and raising public awareness of the role and work of PA institutions, King et al. (2012) explained that because most PA practitioners have limited interest or training in marketing, developing a collaborative working relationship between PA practitioners and communication and/or marketing specialists is necessary. King et al. (2012) further explained that:

> Marketing protected areas has many dimensions such as building awareness, price setting, and developing and managing attractive products (high-quality visitor experiences, maintaining product quality, selling wider benefits such as ecosystem services etc.). Using well-designed marketing strategies, protected area staff can maintain and strengthen connections with local residents, communities and services providers (e.g., water authorities). (p.55)

While Ethan acknowledged that NPWS is "starting to talk their language" – referring to the language of NSW Treasury, he suggested:

> [NPWS needs] to be better invested in the language of modern economies and how we sell the story we are doing in that framework.

Similarly, Cody believed that effective communication and messaging are crucial to mounting a stronger argument for a fully funded PA estate, explaining:

> We need to do more to argue why we need a fully funded system, and we need to make those arguments to people who can influence those decisions. We can't sit back and assume that we have a compelling investment case. We need to get a little bit savvy and talk business talk and talk about the case for investment in our protected areas – here's what you get – clean watershed, XYZ, and maybe talking the language of bonds and so on – this is our 'coupon rate', this is your 'rate of return'.

Cody's narrative excerpt illuminates the link between having a compelling investment case and effectively communicating with government and other potential funders. Related to the notion of a compelling argument for a fully funded PA estate, is the importance of good storytelling, as Ethan explained:

> Every conversation with government needs a good story behind it.

In support of this view, research shows that "policy actors tend to view issues as distant phenomena removed from their daily life and experience" (Xu et al., 2020, p.1304). Thus, to attract the attention of politicians, Treasury officials and other key stakeholders, NPWS needs to communicate information in a way that decreases this "psychological distance" (Xu et al., 2020, p.1304). Therefore, in creating a powerful narrative or story, it is useful to understand that "while a positive narrative may be perceived as a public good for actors, a negative narrative heightens the costs and reduces psychological distance, whereby leading to action" (Xu et al., 2020, p.1298). Sophia suggested that "cultural translators" could be engaged to participate in storytelling and in establishing a narrative for PAs:

> Cultural translators are really important…someone that young people can be bothered listening to…I think cultural translators for want of a better expression can talk between worlds and get messages across. I think they are absolutely critical.

As Sophia's comment highlights, cultural translators could help to facilitate successful communication between and across groups of people with different interests and backgrounds, for example, PA specialists and politicians, Treasury officials, investors or donors, and the public. Sophia, Briana, Ethan, and Cody cited the Colombian PA agency as an example of an effective communicator. Cody explained that:

> [i]n their parks they have a clear card – this is how much we invest, and this is what you get: clear watershed, clean air, ecological services. We don't have any of that. You go up to your local park and I have no idea what it takes to manage that; we could do a lot more.

Cody's example suggests that the Colombian PA agency's capacity to effectively communicate is strengthened through the data that it has available on the PA estate and the evidence available to support its case for funding. Asher asserted that there is considerable scope to grow NPWS' self-promotion as a mechanism to increase the support base for PAs and the institution together with the NPWS brand visibility through different communication channels; he explained:

> We need to get the positive news stories out so you have got so much positive capital amongst the community so they say, 'no, hang on! They might have stuffed up on this one and invariably people do stuff up', but you've got all these good things to fall back on.

Examples of self-promotion opportunities raised by participants include requiring staff (including executive staff) to wear the NPWS uniform when addressing the media and attending public events and forums; erecting signs at the entrance/exit points of fee-paying parks to display information on how the park use fees collected are spent; and setting up live-feed cameras for people to follow the life cycle of iconic Australian animals in national park settings:

> In Tassie, their head of agency last year in the fire season was wearing a uniform so there is almost this sense of trying to pull them out and say there is a group called Parks who manage in Tasmania; it is 60% of the state. (Ethan)

> [An information sign at the park entrance to say] 'welcome to National Parks, this is who we are, this is how much it costs, this is what you get and here are the things we'd like to do but we can't do' [due to funding limitations]. (Cody)

> Things like live feeds, like setting up cameras so people can watch a baby animal or follow the life cycle. Watch what happens to the baby wombat when they come out of the burrow so kids can check on *their* baby wombat each day, that sense of ownership and caring for something. (Sophia)

The self-promotion examples provided by Ethan and Cody suggested that brand visibility for NPWS is important for maintaining and expanding the support and advocacy base for the work, the institution, and its funding. This also relates to a point made by Bovarnick (2010) that "communication campaigns for the public about tourism fees, conservation taxes… [should be] widespread and high profile" (p.21) across the estate as well as at the Area management level. Research into the branding of PAs (including the World Heritage Brand) in Australia, the U.S., and Malaysia found that an effective branding strategy can:

1. Increase shared stewardship for PAs through building brand awareness (King et al., 2012).
2. Increase "positive brand equity" by connecting the emotional experiences of a visitor within a PA to the brand (i.e., the NPWS brand or the World Heritage brand). King et al. (2012, p.60) explained that brand equity is important because it "forms the basis for behaviours protected

area managers want to encourage such as public donations, in-kind contributions, volunteerism, self-policing, grassroots support and advocacy for any PA carrying the brand".

3. Teach PA visitors and other stakeholders "brand meaning" (King et al., 2012, p.60). For example, this could involve the consistent presentation of the brand and its values (i.e., consistent signage across the PA estate), increased on-park branding at key visitor destinations and points of visitor contact (i.e., park entry and exit points), and the use of plain language to educate visitors about the cultural and natural values of PAs, their history, and the PA institution responsible for their management – and importantly, why people should care about PAs (King et al., 2012).

Cody's example of self-promotion, which relates to raising public awareness about how and where park entrance fees are spent, is recognised in the literature as a critical factor in the successful implementation of a PA fee structure (Hayman & Williams, 2012, p.33). For instance, when conservation fees were introduced in Bonaire National Marine Park, which surrounds the Caribbean Island of Bonaire, a public awareness campaign regarding fees was described as a critical success factor (Hayman & Williams, 2012). Part of this involved making the results of the income visible so people could see exactly what the conservation fee was contributing to – in this case, the employment of rangers, the provision and maintenance of buoys, and well-marked dive sites (Hayman & Williams, 2012).

Sophia's example of setting up live feeds in national parks helps to show how interactive activities can engage communities and stakeholders in the work of NPWS and display the values of PAs. This is considered important because as established throughout this thesis, community, and stakeholder support, including political support, are crucial to financial sustainability. Asher also picked up on this point, explaining:

> No one will protect what they haven't experienced; no one cares about what they haven't experienced.

Self-promotion, marketing, and branding as communication tools can be targeted to park users, communities, decision-makers, the PA institution's staff and volunteers, and other stakeholders. These tools can prompt personal beliefs and evoke positive emotional responses to a PA and the institution's marketing efforts and in doing so build advocacy and stewardship for the PA estate (King et al., 2012; Reid et al., 2008).

Sophia considered the private land conservation sector an effective communicator and successful self-promoter. She explained:

> The private land sector is extremely good at communication because, of course, their income depends on it, and you will pick up Woman's Weekly, you will pick up The Conversation, you'll pick up the Guardian, you'll go onto Nine News, Channel 10 and there will be people releasing bilbies in the Pilliga. So they are not only putting in a lot of money and effort into conservation but they are also publicising particularly successful conservation, which, of course, is motivating for people to think, 'oh gosh, I'd like to do that' – you know, bring back the bilbies, bring back the numbats or whatever it happens to be.

Sophia's narrative excerpt illuminates the interconnection between effective communication including marketing and self-promotion, growing brand visibility, building a support base for conservation work and resultantly increased revenue. Sophia specifically referenced Bush Heritage Australia as an example of a private land management organisation that she considers to be an effective communicator with a strong and well-recognised brand. By way of example, in 2019, Bush Heritage Australia engaged a communications company to design and run an appeals campaign to improve donor engagement, and in doing so, it successfully increased the organisation's income. The language used in the campaign was described as "evocative and confident" and the imagery "beautiful and inspiring". This campaign is credited with helping Bush Heritage grow its appeal income by an average of 10% per year in the three years since it was launched. It did this by "tapping into the values held by donors and bringing them closer than ever to the work of Bush Heritage Australia reserves" (Marlin Communications, 2021).

The interpretation of PAs is another important communication tool. Mearns and Botha (2017) emphasised the power of interpretation, explaining that "through interpretation knowledge is instilled in visitors, attitudes and behaviours are changed, and tourists are encouraged to take care of the national parks and to become responsible citizens. In addition, interpretation services add to the visitors' enjoyment, create loyalty, extended stays, and increase expenditure and revenue for the park". In South Africa for example, the PA management agency, SANParks, considers interpretation to be an essential management function and it actively seeks to incorporate visitor interpretation plans into park plans of management (Mearns & Botha, 2017).

Finally, as briefly touched on, effective communication, messaging, and self-promotion rely in part on having evidence available to measure and report on the inputs, outputs, and outcomes or impact of work undertaken in PAs.

5.12 Enabling Condition 11: Evidence Available

Evidencing the case for funding is the eleventh enabling condition for financial sustainability. This requires the collection of adequate data to enable the measurement of and reporting on the inputs, outputs, and outcomes or impact across the full gamut of park management activities, from visitor infrastructure and fire trails through to the conservation of nature and the management of cultural and Aboriginal heritage (artefacts and sites). Alexander described the difference that having evidence available can make to the case for funding:

> Rather than going back to government and saying, 'We did good things with the $5 million you gave us', […] we can actually say we killed 30 thousand deer and 10 thousand horses, maintained X amount of fire trails and the next piece is around broader system health, reserve health, because at the moment the only thing we've got is the State of the Parks [reporting system], which is very subjective; it's the rangers sitting around saying, 'I think it's improved, I think it's got worse'.

Alexander's description illuminates the importance of demonstrating the past or potential future success of a project or program as part of a funding request to government (Xu et al., 2020). This is particularly important if NPWS is to successfully compete for funding in the NSW Government's prescribed outcomes-based funding model as discussed in Chapter 4 (Impediment 1). For instance, information can be presented about past successes in the implementation of a particular project or program, thereby helping to "demonstrate the potential effectiveness of future funding for the same or similar" projects/ programs (Xu et al., 2020, p.1287).

Furthermore, Oliver believes that stakeholder support for PAs is linked to stakeholders valuing and respecting PAs. He explained:

> …at the moment we see public land management whether it is national parks or crown land as pretty much a default low-cost way of looking after the bits that no one else wanted; that will only be respected when it is actually valued appropriately, so it is a legitimate cost to the community.

While stakeholder support will invariably ebb and flow, performance information can help to highlight PA funding priorities and needs, improve NPWS communication and messaging, and bolster its credibility as the expert in PA management and project/program execution. This strategy may help in turn to garner the trust and support of funding decision-makers (Xu et al., 2020).

This enabling condition further necessitates that data is collected to "measure, communicate and understand the funding shortfall" for park management (IUCN ESARO, p.19). This is necessary to "understand the potential direct and indirect consequences of the funding shortfalls" (IUCN ESARO, 2020, p.19). The information should inform the NPWS business plan and be used "as a blueprint for operations and fundraising" (IUCN ESARO, p.19). It is also necessary to periodically recalculate the funding gap and compare it against a benchmark to recognise how the funding situation has evolved over time. As described by IUCN ESARO (2020 p.v), "in order to develop and implement effective strategies to address the protected area funding gap, governments and conservation management agencies and managers must first understand the gap by conducting an assessment for individual protected areas and the entire protected area system". This will establish a narrative for the financial context of the PA estate that can be reviewed and revised as new evidence becomes available.

As discussed in Chapter 4 (Impediments 4 and 5), NPWS has not conducted an assessment to comprehensively understand the funding gap for the PA estate (NPWS, 2021g). However, the Financial Sustainability Scorecard for the 2020–21 financial year, which shows the current health and status of the PA estate, can be used as a benchmark for future financial years to indicate if the estate is "holistically moving over the long-term towards an improved financial situation" (Bovarnick, 2010, p.4).

Establishing a narrative for the financial context of the PA estate also correlates with Enabling Condition 10, which is focused on effective communication, messaging, and self-promotion, because data can underpin the justification for funding requests and provide the foundation for a strong narrative for future funding needs (Xu et al., 2020). It could also give the PA estate a boost when competing against other priorities for limited government funds by articulating quantified options, for example, as Emerson explained "if nothing happens [status quo], preferred option and minimal option". However, the effectiveness of this strategy requires accurate data including comprehensive scientific knowledge upon which the consequences of not-funding or underfunding can be argued (Xu et al., 2020).

Importantly, strategic collaborations and partnerships can assist in defining and collecting the evidence required to make a case for PA funding and play a role in the financial sustainability of the terrestrial PA estate in NSW more broadly.

5.13 Enabling Condition 12: Strategic Collaborations and Partnerships Fostered

The twelfth enabling condition is strategic collaborations and partnerships, which involve fostering new opportunities and maintaining and improving existing collaborations and partnerships. Ruth described this condition as:

> Looking outside of ourselves to build networks and skills and building relationships across government.

Ethan cited New Zealand's Department of Conservation as an example of a government department that has a strong focus on strategic collaborations and partnerships as a strategy to improve the financial sustainability of the PA estate and its management effectiveness. He described the New

Zealand Department of Conservation as “the poster boy” for partnerships because it generates around 30% of its annual budget from philanthropic and corporate partnerships. Ethan stated:

> They have got a partnership with Dulux, so Dulux paints all of their huts; they have got one thousand huts in New Zealand, they are all painted by Dulux – not just the paint, but Dulux goes out there and paints. You see all their ads in New Zealand and they’re Dulux paint, and there is a picture of the Routeburn Hut. It is so deeply embedded in the culture of the place.

Ethan’s comment highlights the importance of partnerships for the funding of New Zealand’s PAs and the broad acceptance of this type of funding by the Department of Conservation as part of the funding portfolio for New Zealand. Specifically, the Department of Conservation’s organisational structure supports maintaining and growing collaborations and partnerships with the ‘Partnerships Group’, one of seven business groups nested within the Department’s structure. The Partnerships Group is “responsible for achieving conservation growth through large scale, high impact partnerships. It works on projects across the country where there is an opportunity to create significant conservation growth” (DOC, n.d.). The Partnerships Group is headed by a Deputy Director-General and seven Partnership Directors. The Partnerships Group also “includes the International Unit, which represents New Zealand on international conservation issues” (DOC, n.d.).

Similarly, Ethan explained that the U.S. National Park Service places a high level of importance on philanthropic and corporate partnerships, working with its charity arm the National Park Foundation to establish and manage partnerships and generate funding for the PA estate. As of July 2021, six of the National Park Foundation’s ‘Corporate Partners’ had contributed over US$1,000,000 to the U.S. PA estate. An additional three partners had contributed between US$500,000 and US$999,999, 25 partners between US$100,000 and US$499,999 while 40 partners had contributed up to US$100,000 for PAs (National Park Foundation, 2021). In addition to corporate partners, the U.S. National Park Service has a national network of over 400 ‘Park Partners’. In 2013, Park Partners generated over US$600 million in revenue and provided in-kind support, for example, through involvement in biodiversity conservation initiatives and by developing and running visitor experience opportunities (National Park Service, 2013).

Within the U.S. National Park Service organisation structure, the Partnerships and Civic Engagement Directorate includes the Office of Partnerships and Philanthropic Stewardship (Partnership Office). The Partnership Office develops, facilitates, and manages programs related to donations and fundraising, marketing and promotion, park-based friends’ groups, partnership training, and the Service’s relationship with the National Park Foundation (National Park Service, 2014).

Returning to NSW, while the current NPWS organisational structure does not place the same level of importance on collaboration and partnerships as New Zealand's Department of Conservation or the U.S. National Park Service, Briana suggested that if strategic collaborations and partnerships are to be fostered and maintained, then:

> [NPWS] needs a dedicated team that doesn't do anything else… we really need a partnerships team; we need capable people to go out and find those partners and innovate.

Briana's assertion is supported by research that has been undertaken into the partnerships entered by the U.S. Department of Agriculture Forest Service with non-profit and private agencies. The research confirms that appropriate resourcing is needed to foster, implement, and maintain successful partnerships to achieve the Department's goals and mission in response to government budget reductions, funding priority changes, and adjustments to staff roles and responsibilities (Seekamp & Cerveny, 2010). The research further recognises that "partners do not manage themselves" and that a "lack of resources, incentives, and structure for maintaining partners" in addition to "hidden administrative costs involved in administering partner relationships" are impediments to successful partnerships (Seekamp & Cerveny, 2010, p.16).

Emerson explained that the NPWS Sponsorship Policy, adopted in 2020, provides a framework for NPWS to consider the appropriateness and suitability of possible partnership opportunities to generate additional revenue for PAs. He stated:

> I think in Parks the list is endless. If corporates want green triple bottom line, we've got a narrative to attach…. there's no reason why we couldn't start to sponsor investment in improving the value of ecosystems corporately, and corporates could say as part of their narrative that we are very pleased to say that we preserved 2% of Australia or something, and we are doing something for the future generations.

While Emerson's narrative excerpt highlights the potential opportunities associated with sponsorship and partnership, Ethan explains that unlike the New Zealand and U.S. offerings, where "the argument is that it is easy because they are one nation so if you sign up with the Parks Service you get all of it", a partnership with NPWS would cover the NSW PA estate only. However, this does not have to be an impediment to successful partnerships; instead, cross-jurisdiction partnerships with PA agencies in other Australian states and territories could be established to present potential partners with more enticing offerings. Ethan explained that, at the time of writing, this idea was being explored by NPWS with the assistance of the Foundation for Parks and Wildlife:

> We have had conversations in Australia where NIB wanted to do a deal. They had been dealing with Victoria for years and then they said they wanted to do a deal with all the agencies, more or less mimicking the Air New Zealand deal, but they said it would only work if we had something everywhere; they wanted to invest in a walking track and they wanted one in Darwin and one on Kangaroo Island and one in Sydney, so we sent the Foundation off to see if they could try and facilitate that across the states.

Ethan's comment raises the possibility of collaborating with other Australian park agencies. However, NPWS could also benefit from collaboration and partnerships with NGOs, private land management organisations, and other interest groups, including traditional owners, to achieve shared priorities, for instance through the sharing of knowledge and the pooling of resources. Sophia gives the example of the purchase of Fish River Station in the Northern Territory for conservation. The purchase of the property in 2010 was possible through a partnership between the Nature Conservancy, Australian Government, Indigenous Land Corporation, Pew Environment Group and Greening Australia (Fitzsimons & Looker, 2012). Meanwhile, funding for the day-to-day operations of Fish River Station comes from a mix of government and philanthropic sources and self-generated revenue (Fitzsimons & Looker, 2012, p.82). Sophia believes the value of the partnership lies in "sharing the load of investment". She explained:

> You end up with three or four partners sharing the load of investment... If you have got multiple partners, then in a sense you are sharing the load of costs and that makes everybody's money go further.

Fish River Station is an example of a partnership between government, NGOs, and an Indigenous Land Corporation; however, it is not without challenges (see Fitzsimons & Looker, 2012). The case study offers several valuable lessons about working in partnership to achieve shared outcomes. Firstly, all partners should have a shared vision and be transparent about their motivating reason for entering the partnership (Fitzsimons & Looker, 2012). A second lesson is that it takes time and effort to foster and maintain strategic collaborations and partnerships (Fitzsimons & Looker, 2012). This links back to Briana's previous comment that appropriate resourcing is needed to foster, implement, and maintain successful partnerships. Asher also recognised this challenge and emphasises that not every potential partnership or partner will align with the objectives of the *National Parks and Wildlife Act 1974* or be a good fit for the PA estate. He also cautioned that collaborations and partnerships can be "complex", stating:

> [partnerships] may raise a level of complexity and bureaucracy…I quite often find that you have competing and conflicting priorities and timelines.

A second example of an innovative partnership arrangement, this time between the private sector and nature conservation industry, is The Lion's Share Fund, which was launched in 2019 by Australian film production company FINCH Australia in partnership with UNDP (FINCH Australia, 2021; Nelius, 2021). It offers a simple model of raising funds through businesses that partner with The Lion's Share, pledging to donate 0.5% of their advertising budget to fund wildlife conservation each time they use an animal in an advertising campaign. Since its launch in 2019, The Lion's Share has co-financed the purchase of land in Northern Sumatra to rehabilitate old palm oil plantations, established an all-female ranger team in Sumatra, contributed to the foundation of a rhino rehabilitation centre in Africa, contributed to education programs in various countries, and funded Dunnart protection programs on Kangaroo Island in South Australia, among other conservation initiatives (Nelius, 2021).

A third example of a partnership arrangement is the Eco-Health Project that has been referenced throughout this chapter (see Enabling Conditions 3, 4, 5 and 7). As part of this multiyear project, NPWS is collaborating with the University of New South Wales's Centre for Ecosystem Science and a team of ecologists at the Australian National University to establish ecological health monitoring plans and performance scorecards for Royal National Park and adjacent Garrawarra State Conservation Area and Heathcote National Park and Kosciuszko National Park (UNSW & NPWS, 2021). The approach of integrating "ecological health indicators and financial data into national park decision making" is described as a world-first and an excellent example of how collaborations and partnerships can help to address the challenge of financial sustainability (UNSW & NPWS, 2021).

As previously discussed under Enabling Condition 8, volunteers who work in partnership with PA practitioners can play an important role in the financial sustainability of the PA estate (DECCW 2009). The literature supports this notion; for example, Ormsby and Lin (2021, p.26) explained that volunteer programs can help to offset and/or supplement the government agency running costs and assist in fundraising activities for PAs. With specific reference to the U.S. context, Bruyere and Rappe (2007) believe that while land management agency budgets "remain insufficient to address the maintenance and programming of outdoor areas, managers will increasingly depend on volunteers for their assistance" (p.515). Dara highlights the fortunate position of the PA estate in NSW in attracting volunteers:

> There is enormous goodwill amongst the community…we have people volunteering to come and work for us; the Corrective Services Department don't have people volunteering to go and do a shift at the jail.

The narrative excerpt from Dara acknowledges that, unlike some other government agencies, people choose to volunteer in national parks. This is evidenced by the thousands of people who each year spend their time volunteering across the PA estate (DECCW, 2009). A volunteer can be defined by three criteria: "(1) performs tasks with free will; (2) receives no financial gain; and (3) acts to benefit others" (Steimel, 2018, p.134).

In NSW, volunteers perform a wide range of roles that support the work of NPWS staff including Bushcare and bush regeneration, wildlife protection, monitoring and reporting, tour and Discovery program guides, visitor centre attendants, and campground hosts; volunteers also assist in the restoration and maintenance of historic sites and in bushfire recovery (NPWS, 2021e; NPWS, 2022a; 2022b). There is also a corporate volunteer program operating in conjunction with Landcare in Sydney Harbour and Lane Cove national parks (NPWS 2022b).

Oliver reflected on the NGO that he works for and how vitally important volunteers are to the organisation's financial sustainability:

> I have only got eight paid staff, [but] I have got 4000 members across the state. But the reality is I have probably got three dozen people who put six to 30 to probably 100 hours of time into my conservation NGO every month and that's on everything from policy development to campaigning to running the bushwalking program.

The level of importance for financial sustainability that Oliver places on the role of volunteers is again supported by the literature on PAs, which indicates that volunteers can bring an array of professional skills to their service, for example, through backgrounds in environmental science and research, education, and walking track creation (see Ganzevoort et al., 2017; Steimel, 2018). Steimel (2018) refers to this as "skills-based volunteerism" (p.134).

While volunteers already play an important role in supporting the work of paid staff, there is room to grow the volunteer base – both the number of volunteers and the hours spent on park. Managing volunteers takes resources; however, it can be expected that a well-run volunteer program could help to address the funding shortage experienced by NPWS. Much like with other collaborations and partnerships, the success of the volunteer program will hinge on the support NPWS provides to its volunteers; this might require the employment of additional volunteer coordinators. In instances such as this, it will cost NPWS money to save money in the longer term (Ormsby & Lin, 2021). The additional benefit of growing the volunteer base is the simultaneous growth of the support base.

Finally, strategic collaborations and partnerships would not be possible without the passion and dedication shown by PA staff and volunteers (Kopylova & Danilina, 2011).

5.14 Enabling Condition 13: Passion and Dedication of PA Staff and Volunteers

The final enabling condition for the financial sustainability of the PA estate in NSW is the passion and dedication shown by staff and volunteers towards the ongoing effective management of the PA estate in accordance with the *National Parks and Wildlife Act 1974*:

> I still think one of our biggest internal assets is the passion of the staff. (Ruth)

> I think people work very, very hard. (Rani)

This enabling condition underpins each of the other 12 enabling conditions and the five key elements of financial sustainability because as the U.S. National Park Foundation (2017) explains, passionate and dedicated staff and volunteers "contribute to the preservation of these spectacular treasures, ensuring they remain protected for future generations, and teaching us about the cultures, landscapes, and history that make up our past and present" (n.p).

While consultants and contractors are engaged to undertake specific or specialised work on behalf of NPWS, for instance, in the preparation of visitor precinct master plans (for example, see DPIE, 2020d), for the most part, more than 2,000 government employees undertake the bulk of the day-to-day management activities with the assistance of volunteers (NPWS, 2021k). Oliver emphasised the dedication of volunteers and the role that they play in supporting NPWS' land management activities:

> So much of protected area management, land management is the grind, but you know what – local communities are actually willing to do that because for each generation that comes through and they get hooked, and it becomes part of their life.

Oliver's comment speaks to the work that volunteers undertake in partnership with paid staff, and it also suggests that volunteer participation can help to garner greater community support and engagement and, through this, advocacy for the PA estate.

The literature on PAs supports the views expressed by Oliver, Ruth, and Rani in recognising the value of a passionate workforce – both paid and volunteer. Kopylova and Danilina (2011) state that "the world's protected areas are managed by dedicated staff. Their passion and commitment are unparalleled…Qualified, competent and committed staff are central to the success of protected areas" (p. xi).

The correlation between the passion and commitment of staff and volunteers and the success of PAs has been recognised through the listing of three reserves managed by NPWS on the IUCN Green List, which is a global certification program recognising and celebrating well-managed PAs. In 2014, Montague Island Nature Reserve, Arakawal National Park, and Cape Byron State Conservation Area were among the first PAs globally, to be included on the Green List and relisted after their 5-year review in 2019 (NPWS 2021l). NPWS believes that the inclusion of the reserves on the Green List reflects the long-term dedication of staff and volunteers together with local communities, including traditional owners, towards high standards of PA governance, design, and management, and the attainment of positive conservation outcomes (NPWS 2021l).

Finally, Oliver cited the Friends of Lane Cove National Park Bushcare group as an example of a successful partnership between NPWS staff and volunteers and of what he believes can be achieved with a team of passionate and dedicated people:

> Lane Cove had the most active, largest scale volunteer program in the state and that was partly because of Friends of Lane Cove. It was partly because you have a very wealthy demographic and people who were looking to do good, but it was also because they [NPWS] employed one of the field staff whose job was essentially as a technical officer to figure out how to get the best out of the volunteers, so they were doing things like integrating their weed management programs with their fire programs. So, Matt and his team would go in and actually do the primary collection, stack it so that it would burn six months before the next burn was programmed for that area to get that dual thing of […]increasing the heat of the burn in terms of consuming the fuels, [which] would end up knocking off some of the seed bank that was there, and you would actually create a fantastic bed for the plants to grow back. It was a smart program that actually needed that deep level of integration to get activities amongst the professional staff and the volunteers…there was a really high level of engagement.

Through his narrative excerpt, Oliver identifies some of the positive results that can be achieved through a well-managed and integrated working partnership between dedicated staff and volunteers. He discusses the role of 'Matt', an NPWS employee who coordinated the volunteer program at Lane Cove National Park and considered how to "get the best out of the volunteers". Research by Ormsby and Lin (2021) supports this view, finding that the employment of additional volunteer coordinators within the PA management agency could enhance the benefits derived from the work of volunteers. The role of the volunteer coordinators would be to recruit volunteers with relevant professional skills, foster and maintain a positive and productive working relationship between NPWS and volunteers, and oversee volunteer programs on park (Ormsby & Lin, 2021). Further to this, Bruyere and Rappe (2007) have emphasised the need for PA and other natural resource agency managers "to understand why people donate their time, in order to effectively manage and retain their volunteers" (p.504). Bruyere and Rappe (2007) have emphasised the importance of volunteer coordinators understanding "the motivations and expectations of those who are involved, so that they might build and organize their programs around those same motivations and expectations" (p.504).

5.15 Interconnections Between the Key Elements of Financial Sustainability and the Enabling Conditions and Impediments

The enabling conditions presented in this chapter represent important factors and processes that cut across the different elements of financial sustainability as defined by Emerton et al. (2006) with individual enabling conditions related to multiple elements of financial sustainability. Table 24 illustrates the interconnections between the elements of financial sustainability and the enabling conditions identified through the research data for the PA estate in NSW.

Table 24 Interconnections Between the Elements of Financial Sustainability and the Enabling Conditions Identified for the PA Estate in NSW

Elements of financial sustainability	Enabling conditions
1. "Building a diverse, stable, and secure funding portfolio: minimizing funding risks and fluctuations" processes (Emerton et al., 2006, p.16)	• Government support • Diverse funding portfolio • Financial security • Effective planning and administration • Supportive policy, legislative and economic environment • Self-generated revenue • Financial independence, transparency, and accountability • Effective communication, messaging, and self-promotion • Evidence available • Strategic collaborations and partnerships fostered • Passion and dedication of PA staff and volunteers.
2. "Improving financial administration and effectiveness: ensuring that funding is allocated and spent in a way that supports PA finance needs and conservation goals" processes (Emerton et al., 2006, p.16)	• Government support • Financial security • Cost-effectiveness • Effective planning and administration • Supportive policy, legislative and economic environment • An enabling environment • Financial independence, transparency, and accountability • Evidence available • Passion and dedication of PA staff and volunteers.
3. "Taking a comprehensive view of costs and benefits: covering the full range of PA costs, ensuring that those who bear PA costs are recognised and adequately compensated, and that those who benefit from PAs make a fair contribution to their maintenance" processes (Emerton et al., 2006, p.16)	• Government support • Diverse funding portfolio • Financial security • Cost-effectiveness • Effective planning and administration • Supportive policy, legislative and economic environment • An enabling environment • Evidence available

	• Strategic collaborations and partnerships fostered • Passion and dedication of PA staff and volunteers.
4. "Creating an enabling financial and economic framework: overcoming market, price and policy distortions that undermine PAs or act as obstacles to PA financing" processes (Emerton et al., 2006, p.16)	• Government support • Financial security • Cost-effectiveness • Effective planning and administration • Supportive policy, legislative and economic environment • An enabling environment • Effective communication, messaging, and self-promotion • Evidence available • Passion and dedication of PA staff and volunteers.
5. "Mainstreaming and building capacity to use financial tools and mechanisms: factoring financial analysis and mechanisms into PA planning processes" (Emerton et al., 2006, p.16)	• Government support • Financial security • Effective planning and administration • Supportive policy, legislative and economic environment • An enabling environment • Financial independence, transparency, and accountability • Effective communication, messaging, and self-promotion • Evidence available • Strategic collaborations and partnerships fostered • Passion and dedication of PA staff and volunteers.

Source: The enabling conditions listed in column two of Table 24 were drawn from O'Flynn et al. (2022, pp.8–10)

As highlighted in Table 24, government support, financial security, effective planning and administration, a supportive policy, legislative and economic environment and having evidence available together with the passion and dedication of PA staff and volunteers (enabling conditions 1,3,5,6,11,13) support all five elements of financial sustainability. Take for example government support (Enabling Condition 1), it is considered an enabling condition for all five elements of financial sustainability. Government support is needed to build "a diverse, stable and secure funding portfolio"; it can encourage the PA institution to improve its financial administration and effectiveness and take "a comprehensive view of its costs and benefits"; it can help to create the enabling framework for financial sustainability; and it can encourage the PA institution and practitioners to build their "capacity to use financial tools and mechanisms" (Emerton et al., 2006, p.16).

Further to this, an enabling environment (enabling condition 8) supports four elements of financial sustainability (2,3,4,5). Cost effectiveness (enabling condition 4) is recognised as supporting three of the elements (elements 2,3,5) as is financial independence (enabling condition 9 and elements 1,2,5), effective communication, messaging, and self-promotion (enabling condition 10 and elements 1,4,5), and the fostering of strategic collaborations and partnerships (enabling condition 12 and elements 1,3,5). Finally, a diverse funding portfolio (enabling condition 2) supports two of the elements (1,3) and self-generated revenue (enabling condition 7) supports one of the elements of financial sustainability (1). While the thesis did not attempt to rank the significance of the enabling conditions in terms of their impact on the challenge of PA financial sustainability in NSW, the findings could provide the foundation for future research in this area.

In the same way that the enabling conditions cut across the different elements of financial sustainability, as shown in Table 24, they also have a relationship with the impediments to financial sustainability, with each condition helping to dismantle the impediments analysed in Chapter 4. Table 25 illustrates the interconnections between enabling conditions of financial sustainability and the impediments identified through the research data for the PA estate in NSW.

Table 25 Interconnections Between the Enabling Conditions and Impediments to Financial Sustainability for the PA Estate in NSW

Impediment	Corresponding enabling condition
1. State budget processes	• Government support • A diverse funding portfolio • Financial security • Cost-effectiveness • Effective planning and administration • Supportive policy, legislative and economic environment • Self-generated revenue • An enabling environment • Financial independence, transparency, and accountability • Effective communication, messaging, and self-promotion • Evidence available • Strategic collaborations and partnerships fostered.
2. Political influence	• Government support • A diverse funding portfolio • Financial security • Effective planning and administration • Supportive policy, legislative and economic environment • Self-generated revenue • An enabling environment • Financial independence, transparency, and accountability • Effective communication, messaging, and self-promotion • Evidence available • Strategic collaborations and partnerships fostered.

3. Poor communication, messaging, and self-promotion	• Financial security • An enabling environment • Effective communication, messaging, and self-promotion • Evidence available • Strategic collaborations and partnerships fostered.
4. Data, measurement, and reporting limitations	• Financial security • Supportive policy, legislative and economic environment • Evidence available • Strategic collaborations and partnerships fostered.
5. Governance challenges	• Government support • Financial security • Effective planning and administration • Supportive policy, legislative and economic environment • Self-generated revenue • An enabling environment • Financial independence, transparency, and accountability • Effective communication, messaging, and self-promotion • Evidence available • Strategic collaborations and partnerships fostered.
6. Limited strategic financial planning and innovation	• Financial security • Cost-effectiveness • Effective planning and administration • Supportive policy, legislative and economic environment • An enabling environment • Financial independence, transparency, and accountability • Evidence available • Strategic collaborations and partnerships fostered.
7. Resistance to change	• Government support • Supportive policy, legislative and economic environment • Effective communication, messaging, and self-promotion • Evidence available • Strategic collaborations and partnerships fostered • Passion and dedication of PA staff and volunteers.
8. Cultural mismatch	• Government support • Effective communication, messaging, and self-promotion • Evidence available • Strategic collaborations and partnerships fostered • Passion and dedication of PA staff and volunteers.

Source: The impediments and corresponding enabling conditions listed in Table 25 were drawn from O'Flynn et al. (2022, pp.8–13).

As highlighted in Table 25, each of the 13 enabling conditions has a role to play in addressing the impediment of state budget processes (impediment 1). Further to this, ten enabling conditions help to address the impediments of political influence (impediment 2 and enabling conditions 1,2,3,5,6, 8,9,10,11,12) and governance challenges (impediment 5 and enabling conditions 1,3,5,6,7,8,9,10,11,12). Eight enabling conditions (3,4,5,6,8,9,11,12) assist in dismantling the impediment of limited strategic financial planning and innovation (impediment 6). Six enabling conditions (1,6,10,11,12,13) help to address the impediment of resistance to change (impediment 7). Five enabling conditions (3,8,10,11,12) help to dismantle the impediment of poor communication, messaging, and self-promotion (impediment 3). Four enabling conditions (3,6,11,12) address the impediment of data, measurement, and reporting limitations (impediment 4). Finally, five enabling conditions (1,10,11,12,13) assist in disabling the impediment of cultural mismatch (impediment 8). Again, while the thesis did not attempt to rank to significance of the enabling conditions in terms of their ability to dismantle the impediments to financial sustainability, the research findings could provide the foundation for future research in this area.

5.16 Summary

This chapter has analysed and discussed the 13 enabling conditions that exist for the financial sustainability of the publicly managed terrestrial PA estate in NSW under the care and control of NPWS. This included a discussion of the interconnections between the key elements of financial sustainability as defined by Emerton et al. (2006) and the enabling conditions and impediments.

The first enabling condition discussed was continued financial and non-financial government support for the PA estate. This condition recognises that historically, the NSW Government has been the primary source of funding for PAs and the necessity for the government to take an ongoing role in the establishment, management, and financing of PAs and the provision of a supportive policy and legislative environment.

A diverse funding portfolio was the second enabling condition discussed. PA practitioners can draw on a broad range of funding mechanisms in addition to government grants and consolidated funds to finance estate expansion and park management (see IUCN, 2020). For instance, funds may be generated through return-on-investment instruments such as impact bonds, self-generated revenue, economic instruments, or collaborations and sponsorship/partnership arrangements (CBD, 2007; CFA, 2020; Meyers et al., 2020; Waldron et al., 2020).

Financial security was the third enabling condition identified. Under this condition, allocated funds are managed in a way to facilitate long-term financial planning, predictability, security, and stability (Meyers et al., 2020). This condition acknowledges that in NSW, financial resources will likely remain limited and, therefore, the funds that are made available to PAs should be strategically allocated and “a comprehensive view of costs and benefits” adopted (Emerton et al., 2006, p.16).

The fourth enabling condition discussed was cost-effectiveness. This enabling condition involves the efficient and effective management and expenditure of funds to achieve maximum impact (Meyers et al., 2020). This could include “financial planning, accounting and business planning… [which can be] important tools for cost-effective management when undertaken on a regular and systematic basis” (Bovarnick, 2010, p.5).

The fifth enabling condition for financial sustainability discussed was effective planning and administration. This condition ensures that the institution is supported by an appropriate business model in place (Kaplan, 2011) and that funds are “allocated and spent in a way that supports PA finance needs and conservation goals” (Emerton et al., 2006, p.16). The chapter explained that in NSW, effective planning and administration will involve the articulation of organisational values, goals, priorities, and a vision that is reflected in NPWS’ procedures, policies and strategic plans and personified by its decision makers and leaders (O’Flynn et al., 2022).

A supportive policy, legislative, and economic environment was the sixth enabling condition discussed. This condition requires that “economic, fiscal, policy, price and market conditions, circumstances, and instruments act in support of, and incentives towards, conservation goals” (Meyers et al., 2020, p.9). It was explained that this will in part require the identification and resolution of impediments to financial sustainability discussed in Chapter 4.

The seventh enabling condition for the financial sustainability of the PA estate discussed was self-generated revenue, which can be reinvested into park management for public use and conservation (see Waldron et al., 2020). The existing legislative and institutional environment in NSW is structured to permit the PA institution to retain and reinvest self-generated revenue.

An enabling environment was identified as the eighth enabling condition. This requires financial sustainability to be a policy priority together with sufficient organisational and technical capacity, political support, and social acceptance, which includes community advocacy and support. This is crucial because public opinion can influence public policy objectives and political priorities (Hobley, 2012). An enabling financial and economic framework can help to overcome “market, price and policy distortions that undermine PAs or act as obstacles to PA financing” (Emerton et al., 2006, p.16).

The ninth enabling condition for financial sustainability analysed was financial independence, transparency, and accountability. Under this condition, NPWS has control of its finances including financial decision making and reporting (O'Flynn et al., 2022). Connected to financial independence are budget accountability and transparency while the institution should maintain the right to keep and reinvest self-generated revenue.

Effective communication, messaging, and self-promotion were discussed as the tenth enabling condition. It covers the delivery and timing of a message to the envisioned audience through various communication channels. Self-promotion is a component of effective communication which is expected to increase the support base for the PA estate and NPWS together with the institution's brand visibility.

The eleventh enabling condition identified was whether evidence is available, which relates to the need to provide evidence for the case for funding. This condition requires that data is available to benchmark the park management funding gap annually, which can help to develop and implement effective strategies to address the funding gap and bolster future funding requests and arguments pertaining to funding needs (IUCN ESARO, 2020; Xu et al., 2020).

The fostering of collaborations and partnerships was discussed as the twelfth enabling condition for financial sustainability. It helps to attract additional funding; encourage the sharing of expertise, ideas, and knowledge; and combine resources to attain shared desired outcomes (Fitzsimons & Looker, 2012). The PA institution's Sponsorship Policy (NPWS, 2020) can be used by the institution to consider potential revenue-generating collaboration and partnership opportunities.

The final enabling condition for financial sustainability identified through the research data and then discussed and analysed in this chapter was the passion of PA staff and volunteers and their dedication to the effective management of PAs (Kopylova & Danilina, 2011).

The analysis revealed that while each enabling condition is crucial to the financial sustainability of PAs in NSW, there are distinct linkages between the enabling conditions. Furthermore, a multiplicity of interconnections exists between the identified enabling conditions and the key elements of financial sustainability where each enabling condition is recognised as important in attaining the elements of financial sustainability. Similarly, the chapter revealed that the enabling conditions assist in dismantling the various impediments to financial sustainability discussed in Chapter 4.

Building on the analysis and discussion of the existing impediments to and enabling conditions for the financial sustainability of the PA estate in NSW, the thesis will now explore the identified pathways to change.

Chapter 6 The Pathways to Change

6.1 Introduction

In Chapter 2, the financial sustainability of terrestrial PAs was explored, with a focus on those under the care and control of government agencies. Through a literature review, the chapter investigated the role and value of PAs in the context of biodiversity conservation and human health and wellbeing and the challenge of PA financial sustainability. The literature highlighted that while financial sustainability is a system-wide challenge and obstruction to the effective management of PAs globally, the context of the challenge is not the same for PAs worldwide. It also revealed that there is limited literature on the challenge faced within the NSW context, in particular, the impediments and enabling conditions that exist for the financial sustainability of the publicly managed PA estate and the pathways to change.

So far, this thesis has sought to address this gap in the literature, with Chapter 4 and Chapter 5 analysing and discussing the existing impediments to and enabling conditions for the financial sustainability of the publicly managed PA estate in NSW. In doing this, the thesis has made several important contributions, including:

1. Improved researcher and participant knowledge of the existing publicly managed PA funding situation in NSW (the context).
2. Identified the impediments to PA financial sustainability and the enabling conditions required to dismantle the impediments within the NSW context.
3. Identified the interconnections between the enabling conditions and the key elements of PA financial sustainability and similarly the interconnections between the enabling conditions and the impediments.
4. Identified the pathways to change to help address the challenge of financial sustainability for the publicly managed terrestrial PA estate in NSW under the care and control of NPWS.

The purpose of Chapter 6 is to further address the gap in the literature by exploring the 'pathways to change' that first emerged through the analysis of impediments and enabling conditions. Six pathways to change are presented in the Theory of Change for the Financial Sustainability of the PA Estate in NSW. Drafting the ToC occurred in the third (and final) phase of data collection and analysis in the thesis (see Table 14).

In addition to contributing to the literature on the financing of PAs, the presented ToC makes an important practical contribution by providing the foundation for an informed and holistic response to the problem of financial sustainability and a framework for strategic decision-making and communication with stakeholders, including funders. To this end, Chapter 6 discusses policy and management implications that arose from the process of drafting the ToC and subsequent lessons for PA practitioners working within NSW and further abroad.[10] Table 26 provides a conceptual outline for the chapter's structure.

Table 26 Conceptual Outline of Chapter 6 Structure

Section	Description
Section 6.2	Theory of Change for the Financial Sustainability of the Protected Area System in NSW
Section 6.3 6.3.1 6.3.2 6.3.3 6.3.4 6.3.5 6.3.6	The Six Pathways to Change - Pathway A. Government Support - Pathway B. Institutional Effectiveness - Pathway C. Appropriate Business Model - Pathway D. Strategic Planning and Innovation - Pathway E. Communication and Advocacy - Pathway F. Collaboration and Partnerships
Section 6.4	Policy and Management Implications and Lessons
Section 6.5	Summary

6.2 Theory of Change for the Financial Sustainability of the Protected Area Estate in NSW[11]

The history and evolution of ToC as a methodology, together with the process used to establish the Theory of Change for Financial Sustainability of the PA Estate in NSW, was detailed in Chapter 3. To briefly recap, in drafting the ToC presented in this thesis, Vogel (2011)'s five-stage process was followed:

1. Analyse context of problem to be addressed.
2. Define desired impact.

[10] The chapter draws extensively on the co-authored work with PhD supervisors published in the *Journal of Park and Recreation Administration* in 2022 for which the researcher was the lead author. See O'Flynn et al. (2022).

[11] The ToC published by O'Flynn et al., (2022) was titled "Theory of Change for the Sustainable Financing of the Protected Area Estate in New South Wales"; however, the title was amended for the purposes of this thesis to better reflect the role of the ToC in addressing the broader challenge of the financial sustainability of the protected area estate in NSW.

3. Determine steps involved in achieving impact.
4. Articulate assumptions.
5. Prepare ToC diagram and narrative.

The action research methodology of this thesis was complemented by the ToC process, which encouraged collaboration between the researcher and research participants. The ToC presented in Figure 4 was informed by the views, knowledge, and experience of the PA specialists interviewed, in addition to secondary data, the literature on the financing of PAs, and the information collected through the population of the NPWS Financial Sustainability Scorecard (2020–21). Table 27 articulates the assumptions associated with the ToC that were gathered from published literature and the practical experience of the research participants.

Figure 4 Theory of Change for the Financial Sustainability of the Protected Area Estate in NSW

IMPACT The end goal	**EFFECTIVE MANAGEMENT OF THE PROTECTED AREA ESTATE WITH RESPECT TO CONSERVATION AND OTHER OBJECTIVES**					
OUTCOMES The desired change	Government plays a central role in financing, establishing, and managing the PA estate	Nature & objects, places, or features of cultural value within the landscape are conserved	The natural & cultural resources & values of PAs are preserved for the enjoyment, education & inspiration of current & future generations	The long-term financial needs of the institution and the PA estate are addressed	Politicians, communities & other stakeholders have greater appreciation of PA estate & its values	PA estate is managed in partnership to deliver best practice in conserving natural & cultural values
OUTPUTS What is delivered	Improved government confidence in institution Institution's priorities/ goals linked to those of government Demonstrate value for money Natural, social assets valued	Financially independent, transparent & accountable Well trained & financially knowledgeable staff Appropriate & timely distribution of funds	Financial security Efficient & effective expenditure of funds Public & private finance unlocked Less dependence on government funding	10-year strategic plan adopted Funding baseline established & funding gap defined Budgets & financial instruments aligned with PA needs & priorities Inputs, outputs & outcomes measured & reported on	Communication targeted to needs/interests of audience Variety of communication channels utilised Strong narrative for future funding needs Broadened support base PAs viewed as culturally valued resource Increased willingness of political leaders to fund PAs	New collaborations & partnerships established Existing collaborations & partnerships strengthened Increased no. volunteers & volunteer hours Knowledge, experience & skills exchanged Financial costs of PAs shared Institution's structure supports collaborations & partnerships
ACTIONS What is done	Target communication to interests/needs of government Determine institution's priorities & goals Demonstrate PA connections to other government portfolios Calculate natural and social asset values	Regain financial independence, transparency & accountability Foster staff passion/ dedication Improve staff financial knowledge Identify funding impediments	Adopt a comprehensive view of costs & benefits Increase self-generated revenue Improve cost effectiveness Broaden funding portfolio Improve financial planning & administration	Increase data collected on inputs, outputs & outcomes Support innovation Assess suitability of finance mechanisms Define financial sustainability in the NSW PA estate context Set 10-year priorities, goals	Improve communication & messaging Increase self-promotion Enhance stakeholder awareness of PA values Increase brand visibility	Expand volunteer base Foster cross tenure/agency/sector collaborations Improve capacity for collaboration & partnerships (incl. volunteers)
PATHWAY TO CHANGE	A. Government support	B. Institutional effectiveness	C. Appropriate business model	D. Strategic planning & innovation	E. Communication & advocacy	F. Collaboration & partnerships
INPUTS What is put in	Staff time, volunteer time, training, financial resources					

The chain logic represented with black arrows is that Actions lead to Outputs, which in turn lead to Outcomes and the overarching Impact.

Source: O'Flynn et al. (2022, p.11)

Table 27 Theory of Change Assumptions

	Assumption
Pathway A. Government support	
1	Political support is linked to the financial resources made available to the PA estate through the state government's budget (Xu et al., 2020).
2	Financial transparency helps to demonstrate value for money, which is essential in securing public and private funding in the future. Financial transparency is also essential for financial accountability and reporting (Carlitz, 2013).
3	Improved communication with political leaders will lead to a change in political will and subsequent increase in willingness to fund the PA estate.
4	The political context/ government prioritisation of funding PAs is linked to community support and the politics of the day (Bakaki et al., 2020).
Pathway B. Institutional effectiveness	
5	Staff and volunteer passion and dedication are critical to institutional effectiveness (Kopylova & Danilina, 2011).
6	Staff financial knowledge and skills do lead to improved cost-effectiveness in PA management (IUCN ESARO, 2020; Turpie et al., 2010).
7	A shift in NPWS culture is necessary to transition towards financial sustainability and will see staff supportive of the estate relying less on government funding.
Pathway C. Appropriate business model	
8	There are different types of funds available for the PA estate; however, not all mechanisms will be suitable in every situation (WCPA, 2000).
9	Diversifying the PA funding portfolio comes with the risk that government will respond by reducing consolidated funding allocated to the PA estate.
10	Improved cost-effectiveness will see more effective and efficient expenditure and management of funds, thereby achieving greater impact than at present (Meyers et al., 2020).
11	NPWS has a responsibility to manage the PA estate cost-effectively, and the opportunity exists to improve PA cost-effectiveness in NSW.
12	NPWS staff are aware of the current financial situation and understand the pathways to PA financial sustainability.
13	Financial transparency helps the government to see what value it is getting from its investment and similarly assists the community to see the value it is getting from its tax dollars.
14	Improved financial transparency, accountability, and reporting will help to build the independent profile of NPWS.
Pathway D. Strategic planning & innovation	
15	Strategic planning can attract new partners, private capital, and philanthropic contributions to grow and enhance the PA estate, for example, through the Sponsorship Policy (NPWS, 2020).
16	NPWS staff have the time, capacity, and resources needed to undertake strategic planning.
17	Data and reporting on inputs, outputs, and outcomes will bolster future requests for funding (Xu et al., 2020).
18	Innovation refers to creative problem-solving and the adoption of novel ideas and approaches for the effective management of the PA estate, including innovations in PA financing.
19	Financial innovation is necessary considering the ongoing shift away from consolidated funding for general operating expenses across government.
20	NPWS culture is supportive of innovation.
Pathway E. Communication & advocacy	

21	NPWS has brand independence.
22	Greater community value for PAs will foster increased political support for PAs and in turn additional financial resources for the PA estate.
23	Increased value (financial and non-financial) of wildlife/conservation to communities leads to increased incentives to protect it (Biggs et al., 2016).
24	Increased advocacy for the PA estate will lead to PAs becoming a culturally valued resource (Hamú et al., 2004).
25	Communication, messaging, and self-promotion can be vetted by the Minister's office or linked with political/ ministerial priorities.
Pathway F. Collaboration & partnerships	
26	The foundation of an effective partnership is shared acceptance of a common purpose, consensus, and trust.
27	While people can be reluctant to donate money to government agencies, they may be more willing to donate money to the charity arm of NPWS.
28	Volunteers are provided with adequate training and receive supervision and support to undertake assigned activities.
29	The PA estate is part of a broader landscape of conserved lands and collaboration/ partnerships can aid the achievement of mutual priorities and the sharing of financial costs (Fitzsimons & Looker, 2012).
30	Collaboration and partnerships can increase advocacy for the PA estate.
31	Some stakeholders are hesitant about entering into partnerships with private investors/non-government partners.

6.3 The Six Pathways to Change

As Figure 4 illustrates, the Theory of Change for the Financial Sustainability of the PA Estate in NSW explores six different yet interlinked pathways to change, including:

A. "Government support."

B. "Institutional effectiveness."

C. "Appropriate business model."

D. "Strategic planning and innovation."

E. "Communication and advocacy."

F. "Collaboration and partnerships." (O'Flynn et al., 2022, p.11).

The pathways are designed to encourage PA practitioners and NPWS to critically consider the challenge of PA financial sustainability, including potential alternative funding models and mechanisms. Each pathway to change involves "inputs, actions, outputs and outcomes that are connected sequentially and lead to the same overall impact" (the end goal) (O'Flynn et al., 2022, p.7). Table 28 describes the components of each pathway to change.

Table 28 Components of Pathways to Change

Component	Description
Inputs	What is required to operationalise each pathway.
Actions	What needs to be done to achieve the desired change. As there are too many possible actions along the six pathways to capture in one diagram, for simplicity's sake, the ToC diagram (Figure 4) outlines a general type of action that would be required.
Outputs	What is delivered. In this ToC the outputs reflect the objects of the NSW *National Parks and Wildlife Act 1974* and the NPWS mission.
Outcomes	Stipulate the desired change.
Impact	The end goal.
Assumptions	The GEF (2019, p.5) defines assumptions as "The beliefs that are accepted as true or taken for granted in defining the causal links in the causal pathway" (see Table 27).

The enabling conditions for financial sustainability identified within the NSW context (see Chapter 5) form the basis for the pathways to change, with each enabling condition reflected within the ToC diagram. Furthermore, the pathways are designed to address the identified impediments to financial sustainability (see Chapter 4). The interconnection between each pathway and the associated enabling conditions and the impediments it endeavours to address are highlighted in Table 29.

Table 29 Interconnections Between Pathways to Change, Enabling Conditions and Impediments

Pathway	Associated enabling conditions	Impediments addressed
Pathway A Government support	"Government support; financial security; cost-effectiveness; effective planning and administration; supportive policy, legislative, and economic environment; an enabling environment; financial independence, transparency, and accountability; effective communication, messaging, and self-promotion; evidence available".	"Political influence; poor communication, messaging, and self-promotion; limited strategic planning and financial innovation; cultural mismatch".
Pathway B Institutional effectiveness	"Financial security; cost-effectiveness; effective planning and administration; supportive policy and economic environment; an enabling environment; financial independence, transparency, and	"State budget processes; political influence; governance challenges; limited strategic financial planning and innovation; resistance to change; cultural mismatch".

	accountability; passion and dedication of PA staff and volunteers".	
Pathway C Appropriate business model	"Government support; a diverse funding portfolio; financial security; cost-effectiveness; effective planning and administration; self-generated revenue".	"State budget processes; political influence; data, measurement, and reporting limitations; limited strategic financial planning and innovation".
Pathway D Strategic planning and innovation	"Government support; a diverse funding portfolio; financial security; cost-effectiveness; effective planning and administration; supportive policy, legislative, and economic environment; evidence available".	"State budget processes; political influence; data, measurement, and reporting limitations; governance challenges; limited strategic planning and innovation".
Pathway E Communication and advocacy	"Effective communication, messaging, and self-promotion; collaboration and partnerships fostered; and an enabling environment".	"State budget processes; political influence; poor communication, messaging, and self-promotion; resistance to change; cultural mismatch".
Pathway F Collaboration and partnerships	"Government support; a diverse funding portfolio; financial security; effective planning and administration; an enabling environment; effective communication, messaging, and self-promotion; collaboration and partnerships; passion and dedication of PA staff and volunteers".	"State budget processes; poor communication, messaging, and self-promotion; limited strategic financial planning and innovation; resistance to change; cultural mismatch".

Source: O'Flynn et al. (2022, pp.13–15)

6.3.1 Pathway A: Government Support

As explained in Chapter 5 (under Enabling Condition 1), historically in NSW, the state government has been the primary funder of publicly managed PAs. Ongoing government support (financial and non-financial) is vital for financial sustainability, and there is also potential to see increased funding allocations from government in the future (Emerton et al., 2006). Therefore, as the ToC diagram (Figure 4) indicates, the actions along Pathway A strive to maintain and increase the government's support for the PA estate. Pathway A calls for greater emphasis "on the values of protected areas to society to expand their constituency" (McNeely, 2015, p.190). For example, by explaining their connection to other government portfolios (e.g., health) and awarding an economic value to natural capital assets.

The outputs to be delivered include improved government confidence in NPWS, achieved through strategic planning, which links the priorities of PAs to those of government, and by highlighting the financial and non-financial value of investing in PAs for government. The outcome of Pathway A is that the "government plays a central role in financing, establishing, and managing the PA estate" (O'Flynn et al., 2022, p.15).

6.3.2 Pathway B: Institutional Effectiveness

Institutional effectiveness (Pathway B in Figure 4) concerns the extent to which the PA institution is meeting its mission and legal mandate. Decision-making is mission focused, and evidence based, while the institution is governed according to clearly articulated and communicated priorities and goals (Ng'and'a & Nyongesa, 2012).

An effective institution generally has knowledgeable and well-trained volunteers and staff who are supportive of institutional goals and priorities. Staff have an appropriate level of financial literacy with the ability to use financial mechanisms and tools that are appropriate to their role (Emerton et al., 2006). Staff will also be aware of the impediments to financial sustainability and the pathways to change. The culture will be strategically relevant, goal oriented and supportive of adapting as circumstances change (Ng'and'a & Nyongesa, 2012).

Central to institutional effectiveness are budget transparency, accountability, and financial independence. A financially independent institution will have "control over its finances including its budget, and decision making regarding the form, allocation, distribution, expenditure, and reporting of funds" (O'Flynn et al., 2022, p.9).

The foundation of an effective PA institution is a supportive policy, legislative, and economic environment with market, fiscal, price, and economic conditions, instruments, and circumstances that provide for and encourage conservation and other goals. This helps to identify and overcome threats, financing constraints, and other impediments (Emerton et al., 2006).

A strong and effective institution will position itself to address the full suite of impediments to financial sustainability (see Chapter 4). It does this by underpinning the other five pathways to change. An effective institution boosts government confidence in its ability to effectively manage the PA estate and provide value for money whereby earning government support for PAs and their financing (Pathway A). It supports a business model that provides financial security for the PAs under its care and control by unlocking private and public finance that lowers the institution's dependence on a single funding source, thereby reducing its vulnerability to external shocks and by managing and spending funds in an efficient and effective way (Pathway C).

An effective institution makes decisions based on strategic planning, including long-term strategic financial planning, and draws on solid data about its inputs, outputs, outcomes, and impact. At the same time, innovation in the form of new ideas and creative approaches to addressing existing problems is supported and encouraged (Pathway D). An effective institution is a strong communicator that breaks down language barriers between audiences and advocates for itself and the PA estate under its care and control. It also has a well-recognised brand and a broad base of support for its work in managing the PA estate and a strong narrative for its future funding needs (Pathway E). Furthermore, an effective institution fosters, strengthens, and maintains cross-tenure, agency, and sector collaborations and partnerships, and it promotes the exchange of knowledge, experience, and skills to enhance financial sustainability and deliver best practice in the conservation of PA values (Pathway F).

The actions identified in Pathway B aim to improve NPWS capacity to sustainably finance and therefore effectively manage the PA estate under its care and control. The outputs to be delivered are that NPWS is "financially independent, transparent, and accountable, it has well trained and financially knowledgeable staff and funds are distributed in an appropriate and timely manner" (O'Flynn et al., 2022, p.15). The outcome of Pathway B, which is based on the objects of the *National Parks and Wildlife Act 1974 (NPW Act)*, is "nature and objects, places, or features of cultural value within the landscape are conserved" (O'Flynn et al., 2022, p.15).

6.3.3 Pathway C: Appropriate Business Model

Pathway C (Figure 4) highlights that an appropriate business model is essential in achieving financial sustainability. The intention of actions along Pathway C is to establish a business model that encapsulates how NPWS establishes, provides, and retains value (Kaplan, 2011). An important component of this is a financial model that articulates NPWS funding sources, revenue streams, the annual cost of managing the PA estate (expenses), and areas for cost savings to achieve financial sustainability. It also involves broadening or diversifying the funding portfolio for the PA estate. This may in part be achieved by using market-based finance mechanisms or payment for ecosystem services, for instance, impact bonds and carbon sequestration (Emerton et al., 2006; NPWS 2021i).

An appropriate business model will be complemented by an active charity arm that is dedicated to the interests of the NSW PA estate. The formation of the NSW National Parks and Wildlife Conservation Trust in 2022 under Part 7 of the *NPW Act 1974* is positioned to take on this role through its capacity to accept donations and raise funds for the PA estate through philanthropy and corporate sponsorship. It could also be achieved by strengthening the existing affiliation with the Foundation for Parks and Wildlife.

The output of Pathway C is that by unlocking public and private finance and the effective and efficient expenditure of funds, the PA estate is financially secure – with all costs associated with the PA estate covered and NPWS dependence on government funding reduced. The outcome of Pathway C, which is based on the objects of the *NPW Act 1974,* is that "natural and cultural resources and values of PAs are preserved for the enjoyment, education, and inspiration of current and future generations" (O'Flynn et al., 2022, p.16).

6.3.4 Pathway D: Strategic Planning and Innovation

Strategic planning and innovation (Pathway D in Figure 4) underpin several of the other pathways to change outlined in the ToC. It supports the government's ongoing commitment (financial and non-financial) to the PA estate (Pathway A); enhances institutional effectiveness (Pathway B); and supports the NPWS business model and its effective communication and advocacy (Pathways C and E).

Actions along Pathway D seek to facilitate an environment that encourages innovation, which can facilitate "creative thinking and new ideas – and commitment – that can in turn help to improve PA management effectiveness and to address the impediments to financial sustainability" (O'Flynn, et al., 2022, p.16). Additionally, by gathering, analysing, and synthesising information on the impact, outcomes, outputs, and inputs of NPWS, the institution can enhance its decision-making, strategic planning, and support for future funding requests (Xu et al., 2020). For instance, this includes the collection of data to calculate the funding gap for optimal and basic PA management (IUCN ESARO, 2020).

The output of Pathway D is a "10-year strategic plan for the PA estate" (O'Flynn et al., 2022, p.11) which will see "budgets and financial instruments aligned with PA needs and priorities" (Emerton et al., 2006, p.16). While the outcome is that "the long-term financial needs of the institution and the PA estate are addressed" (O'Flynn et al., 2022, p.16).

6.3.5 Pathway E: Communication and Advocacy

Communication and advocacy (Pathway E in Figure3) "are critical to the attainment of government and political support for the PA estate and its adequate funding (Pathway A), and the overall effectiveness of the institution (Pathway B)" (O'Flynn et al., 2022, p.16). Effective communication in the context of Pathway E promotes the work of NPWS, improves its brand visibility, expands the support base for PAs, increases awareness of PA values, and maintains and fosters collaborations and partnerships. Effective communication is also the basis for compelling narratives that support successful funding requests and grant applications.

Therefore, actions found on Pathway E aim to expand stakeholder and community advocacy for and awareness of PAs and their values, improve messaging and communication, and strategically grow NPWS brand visibility and self-promotion. In recognising the size of the actions required along

Pathway E, an initial focus could be on building a greater commitment with existing park users, for example through day visitors, volunteer groups, Indigenous communities, schools, universities, and other parts of government where there is a clear association with PAs, such as health (Rosengreen, 2019). Establishing this broader constituency of PA advocates should in turn help to attract additional groups such as donors through the recently established charity arm of NPWS, the NSW National Parks and Wildlife Conservation Trust.

The output of Pathway E is communication and messaging directed at the interests and needs of the recipient through different communication channels, including mass media (Bakaki et al., 2020), while the outcome is that "politicians, communities and other stakeholders have greater appreciation of the PA estate and its value" (O'Flynn et al., 2022, p.16).

6.3.6 Pathway F: Collaboration and Partnerships

Collaboration and partnerships are the sixth and final pathway to change identified in the ToC (Pathway F in Figure 4). PAs require a well-trained and skilled workforce together with strong collaborations and partnerships to effectively manage the many challenges faced by PAs – including financial sustainability (CSU, 2022). The intention of actions along Pathway F is to "attract additional financial resources and foster the sharing of knowledge, ideas, and expertise on issues of mutual interest through cross sector, tenure and industry collaboration and partnerships" (O'Flynn et al., 2022, p.17).

The actions recognise that partnering or collaborating with volunteers, individuals or organisations who can offer cost-saving products or actions or donate capacity to NPWS have an important role to play in PA financial sustainability. The outputs focus on the establishment of new and strengthening of existing collaborations and partnerships. While the outcome is that the "PA estate is managed in partnership to deliver best practice in conserving natural and cultural values" (O'Flynn et al., 2022, p.17).

6.4 Policy and Management Implications and Lessons

The drafting of the ToC presented in this chapter was for many of the research participants their first time engaging in the ToC process. Reflecting on this process and the experience of working collaboratively to draft a ToC highlighted a series of policy and management implications and lessons that may be of interest to PA practitioners working both within the NSW context and further abroad.

Firstly, the process of preparing the ToC encouraged participants to think critically about the challenge of PA financial sustainability in NSW and potential alternative funding models. The ToC established that there is no fast or straightforward way to achieve financial sustainability and that the process of change is not necessarily linear, rather it is possible to have multiple interlinked pathways to change (Tolmie, 2014; Vogel, 2012).

Secondly, the presented ToC benefited from the wide-ranging knowledge, expertise, and views shared by the PA specialists involved in its drafting. Participants were also asked to review the draft ToC several times to ensure the diagram and narrative were logical and identify missing pathways, assumptions, outputs, outcomes, and actions. Furthermore, the active engagement of participants in the ToC process, including through the provision of feedback, fostered a sense of ownership by participants over the ToC (Belcher & Claus, 2020).

Depending on the time and resources available and the purpose of the ToC, feedback from a wider audience could be sought, for instance, from colleagues, partners, and other stakeholders (Tolmie, 2014). Overall, ToC as a methodology and tool can encourage a more inclusive decision-making process (van Eeden et al., 2020), and it can facilitate communication between stakeholders and a more holistic, strategic, and collaborative response to the challenge of financial sustainability (Tolmie, 2014).

The ToC narrative and diagram can help to ascertain whether the identified enabling conditions for financial sustainability are in place, assess whether the identified impediments to financial sustainability have or are being satisfactorily addressed, and reflect on the validity of the ToC assumptions. However, to remain relevant the ToC diagram and narrative must be periodically reviewed and updated – a process that will require both time and resources (Tolmie, 2014). Given that PA practitioners tend to be time-poor with competing priorities and limited funding, it may be challenging to set aside the time and resources necessary to undertake the review (Wearing & Schweinsberg, 2019). Furthermore, while the ToC presented in Chapter 6 outlines six different yet interlinked pathways to change, Vogel (2011)'s five-stage process could be used to prepare intervention level ToC for the actions identified in Figure 4. This could form the basis of a comprehensive framework to enhance the design, delivery, and evaluation of actions.

Finally, in terms of the implementation and ongoing management of the ToC, the NPWS Business Delivery Unit will take carriage of this work. This will involve collaboration with other NPWS units (for example the Park Operations Unit) together with relevant divisions of the larger cluster department (for instance Corporate Services). The Business Delivery Unit will also periodically review and update of the ToC in collaboration with internal stakeholders.

6.5 Summary

This chapter explored the six pathways to change presented in the Theory of Change for the Financial Sustainability of the PA Estate in NSW[12]. Drafting the ToC was the third and final phase of data collection and analysis in the thesis, and the process of drafting the ToC brought together the knowledge, experience, and views of the PA specialists who participated in the action research study. The ToC also provides the foundation for an informed and holistic response to the problem of financial sustainability and delivers a framework for strategic decision-making and communication with stakeholders, including funders.

Pathway A highlighted that ongoing government support for the PA estate is essential for financial sustainability, and it recommended that action is required to maintain and enhance government support for PAs into the future.

Pathway B recognised that institutional effectiveness relates to the extent to which NPWS is meeting its mission and legislated mandate, the existence and communication of clear goals and priorities, and decision-making that is evidence based and mission focused.

Pathway C established that action is required to develop an appropriate business model that encapsulates how NPWS establishes, provides, and retains value (Kaplan, 2011). This includes diversifying the funding portfolio.

Pathway D indicated that strategic planning and innovation will support the government's ongoing commitment (financial and non-financial) to the PA estate, enhance institutional effectiveness, and support the NPWS business model and its effective communication and advocacy.

Pathway E recognised that communication and advocacy are critical to promoting the work of NPWS, improving brand visibility, expanding its support base (including government and political support), raising awareness of PA values, and maintaining and fostering collaborations and partnerships. Effective communication is also essential in preparing a compelling narrative for future funding requirements.

Pathway F highlighted that partnering or collaborating with volunteers, individuals, or organisations who can offer cost-saving products or actions or donate capacity to NPWS have a crucial role to play in financial sustainability.

[12] The ToC published by O'Flynn et al., (2022) was titled "Theory of Change for the Sustainable Financing of the Protected Area Estate in New South Wales"; however, the title was amended for the purposes of this thesis to better reflect the role of the ToC in addressing the broader challenge of the financial sustainability of the protected area estate in NSW.

Finally, Chapter 6 discussed a suite of policy and management implications and lessons that may assist PA practitioners in using ToC to address challenges such as financial sustainability and in managing change.

In the following chapter (Chapter 7), the discussion focuses on one of the actions identified in Pathway C of the ToC as a critical means for attaining PA financial sustainability: diversifying the funding portfolio.

Chapter 7 Diversifying the Funding Portfolio: Exploring How Social and Environmental Impact Bonds Could Help to Finance Publicly Managed Terrestrial Protected Areas

7.1 Introduction

The concept of diversifying the funding portfolio for terrestrial PAs both within the context of NSW and further abroad has been discussed in this thesis. In Chapter 2, a diversified funding portfolio was recognised as one action available to PA practitioners in addressing the challenge of financial sustainability. In Chapter 5, a diversified funding portfolio was identified as one of 13 enabling conditions for the financial sustainability of the terrestrial PA estate in NSW (see Enabling Condition 2). Under this enabling condition, it was explained that a diversified funding portfolio looks beyond traditional sources (i.e., annual government allocations and grants) and includes a broad range of funding instruments to spread financial risk and provide adequate funding to cover the full range of PA costs. It was also revealed that a diverse funding portfolio can help to address the impediments of state budget processes and political influence identified in Chapter 4 (see Impediment 1 and Impediment 2).

Building on the research findings and relevant literature, Chapter 6 then presented the Theory of Change for the Financial Sustainability of the PA Estate in NSW in which Pathway C (appropriate business model) identified a broadened or diversified funding portfolio (in combination with a suite of other actions) as critical to PA financial sustainability (O'Flynn et al., 2022).

The purpose of Chapter 7 is to further explore the action of diversifying the funding portfolio, specifically how the social and environmental impact bond (herein impact bond) could help to finance publicly managed terrestrial PAs. To answer this question, the feasibility of the impact bond as an alternative finance mechanism is assessed. Lessons are drawn from the literature on impact bonds together with the lived experiences of the four Australia-based impact investment specialists interviewed and off-the-record discussions with an additional two impact investment specialists. The commonly cited barriers and perceived challenges associated with developing and implementing impact bonds are also analysed.

The chapter further explores the interviewed PA specialists' views and personal attitudes towards the adoption of alternative finance mechanisms, in particular the impact bond, to complement existing funding sources for PAs. The views and attitudes expressed during in-depth semi-structured interviews further help explore the question of how the impact bond could help to finance terrestrial

PAs. Finally, Chapter 7 presents a feasibility checklist that has been specifically designed to assist PA practitioners in determining the suitability of the impact bond for their funding requirements or project/program needs.

As alluded to, this chapter uses data collected during the interviews, with participants referenced throughout the chapter by pseudonyms to protect participant confidentiality. Table 30 introduces the interviewees referred to in Chapter 7.

Table 30 Interviewees Referred to in Chapter 7

Interviewee	Description
Hamilton	An experienced PA specialist with expertise across policy and planning including business planning and park operations.
Briana	A PA specialist with a background in economics and expertise in park planning, policy, and business planning.
Akram	An environmental economist with experience in PA policy and strategic planning and economic research.
Ethan	An experienced PA specialist with expertise across all facets of PA management.
Dara	A PA practitioner with business operations and financial expertise.
Alexander	An experienced PA specialist with expertise across policy, planning including business planning, and park operations.
Rani	An experienced PA specialist with expertise across all facets of PA management.
Sophia	A PA advocate and specialist with expertise in park planning, policy, and partnerships and collaboration.
Edna	An experienced PA specialist with park planning and policy expertise.
Ruth	An experienced PA specialist with community engagement, park planning, operations, and administration expertise.
Cedric	An experienced PA specialist with park operations and administrative expertise.
Cody	An experienced PA specialist with policy and legal expertise.
Asher	An experienced PA specialist with business operations, park planning and policy expertise.
Fred	An experienced PA specialist with business operations and financial expertise.
Oliver	A PA advocate and specialist with expertise across all facets of PA management both within a government and non-government PA organisation.
Nate	A sustainable finance specialist with experience working for the NSW Government and a knowledge of PAs and their management within the NSW context.
Kate	A conservation finance specialist with extensive knowledge of impact investing in the NSW context, including impact bonds.
Liam	A PA and nature conservation specialist with expertise in sustainable financing, including the development of a nature-based impact bond.
Mali	A threatened species specialist with experience as a PA practitioner and expertise in sustainable finance, including the development of a nature-based impact bond.

Existing literature on the environmental and social impact bond and the financing of PAs also provides a foundation for the discussion in this chapter.[13] Table 31 offers a conceptual outline of the chapter's structure.

Table 31 Conceptual Outline of Chapter 7 Structure

Section	Description
Section 7.2	Assessing the Feasibility of the Impact Bond as an Alternative Finance Mechanism for Terrestrial Protected Areas
Section 7.3 7.3.1 7.3.2 7.3.3 7.3.4 7.3.5 7.3.6 7.3.7 7.3.8 7.3.9 7.3.10 7.3.11 7.3.12 7.3.14 7.3.15 7.3.16 7.3.17 7.3.18 7.3.19 7.3.20 7.3.21	Lessons for the Financing of Protected Areas - Impact Bonds Suited to Interventions That Government is Not Already Willing to Fund - Impact Bonds Can Help to Address Significant Social and Environmental Challenges - The Importance of an Enabling Policy and Legal Environment - The Potential Influence of Impact Bonds on Protected Area Financial Sustainability May be Limited - There is Investor Interest in Environmental Outcomes - The Investment Value of an Impact Bond Can Vary - Impact Bonds Can be Complex, Costly, and Time Consuming to Establish - Grants Can Help to Cover High Transaction and Other Costs - Bringing Together Protected Area and Finance Expertise is Important - The Lifespan of an Impact Bond Can Vary - Impact Bonds Can Shift the Financial Risk Balance - Impact Bonds Can Provide Upfront Funding for Interventions Across Large Geographic Areas - Measurable Performance Outcomes Are a Key Focus Area for Impact Bonds - Performance Outcomes Should Be Monetisable - Impact Bonds Can Be Structured to Measure a Range of Different Outcomes

[13] The chapter draws extensively on the co-authored work with PhD supervisors published in the *Journal of Park and Recreation Administration* in 2021 for which the researcher was the lead author. See O'Flynn et al. (2021).

	- Impact Bonds Are Monitored and Evaluated by an Independent Evaluator - An Impact Bond Can Be Terminated Early - Impact Bonds Can Offer Flexibility in Implementing Interventions - Impact Bonds Tend to Be Collaborative in Nature - Regulatory Requirements Can Motivate Stakeholders to Act - NGOs Often Take on the Role of Service Provider
Section 7.4 7.4.1 7.4.2 7.4.3 7.4.4 7.4.5 7.4.6 7.4.7 7.4.8 7.4.9 7.4.10 7.4.11	Commonly Cited Barriers and Perceived Challenges Associated with Impact Bonds - Uncertainty of New Market - Contractual Complexity - Monetisation of Outcomes - Developing Outcome Metrics - Neoliberalisation of the Social/Environment Sector - Complexities of Collaboration - Balancing Evidence with Innovation and Investor Risk Appetite - High Transaction Costs - High Stakes for Impact Investors - Greenwashing - Sustaining Outcomes Beyond the Impact Bond
Section 7.5	Protected Area Practitioner Attitudes Towards the Impact Bond
Section 7.6	The Social and Environmental Impact Bond Feasibility Criteria Checklist
Section 7.7	Summary

7.2 Assessing the Feasibility of the Impact Bond as an Alternative Finance Mechanism for Terrestrial Protected Areas

In Chapter 2, the social and environmental impact bonds were introduced as a subset of impact investment and an innovative means of raising additional money for projects and programs seeking to address some of society's most significant challenges (Dear et al., 2016; Quantified Ventures, 2018).

Since the launch of the world's first SIB in 2010, the number of impact bonds has risen steadily, raising hundreds of millions in capital, and positively impacting the lives of people around the world (Social Finance UK, 2020). More recently, impact bonds have been launched in the environment sector, for example, helping to finance green infrastructure projects to improve water quality across the U.S. (Quantified Ventures, 2018).

Despite growing investor interest in impact bonds, this funding mechanism had not until 2022 been adopted for the sole purpose of funding projects or programs run in terrestrial PAs (Hamrick, 2016). Nevertheless, the UNDP recommends that new financial instruments that use philanthropic and investor capital, like the impact bond, are required to encourage improvements in the effective management of PAs (UNDP, 2018a).

Building on the UNDP's recommendation, the action researcher selected three examples of impact bonds to help assess the suitability of the impact bond as an alternative finance mechanism for publicly managed terrestrial PAs. The results of the assessment were subsequently published in the *Journal of Park and Recreation Administration* in 2021 (see O'Flynn et al., 2021). Table 32 provides a brief justification for the selection of the impact bonds assessed.

Table 32 Justification for Selection of Impact Bonds Assessed

Impact bond	Rationale for selection
Washington D.C. EIB	The world's first EIB with predefined social and environmental outcomes, which makes the example relatable to PA practitioners.
Atlanta EIB	The first EIB to be publicly offered. It has predefined social and environmental outcomes, which makes the example relatable to PA practitioners.
Wildlife conservation bond (WCB)	The impact bond funds threatened species conservation activities in PAs with expected social and environmental benefits, making the example directly relatable to PA practitioners.

In 2016, the U.S. introduced an EIB to fund the roll-out of green infrastructure in Washington D.C. The project was expected to be a cost-effective alternative to the construction of one of three tunnels designed to prevent stormwater overflow into rivers at a cost of US$2.6 billion (EPA, 2017). However, the project was considered risky by government because green infrastructure had previously only been adopted at a smaller scale in Washington D.C. (Quantified Ventures, 2018). To address this issue, outcomes-based capital firm Quantified Ventures was engaged by DC Water and Sewer Authority to find impact investors to help share the financial risk.

The EIB, which has a 30-year duration and a mandatory tender scheduled in its fifth year (EPA, 2017), proved popular, and it was oversubscribed by investors, with US$25 million invested into the project by Goldman Sachs Urban Investment Group and the Calvert Foundation (EPA, 2017; Quantified Ventures, 2018). The EIB was expected to deliver environmental and social outcomes, including new job opportunities and improved district resident health outcomes (Quantified Ventures, 2019a).

Post-construction monitoring and evaluation was used to independently evaluate the project's success over its first five years; investor repayment, including the rate of return, was to be determined by the evaluation outcomes (EPA, 2017). In May 2021, Quantified Ventures, the EIB's intermediary, announced:

> DC Water recently made mandatory tender and full repayment of the EIB following a robust evaluation of the project outcomes that confirmed the effectiveness of green infrastructure in the District. The information gained through performance monitoring resulted in optimizations that will ensure a future for green infrastructure at DC Water (Quantified Ventures, 2021, n.p.).

DC Water chief financial officer Matt Brown confirmed that the EIB had "allowed DC Water to share a proportion of the financial risk associated with green infrastructure investment on this scale". Brown further stated that the Washington D.C. EIB "establishes a replicable and scalable approach to financing green infrastructure for other communities across the country" (Quantified Ventures, 2021, n.p.).

Following the launch of the Washington D.C. EIB, the EIB framework was quickly replicated. In 2018, the City of Atlanta received a grant from the Rockefeller Foundation to establish an EIB to fund six green infrastructure projects. The resultant ten-year US$14 million EIB was launched by the City of Atlanta in 2019 (City of Atlanta Department of Watershed Management, 2019; Quantified Ventures, 2019b). Like the Washington D.C. EIB, the Atlanta EIB is expected to achieve environmental and social outcomes, including improved water quality and stormwater management, economic growth, and enhanced quality of life for residents living within the water catchment (Water F.M, 2019).

Significantly, the Atlanta EIB was the first impact bond to be offered on the open market – sold on the "Neighborly's Online Platform" (Lewis, 2019). Because the EIB was publicly traded, it is considered more replicable than the Washington D.C. EIB and other EIBs that are offered to prearranged investors (Water F.M, 2019). Quantified Ventures (2019b) explained that the public offering of the Atlanta EIB symbolised "a pivotal step in demonstrating outcomes-based financing as a tool for the public sector municipal bond market". This means that, in theory, other cities interested in launching green infrastructure projects could use the Atlanta EIB as a blueprint for their funding needs (Water F.M, 2019).

The Atlanta EIB was fully subscribed with investors reportedly interested in investing in projects that achieve measurable impact in addition to a financial return (Thompson, 2020). Investor repayment is linked to the results of the independent evaluation of the measurable outcome (increased capacity for stormwater capture). The green infrastructure EIB model is currently being replicated in other U.S. cities, and work is underway to adopt the EIB framework to address other environmental challenges such as coral reef restoration (Flanagan & Woolworth, 2019). The World Bank has also recently launched a Wildlife Conservation Bond (WCB) to help fund threatened species conservation activities in two South African PAs (The World Bank, 2022).

Due to a declining population, the black rhino species is listed on the IUCN's Red List of Threatened Species as Critically Endangered (SANParks & ECPTA, 2020). The UNDP cites insufficient funding as a major barrier to successful rhino conservation. To address this problem, the US$4.5 million Rhino Impact Investment Project was launched in 2016 to trial conservation strategies and select the metrics to underpin an impact bond for black rhino conservation (Benchimol Dominguez, 2022; UNDP, 2018b). Building on the Rhino Impact Investment Project, the WCB draws on the funds raised through the bond to finance wildlife conservation with a focus on outcomes delivery (SANParks & ECPTA, 2020). Great Fish River Nature Reserve and Addo Elephant National Park in South Africa were selected as the priority rhino conservation sites to receive funding for conservation activities through the five-year, US$150 million impact bond (The World Bank, 2022).

A GEF grant underwrites the WCB, which the World Bank is responsible for administering, while Eastern Cape Parks and Tourism Agency and South African National Parks are responsible for the daily management of funded conservation activities (SANParks & ECPTA, 2020). The independently verified success of net rhino growth (the measurable outcome) will determine investor repayment, with a portion of the WCB's total value reserved as a success payment to investors (Benchimol Dominguez, 2022). However, if the independent evaluation finds that the black rhino population growth rate is zero or the population has declined, it is possible that investors will not receive the success payment (Benchimol Dominguez, 2022).

Due to the global pandemic, the WCB's original expected launch date of 2020 was delayed (Sguazzin, 2021), and the World Bank issued the bond on 31st March 2022 (World Bank, 2022). While the launch of the WCB suggests that impact bonds can be a feasible alternative finance option for PAs in certain situations, the success of the WCB will not be known until it reaches maturity in March 2027. If successful, there are plans to expand the WCB to incorporate an additional three priority rhino sites in Kenya, and it could encourage the adoption of the impact bond model to finance conservation activities for other threatened or endangered species (UNDP, 2018b; World Bank, 2020). Table 33 provides a comparative overview of the U.S. and South African impact bonds discussed, highlighting some of their defining characteristics.

Table 33 Comparative Overview of the Washington D.C., Atlanta, and Wildlife Conservation Bonds

	Washington D.C.	**Atlanta**	**Wildlife Conservation**
Problem	Combined sewer overflows	Combined sewer overflows	Declining black rhino numbers
Solution	Green infrastructure designed to reduce stormwater and improve water quality	Green infrastructure designed to control stormwater flow and improve water quality	Conservation initiatives to increase black rhino numbers in target PAs
EIB investment	US$25 million (EPA, 2017)	US$14 million (Quantified Ventures, 2019b)	US$150 million (The World Bank, 2022)
Duration	30-year maturity with a mandatory tender at 5 years (EPA, 2017)	10 years (Lewis, 2019)	5 years (The World Bank, 2022)
Outcome funder(s)	DC Water and Sewer Authority	Atlanta Department of Watershed Management	The GEF
Investors	Goldman Sachs Urban Investment Group, Calvert Foundation	Mostly mainstream institutional investors (Lewis, 2019)	Institutional investors (World Bank, 2020)
Initial/base interest rate	3.43% p.a. (EPA, 2017)	3.55% p.a. (Lewis, 2019)	Return between 3.7% and 9.2% at end of 5 years (The World Bank, 2022)
Outcome measures	Percentage reduction in stormwater runoff per acre when measured against baseline (EPA, 2017)	Generation of new capacity for stormwater capture with the "high-performance threshold set at 6.52 million gallons of capacity for stormwater capture" (Quantified Ventures, 2019b, n.p.)	Average annual rhino population growth rate between 0% and 4% (Benchimol Dominguez, 2022)
Performance payment and potential return	Three-tier performance structure: Tier 1 – Better than expected: 4.12% interest rate, investors receive additional outcome payment of US$3.3 million. Tier 2 – Expected runoff reduced: 3.18% interest rate, no outcome payment to investors. Tier 3 – Worse than expected: 1.92%–2.51%	Two-tier performance structure: Base performance: a fixed interest rate of 3.55% p.a. with no additional payment. High performance: a fixed interest rate of 3.55% p.a. with US$1 million additional payment (Behrend et al., 2019)	Investors will receive their principal together with a variable payout depending on the rate of black rhino population growth at the two priority sites in South Africa. If rhino population growth is zero or the population declines, investors will be repaid their principal but will not receive a success payment

	interest rate, investors make a "risk share payment" to DC water of US$3.3 million (North & Gong, 2017)		(Benchimol Dominguez, 2022)

Source: Adapted from O'Flynn et al. (2021, p.11).

Like in the U.S., the NSW Government has taken an interest in impact investment identifying it as "an emerging approach to tackling social challenges that brings together capital and expertise from across the public, private and not-for-profit sectors" (OSII, 2015, p.1). In 2015, the NSW Government adopted the NSW Social Impact Investment Policy to support social impact investment. By 2020, all 10 actions under the Social Impact Investment Policy had been delivered and the state government began work on a follow-up policy, the Social Impact Investment Policy 2.0: Growing Our Impact in 2020.

In 2019, an additional policy layer was introduced in the form of the NSW Sustainability Bond Framework, which was developed collaboratively between NSW Treasury, the then Office of Environment and Heritage, NSW Office of Social Impact Investment, and NSW Treasury Corporation (TCorp). The Framework "was developed to demonstrate how TCorp may issue use of proceeds bonds in Green Bond, Social Bond and/or Sustainability Bond formats" (TCorp, 2020, p.3). The proceeds raised from the bonds are used to "finance or refinance projects and assets that deliver positive environmental and social outcomes, align with and contribute towards meeting the United Nations Sustainable Development Goals and to support the NSW Government's social and/or environmental objectives" (TCorp, 2020).

With the NSW Sustainability Bond Framework in place, the state government introduced the NSW Sustainability Bond Programme, which permitted the issue of a 10-year, AU$1.8 billion Green Bond (OSII, 2020a). This was the largest Green Bond to be issued in Australia at the time. The Programme was established to "support a broad range of NSW Government environmental and social policies, strategies and goals" (TCorp, 2021a, n.p.), including the:

- Climate Change Policy Framework
- State Infrastructure Strategy
- Resource Efficiency Policy
- Premier's Priorities
- Net Zero Plan.

According to the NSW Sustainability Bond Framework, bonds issued by TCorp can be:

- Green Bonds "issued in alignment with the ICMA Green Bond Principles and/or meet the requirements for Programmatic Certification in compliance with the Climate Bonds Standard (CBS)" (TCorp, 2020, p.3).
- Social bonds "issued in alignment with the ICMA Sustainability Bond Principles (SBP)" (TCorp, 2020, p.3).
- Sustainability Bonds "issued in alignment with the ICMA Sustainability Bond Guidelines (SBG) a combination of both Green and Social Projects and assets" (TCorp, 2020, p.3).

Each of the Green and Social Bond Principles is aligned with the United Nations Sustainable Development Goals. The proceeds of the NSW Sustainability Bond Programme are applied to projects that meet the Green and Social Bond eligibility criteria (as set out in the NSW Sustainability Bond Framework). Table 34 provides a summary of the Green Bond and Social Bond project categories.

Table 34 Summary of the Green Bond and Social Bond Project Categories

Green Bond	**Social Bond**
Renewable energy (ICMA, 2021, p.4)	Affordable basic infrastructure (TCorp, 2020, p.7)
Energy efficiency (ICMA, 2021, p.4)	Access to essential services (TCorp, 2020, p.7)
Pollution prevention and control (ICMA, 2021, p.4)	Affordable housing (TCorp, 2020, p.7)
Environmentally sustainable management of living natural resources and land use (ICMA, 2021, p.4)	Employment generation (TCorp, 2020, p.7)
Terrestrial and aquatic biodiversity (ICMA, 2021, p.5)	Feed security and sustainable food systems (TCorp, 2020, p.7)
Clean transportation (ICMA, 2021, p.5)	Socio-economic advancement and empowerment (TCorp, 2020, p.7)
Sustainable water and wastewater management (ICMA, 2021, p.5)	
Climate change adaptation (ICMA, 2021, p.5)	
Circular economy products, production, technologies and processes and/or certified eco-efficient products (ICMA, 2021, p.5)	
Green buildings (ICMA, 2021, p.5)	

In accordance with the NSW Sustainability Bond Framework, the Sustainability Bond Programme evaluation and selection process involves six stages as summarised in Table 35.

Table 35 NSW Sustainability Bond Programme Project Evaluation and Selection Process

	Stage	Description
1	Project identification	The Asset Identification Group, which is run by NSW Treasury, "identify and assess proposed eligible projects and assets".
2	NSW Sustainability Committee (NSC) approval	NSC, which is made up of TCorp, Department of Planning, Industry and Environment, NSW Treasury, and the Office of Social Impact Investment, "approve projects and assets against the Framework for inclusion in the NSW Sustainability Bond Programme asset pool".
3	Pre-issuance assurance	"Verifier completes pre-issuance assurance (as required); confirms compliance with requirements for Climate Bond Standard (CBS) certification (if applicable); and CBS certification for Sustainability Bond issued (where relevant)."
4	Bond issuance	"TCorp Sustainability Bond issued".
5	Post-issuance assurance	"Verifier completes post-issuance assurance; confirms compliance with requirements for CBS certification (if required)."
6	Continuing annual assurance	"Annual compliance/assurance review for ongoing compliance of the NSW Sustainability Bond Programme with the Framework; annual verification of all outstanding TCorp Sustainability Bonds to confirm compliance with post-issuance requirements including CBS (if applicable)."

Source: Adapted from TCorp (2020, p.9).

In line with the evaluation and selection process outlined in Table 35, the NSW Sustainability Bond asset pool has been periodically updated as "loans are repaid, projects are removed, and additional eligible projects are identified and funded" (TCorp, 2020, p.8). An example of this is the Improving Access to National Parks Program, which was added in 2020 as an "eligible asset" to the asset pool (TCorp, 2021b).

Funding of this asset through the Sustainability Bond Programme to the value of AU$150 million seeks to improve accessibility to national parks through capital works and in doing so improve visitor facilities and infrastructure and "promote tourism through national parks" (Liberal Party NSW, 2019, n.p.). The expected outcomes include improved access to national parks for people and families with mobility limitations, upgraded walking track and trail safety, and improved visitor facilities including picnic areas (TCorp, 2021b). Funding will also be invested into the development of digital tools to improve mobile connectivity across the PA estate and expand park safety programs (TCorp, 2021b, p.25).

The government is not the only institution to have issued green bonds in Australia. In December 2014, the National Australia Bank issued the country's first green bond, which was certified by the Climate Bond Initiative with funds allocated to solar and wind farms. To date, each of the "big four" Australian banks have issued green bonds, with other Australian issuers including corporate businesses (for instance Stockland and Woolworths Group Ltd.), Monash University, and property funds (Freeburn & Ramsay, 2020).

To further understand the impact bond policy framework in NSW and how this alternative finance mechanism could help to fund projects and programs run in PAs, five impact/benefit bonds issued by the NSW Government between 2013 and 2021 have been assessed, with lessons extracted and considered theoretically for the future funding of terrestrial PAs. Assessed bonds include the Newpin social benefit bond, Benevolent Society social benefit bond, Resolve social benefit bond, Sticking Together Social Impact Bond, and the Foyer Central Social Impact Bond. The selected social impact/benefit bonds seek to fund positive change in the policy areas of out-of-home care, palliative care, mental health, recidivism, youth unemployment, and homelessness (OSII, 2020a).

The Newpin social benefit bond was the first social benefit bond to launch in NSW in October 2013. The AU$7 million, seven-year social benefit bond provided funding to UnitingCare to deliver the Newpin program to "support families to break cycles of neglect and abuse and provide safe, nurturing environments for children. Newpin…[aimed] to safely restore children in out-of-home care to their families and work with at-risk families to keep children out of care" (OSII, 2017a, p.1). The program was able to demonstrate a clear cost saving for the NSW Government in child and family welfare, and on reaching maturity in 2020, 391 children had been returned to the care of their families, representing an "overall restoration of 60.9%" (OSII, 2020b, n.p.). In recognition of the success of the Newpin program, its funding is expected to be renewed through a new pay-for-success contract (OSII, 2020b).

In the same year that the Newpin social benefit bond was launched (2013), the NSW Government launched the Benevolent Society social benefit bond (also referred to as 'Resilient Families'). The AU$10 million, five-year social benefit bond provided funding to the Benevolent Society to engage with at-risk families and address issues such as family functioning and relationships, unstable housing, substance abuse, and domestic violence (OSII, 2017b). It was a joint venture between the Benevolent Society, Commonwealth Bank and Westpac Institutional Bank. The 'Resilient Families' program funded through the social benefit bond was able to demonstrate a clear cost saving for the NSW Government in "out of home care" (SVA, n.d., n.p.). In 2018, it became the first social benefit bond to reach maturity in Australia with "results recording 32% fewer children from families entering out-of-home care than children from the matched control group of families" (OSII, 2022, n.p.). The Program, which was delivered to 303 at-risk families and their children, dealt with issues including but not limited to domestic violence, relationships and family functioning, debt problems, and housing security (OSII, 2022).

On the back of the successful implementation of the first two social impact/benefit bonds in NSW, the state government launched the Resolve social benefit bond in 2017. The AU$7 million, seven-year social benefit bond is providing funding to Flourish Australia to deliver an individually tailored adult mental health support program in an effort to lower hospital usage in NSW (Justice Connect, 2018; OSII, 2017c; SVA, 2019a). While the social benefit bond does not reach maturity until 2024, it is estimated that "530 adults will be supported by the Resolve program... [across] its seven-year service delivery period" (SVA, 2020a, n.p.).

In the year following the launch of the Resolve social benefit bond, the NSW Government launched the Sticking Together Social Impact Bond. The 4.5-year, AU$5 million SIB is funding 'SYC' to provide a coaching program that supports young people to develop the skills necessary to find and maintain employment" (SVA, 2019b.). While the SIB does not reach maturity until 2023, it is estimated that the Sticking Together Project will work with more than 800 young people experiencing unemployment and "high barriers to employment" to find ways to improve each person's "connectedness, motivation, and personal self-worth and through providing support to their employers (SVA, 2019b, n.p.).

Most recently in 2021, the NSW Government partnered with Uniting, Social Ventures Australia (SVA), and St George Community Housing to launch the Foyer Central Social Impact Bond. The nine-year, AU$33 million SIB funds the provision of a combined accommodation and learning Centre to instil independence in young people who have been in out-of-home care. While the SIB does not reach maturity until 2030, it is estimated that 272 young people between the ages of 18 and 22 will enrol in the program across its nine-year service delivery period (OSII, 2021; Liberal Party, 2021a). Table 36 provides a comparative overview of the NSW-based social impact/benefit bonds discussed, highlighting some of their defining characteristics.

Table 36 Comparative Overview of the NSW-Based Benevolent Society, Newpin, Resolve, Sticking Together and Foyer Central Social Impact/Benefit Bonds

	Newpin	Benevolent Society	Resolve	Sticking Together	Foyer Central
Problem	At-risk families	At-risk families	Mental illness hospitalisation	Disadvantaged youth	Young people at risk of homelessness
Policy area	Out-of-home care	Out-of-home care	Mental health	Youth unemployment	Youth homelessness
Solution	Support program for at-risk families to keep children out of OOHC.	Support services for families of children at high risk of being placed into OOHC.	Individually tailored mental health support program.	"Coaching program that supports young people to get ready for work…and develop life	"An integrated learning and accommodation centre" to support young people who have

				skills that enable them to stick with their jobs" (SVA, 2019b, n.p.).	been in OOHC (OSII, 2021, n.p.).
Duration	7 years (2013 – 2020)	5 years (2013-2018)	7 years (2017 - 2024)	4.5 years (2018-2023)	9 years (2021 – 2030)
Investment value	AU$7 million	AU$10 million	AU$7 million	AU$5 million	AU$33 million
Outcome funder(s)	NSW Government	NSW Government	NSW Government	NSW Government	NSW Government
Investors	59 investors, including UnitingCare Burnside, family foundations, superannuation funds, high-net-worth individuals, trusts, foundations, institutions (Government Outcomes Lab, 2020).	Family foundations, superannuation funds, high-net-worth individuals, trusts, foundations, institutions (SVA, n.d.).	Described as "wholesale investors" as defined in the Social Benefit Bond (SBB) Information Memorandum (SVA, 2017).	Described as "wholesale investors" in the SBB Information Memorandum (SVA, 2018).	Described as "wholesale investors" as defined in the SIB Information Memorandum (SVA, 2020b).
Service provider(s)	UnitingCare	The Benevolent Society	Flourish Australia	'SYC'	St George Community Housing and Uniting
Intermediary	SVA	The Benevolent Society, Westpac, Commonwealth Bank Australia	SVA	SVA	SVA
Evaluator	URBIS	ARDT Consultants and Deloitte	Urbis	Not specified	Not specified
Initial base interest rate	Minimum 5% p.a. (SVA, 2013).	Baseline Performance: >5% <15% – return of 5–8% "Good 1" performance: >15% <20% – return of 6–10.5% "Good 2" Performance: >20% <25% – return of 7–15%. "Good 3" performance:	"2% p.a. fixed interest payments over 4.75 years, then performance coupons based on the level of Resolve SBB Trust assets" (SVA, 2020a, n.p.).	"Fixed coupons of 3% p.a. for first two years" (SVA, 2019b, n.p.)	Fixed coupons of 2% p.a. for first 3 years (OSII, 2021).

		>25% <35% – return of 8–20%. “Good 4” performance: >35% <40% – return of 9–25%. “Out-performance”: >40% – return of return of 10–30% (Benevolent Society, 2018, p.9).			
Outcome/ performance measures	“The restoration rate of children who enter the program” (OSII, 2020b)	Average numbers of (1) entries into OOHC per child; (2) helpline reports per family; and (3) safety and risk assessments per family when measured relative to the control group of matched children who did not receive intensive support (OSII, 2013).	“Reduction in hospital use by…participants relative to a control group” (Justice Connect, 2018, p.16).	“The number of Cumulative Productive Hours less the Cumulative Counterfactual Hours” (SVA, 2018, p6).	“Average Foyer vacancy rate”; “participants’ rate of completion of life skills course” (SVA, 2020b, p.30.).
Performance payment and potential return	“Minimum 5% interest first 3 years Principal protection 75% (Years 1-3), 50% years 4-7)” (SVA, 2020c, n.p.).	6% return delivered to capital-protected investors: 10.5% return to capital-exposed investors (OSII, 2020c).	7.5% per annum (objective) (SVA, 2020a).	7% p.a. (objective)	6% p.a. (objective), with a maximum return of 10% p.a. (OSII, 2021).

7.3 Lessons for the Financing of Protected Areas

Recent research into impact bonds implies that this funding instrument can help to finance interventions that address social and environmental challenges alongside existing funding sources (see The Royal Foundation, 2019; UNDP, 2018b). However, the following lessons drawn from interviews with impact investment specialists, the literature on impact bonds, and the impact bonds assessed for this thesis demonstrate that this finance mechanism is not a funding solution for terrestrial PAs in every situation.

7.3.1 Impact Bonds Suited to Interventions That Government Is Not Already Willing to Fund

The first lesson is that impact bonds could help to finance pilot interventions that a government is not already prepared to fund (Hall et al., 2017; Quantified Ventures, 2018). For example, it might be a new intervention with limited evidence or an established and well-evidenced intervention that needs to reach a broader geographic footprint as in the case of the Washington D.C. EIB and the roll-out of the green infrastructure project at a scale not previously seen in Washington D.C. (Quantified Ventures, 2018).

7.3.2 Impact Bonds Can Help to Address Significant Social and Environmental Challenges

Impact bonds can help to address significant social and/or environmental challenges. For example, Liam, one of the impact investment specialists interviewed for this thesis, explains that The Nature Conservancy in collaboration with HSBC Bank is designing a "Blue Impact Bond for nature" to be piloted on the mid-north coast of NSW. Liam expects that the Blue Impact Bond will be simple, scalable, and replicable:

> The methodology that we are trying to develop will be publicly available so it won't be an in-house where your methods won't see the light of day, otherwise HSBC could just pay us to develop a bespoke bond for them and they could go away and issue it and make a bunch of cash which is how you would typically do it but in this particular case, with philanthropy it means we are an open source at the end of the project….we'd like to hope that this is replicated.

Like Liam's Blue Impact Bond example, if the WCB is successful, the impact bond finance mechanism could be applied to other threatened or endangered species or potentially to other PA outcomes (UNDP, 2018b).

The U.S. and NSW impact bonds assessed were launched to address significant social and/or environmental challenges in collaboration with private investors and NGOs. As Walker (2015, p.208) explained in relation to the Newpin SBB, "the key difference operating with the UnitingCare Burnside Newpin SBB is the availability of funding levels to which we had previously not had access". Thus, impact bonds can provide funding to help address social and environmental challenges where the funds may otherwise not have been available. Further to this, Freeburn and Ramsay (2020, p.426) suggested that one benefit of the impact bond is that it can "attract investors from a growing segment – those who are interested in sustainable investments – who otherwise may not be interested in investing".

7.3.3 The Importance of an Enabling Policy and Legal Environment

An enabling policy and legal environment – including government and political support and commitment – is necessary for a successful impact bond and impact bond market (OECD, 2016). It may be worth considering the level of support shown by key stakeholders and service providers/ managers for adopting market-based mechanisms like the impact bond in meeting their funding needs. This is important because impact bonds are sometimes criticised as a cultural mismatch between environmental and social sector organisations, government agencies, and investors (Sinclair et al., 2019). Furthermore, although not essential for the impact bond to be a suitable funding mechanism for a proposed intervention, it can be useful to have regulatory requirements that incentivise stakeholders to act (Quantified Ventures, 2018).

7.3.4 The Potential Influence of Impact Bonds on Protected Area Financial Sustainability May Be Limited

While the inclusion of the Improving Access to National Parks Program into the NSW Sustainability Bond Programme asset pool is not an example of a standalone impact bond established for the sole purpose of funding PAs, it still represents a potentially significant development in the sustainable financing of the PA estate in NSW. The inclusion of this program into the asset pool reflects the broadening of the funding portfolio to incorporate alternative finance mechanisms to help fund PAs. As discussed in Chapters 2, 5, and 6, broadening or diversifying the funding portfolio is an important enabling condition for the financial sustainability of the PA estate in NSW (and for PAs around the world). However, as explored in Chapter 4, the challenge in financing the NSW PA estate does not lie in the funding of new visitor facilities and infrastructure. Instead, the challenge rests in NPWS' "ability to secure stable and sufficient long-term financial resources and to allocate them in a timely manner and appropriate form, to cover the full costs of PAs (direct and indirect) and to ensure that PAs are managed effectively and efficiently" (Emerton et al., 2006, p.15). This includes stable and sufficient long-term financial resources to pay for essential operational overheads like office rent, electricity, water rates, and fuel for fleet vehicles and for the ongoing maintenance of existing infrastructure assets (refer to Impediments 1, 2 and 4 in Chapter 4).

Based on this finding, it could be argued that the inclusion of the Improving Access to National Parks Program in the NSW Sustainability Bond Programme asset pool will have a limited impact on addressing the challenge of financial sustainability for the PA estate in NSW. It could even have a negative impact by increasing the unfunded maintenance liability of NPWS' asset portfolio over time as new infrastructure is developed, yet funding for its ongoing maintenance is not assured. However, it could demonstrate to government and PA stakeholders how projects and programs run in a PA setting can contribute to social and environmental outcomes (in line with Pathway A of the ToC presented in Chapter 6). It could further demonstrate that alternative finance mechanisms such as the impact bond can be used to generate additional funding for PAs, thereby potentially allaying some of the concerns held by stakeholders about diversifying the funding portfolio (as discussed in Chapter 4, Impediment 7: resistance to change). Furthermore, the inclusion of the Improving Access to National Parks Program into the asset pool could pave the way for other PA activities, including those non-capital in nature, to be included in the asset pool or be funded through a separate impact bond.

7.3.5 There Is Investor Interest in Environmental Outcomes

Another lesson for the financing of terrestrial PAs comes from the popularity of the Washington D.C. and Atlanta EIBs with investors. The popularity of these EIBs indicates that investors are interested in financing projects/programs/interventions that seek to achieve positive environmental outcomes. The Forest Trends survey of investors (see Hamrick, 2016), previously discussed in Chapter 2, supports this view; further, strong investor interest in the WCB could also indicate future investor appetite for the financing of interventions within a PA setting. The NSW impact bonds assessed have also proven to be popular investments with each bond fully subscribed by investors – or oversubscribed as in the case of the Sticking Together SIB (Easton, 2019).

A wide range of investors have invested in the impact bonds assessed, ranging from high-net-worth individuals, superannuation funds, and hedge funds to trusts and foundations and institutions including banks. For example, major investors in the Sticking Together SIB include NGS Super, the Wyatt Trust, clients of private wealth management firms, and Light Warrior Ventures (Easton, 2019).

Mali, an interviewee with experience as a PA practitioner and in the development of impact bonds, described impact investing "as a market for investors [that] is growing hugely":

> Increasingly, really wealthy people with lots of money are open to that because it is not pure philanthropy, and philanthropists might end up getting there too because potentially if they get their money back, they can give it again, get it back, give it again. It is a system where you can have more impact for your money repeatedly, almost.

While Mali's comment draws attention to the growing investor interest in impact bonds, it is prudent to remember that the feasibility of an impact bond as a viable finance option depends on an investor's interest in funding a particular intervention or outcome.

7.3.6 The Investment Value of an Impact Bond Can Vary

The investment value of an impact bond can vary; for example, the Sticking Together SIB investment value is AU$5 million while the Foyer Central SIB has an investment value of AU$33 million. Liam explains that the investment value should be large enough to warrant the time and expense associated with developing an impact bond. He stated:

> The advice we got from our partners was that $20 million would be an uber bespoke bond and they would consider it, so in our mind that is the threshold … the very limited threshold. $40–50 million gives us a bit of a buffer, which is what we are aiming for to see what the projects are. So, as we develop the list of projects and interventions and their costs, we will have an eye towards trying to get at least $50 million; if it is $100 million great, but at least $50 million. If we are below that, then we will go right, we might need to look at a second catchment or broaden the geographic basis or broaden the scope of what we will include in order to be able to make it financially work, so we don't just say 'oh well sorry, it is three projects and it's like 10 million bucks' that is what we are going to work with, so it is fluid until we work out exactly what and how much.

Liam's comment indicates that the investment value of an impact bond should be large enough to ensure the cost of establishing an impact bond is a financially viable option.

7.3.7 Impact Bonds Can Be Complex, Costly, and Time Consuming to Establish

Impact bonds can be costly, complex, and time consuming to establish because they are still a new finance mechanism (Dear et al. 2016; Pandey et al., 2018). For example, the WCB was preceded by the two-year Rhino Impact Investment Project that tested conservation strategies and determined the outcome metrics to be used in the WCB (World Bank, 2020). Again, drawing on his involvement with the proposed Blue Impact Bond, Liam explained that the decision to pursue funding through an impact bond was based on a large amount of preliminary work:

> We had invested a fair bit in ecosystem services valuation through Mapping Ocean Wealth, and we also did…a benefit-cost analysis [with the NSW Government] …it was basically to fund six different restoration interventions across the marine estate, and it was large-scale fencing, oyster reef restoration, wetland restoration, opening up fish passages, and it was done by KPMG, and it was a $230 million investment for a $400-odd million return. So, we had to figure out what the numbers were; we had a good set of numbers and figured out the business case and the RoI [return on investment] was positive and looked really attractive.

As Liam's narrative excerpt shows, considerable research, data collection, analysis, and reporting preceded the decision by TNC and HSBC Bank to develop the proposed Blue Impact Bond. Liam explained that this was a time-, labour-, and resource-consuming process. Therefore, before committing to an impact bond, it may be judicious to consider other finance options to ensure that there is not a faster, cheaper, and more suitable finance mechanism available (Quantified Ventures, 2018).

Furthermore, Walker (2015, p.209), in reflecting on her involvement in developing the Newpin SBB, explained that the process took "incredible energy", to the point where the responsible state government department was unable to "consider any new bonds in the immediate future". Nevertheless, Walker saw "enormous potential" for other government departments in accessing new funds through the impact bond model (2015, p.209). Walker's comment reinforces the point that the time and effort that goes into developing an impact bond means that it is not going to be a viable funding mechanism in every situation.

7.3.8 Grants Can Help to Cover High Transaction and Other Costs

The development phase in the Washington D.C. and Atlanta EIBs were underwritten by grants from charities, private, philanthropic, and NGOs. These grants covered the impact bond's development phase costs, which without a grant can be prohibitively high. To take the Atlanta EIB as an example, a grant from the Rockefeller Foundation together with support from KeyBanc Capital Markets and Sibert Cisneros Shank made the EIB possible (Quantified Ventures, 2019b). Moreover, in the case of the proposed Blue Impact Bond, philanthropic funds have been critical in financing the costs associated with the development phase, as Liam explains:

> HSBC, they have got that $100 million nature-based solutions initiative, and as part of that, we have had a long relationship with them, so the funding has come through that global round, and it is funding us to do all the transaction work.

Liam's comment indicates that philanthropic funding is essential in covering the transaction costs associated with the proposed Blue Impact Bond. Furthermore, in reflecting on her involvement in the Rhino Impact Investment Project, which was the precursor to the WCB, Mali explained:

> … a lot of the money in the rhino bond [project] went into supporting the sites to get up to a stage where they were what we called 'investor ready' because maybe their finance systems, their reporting systems, staff management, there were lots of things about the running of the sites beyond the rhino side, that you were just like, 'can we honestly sell this site to an investor when they can't even report? They don't have a financial management system and we don't have trust in them already.' So, a lot of money went into getting that up to a point where they were ready.

Mali's recollection of the Rhino Impact Investment Project like Liam's comment on the proposed Blue Impact Bond highlights the high transaction costs that can be associated with the development phase of an impact bond.

7.3.9 Bringing Together Protected Area and Finance Expertise Is Important

Bringing together PA and finance expertise and knowledge is important when developing an impact bond. For example, PA specialists (including those with expert knowledge of the black rhino species) were engaged in the Rhino Impact Investment Project alongside finance experts, and together they laid the groundwork for the WCB, which was launched in 2022 (The Royal Foundation, 2019). Furthermore, Liam explained that throughout the development phase of the proposed Blue Impact Bond, TNC had brought together subject matter experts:

> The whole point of TNC is that we just draw on the resources that we need to resolve the issue, not everyone has to be the expert.

7.3.10 The Lifespan of an Impact Bond Can Vary

Like the investment value for an impact bond, the lifespan can also differ. For example, the Atlanta EIB has a 10-year duration (Lewis, 2019) while the Foyer Central SIB has a nine-year term (OSII, 2021; Quantified Ventures, 2019a). With medium- to long-term operating periods in place, funding recipients can focus on delivering an intervention within a terrestrial PA without concern for annual grant cycles or government funding allocations or cuts, which may generate greater financial security and certainty (Justice Connect, 2018). Kate who has an extensive knowledge of impact investing in the NSW context believes that the medium to long-term operating periods could be "quite compelling" as an argument in favour of financing through impact bonds. Kate explained:

> The benefit over the 'business as usual' funding…is the expediency of the funding, in terms of we need the funding now and if we wait too long, it is going to be too late, so let's fund it now rather than bit by bit, piece by piece slowly. You know you are fighting every time, you put all of your businesses cases together and you fail, so this in a sense bundles it, puts your investment for the next 15 years, you have mapped it out, which is quite compelling as an argument.

Like Kate, Mali considers the medium- to long-term operating period to be a potential advantage of the impact bond over more traditional funding mechanisms such as a government's annual budget cycle. Mali stated:

> …the impacts that you are talking about generally are not annual; you cannot measure them on an annual basis. For us, there needed to be a five-year minimum for the investment in rhinos because you can't show an increase in population in a timeframe less than that. It is then also

> about having to sit down and think about theory of change and your impact and what timescale you need to measure that impact and saying realistically then this is a five-year process so the investor has to commit to not seeing a return financially or otherwise for five years….You do still give them project updates to show you are on track and we are doing this, but they have given the money for five years, so they don't bug you every three months, and you have to focus on measuring those impacts at a longer time scale, and impact bonds generally depending on the timescale give you the freedom to do that.

As Mali's rhino example illuminates, the operating period of an impact bond can be tailored to the timeframe of the project/program outcomes being measured. In the case of rhinos, Mali explained that a minimum five-year timescale is required to measure the impact of interventions on the size of the rhino population and an impact bond can be tailored to fit this timeframe.

7.3.11 Impact Bonds Can Shift the Financial Risk Balance

One perceived advantage of the impact bond mechanism is that it can lessen some of the concerns that outcome funders (e.g., government) may face in funding innovative or preventative interventions or projects/programs in PAs, by transferring some of the financial risk to investor(s) (Dear et al., 2016). In the case of the Washington D.C. EIB, green infrastructure was recognised as a cost-saving option when compared to the alternative tunnel-based system to manage stormwater. However, the government perceived green infrastructure as a higher risk solution because it had not previously been adopted on such a large scale in Washington D.C. (Quantified Ventures 2018). The EIB model offered DC Water and Sewer Authority the opportunity to shift some of the perceived financial risk associated with green infrastructure to the impact bond investors, which emboldened the government to experiment with green infrastructure – a risk they may have otherwise been unwilling to take. This in turn paved the way for positive environmental change (Quantified Ventures, 2018).

7.3.12 Impact Bonds Can Provide Upfront Funding for Interventions Across Large Geographic Areas

It may be possible to establish an impact bond to provide upfront funding for several projects that share the same desired outcome as in the case of the WCB and the Washington D.C. and Atlanta EIBs. It could also be possible to fund interventions that take place in more than one PA or across a large geographic area, as demonstrated by the WCB, which provides upfront funding for conservation activities in two South African PAs (World Bank, 2020). Liam explained that TNC is developing criteria to determine the suitability of projects for funding, specifically through the proposed Blue Impact Bond:

…We develop the list of projects and interventions…We are in the process of developing the criteria for projects now, and then it's starting to go through all the strategies of council and government to work out what is in the pipeline that could be funded.

As Liam's narrative extract explains, the proposed Blue Impact Bond will finance a suite of strategically selected projects across the north coast of NSW. TNC has described the key criteria as "any project that has a measurable and significant downstream benefit to coastal ecosystems" (TNC, 2021, p.7). Liam further explained that the pilot location's geographic area could be broadened, or a second catchment area included to expand the number of projects financed through the funding mechanism.

7.3.13 Measurable Performance Outcomes Are a Key Focus Area for Impact Bonds

Measurable performance outcomes are a key focus area for impact bonds whereby they allow the independent evaluator to verify when an outcome has been achieved and if/when investors should be repaid (Dear et al., 2016). For example, the WCB outcome measure is net rhino growth over a five-year period, while the outcome measure for the Newpin SBB was "the restoration rate of children who enter the program" (OSII, 2020b, n.p.).

7.3.14 Performance Outcomes Should Be Monetisable

The expectation is that the performance outcomes are monetisable to enable outcome funders to determine where budgetary savings have been made and are clearly attributable to the funded intervention with investor repayment to be made from these savings (Dear et al., 2016; OECD, 2016).

Prior to the launch of the assessed NSW impact bonds, it was possible to estimate a cost saving to the NSW Government directly attributable to the program. For example, the program funded through the Resolve SIB was able to show an expected cost saving through reduced hospital use, with investor returns based on government savings made through the Resolve Program (Justice Connect, 2018). By way of another example, in relation to the Newpin SBB, Walker (2015, p.208) explained that "it is the savings to government associated with these outcomes that are what really make the social bond work, some of the savings are returned to investors...It is important to note that the returns are capped, because the idea of this bond is not for people to make extraordinary returns. This gives assurance to government, as well as to other people scrutinising the purpose of the bond, that this is not just a money creation scheme". Revenue sources available to repay the impact bond should also be considered (Quantified Ventures, 2018).

7.3.15 Impact Bonds Can Be Structured to Measure a Range of Different Outcomes

Impact bonds can be structured to measure a range of different outcomes; thus, a PA impact bond could be structured to measure social outcomes *or* environmental/conservation outcomes *or* possibly both, depending on the intervention's purpose. In the case of the WCB and the assessed U.S. impact bonds, the selected outcome measures have a conservation/environment focus while social outcomes are also expected (EPA, 2017; Quantified Ventures, 2018, 2019b; World Bank, 2020).

7.3.16 Impact Bonds Are Monitored and Evaluated by an Independent Evaluator

Each impact bond is monitored and evaluated by an independent evaluator throughout the intervention or project/program's life. The results of the evaluation determine whether the program's progress constitutes statistically significant results in line with the predefined outcome measures. At the time of writing in 2022, two of the five NSW impact bonds assessed had reached maturity, with both recording statistically significant results. For example, The Benevolent Society SBB's final independent evaluation report recommended that based on the positive results, the Resilient Families Service should continue to be delivered (ARTD Consultants, 2020).

7.3.17 An Impact Bond Can Be Terminated Early

It is possible for an impact bond to be terminated early if the independent evaluation does not find evidence of statistically significant results. Although this has not been the case for the impact bonds assessed, the NSW Government's ON TRACC (Transition Reintegration and Community Connection) impact investment, which was launched in 2016, was terminated early for this reason (OSII, 2022). The ON TRACC evaluation report stated that evidence could not be found in support of the program having "led to a statistically significant reduction in recidivism in comparison with existing services provided by NSWCC" (OOi, Poynton & Halloran, 2020, p.1). Thus, the lesson is that while the impact bond could be a medium- to long-term funding option for interventions and projects/programs within a PA setting, there is a risk that the funding may be discontinued if the independent evaluation does not find evidence of statistically significant results.

7.3.18 Impact Bonds Can Offer Flexibility in Implementing Interventions

A PA impact bond would in theory provide funding recipients with the power to flexibly implement interventions through the prescription of outcomes instead of specifying how the recipient is to achieve those outcomes (Dear et al., 2016). Thus, funding recipients retain the ability to decide how a conservation activity is implemented on the ground. For example, in the case of the WCB, it is expected that PA managers will use real-time data to adaptively manage conservation activities on the ground, which is expected to increase the attainment of predefined outcomes (World Bank, 2020). Mali considered this an advantage of the impact bond, and in relation to the Rhino Impact Investment Project she explained:

> … they [investors] don't want to know how you are doing it, unless they are particularly interested in conservation. They don't care if it is anti-poaching for a species-specific one, so if you are looking at a protected area one, they don't care that it's community engagement or better protection or more staffing or more visitors; they don't really care because what they are actually investing in is the actual impact.

Mali's narrative excerpt suggests that because impact bonds focus on measurable impact, the investor is less interested in the details of how the impact is achieved, which can in turn provide a level of flexibility in how an intervention is implemented.

7.3.19 Impact Bonds Tend to be Collaborative in Nature

Impact bonds tend to be collaborative in nature; thus, implementing an impact bond to fund terrestrial PAs could facilitate new collaborations between stakeholders with similar interests and whose paths have not previously crossed. These collaborations could encourage new management models and, in doing so, may improve the management effectiveness of PAs over time (Dear et al., 2016). For example, in the case of the proposed Blue Impact Bond, Liam explained that a wide range of stakeholders are involved in developing the impact bond, including TNC, HSBC Bank, various state government departments, and local councils located on the north coast of NSW.

7.3.20 Non-Government Organisations Often Take on the Role of Service Provider

Finally, each of the NSW-based impact bonds assessed was launched by the state government in partnership with an NGO, where the NGO took on the role of service provider. For example, the Foyer Central SIB is a partnership between the NSW Government (specifically the Department of Communities and Justice), Uniting, St George Community Housing, and SVA. In this example, the service providers are St George Community Housing and Uniting. Significantly, none of the NSW impact bonds assessed have engaged a government department as the service provider. However, as previously explained in the Washington D.C. EIB example, DC Water and Sewer Authority – an independent government agency – was engaged as the service provider. This suggests that the impact bond model does not preclude government entities from taking on the role of service provider.

7.4 Commonly Cited Barriers and Perceived Challenges Associated with Impact Bonds

As alluded to in Section 7.3, there are barriers and perceived challenges associated with impact bonds, and it is recommended that PA practitioners consider the following barriers and challenges when weighing up the feasibility of the impact bond to meet their financing requirements.

7.4.1 Uncertainty of New Market

In 2010, J.P. Morgan, the GIIN, and the Rockefeller Foundation cooperated on a study, which examined the impact investment market. The study included a survey of over 1,000 private impact investment transactions and was followed by an expanded survey in 2011 of over 2,200 private transactions, totalling more than US$4 billion of investment. Many impact investors surveyed acknowledged significant challenges in delivering market growth, including a shortage of quality investment opportunities, high transaction costs, small average financial size of impact investment ('deal size'), limited track record of successful investments and inadequate impact measurement practices among other challenges (Edmiston & Nicholls 2018; O'Donoghue et al., 2010). Similarly, a discussion paper prepared by Australia's Commonwealth Treasury Department in 2017 found that the limited number of investment opportunities offering market rates of return was a significant barrier to a successful impact bond market.

Furthermore, there is limited evidence of success because the impact bond market is in its early years (Sinclair et al., 2019). Nate who shared his extensive knowledge on impact investing during his research interview expressed scepticism about the role that the impact bond could play in financing terrestrial PAs. He argued:

> A bond is one particular instrument and, frankly, it is a really expensive, over talked, underutilised [instrument]. There is always a reason why some things haven't been done.

Nate further believes that in relation to impact bonds:

> There are two camps of thinking: one is that they were effective, they are part of that innovation curve, concessional government steps in then those impact areas are tested…we concessionalise it, government played its role, we paid for the extra capital and all those sorts of things and yes, it was a success, but in reality you have to step back and go so that impact area – can it now be financed directly or is it still reliant on concession? If it is still reliant on concession, then we haven't done anything. Now that is okay because part of it is testing and learning, but the other side is that maybe there is a role for government just to pay for those things, those outcomes, because why do we have to pay extra to get them.

Nate's narrative excerpt highlights the uncertainty that exists around the impact bond market and around the role that it can or should play in financing outcomes that are more traditionally funded by government.

7.4.2 Contractual Complexity

A commonly cited challenge is the contractual complexity of the impact bond (see Carter et al., 2018; Commonwealth Treasury 2017; Dear et al., 2016; Fraser et al., 2021; Gustafsson-Wright et al., 2015; Hall et al. 2017; Roy et al. 2018; Sinclair et al. 2019; Tan et al., 2019). To briefly summarise, the perceived complexity can be attributed to:

- The time and effort required to establish the financial mechanism.
- The technical nature of the contractual arrangements between different parties.
- Prescribing outcome metrics and attributions.
- Obtaining agreement on measurement.
- Forming a new type of partnership between investors, government, and the social/environment sector(s) (Dear et al., 2016; Fraser et al., 2021; Tan et al., 2019).

Both Nate and Kate consider the complexity of the impact bond as a barrier to the development and implementation of this finance mechanism. Speaking of her work with the NSW Government, Kate explained, "we have provided advice to government in the past that the kind of complexity in establishing an impact bond is enormous." However, Gustafsson-Wright et al. (2015) and Dear et al. (2016) reasoned that as the impact bond market grows, this challenge will lessen. Liam made a similar point when discussing the proposed Blue Impact Bond in NSW. Liam believes the Blue Impact Bond will become a prototype for future environment-focused impact bonds in Australia. He stated:

> We'd like to hope that [it] is replicated…how do we ease the burden [and] figure out that worked well? It took a little while. And how do we shoot down the next one to 12 or 18 months and follow the same process and shorten that one and get better on the next one?

As Liam's narrative excerpt highlights, the expectation is that lessons from the Blue Impact Bond will help to reduce the complexity of the mechanism and the time it takes to develop an impact bond in addition to the associated administrative costs.

7.4.3 Monetisation of Outcomes

Setting a financial value for a social and/or environmental outcome can be difficult, and it can cause political, ethical, and methodological conflicts (Hall et al., 2017). Hall et al. (2017, p.12) explained that "measuring improvements in mental health, for example, necessarily involves normative criteria such as 'what is healthy?', 'what is socially acceptable?', and 'what is well-being?' Answering these questions involves not only methodological disputes, but also ethical and political disputes over what we consider to be 'good' or 'normal'". Nate also recognised the monetisation of outcomes as a challenge for impact bonds. He suggested:

> Some things [we] will never be able to account for in that context and nor should we…but I think it is trying to find a sweet spot where certain services – and they could be social services, or they could be natural capital services – can be recognised in financial terms.

Specifically, Nate's comment illuminates the perceived difficulty of monetising certain outcomes. As he alluded, it is not appropriate to monetise all services – and account for them in "financial terms".

Mali further explained that measuring the outputs, outcomes, and impacts from an intervention or project/ program funded through an impact bond can be challenging. She suggested that "there is an absolute lack of understanding of what the benefits can be and how it would work". Mali further suggested that the challenge can be in part mitigated by making conservation outcomes secondary to social outcomes. For example, she explained that the focus of a program run in a PA to be funded by an impact bond might be "employment opportunities for Indigenous communities", where "for investors the impact is employment and better lives for those people". As Mali explained in this example, the conservation outcome(s) of the program "is almost like a by-product and in some cases it has to be because people are concerned about other things, so if you can use those other things to sell it to an investor". This approach is not intended to water down the significance of the conservation outcomes, rather it is a response to the track record of impact investors funding projects and programs that seek to achieve social outcomes.

7.4.4 Developing Outcome Metrics

Developing outcome metrics can be both time consuming and problematic if trustworthy data is not available (Berlin, 2016). The first stage in developing outcome metrics is gathering the data, which can take up to two years from initiation to launch (Berlin, 2016). Also, if reliable data for example on costs is not available, it can be almost impossible to accurately estimate the scale of a program required to make an impact bond deal worthwhile (Berlin, 2016).

7.4.5 Neoliberalisation of the Social/ Environment Sectors

As discussed in Chapter 2, impact bonds have been criticised for the commodification of people and the environment and the neoliberalisation of the environment and social sectors (Sinclair et al. 2019). This criticism is based on concerns that impact bonds represent the 'financialisation' of social policy, which leads to the 'marketisation' of social services for example, and the financialisation of the service

(Morley, 2019; Sinclair et al., 2019; Tan et al., 2019). Subsequently, there have been calls for increased "scrutiny around the role of marketisation and financialisation in the formulation of public services and for service participants or recipients to be actively involved in the design of services they receive" (Tan et al., 2019, p.4).

Some critics of neoliberal ideology believe that impact bonds are unnecessary, arguing that the government is responsible for the delivery of environmental solutions and preventative social services (Sinclair et al. 2019). While others theorise that the impact bond is a replacement for existing government programs or a substitute for government funding (Hall et al. 2017). However, the literature on impact investment does neither support the view of impact bonds as a substitute for traditional funding sources for social and environmental services nor as an appropriate funding instrument in all situations (see Commonwealth Treasury 2017; Department of the Prime Minister and Cabinet 2020; Hall et al., 2017). Nevertheless, Nate explained that he can understand this criticism and further conceded that he too views impact bonds as "a bit of a neoliberal thing". Nate suggested that a PA institution's leadership team should work through a decision logic to determine the role (if any) for the private sector in helping to finance PAs:

> You need to think […], 'okay, where can the private sector contribute?' And that is not a financing question, that is a role for government versus role for private sector, and it meets our needs. Just because they have a lot of money, you know, they can't buy our land, they can't rent our lands. So what would we be doing? …If you feel that the answer is satisfactory, then you could go, 'okay, what would be the right means of unlocking the private capital?' and then 'How could we do that in a way that would deliver on the social and environmental impact element?'

Nate's comment supports the notion discussed in Chapter 5 (Enabling Conditions 2 and 5) that not all funding sources will be suited to the financing of every project or program, and if the PA estate's funding portfolio is to be further diversified, the institution should undertake CBAs for proposed alternative funding mechanisms. This will assist in understanding the potential implications and risks of individual funding sources or mechanisms and help identify the right mix of finance options within a particular context (Meyers et al., 2020).

7.4.6 Complexities of Collaboration

Collaboration does not always come easily, and it can be complex and time consuming to perfect (Dear et al., 2016). Mali reflected that it took time to achieve the right mix of people to work on the Rhino Impact Investment Project. She explained:

> Having the right people in the room who could explain it, came from the investor perspective and the government perspective…When we found the right people then everything was fine.

7.4.7 Balancing Evidence with Innovation and Investor Risk Appetite

Another challenge with impact bonds is balancing evidence with innovation whilst also factoring in the risk appetite of investors (Gustafsson-Wright et al., 2015). Some commentators have argued that it is hard for a program to be truly innovative if it requires evidence of effectiveness (Donaldson, 2017; Government Outcomes Lab, 2020; Hall, 2017; NSW Government, 2015; Social Finance UK, 2017; Roy et al., 2018). To date, the data from impact bond outcomes suggests limited innovation can be expected in program delivery. Innovation has instead come from applying conventional models in new ways, in different settings, and to new populations (Gustafsson-Wright et al., 2015). In NSW, for example, the government takes a broad view of innovation, not just whether the program is entirely new (NSW Government, 2015).

7.4.8 High Transaction Costs

A major challenge associated with impact bonds relates to the high transaction costs incurred in an impact bond's development phase – for instance, fees payable to lawyers and finance specialists and due diligence costs (Fraser et al., 2021; Gustafsson-Wright et al., 2015; Tan et al., 2015, 2019). The 2010 survey of impact investors by J.P. Morgan in conjunction with The Rockefeller Foundation and the GIIN recognised high transaction costs and inefficiency as a challenge inherently associated with an "emerging asset class" (O'Donoghue et al., 2010, p.28). Kate described the upfront administrative costs associated with establishing an impact bond as "prohibitive", while Nate commented that "bonds are not any sort of panacea and bonds are very expensive".

7.4.9 High Stakes for Impact Investors

The stakes are high for impact investors who risk losing their entire investment (or part thereof) if an intervention or project/ program is evaluated as unsuccessful. With this level of investment risk comes the danger that investors may try to pressure/influence those involved in the program's evaluation and in measuring its success to see the program meet its predefined outcomes and, in doing so, guarantee repayment (Donaldson, 2017).

Some service providers have reported feeling so pressured to secure outcomes that they have tried to protect their frontline staff from the influence of certain impact investors (Donaldson 2017; Edmiston & Nicholls 2018).

7.4.10 Greenwashing

Freeburn and Ramsay (2020, p.433) argue that "the most common problem associated with the green bond market is 'greenwashing' which arises because investors face the problem of judging whether an investment is truly green". In this context, greenwashing can be described as "the practice of falsely attributing environmentally positive credentials to a bond claimed to be green" (Freeburn & Ramsay, 2020, pp.418–421). Greenwashing is a problem for the impact bond market because "confidence in the green credentials of green bonds is essential to a sustainable market" (Freeburn & Ramsay, 2020, p.433). Nate considers the greenwashing of impact bonds to be a serious challenge. He commented:

> [Impact bonds] get pushed by greenwashing institutional investors because it is easy to have a big pool of money but remember that money is just sitting there gaining interest for someone and so… we will issue the bond, but it is actually government that has to pay for everything.

To avoid greenwashing, standards and assurance for an impact bond are critical (Freeburn & Ramsay, 2020). In NSW, the Sustainability Bond Framework helps to maintain the integrity of the impact bond as a finance mechanism with only projects/programs that meet specific criteria for green, social, or sustainability impact bonds accepted into the asset pool. As explained previously, in line with the NSW Sustainability Bond Framework, a bond can only be issued in accordance with the ICMA Green Bond Principles if it meets the programmatic certification requirements in compliance with the CBS, ICMA Social Bond Principles, and ICMA Sustainability Bond Guidelines (TCorp, 2020).

7.4.11 Sustaining Outcomes Beyond the Impact Bond

The final commonly cited challenge relates to the necessity to sustain the outcomes achieved beyond the life of the impact bond because the payment metrics of most impact bonds assume that the outcomes achieved through an intervention's delivery are ongoing. Therefore, funding through an impact bond is rationalised on forecasted cost savings over time (Hall, 2017). Berlin (2016, p.18) mused that the future of impact bonds as an established investment tool or a "forgotten fad" will hinge in part on whether services delivered through a successful impact bond program can be sustained after the deal ends.

Despite the barriers and perceived challenges that exist to developing and implementing impact bonds, the impact bond market continues to grow, with the number of impact bonds launched globally on the rise (Freeburn & Ramsay, 2020). Nevertheless, as stated in Chapter 2 (Section 2.6.3), a related yet under-explored research area is the attitudes of PA practitioners towards neoliberal conservation strategies, such as the impact bond, and whether these attitudes influence a practitioner's willingness to adopt such strategies as alternative finance mechanisms for the PAs under their care and control.

7.5 Protected Area Practitioner Attitudes Towards the Impact Bond

In Chapter 2, the literature on neoliberalism and neoliberal conservation strategies was reviewed within the context of the sustainable financing of terrestrial PAs. It found that notwithstanding the criticisms, PA practitioners are actively encouraged by leading conservation organisations and conservationists to adopt market-based strategies to address the challenge of insufficient funding. However, one of the impediments to attaining financial sustainability for the PA estate in NSW, as identified in Chapter 4, is resistance to change by stakeholders, including NPWS staff. This resistance extends to diversifying the funding portfolio and adopting alternative finance mechanisms (see Impediment 7).

To better understand how the impact bond could help to finance PAs, the thesis now explores the views and personal attitudes expressed by the PA specialists who participated in the research study towards the adoption of alternative finance mechanisms, in particular the impact bond. The participants were asked to discuss their personal views about whether alternative finance mechanisms like the impact bond should be adopted to complement existing funding sources for PAs.

The research findings indicate that the attitudes of PA specialist participants towards alternative finance mechanisms range from strong support to strong opposition, with the attitudes of most participants falling somewhere in-between. Participants recognise that the government must continue to financially support the PA estate into the future (see Enabling Condition 1 in Chapter 5). The importance of this belief is reflected in the Theory of Change for the Financial Sustainability of the PA estate in NSW with 'government support' included as one of the six pathways to change (refer to Chapter 6). Interestingly, most participants (18 out of 20) also support the broadening of the funding portfolio to incorporate alternative finance mechanisms such as the impact bond:

> I have no strong philosophical objection to that type of arrangement. (Cedric)

> Maybe I am optimistic, but I do think that as we come under budget pressures that these instruments aren't the anthesis of trying to achieve public outcomes, they are just a more modern way of achieving funding. Really, in one sense it is no different to taxpayers funding; it is just that with taxpayers we extract money off people involuntarily and with these bonds we extract money voluntarily, and it still all comes from the private markets in order to fund government services. (Dara)

> I think we need to continue to look towards government because they are the primary funder at the moment. I think we need to continue to build and grow our revenue streams, and we can also

look at other innovative funding mechanisms, that is fine too. I think we need as broad a strategy as we can to address the issue. (Hamilton)

> Absolutely, we should explore that and just understand what it means for us and it's a bit like you've got one person who wants to invest $100 million in South Head [in Sydney Harbour National Park]…I think we should be open to it and depending on what that market mechanism is, just as long as we understand what the implications of going down a particular pathway are around a particular mechanism and with things like social bonds and what that means for us in the longer term. (Alexander)

> I think we should explore it. It's certainly not a blanket yes; there would have to be parameters around it and there would have to be that transparency, and it would have to be above corruption and all those things that as government employees we are required to do. (Ruth)

> There is no question that we should be adopting alternate models and methods, but whether it is those that we should be using, that requires careful thought. I think there are unforeseen consequences and, in some cases, actually foreseen consequences; it is just that we haven't thought about it hard enough, but there is no doubt that we should absolutely be looking at all those sorts of things and consider […] whether they are going to work for us and in what circumstance and the possible planning. (Rani)

While the selected narrative excerpts highlight the general support shown by participants towards the adoption of impact bonds as an alternative finance mechanism for PAs, Alexander, Ruth, and Rani's comments allude to an underlying sense of caution. For example, Rani suggested that impact bonds and other "alternate models" require "careful consideration" prior to adoption to avoid what she referred to as "foreseen" and "unforeseen consequences". Similarly, Briana described incorporating impact bonds and market-based finance mechanisms into the funding portfolio as a "massive priority" for NPWS; however, she too urged a "cautious" approach. Briana stated:

> I think it is worth pursuing; it should be a massive priority, but we just have to be so cautious about how you structure it because it is so easy for it to all go wrong, and we have seen that happen over and over.

Furthermore, while Cody described himself as open to the idea of market-based finance mechanisms, such as the impact bond, playing a role in the financing of NSW's PAs, he emphasised his belief that this action alone would not be a solution to the challenge of financial sustainability:

> I guess I'm open to all this stuff…but I think we need to be a little bit careful that that's not actually going to solve our problems and that we need to be able to clearly explain what we are doing,

> what we are managing, and how much it costs, and if you are not going to fund us: well, guess what? You are not going to get XYZ.

In his narrative excerpt, Cody suggests that a broadened funding portfolio will not solve the problem of financial sustainability. Furthermore, Cody describes the impact bond as a buzz word, explaining that through his own research into the feasibility of impact bonds, he concluded that there could be a complementary role for the impact bond but only in certain situations:

> [The impact bond] is very niche. It could be complementary, it could be useful to fund certain types of activities in protected areas, certain types of capital-intensive projects; but as a solution to funding the entire system, I didn't see applicability.

Edna, like Cody, acknowledged that the impact bond could help to fund PAs in certain situations; however, she believes that the mechanism is unlikely to generate funds for the PA estate where it needs funding most:

> I think it could possibly work for some of our programs but [be] difficult for others, and those others are probably the ones that we really need funding for. Some of those environmental issues might be difficult to come up with those measures that show savings. If you want to think about climate change or whatever, a lot of the stuff that we work with it is hard to measure; it is hard to show the benefits, but that is definitely what we should be working towards. We can describe what the benefits are, a little harder to measure, a lot more difficult to measure as a dollar saving. For the tourism infrastructure projects, the idea is that we increase the amount of people that come to parks, and we can say that if all of those people come to parks, it generates this revenue for us and that allows us to maintain that facility. But that might be straight forward, but there is a lot of aspects of managing parks and particularly the environmental side that would be a lot more difficult to measure, but they are important benefits.

Edna in her narrative extract suggests that the nature of the work undertaken by NPWS does not always fit the impact bond funding model, which requires outcomes to be measured and monetised and which, she believes, would be difficult to achieve for certain environmental outcomes. This view is in part supported by the NSW Government's current preference for land and asset management agencies which adopt an outcomes-based funding model enabling the government to better understand what they can expect from their financial investment. As discussed in Chapter 4, this approach differs from the traditional funding model adopted by land management agencies, where allocated government funds are mostly left to the discretion of NPWS to allocate and spend, and funding is not necessarily tied to outcomes.

While NPWS has commenced its transition towards an outcomes-based approach to the funding of the estate's infrastructure assets, participants explain that the PA institution finds it difficult to demonstrate to government what it will receive for its investment into non-infrastructure assets and projects/programs. Similarly, participants find it difficult to understand how the impact bond model can be applied to PAs when environment/conservation outcomes are seen as difficult to measure and quantify.

While most PA practitioners interviewed expressed varying degrees of support for impact bonds and alternative finance mechanisms more broadly, Oliver was strongly opposed recommending instead that NPWS continue to look to government for its funding needs with a focus on incentivising government to invest in PAs. He stated:

> If we were at the point where we could put our hand on our heart and say that the core conservation, infrastructure, visitor service requirements of managing the 8 or 9% of NSW which is in the protected area network have been met, and what we are looking at is in effect discretionary projects that add value beyond the really fundamental criteria of 'are we maintaining or improving the condition of our habitats', 'are we maintaining or improving the condition of our cultural assets', 'are we maintaining or improving the resilience and status of our threatened species' – if you are at that point, more than happy to have additional assistance, but I'd argue that we are nowhere near that point in NSW and to be honest, talking to colleagues across the nation, I'm not aware of any jurisdiction that is anywhere near it. In fact, on the contrary what we have is a triage system of the squeakiest wheel, the most dire threat gets funded. In that situation, having a competitive layer put on top of who can access external dollars, I think it is really fraught.

The "competitive layer" that Oliver referred to in his narrative extract relates to the competition that NPWS could generate if it were to compete for private funds against non-government conservation organisations, including private land management organisations like Bush Heritage Australia and the Australian Wildlife Conservancy.

Some participants, including those in support of exploring the feasibility of impact bonds, explained that they find it difficult to understand how PA projects and programs can provide a return on investment and, therefore, how impact bonds can be applied to PAs when environmental outcomes are not necessarily 'easy' to measure:

> My question is how do you get them [investors] a return?... How do you get your investment back and how do you actually show that it has worked in a long-term program? (Fred)

> I'd need to know more about it because they are based, I would imagine, on quite large-scale infrastructure projects; we don't in the main do large-scale infrastructure projects, they are much

smaller scale whether we are building a road or whatever we are doing, and also there's the return: again, how would that work within the park context? (Sophia)

As I understand it, the bonds rely on an income at the end of the project or a clear saving is again getting a quantifiable saving, I'm just struggling with that at the moment in understanding how it would work. (Sophia)

I'm just not sure of the mechanisms that would do that. Again, it depends if you have got a developing country; their government might be such a basket case that they just don't have the capacity through public finances to fund protected areas, so you might find that either through NGOs or other third parties that they could fund that, yes, that's a possibility. I just don't know how the mechanisms of it all works or would work. (Cedric)

The other side of it too is that the private sector is just about money or making money, and in the public sector that is not what it is about for a lot of the agencies but also a lot of its people. So, the social and the environmental values are important, and some of those are not as hard and fast as knowing how many dollars you have got in the bank. So, it is a cost benefit, but the benefits are not all financial and they are not as easily measurable as others. How do you measure social capital? I'm not quite sure. (Asher)

The difficulty we probably need to answer is how do you prove an outcome and who is willing to pay for it? (Ethan)

The attitudes expressed by PA practitioners in the selected narrative excerpts above suggest that there is a level of confusion and misunderstanding about the purpose and mechanics of the impact bond and the role that this mechanism could play in financing PAs. Yet, the lived experience of Mali during her work on the development of an impact bond for rhino conservation in South Africa together with the literature on impact bonds indicates that stakeholder understanding is critical to the overall success of a project/program and its financing through an impact bond model. When reflecting on the development of the Rhino Impact Investment Project as a precursor to the WCB, Mali explained that a challenge faced by the project team from the outset was conservation specialists not understanding the purpose and mechanics of the impact bond. She stated:

We struggled a lot with people not understanding the impact bond, not understanding how it might work, particularly from a conservation perspective, less so than from a finance one because you end up speaking to finance people who know about impact investing and they get it, whereas the conservationists didn't.

Mali also explained that the support of conservationists for the impact bond project was considered critical to the overall success of the project and its financing via an impact bond:

> And when you presented it to the rhino people who you needed to support it, and while they are not in charge of it, part of me is, like, you don't need to get it, but they kind of do. They don't need to understand the minute details, but they still need to be behind it…those technical specialists, they need to understand it, but they also need to understand that actually, it doesn't matter if they don't understand all the minute details because that is not their role. Their role is to try and make sure that whatever the investment is has impact in the sector that you want it to have impact in, that is their job.

Further to her comment, Mali emphasised how important it is to "get the right people in the room" to develop a partnership between the PA institution and finance experts that is built on trust, respect, and shared desired outcomes.

There is also a perception that some PA practitioners and stakeholders will be resistant to funding through alternative finance mechanisms like the impact bond:

> The traditional view would see it as a state service – they should be funded by the state as far as possible. (Ethan)

> You probably have to phrase it in a way that is to complement existing things rather than replace because you get a lot of Parkys that will sit there and say, 'What are we doing so wrong now? And why should we change?' I think a nice slow burn into that would be that we think that there is room for maybe educating both sides – the Parky side and the private-sector side – on what the mutual benefits are…Most Parkys will sit there and go, 'You are selling parks' – and I don't think that is true, the fact that someone else can benefit, as I said before, is a good thing. (Asher)

> I think protected land managers have probably shunned away from what could be seen as being 'too commercial', which I can kind of understand in the environment space, but I do think there are some unique opportunities for us to be also innovative in the way that we generate revenue because that for me is the future for protected land management; reliant on consolidated funding for day-to-day operations is not where the future lies, I don't think, in terms of the sustainability of our business. (Dara)

The literature on impact bonds supports the views expressed by Ethan, Asher, and Dara above, with some analysts critical of neoliberal ideology arguing that impact bonds are unnecessary because in their view, government is responsible for delivering environmental solutions and preventative social services (Sinclair et al., 2019).

As discussed in Chapter 4, Akram, Cody, and Rani speculated that if impact bonds were adopted to help fund the PA estate, the NSW Government would not necessarily view the funds generated as 'complementary' to consolidated funding:

> My first instinct is the danger that if the Parks Service begins to find alternative sources of revenue, then the state government will simply reduce its budget… I can absolutely see that happening. I would say it's really likely to happen rather than the opposite. (Akram)

> I come back to the fact that government has prime responsibility for funding a protected area system, and if we start talking about turning ourselves into a self-funding entity, well actually we are never going to be. Where we are in human history is that we have done a lot of damage to the environment, and it needs to be actively managed and that is a core responsibility of government, and we shouldn't be giving government an excuse to move away from its core commitment. That would be my strong personal view. I think any talk is mischief making and gives people who have agendas against us an excuse to walk away from these obligations. (Cody)

> I think there is no question that they would, that is absolutely the vibe that we are getting from Treasury all the time. Any money that we get and it is worse than that, sometimes we ask for money and we tell them what a high priority it is and how much we need the money and why and what the risk will be if we don't get it and they say you are right and we agree, you reprioritise the money that you got and you find that money and you do that project within the money that we have already given you. I think that is a real risk, and I don't know if this conversation is going to end up there. (Rani)

In their narrative excerpts, Akram, Cody, and Rani express a similar view, namely that funding for the PA estate from sources outside of government may result in decreased consolidated funding through the annual budget cycle. Dara, however, takes a different view, arguing that government is "taking the money anyway". Dara describes the "worst outcome" for the PA estate as one where government continues to reduce consolidated funding for PAs while NPWS does not have alternative ways to fund its work:

> Ten years ago, I could understand why agencies would be worried about losing the river of gold from consolidated funding, but my view on it these days is that that river is drying up and it is actually not the proposition that others are saying, which is: we do this and therefore they will take the money away. They are taking the money away anyway, the money is going anyway, and so my view on it is that we have to get innovative not because it is about augmenting what we have got; the shift away from consolidated funding particularly for general operations across government is everywhere…and I would characterise it that unless we get into that space we could get the worst outcome that is that the money gets taken off us anyway and we don't have some alternative ways of funding our services.

Dara further believes that "it is a false dichotomy to argue that it is about either – or that if we do one, the other will be taken off us because they both in a way run separately". He believes that adopting alternative finance mechanisms such as the impact bond will increase NPWS' financial independence, which is one of the enabling conditions for financial sustainability discussed in Chapter 5 (see Enabling Condition 9). Dara stated:

> If the price for independence is loss of consolidated funds in exchange for the things we can control, I reckon we should be grabbing that every day of the week.

As the narrative excerpt suggests, Dara advocates for a reduced reliance on government for PA funding and the adoption of alternative finance mechanisms in the name of financial sustainability. Similarly, Ethan likened the risk of government reducing consolidated funding to the ongoing risk faced by NPWS when it experiences an increase in self-generated revenue. While Ethan acknowledged that "there is a little bit of a risk that if we bump our revenue up, Treasury just cuts our base funding", he argued that the need for additional funding outweighs the "traditional view" that the state is responsible for the funding of PAs:

> Essentially there is a view that biodiversity is not improving, so we are not meeting our stated objectives and we are going backwards, so we should be investing more not less, so we need stability in our base funding and some growth as well, and whether it comes from inside or outside Treasury doesn't matter.

What Ethan described as a "traditional view" of PA funding, Dara considered to be a "cultural mindset":

> There is a big challenge around changing the mindset that these things are not bad, they are good, that they are actually about the future of Parks rather than being about selling ourselves out to the highest bidder. I think if we can get away from that culturally… but that is going to take a while and some of it is a generational change I suspect.

The propensity to resist change may be a response to the view that with impact bonds and other market-based finance mechanisms, there is a risk, as Dara described it, of PAs becoming "more beholden to those sources of funding". Oliver, for example, argued that "core funding" for PAs should come from government as this reflects a "commitment to future generations". He explained:

> It is not a question of user pays; it is actually about a commitment to future generations. For me the core funding for your state parks agency should actually come from government and in the case of NSW, there certainly is capacity to have some level of user pays managed revenue whether that is through park use fees or whether it is through licensing of alien uses. […] the reality is they are never going to be more than a small percentage of the total costs of acquitting conservation management obligations, and in large part they are going to be consumed by your visitor services,

> whether it is the maintenance and construction of everything from toilet blocks and visitor centres to the lookout. That is of an order of the scale to more than consume what you can create through user pays principles, so through revenue principles, which means that the core management conservation matters have to be dealt with by the state.

Mali, like Briana, Alexander, Dara, Ethan, Rani, and others, believes that a cultural shift may be necessary to adjust the thinking of staff and stakeholders to one that is generally supportive of using alternative finance mechanisms within the PA context:

> I think the other thing is an enabling cultural shift. I think that's really important that we should be talking around sustainability and financial sustainability and making sure that people do understand that there's a certain amount of dollars and we work out how best we go about being the most efficient with the dollars we have and also then maximising the revenue that we get in. (Alexander)

> There is a bit of an attitude amongst some people in Parks and protected land management more generally that if we move away from consolidated funding, we are selling ourselves out to commercial interests, and the way we protect ourselves from that is to stay on consolidated funding and, therefore, we can be a bit more purist about it and I get that. I get that the danger of some of the other options is to become more beholden to those sources, but I am just not sure that sustainability lies in the pathway of reliance on consolidated funding. The status quo is not the lane that we want to be in, unfortunately, with the way government is, and it is not party political, all governments are facing the same challenges around the world, it is a global issue. (Dara)

> A cultural piece is central, and if you have got investors who are lining up in this space, they are going to be weighing up a whole lot of factors in whether they invest in a national park or invest in a school education program or disability program or a prison reform program, whatever the traditional SIBs might be looking at and if there has been less in the environment space, which I suspect is true. We are coming from a much more immature state, so that is an issue, so building the conditions within which an agency like ours could actually do it and that is partly cultural, but there are a whole lot of other aspects such as structural and the way funding models work, so it wouldn't be without it's challenges. (Dara)

> We also need to think about how we take our more traditional stakeholders, our traditional support base and traditional partners on the journey with us because a lot of them will be very confronted by any change. (Rani)

As indicated in the selected narrative extracts, Rani, Dara, and Alexander recognise the challenges associated with the cultural shift discussed. Particularly because the cultural shift would not be without its own challenges as it represents a departure from the more traditional attitude that the funding of PAs is a core responsibility of government. Dara, for example, believes that the cultural shift may be "generational".

7.6 The Social and Environmental Impact Bond Feasibility Criteria Checklist

Chapter 7 has sought to answer the research question: *How could the social and environmental impact bond help to finance publicly managed terrestrial protected areas?* The lessons drawn from the literature, the assessment of impact bonds, professional views of the impact investment specialists interviewed together with PA practitioner attitudes towards alternative finance mechanisms suggest that while not a panacea, the impact bond could be a feasible finance option in certain situations. In this sense, the impact bond could play a role in the sustainable financing of PAs (and thus in addressing the challenge of PA financial sustainability) by broadening or diversifying the funding portfolio – an action identified along Pathway C (appropriate business model) of the ToC presented in Chapter 6. The recent inclusion of the Improving Access to National Parks Program in the NSW Sustainability Bond asset pool appears to support this assertion.

As explained in Chapter 3, action research values both the contribution that research makes to improving knowledge and the practical contribution in addressing a real-world situation (Eden & Huxham, 1996). To this end, a checklist has been devised to assist PA practitioners in determining the suitability of the impact bond as a finance mechanism for their funding or project/program requirements. The feasibility checklist outlined in Table 37 reflects the lessons extracted from the literature on impact bonds, including the assessment of the impact bonds, in addition to the commonly cited challenges associated with this funding mechanism and the views expressed by impact investment specialists as part of the thesis. It is intended that the user will consider each criterion, however marking one criterion as 'no' does not necessarily preclude a project from funding through an impact bond. Instead, the user will apply their discretion when determining the feasibility of the impact bond for their funding needs, in this respect the checklist should be used as a guide only.

Table 37 Impact Bond Feasibility Criteria Checklist for PA Practitioners

No.	Criteria	Yes/No
1	The government is not already willing to fund the intervention/ project/ program.	
2	Other finance mechanisms have been considered and ruled out as suitable funding options.	
3	There is political support and commitment for the proposed intervention/ program.	
4	There is an enabling policy and legal environment – including government support.	
5	There is general stakeholder support for financing through an impact bond mechanism.	
6	There is evidence of investor interest in funding an intervention/ project/ program or outcome.	
7	There is philanthropic or government funding available or sufficie nt funding in the budget to finance the impact bond's development phase.	
8	If financial expertise is not available in house, it is possible to foster collaborations to bring together PA and finance expertise during the impact bond's development phase.	
9	Cost savings to government have been forecast or revenue sources identified for the repayment of the impact bond.	
10	A ToC exists that communicates the desired impact and the inputs, actions, outputs, and outcomes for an intervention/ project/ program that are connected sequentially and lead to the overall impact.	
11	Identified performance outcomes are measurable and monetisable.	
12	Identified performance outcomes can be sustained beyond the term of the impact bond.	
13	The investment value is large enough to justify the upfront costs and complexities associated with developing an impact bond. *Note:* consider including multiple projects/ programs or expanding the geographic area of the intervention to meet the recommended minimum value.	
14	The intervention offers a clear return on investment.	

7.7 Summary

Chapter 7 explored the action of diversifying the PA funding portfolio, specifically how the social and environmental impact bonds could help to finance publicly managed terrestrial PAs. To answer this question, the feasibility of the impact bond as an alternative finance mechanism was assessed and lessons drawn from the literature on impact bonds together with the lived experiences of the impact investment specialists interviewed. A selection of impact bond examples from the U.S., South Africa, and NSW were assessed to help determine the feasibility of the impact bond as an alternative finance mechanism with relevance to terrestrial PAs. The commonly cited barriers and perceived challenges associated with developing and implementing an impact bond were also analysed.

The first lesson drawn from impact bonds for the financing of terrestrial PAs was that impact bonds are not a panacea for the challenge of PA financial sustainability; however, they could in certain circumstances play a role in the financing of terrestrial PAs by complementing existing funding sources. The recent launch of the WCB to fund conservation activities in two South African PAs supports this view together with the inclusion of the Improving Access to National Parks Program in the NSW Sustainability Bond Programme asset pool.

Secondly, impact bonds are suited to the financing of interventions and projects/programs that a government is unlikely to fund (Hall et al., 2017). Furthermore, the impact bond finance mechanism has been used to address significant social and/or environmental challenges in collaboration with private investors and NGOs. Impact bonds can also provide additional funding to help address social and environmental challenges where the funds may otherwise not have been available.

Political commitment and support for an intervention together with an enabling legal and policy environment are necessary for a successful impact bond market (and impact bond) (OECD, 2016). It may be sensible to consider whether key stakeholders are supportive of funding through an impact bond as this finance mechanism is sometimes criticised for being a neoliberal strategy and represents a significant departure from more traditional PA funding sources. Further to this, while the impact bond could be included in the PA funding portfolio, as illustrated through the ToC presented in Chapter 6, a diversified funding portfolio represents a single action identified along one of the six interlinked pathways to change for the financial sustainability of the PA estate in NSW. Thus, when this action is implemented and considered in isolation from the suite of other actions identified in the ToC, the inclusion of impact bonds into the funding portfolio may have a limited impact on the overall challenge of financial sustainability.

Research shows that there is investor interest in funding projects/programs and interventions that seek to achieve environmental outcomes alongside a financial return, as evidenced by the Forest Trends survey of impact investors conducted in 2016 and the popularity of the Washington D.C. and Atlanta EIBs with investors. However, the feasibility of the impact bond as a funding option will depend on the interest shown by investors in funding a specific outcome or intervention. A related lesson is that the investment value of an impact bond can vary considerably, importantly the value should be large enough to ensure the cost of establishing an impact bond is a financially viable option to warrant the time and expense associated with developing an impact bond.

Additionally, impact bonds can be complex, costly, and time consuming to set up because they are still a new finance mechanism. Therefore, before committing to an impact bond, it may be wise to investigate other funding options to ensure that there is not a faster, cheaper, and more suitable finance mechanism available (Quantified Ventures, 2018). Given the associated costs, a grant may be required to cover the costs associated with an impact bond, including the costs incurred during the development phase of the impact bond. Developing an impact bond for PAs will also require the expertise of both finance and PA specialists. Thus, it may be necessary to bring the two together during the development phase of an impact bond.

Further to this, impact bonds can help to transfer some of the financial risk from the outcome funder to investors, outcome funders may feel more confident in supporting interventions or projects/programs in PAs they may have otherwise deemed as too risky to fund (lesson 11). The WCB indicates that it is possible for this type of finance mechanism to provide upfront funding for interventions (i.e., conservation activities) across large geographic areas – including within a PA setting. It may be useful to develop criteria for projects or programs to determine their suitability for funding through a proposed impact bond as in the case of the proposed Blue Impact Bond for northern NSW.

It should be possible to estimate a cost saving to government budgets that is directly attributable to a project/program pegged for funding through an impact bond and where investor repayment can be made from these savings (OECD, 2016). It may also be necessary to consider revenue sources available to repay the impact bond investors. While a related lesson is that measurable performance outcomes are an essential part of any impact bond because they allow the independent evaluator to verify the achievement of outcomes and determine investor repayment (Dear et al., 2016).

It may be possible to structure a PA impact bond to measure social *or* environmental/conservation outcomes *or* possibly both, depending on the intervention's purpose. In the case of the WCB and U.S. impact bonds assessed, the outcome measures selected have a conservation/environment focus while social outcomes are also expected (EPA, 2017, Quantified Ventures, 2018; World Bank, 2020). Furthermore, the length of an impact bond can vary, often offering medium- to long-term operating periods, which may mean that funding recipients can focus on delivering an intervention without concern for annual grant cycles or government funding allocations or cuts; this may generate greater financial security and certainty (Justice Connect, 2018). Additionally, impact bonds are monitored and evaluated by an independent evaluator throughout the intervention or project/program's life. The evaluation results determine whether the progress made constitutes statistically significant results in line with the predefined outcome measures. The key takeaway is that an impact bond's performance outcomes must be monetisable as well as measurable (Dear et al., 2016; OECD, 2016).

It is possible that if the independent evaluation of the impact bond cannot find evidence of statistically significant results that the bond will be terminated early. Thus, the lesson is that while the impact bond could be a medium- to long-term funding option for projects and programs within a PA setting, there is a risk that the funding may be discontinued if the independent evaluation does not find evidence of statistically significant results. Furthermore, impact bonds can give funding recipients flexibility when implementing interventions. Funding recipients can implement interventions flexibly through the prescription of outcomes rather than defining how set outcomes are to be achieved (Dear et al., 2016). This can give funding recipients greater autonomy on how an intervention or project/program is managed on the ground.

Impact bonds tend to be collaborative in nature; thus, implementing an impact bond to fund terrestrial PAs could facilitate new collaborations between stakeholders with similar interests whose paths have not previously crossed. These collaborations could encourage new management models and in doing so may improve the management effectiveness of PAs over time (Dear et al., 2016). Furthermore, It can be useful to have regulatory requirements that incentivise stakeholders to act (Quantified Ventures, 2018). In these circumstances, the impact bond becomes a financial instrument that encourages stakeholder action (Quantified Ventures, 2018). The final lesson shared was that NGOs often take on the role of service provider, – this is more common than a government department taking on the role of service provider. However, the impact bond model does not necessarily preclude government departments from taking on the role of service provider.

Following the discussion and analysis of the lessons drawn from impact bonds for the financing of terrestrial PAs, the Chapter considered the barriers and perceived challenges associated with impact bonds as a finance mechanism. The first commonly cited barrier discussed was the uncertainty associated with impact bonds as a new type of funding mechanism. There is limited evidence of the success of impact bonds as a finance mechanism because the impact bond market is still in its infancy, with the world's first impact bond only launched in 2013 (Sinclair et al., 2019). Secondly, contractual complexity is often ascribed to: (1) the technical nature of the contractual arrangements between different parties; (2) prescribing outcome metrics and attributions; (3) obtaining agreement on measurement; (4) forming a new type of partnership between investors, government, and the social/environment sector(s) (Dear et al., 2016; Fraser et al., 2021; Tan et al., 2019).

The monetisation of outcomes is another commonly cited barrier associated with impact bonds. It can be challenging to determine a monetary value for social and/or environmental outcomes and this process can involve ethical, political, and methodological differences (see Hall et al., 2017). A related criticism levelled at impact bonds is that they commodify people and the environment and contribute to the neoliberalisation of social and environment sectors (Sinclair et al. 2019). Furthermore, greenwashing is a challenge for the impact bond market because it can discourage impact investors from investing projects or interventions that claim to be addressing environmental challenges which is in turn detrimental to a sustainable market (Freeburn & Ramsay, 2020).

The high transaction costs typically associated with impact bonds are cited as a barrier to the adoption of this finance mechanism. The costs include due diligence costs for investors and intermediaries, the costs of engaging intermediaries to establish projects, and the fees charged by lawyers and finance professionals (Gustafsson-Wright et al., 2015). While developing outcome metrics, particularly where reliable data is not available, can be a time-consuming and challenging task (Berlin, 2016) Furthermore, balancing innovation with evidence can be a challenge for impact bonds whilst also taking into consideration the risk appetite of investors (Gustafsson-Wright et al., 2015).

An impact bond can be seen as a risky investment for impact investors who risk losing part of or their entire investment if an intervention or program/project is deemed unsuccessful by the independent evaluation. Thus, a related concern is that investors may try to influence or pressure the independent evaluators to secure a successful outcome for the project, thereby ensuring repayment (Donaldson, 2017). Finally, Funding through an impact bond is premised on the assumption that outcomes achieved through a funded project/program or intervention will be sustained beyond the life of the impact bond, therefore funding is rationalised on the anticipated cost savings over time (Hall, 2017).

The chapter further explored the views and personal attitudes of PA practitioner participants towards the adoption of alternative finance mechanisms, in particular the impact bond to complement existing funding sources for PAs. The research findings indicated that the attitudes of PA practitioner participants towards neoliberal conservation strategies, in particular the impact bond, vary from strong support to strong opposition, with the attitudes of most participants falling somewhere in-between. There is broad recognition that the government must continue to support the PA estate into the future and that the NPWS' focus should be on ways to incentivise government to invest in PAs. Nevertheless, most PA practitioners interviewed (18 out of 20) supported the broadening of the funding portfolio to incorporate market-based alternative finance mechanism whilst recommending a cautious approach towards adopting impact bonds and other alternative finance mechanisms.

The PA practitioner participants recognised that impact bonds and other market-based finance mechanisms alone are not a solution to the challenge of financial sustainability; instead, they may have a complementary role to play in the funding of PAs in certain situations. This relates to the view that the impact bond could help to diversify the PA funding portfolio; however, its overall impact on financial sustainability will likely still be limited because the mechanism may not generate funds for PAs where it needs funding most, for example, funding to cover operational overheads rather than for new infrastructure projects.

While there was general support shown for impact bonds, the PA practitioner participants expressed a level of confusion and misunderstanding about the purpose and mechanics of the impact bond and the role that this mechanism could play in the financing of PAs. They further recognised that stakeholder (including staff) support for an impact bond is considered critical to the overall success of the project and its financing via an impact bond. However, there is a perception that some PA practitioners and stakeholders will be resistant to impact bonds, possibly because they represent a departure from the traditional view that the funding for PAs is a government responsibility and that stakeholders may associate this type of market-based finance mechanism with the commercialisation of PAs.

Furthermore, several PA participants speculated that if impact bonds were adopted to help fund the PA estate, the NSW Government would not view the funds generated as 'complementary' to consolidated funding. Instead, funding for the PA estate from sources outside of government may result in decreased government-allocated consolidated funding through the annual budget cycle. Finally, the notion of a cultural shift considered necessary to adjust the thinking of staff and stakeholders to one that is generally supportive of using alternative financing mechanisms within the PA context. However, it was recognised that the cultural shift would not be without its own challenges as it represents a departure from the more traditional attitude that the funding of PAs is a core responsibility of government.

The analysis of these views and attitudes assisted in understanding how the impact bond could help to finance publicly managed terrestrial PAs. The research findings indicate that while the impact bond is not a cure-all for the challenge of financial sustainability, it could be a feasible finance option for terrestrial PAs in certain situations. To this end, a feasibility checklist for the impact bond was presented with the aim of assisting PA practitioners in determining the suitability of the impact bond for their funding needs or project/program requirements.

The following chapter (Chapter 8) will conclude the thesis, specifically it will examine whether the thesis has answered the research questions and, in doing so, helped to address the challenge of financial sustainability of the publicly managed PA estate in NSW under the care and control of NPWS. Chapter 8 also summarises the research process reported in Chapters 1 through 7, and finally it presents recommendations for future research and practical actions to address the challenge of financial sustainability for the PA estate in NSW.

Chapter 8 Conclusion – Implications and Future Directions

8.1 Introduction

The purpose of Chapter 8 is to review the thesis' answers to the research questions and its contribution in addressing the challenge of financial sustainability of the terrestrial PA estate in NSW that is under the care and control of NPWS. It also summarises the research process reported in Chapters 1 through to 7. Finally, Chapter 8 presents a comprehensive set of recommendations for future research and practical actions that can be taken to address the challenge of PA financial sustainability in the subsequent cycles of action research that are beyond the scope of this thesis.

8.2 Summary and Discussion of the Research Findings

Like for PAs around the world, the financial sustainability of the PA estate in NSW is an obstacle to the effective management of over seven million hectares – this equates to 10.2% of the state's total land area (SMH, 2023). The research literature indicates that PAs receive insufficient funding to cover management and expansion costs and to provide for their long-term effective management (see Chapters 1 and 2). The main contribution of this thesis has been to provide an in-depth exploration of the challenge of the financial sustainability of the publicly managed terrestrial PA estate in NSW. In doing so, the thesis has made an original contribution to knowledge and a practical contribution in addressing a real-world challenge. This is significant because prior to this thesis, no formal studies had been undertaken on the challenge of financial sustainability for PAs under the care and control of NPWS. There was also limited literature available on the feasibility of social and environmental impact bonds as an alternative finance mechanism for publicly managed terrestrial PAs.

Systems theory helped to contextualise the research, which allowed for a clearer view of a financially sustainable PA estate as a system of interrelated components which work together towards a common end goal (see Blanchard & Fabrycky, 2014). By combining action research with systems theory, a framework emerged for a more flexible and collaborative process. This helped to develop a system of inquiry involving a collaborative effort with research participants to address the challenge of financial sustainability in a holistic way. The three-phase process of data collection and analysis involved:

1. Interviews with PA specialists and impact investment specialists.
2. The analysis of secondary data and an additional review of the research literature – this included adapting the UNDP's Financial Sustainability Scorecard template for PAs (Bovarnick, 2010) to the NSW PA estate and populating the scorecard for the 2020–21 financial year.

3. Drafting a Theory of Change for the Financial Sustainability of the Terrestrial PA Estate in NSW.

The mechanics of the thesis followed Coghlan and Brannick (2014)'s action research cycle, which comprises a pre-step followed by four key steps: (1) constructing; (2) planning action; (3) taking action; and (4) evaluating action. The thesis was designed to be collaborative and for this purpose employed ToC, which encouraged collaboration between the researcher and research participants during data collection and analysis and in preparing a set of recommendations.

In meeting its stated purpose (see Chapter 1) and in answering the research questions, the thesis has articulated the challenges faced by PA practitioners and management agencies in sustainably financing terrestrial PAs and it has also considered the implications of insufficient funding (see Chapter 2). The thesis has further identified a suite of interconnected impediments and enabling conditions that exist for the financial sustainability of the publicly managed PA estate in NSW. Table 38 highlights the impediments and enabling conditions that exist for the financial sustainability of PAs under the care and control of NPWS.

Table 38 Impediments and Enabling Conditions that Exist for the Publicly Managed Protected Area Estate in NSW.

Impediments	Enabling conditions
1. State budget processes	1. Government support
2. Political influence	2. A diverse funding portfolio
3. Poor communication, messaging, and self-promotion	3. Financial security
4. Data, measurement, and reporting limitations	4. Cost-effectiveness
5. Governance challenges	5. Effective planning and administration
6. Limited strategic financial planning and innovation	7. A supportive policy, legislative and economic environment
8. Resistance to change by stakeholders including NPWS' staff	7. Self-generated revenue
9. Cultural mismatch	8. An enabling environment
	10. Financial independence, transparency, and accountability
	11. Effective communication, messaging, and self-promotion
	12. Evidence available
	13. Strategic collaboration and partnerships fostered
	14. The passion and dedication of PA staff and volunteers

The research findings are significant because they help PA practitioners and decision makers to construct a picture of the current financial situation for publicly managed PAs in NSW and envision what a financially sustainable PA estate would look like. Consequently, practitioners and decision makers will be better positioned to take action to address the challenge of PA financial sustainability. An important consideration is that the impediments and enabling conditions may change over time, therefore NPWS will need to periodically review and update the list to ensure that it remains current and continues to provide a useful basis for NPWS' financial decision making. Furthermore, given that the research findings are generalisable, it is anticipated that PA practitioners and decision makers working outside of the NSW context will find them informative when seeking to address the challenge of PA financial sustainability within their jurisdiction.

Based on the identified impediments and enabling conditions, a ToC was developed in collaboration with research participants for the financial sustainability of the PA estate in NSW (refer to Chapter 6). The ToC process encouraged the PA specialists who participated in the research study to critically consider the challenge of PA financial sustainability including potential alternative funding models and mechanisms. The ToC provides the foundation for an informed and holistic response to the challenge of financial sustainability and a framework for strategic decision-making and stakeholder communication. Furthermore, the ToC established that there is no fast or straightforward way to achieve financial sustainability and that the process of change is not necessarily linear, rather it is possible to have multiple interlinked pathways to change (Vogel, 2012, Tolmie, 2014). As such, the ToC identified six interlinked pathways to change:

- Pathway A. Government support
- Pathway B. Institutional effectiveness
- Pathway C. Appropriate business model
- Pathway D. Strategic planning and innovation
- Pathway E. Communication and advocacy
- Pathway F. Collaboration and partnerships.

The expectation is that the NPWS Business Delivery Unit will lead the implementation of the ToC which will require collaboration with other NPWS units together with relevant divisions of the braoder cluster department. The Business Delivery Unit will also periodically review and update of the ToC, again in collaboration with internal stakeholders. Furthermore, while the ToC and the six pathways to change were specifically designed to help PA practitioners and decision makers in NSW address the challenge of financial sustainability for the PAs under their care and control, practitioner's working outside of the NSW context may also find the ToC helpful in addressing the challenge of PA financial sustainability within their jurisdiction. To this end, the ToC together with policy and management implications and lessons were published in an academic journal in 2022 to provide broader access to the research findings (see O'Flynn et al., 2022).

The concepts of neoliberalism and neoliberal conservation strategies were discussed in Chapter 2 including the reported outcomes of neoliberalism on PAs in Finland and the U.S. and the involvement of the private sector in the funding, management, and delivery of services within the Australian PA context. While some commentators warn of the harmful impacts of neoliberalism on people and nature, PA practitioners are encouraged by leading conservation organisations and conservationists to diversify the PA funding portfolio to include market-based mechanisms in the name of financial sustainability (see IUCN, 2000; Emerton et al., 2006; Watson et al., 2014, CFA, 2020). Whilst acknowledging the criticisms of neoliberalism and neoliberal conservation strategies, Pathway C., (Appropriate business model) in the ToC identified broadening or diversifying the PA funding portfolio as one action available to help address the challenge of financial sustainability. Based on this research finding, the thesis then explored the action of diversifying the funding portfolio, specifically how the social and environmental impact bonds could help to finance publicly managed terrestrial PAs (refer to Chapter 7).

Chapter 7 assessed the feasibility of social and environmental impact bonds as a market-based alternative finance mechanism for terrestrial PAs drawing on lessons from the impact bond literature together with the lived experiences of the impact investment specialist research participants. The research findings revealed that while the impact bond is not on its own a panacea or cure-all for the financing requirements of terrestrial PAs in every situation, it can play a complementary role in financing certain interventions and projects/programs in a range of environmental/conservation and social sectors.

A series of lessons were drawn from impact bonds for the financing of terrestrial PAs and following this, the thesis considered the barriers and perceived challenges associated with impact bonds before exploring the views and attitudes of the PA specialists in this research study towards impact bonds as an alternative finance mechanism. Table 39 provides a high-level overview of the lessons and challenges/perceived barriers together with the views and attitudes expressed by the PA specialists towards impact bonds.

Table 39 Overview of the Lessons Drawn from Impact Bonds, Barriers and Perceived Challenges Associated with Impact Bonds and Protected Area Specialist Views and Attitudes Towards Impact Bonds

Lessons from Impact Bonds	**Commonly Cited Barriers and Perceived Challenges**	**Protected Area Specialist Views and Attitudes**
Impact bonds suited to interventions that government is not already willing to fund (S7.3.1)	Uncertainty of new market (S7.4.1)	PA practitioner views and attitudes vary (S7.5)
Impact bonds can help to address significant social and environmental challenges (S7.3.2)	Contractual complexity (S7.4.2)	Government financial support remains important (S7.5)
The importance of an enabling policy and legal environment (S7.3.3)	Monetisation of outcomes (S7.4.3)	General support for broadening the PA funding portfolio (S7.5)
The potential influence of impact bonds on PA financial sustainability may be limited (S7.3.4)	Developing outcomes metrics (S7.4.4)	Cautious approach urged in related to adopting impact bonds (S7.5)
There is investor interest in environmental outcomes S7.3.5)	Neoliberalisation of the social/environment sectors (S7.4.5)	Recognition that the impact bond is not a panacea (S7.5)
The investment value of an impact bond can vary (S7.3.6)	Complexities of collaboration (S7.4.6)	Impact bonds are seen as confusing (S7.5)
Impact bonds can be complex, costly, and time consuming to establish (S7.3.7)	Balancing evidence with innovation and investor risk appetite (S7.4.7)	Stakeholder support is a critical success factor for impact bonds (S7.5)
Grants can help to cover high transaction costs (S7.3.8)	High transaction costs (S7.4.8)	Perception that some PA practitioners and stakeholders will be resistant to impact bonds (S7.5)
Bringing together PA and finance expertise is important (S7.3.9)	High stakes for impact investors (S7.4.9)	Funds raised through impact bonds will not be viewed as 'complimentary' to government allocated consolidated funding (S7.5)
The lifespan of an impact bond can very (S7.3.10)	Greenwashing (S7.4.10)	A cultural shift may be necessary (S7.5)
Impact bonds can shift the financial risk balance (S7.3.11)	Sustaining outcomes beyond the impact bond (S7.4.11)	
Impact bonds can provide upfront funding for interventions across large geographic areas (S7.3.12)		
Measurable Performance Outcomes are a key focus area for impact bonds (S7.3.13)		
Performance outcomes should be monetisable (S7.3.14)		

Impact bonds can be structured to measure a range of different outcomes (S7.3.15)		
Impact bonds are monitored and evaluated by an independent evaluator (S7.3.16)		
An impact bond can be terminated early (S7.3.17)		
Impact bonds can offer flexibility in implementing interventions (S7.3.18)		
Impact bonds tend to be collaborative in nature (S7.3.19)		
Non-government organisations often take on the role of service provider (S7.3.21)		

The thesis presented a social and environmental impact bond feasibility checklist (see Section 7.6). The checklist was specifically designed to assist PA practitioners in determining the suitability of the impact bond for their funding needs or project/program requirements. It was further designed to reflect the lessons extracted from the impact bond literature, including the impact bonds assessed in addition to the barriers and challenges associated with this alternative finance mechanism and the views expressed by impact investment specialists as part of this thesis. The research findings are important because they provide PA practitioners and decision makers with practical tools and information on the feasibility of this alternative finance mechanism for the funding of terrestrial PAs. In this way, it is anticipated that the findings will inform future funding decisions and potentially new funding models for terrestrial PAs and further abroad.

Further to contributing to knowledge and practice, the research generated a practice-oriented theory consisting of five theoretical elements:

1. a new perspective on the phenomenon of PA financial sustainability
2. the identification of problems and the generation of strategies to mitigate them
3. a conceptual framework
4. generalisation from detail
5. practical implications from the conceptualisation of the data (see Chapter 1 for full details).

The theory provides new insights into the challenge of PA financial sustainability, particularly within the NSW context. This in turn has contributed to a meaningful and rich picture of the current financial situation for PAs in NSW and the challenge of PA financial sustainability itself. The theory also has the potential to inform management, policy (and possibly political) decisions, thereby contributing to its usefulness as a practice-oriented theory.

As explained, the conceptual framework prepared for the financial sustainability of terrestrial PAs (see Chapter 3) is a key element of the theory generated through the research study. The conceptual framework shows that when Coghlan and Brannick (2014)'s action research cycle is used as a logical methodology in conjunction with Vogel (2011)'s process for preparing a ToC, the research findings illuminate pathways to change that may help to address the challenge of financial sustainability of publicly managed terrestrial PAs. It also defines, explains, and diagrammatically represents the key concepts relevant to the financial sustainability of terrestrial PAs, the linkages between each of the concepts together with the research process and the research findings. The conceptual framework recognises that a financially sustainable PA estate can be defined as a system of interrelated components which work together towards a common end goal. In this way, the framework encourages PA practitioners to address the challenge of financial sustainability using a holistic approach and in doing so allow for a more thorough exploration of the challenge. The conceptual framework can also be used to verify that the identified impediments are barriers to the core elements of PA financial sustainability and similarly that the enabling conditions can be expected to support financial sustainability.

8.3 Recommendations for Future Research and Practical Actions

To conclude this thesis and the current cycle of action research, a comprehensive set of recommendations is presented in Table 40 for future research and practical actions to address the challenge of financial sustainability for the publicly managed terrestrial PA estate in NSW. The recommendations are based on the research findings, with each recommendation linked to one or more of the pathways to change, outlined in the ToC presented in Chapter 6, and the key elements of financial sustainability as defined by Emerton et al. (2006) and articulated in the conceptual framework presented in Chapter 3.

As explained in Chapter 1, given that it was beyond the scope of this thesis to document the entire multicycle change process, by design the research study has completed the first action research cycle and established the foundation for the cycles to follow. The recommendations presented in Table 40 offer a framework for future action research cycles.

Table 40 Recommendations for research and practical actions in the future

No	Recommendation	Pathway(s)	Elements of financial sustainability
1	NPWS undertake research to determine the key factors of successful funding business cases within the NSW Government's outcomes-based funding model. The findings should then inform the preparation of future business cases, thereby increasing their competitiveness for the limited government funding available.	A	2, 3, 4
2	NPWS continue to work closely with the Department of Planning, Industry and Environment (DPIE) to support the work underway to value natural capital assets and encourage the inclusion of national parks in the pilot program.	A	1, 2, 3, 4
3	Additional data be collected on NPWS project and program outputs and outcomes to better demonstrate to government (and other funders) the return on investment.	A, D	1, 2, 3, 4
4	NPWS clearly articulate its short-, medium-, and long-term priorities and link these to its mandated role(s) and responsibilities, and where possible to the broader priorities set by the NSW Government and the United Nation's Sustainable Development Goals. NPWS priorities should be periodically reviewed and updated.	A, D	2, 3, 4
5	NPWS establish a formal alliance with Health NSW to demonstrate the connection between PAs and human health and wellbeing. The assumption is that if NPWS can align its work with a government and community priority such as health, it will translate into greater support and advocacy for the PA estate and in turn additional funding. The alliance should be underpinned by research that demonstrates the health and wellbeing benefits of spending time in nature.	A, F	1, 2, 3
6	NPWS require financial training appropriate to a staff member's role as part of their individual work performance and development plan. Adequate professional capacity to encourage financial sustainability at the Area and estate level is crucial to financial sustainability.	B	2, 5
7	It is recommended that a reward and recognition policy be developed and adopted by NPWS to help the institution recognise and reward the passion and dedication shown by staff in striving to meet the objectives of the *National Parks and Wildlife Act 1974.*	B	4
8	Budgetary incentives be adopted to encourage staff to foster Area-level financial sustainability within NPWS.	B	2, 3, 5
9	If NPWS is committed to broadening its funding base, for example, to include greater private sector and philanthropic sponsorship and partnerships, cultural realignment within the institution be undertaken.	B, C	5
10	If NPWS chooses to pursue its independence as a statutory authority, a business case be prepared in support of this option. The business case should demonstrate that NPWS is a sound financial manager (at the Area/Branch/estate levels), and the business case should be founded on data that demonstrates to	B, C	2, 4, 5

	government that NPWS provides value for money and that the PA estate is managed cost-effectively. The business case should articulate the benefits of an independent PA institution to government and highlight the precedents of other independent agencies within the same cluster department (i.e., Parramatta Park Trust, Sydney Olympic Park Authority, Western Sydney Parklands Trust, Taronga) and the independent Parks Victoria. Necessary legislative and governance changes should be articulated, and Ministerial support would be critical.		
11	The NPWS performance assessment of Area Managers include the assessment of cost-effective management, fee collection, revenue generation and sound financial planning.	B, C	2, 5
12	NPWS develop guidelines for staff on cost-effective management.	B, C	5
13	An inter-Area-level network be established by NPWS for Area managers to encourage collaboration and knowledge sharing, for example, related to their practices, impacts, and costs.	B, C	2, 3, 5
14	The documented impediments to financial sustainability be periodically reviewed by NPWS to determine their ongoing relevancy and to identify new or previously missed impediments.	B, D	1, 2, 3, 4, 5
15	The documented enabling conditions for financial sustainability be periodically reviewed by NPWS to determine their ongoing relevancy and to identify new or previously missed conditions.	B, D	1, 2, 3, 4, 5
16	NPWS implement comprehensive financial plans and data for a coordinated, state-wide cost accounting system (activity and input-based accounting).	C	2, 3
17	NPWS implement a monitoring and reporting system to illustrate why and how funds are allocated across management Areas and Branches. Transparency and accountability are an important facet of financial sustainability.	C	2, 3
18	A reporting and evaluation system be implemented to illustrate how effectively NPWS' management Areas and Branches use their available finances to achieve management objectives. Transparency and accountability are an important facet of financial sustainability.	C	2, 3
19	NPWS monitor the costs associated with implementing operations and plans of management and that this information is used in financial performance reporting and in the provision of cost-effective guidance.	C	2, 3
20	NPWS develop a coordinated and transparent cost accounting system for the PA estate.	C	2, 3
21	Revenue tracking systems be put in place and operational for each of the NPWS management Areas.	C	1, 4
22	Where possible, NPWS measure and report on the financial returns on tourism-related investments (e.g., measure and report on visitor revenue prior to and after investment in a new/upgraded visitor centre).	C	1, 2, 3
23	The social and environmental impact bond feasibility criteria checklist be used by NPWS to determine the suitability of this finance mechanism for the funding needs of a project/program within a PA setting.	C	1, 2, 5
24	NPWS periodically undertake strategic planning exercises to address cost-effectiveness, including the use of a decision support tool to identify cost drivers and how they are measured.	C, D	2

25	NPWS adopt a revenue strategy to determine how and where revenue is generated and how and where revenue is reinvested into the PA estate.	C, D	1, 2, 4
26	NPWS develop an investment portfolio to articulate key projects or outcomes that are linked to the institution's priorities and funding requirements across the PA estate. Prior to inclusion in the investment portfolio, projects should be assessed against a criterion to determine potentially suitable funding sources; have data supporting the expected outputs and outcomes; have a completed CBA; and identify funding requirements.	C, D	1, 2, 3, 4
27	NPWS budget be allocated to management Areas based on agreed criteria, for example, size, visitation, threats, needs, performance, plans of management/operations plans, etc.	C, D	2, 3
28	ToC, scenario planning, and CBA be used by NPWS to understand the possible intended and unintended consequences of alternative finance mechanism(s).	D	1, 2, 3, 5
29	The Theory of Change for the Financial Sustainability of the PA estate in NSW be periodically reviewed and updated by NPWS.	D	2, 4, 5
30	NPWS adopt a 10-year strategic plan that articulates its vision, mission, strategic directions, strategic priorities, and how its vision will be achieved (see QLD's PA Strategy 2020-2030 as an example).	D	2, 3, 4
31	NPWS adopt a state-wide strategy for concessions.	D	1, 4
32	NPWS monitor and evaluate the operational performance of concessions (environmental and financial) and take action as necessary.	D	3, 4
33	Proposed tourism/visitor-related infrastructure investment be based on the analysis of revenue potential and return on investment.	D	2
34	The existing framework for park use fees be reviewed by NPWS with a view to adopting a state-wide user fees strategy and action plan.	D	1, 2, 4
35	NPWS operations plans contribute to estate-level planning and budgeting.	D	2, 3
36	NPWS Financial Sustainability Scorecard be populated annually, and the findings compared to the scorecard's benchmark financial year (2020–21).	D	2, 3, 4
37	NPWS Financial Sustainability Scorecard be used to determine the funding gap for the PA estate.	D	2, 3, 4
38	Comprehensive information on PA revenues and expenditures be comprehensively and consistently reported on by NPWS and that this information be published annually in the relevant annual report or equivalent public document. Transparency and accountability are an important facet of financial sustainability.	D, E	2, 3
39	Staff wear the NPWS uniform when fronting the media in a work capacity or attending a conference or other public event to increase NPWS self-promotion and brand recognition, which can translate into greater support and advocacy for the PA estate and in turn additional funding.	E	4

40	NPWS increase its self-promotion, which can translate into greater support and advocacy for the PA estate and in turn additional funding.	E	4
41	NPWS develop and implement a branding strategy.	E	4
42	General communication and messaging by NPWS be targeted to the audience and consider the interests and needs of the intended audience.	E, A	2, 4
43	Communication specialists work collaboratively with PA practitioners to ensure that the information communicated is clear, meets the needs/interests of the audience, utilises appropriate communication channels and achieves its intended purpose.	E, A	2, 4
44	NPWS communication campaigns about park fees be widespread and high profile across the PA estate.	E	4
45	NPWS prepare and implement interpretation and storytelling plans for high visitation parks. The purpose of the plans is to ensure that interpretation and storytelling initiatives (services, programs, activities, infrastructure etc.) are planned for and undertaken in a strategic and coordinated manner. The interpretation and storytelling plans could be incorporated into or sit alongside park plans of management.	E	2, 4
46	Where park use fees are charged, NPWS erect a sign at park entry points notifying visitors of how the fee is spent/contributes. This is part of on-park branding.	E	4
47	NPWS conduct further research into collaborations and partnerships as a key pathway to change. The research outcomes could inform future funding models for the PA estate and the organisational structure of NPWS.	F	1, 2, 4
48	NPWS explore cross-tenure, industry and sector collaborations and partnerships as a way of generating additional funds, realising cost savings/ efficiencies, and achieving the sharing of knowledge, experience, and ideas.	F	1, 2, 4
49	The organisational structure of NPWS be amended to reflect the importance of collaboration and partnerships with a section/division established and dedicated to forging and maintaining corporate and philanthropic collaborations and partnerships.	F	1, 2, 4, 5
50	While volunteers already play an important role in supporting the work of paid staff, there is potential to grow the NPWS volunteer base – both the number of volunteers and the hours spent on park.	F	1, 2, 4
51	The community support and advocacy base for NPWS and the PA estate be broadened. Given the size of this action, it is recommended that the initial focus be on building greater commitment with existing park users, for example, through volunteer groups, Indigenous communities, schools, universities, and other parts of government.	F	1, 3, 4
52	The relationship between NPWS and the NSW National Parks and Wildlife Conservation Trust (the institution's charity arm) be viewed as a partnership with shared goals and priorities. This relationship could be managed by the proposed Partnerships Section of NPWS.	F, C	1, 4, 5

8.4 Concluding Statement

This action research study was born out of my own professional experience, and the experiences of other PA practitioners, that an obstacle to the effective management of terrestrial PAs is financial sustainability. These experiences are supported by the research literature, which finds that the challenge of financial sustainability for terrestrial PAs is not a new phenomenon and that despite the important role of PAs, they do not receive the funding needed to cover management and expansion costs. The thesis sought to address a gap in the literature on the funding of terrestrial PAs within the NSW context, in particular the impediments and enabling conditions that exist for the financial sustainability of publicly managed PAs in NSW and the pathways to change. It also sought to understand the feasibility of the impact bond as a finance mechanism to complement existing funding sources for terrestrial PAs.

The thesis revealed that eight impediments to and 13 enabling conditions for the financial sustainability of the publicly managed terrestrial PA estate in NSW exist together with six interlinked pathways to change. Identifying the impediments helped to construct a picture of the current financial situation in NSW, while identifying the enabling conditions aided the researcher and research participants in visualising what a financially sustainable terrestrial PA estate would look like. It is intended that the ToC presented in the thesis will provide the foundation for an informed and holistic response to the problem of financial sustainability and a framework for strategic decision-making and communication with stakeholders.

Further to this, the thesis presented practice-oriented theory generated through the action research study, which consisted of five theoretical elements including a conceptual framework for the financial sustainability of terrestrial PAs. It is intended that the conceptual framework will help PA practitioners to define and understand the key concepts relevant to the financial sustainability of PAs and address the challenge of financial sustainability. Finally, a red thread that weaved its way through the thesis was the action of diversifying the PA funding portfolio, specifically how social and environmental impact bonds could help to finance publicly managed terrestrial PAs. The thesis found that while the impact bond is not a cure-all or panacea for the funding needs of PAs, it can be a feasible finance option in certain situations.

While the thesis and current action research cycle has come to an end, the recommendations presented to address the challenge of terrestrial PA financial sustainability in NSW have established a framework for future action research cycles. The challenge ahead will be in maintaining the momentum gained through this thesis in the action research cycles to follow.

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