Enabling Collaboration in Conservation: An Exploration of Change, Diversity and Funding

Thesis

How to cite:

For guidance on citations see FAQs.

© 2022 Lindsey Celeste Elliott

https://creativecommons.org/licenses/by-nc-nd/4.0/

Version: Version of Record

Link(s) to article on publisher’s website:
http://dx.doi.org/doi:10.21954/ou.ro.00014f65

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online’s data policy on reuse of materials please consult the policies page.

oro.open.ac.uk
Enabling collaboration in conservation:
An exploration of change, diversity and funding

Lindsey Celeste Elliott
Abstract

Conservation is a mission-driven field to sustain the diversity of life on the planet. The use of collaborative approaches in conservation has grown rapidly, and it is argued that ‘supraorganisational collaboration’, which describes interorganisational collaboration to address complex societal meta-problems, is needed to tackle ‘wicked’ conservation issues. Management literature clearly shows how collaboration between organisations is itself complex and often challenging in practice. The Theory of Collaborative Advantage (TCA) uses theoretical conceptualisations about the management, leadership and governance of interorganisational collaboration to develop robust understanding about themes that are recognisable to collaboration practitioners, helping them to reflect about issues of importance and act appropriately.

This research bridges collaborative theory and conservation in research and practice to explore ways to enable collaboration in conservation. The study is interdisciplin ary in bringing together theoretical concepts from the TCA and the context of conservation. It is additionally transdisciplinary in its use of a Research Oriented Action Research (RO-AR) approach, similar to that used for the ongoing development of the TCA, to make novel contributions to knowledge through practice-oriented research with actual conservation collaborations. The research journey was emergent as it was directed by collaborators’ needs in practice.

The study involved working directly with participants within two settings, the Cambridge Conservation Initiative and the Biodiversity Revisited Initiative, via a number of interventions to address the challenges they faced. Different types of data about individuals’ perspectives and collaborative interactions and settings were collected through: participant observation, interviews, conversations, surveys, key document review and feedback opportunities. Three interconnected themes – change, diversity and funding – emerged during in-depth analysis.

The thesis considers different types of change and how these are achieved through collaboration. Conservation is recognised as a field that requires working across multiple individual and organisational differences, and ways of doing so in practice are explored. Funding is identified as a key enabler for collaboration within this severely underfunded field. Consideration of findings in light of relevant interdisciplinary literature led to two types of contribution. Firstly, the study generates actionable knowledge about ways that collaborators can work together to achieve change in complex systems, as well as ways the field of conservation itself can be changed to further enable collaboration. Secondly, the thesis extends collaborative theory through the conceptualisation of the change paradox and a management tension that can support reflection about the management of different ambitions for change within conservation collaborations.
Acknowledgements

This thesis may have my name on the front but it was a collaborative effort in so many ways. Thank you to everyone who participated and bravely allowed me to observe and take part.

I feel extremely proud and lucky to have had the opportunity to conduct this research at the Open University Business School. Thank you to the School for the generous funding that made it possible, and to the Department of Public Leadership and Social Enterprise and the Centre for Voluntary Sector Leadership for welcoming me as a newcomer to the world of business. Thanks in particular to Emma, Lin and Michelle for being so supportive and helpful, especially during the difficult circumstances of the Covid pandemic. Everyone at the OU showed compassion and understanding during this challenging period and I am very grateful to both the Graduate School and Business School for the extensions I received. Thanks also Daniel, Angela, Lizzie, Carlos, Akash, Sampierre, Alex, Nishant, Sally, and Maria for your friendship.

I am immensely grateful to have had the opportunity to be supervised by not one, but two amazingly inspirational women. Thank you Siv and Karen for trusting me and giving me the space to explore, while guiding me through this journey and steering me back to the task at hand. You have been so patient and supportive throughout and I have really valued your different perspectives and insights. This has been such a formative and empowering experience largely thanks to the two of you and I hope we can find ways to continue to work together.

Thank you to Mike R. for believing in my vision for this research from the start and for helping to make it possible within CCI. Your trust and support have been invaluable. To Elizabeth, Leonie, Shelley, Faye, Lizzie, Tom, Katie, Georgina, Berry, Thom, Thirza, Hitesh, Josie, Anca, Roge and Eszter for the many fruitful conversations and ideas. I thoroughly enjoyed getting to know you all. To the CCI Council, and Humphrey, David, Bill and Mel in particular, for your valuable time and for bravely allowing this research to take place at all. I feel privileged to have been able to get a glimpse of this amazing collaboration from its core and it means a great deal to me that you are keen to hear the findings and use them in practice where possible.

Thank you Mel for letting me into your personal Biodiversity Revisit ed journey. I feel fortunate to have been a sounding board, and to have gotten a glimpse of that brilliant mind of yours – I learned a huge amount. Thank you Carina for making it possible for me to get involved in this amazing project and for believing in me even when I didn’t. Thanks to the whole team involved, especially Jon, Jasper, Jessica, Olga, Adrian and Adil. The project showed me how people can work together to do things differently.

Finally, to Robin and Elliott, thank you for your beautiful artwork at the start of each chapter! You two inspire me every day and give me hope for this world. Thank you for teaching me so much and for understanding that writing this ‘book’ was something mummy had to do. Never stop being your wondrous, creative selves. Thank you Doug, Jo, Nic, Bud and Martin for supporting me in all of my crazy adventures and Mo for being my loyal, furry companion. And to Chris – few couples could navigate the ethical intricacies this research required, let alone so gracefully. Thank you for always believing in me and for the countless sacrifices you’ve made along the way. We make an amazing team.
# Contents

Abstract..............................................................................................................................i

Acknowledgements...........................................................................................................iii

Contents...............................................................................................................................iv

List of figures.........................................................................................................................ix

List of tables.........................................................................................................................x

List of boxes.........................................................................................................................x

Abbreviations.......................................................................................................................xi

Chapter 1 – Introduction .................................................................................................1

1.1 Enabling collaboration in conservation.........................................................................1

1.2 Approach.........................................................................................................................5

1.3 Research questions..........................................................................................................5

1.4 Contributions of the research.........................................................................................7

1.5 Structure of the thesis.....................................................................................................8

Chapter 2 – The context of conservation .......................................................................11

2.1 Introduction to Chapter 2 ............................................................................................11

2.2 Conservation..................................................................................................................12

  2.2.1 Defining conservation.............................................................................................12

  2.2.2 A brief history of conservation..............................................................................13

  2.2.3 The funding of conservation................................................................................15

  2.2.4 The future of conservation....................................................................................19

2.3 Conservation collaboration............................................................................................21

  2.3.1 Why collaborate in conservation?........................................................................21

  2.3.2 What conservationists collaborate on?.................................................................24

  2.3.3 How to collaborate in conservation......................................................................28

2.4 Research settings............................................................................................................30

  2.4.1 The Cambridge Conservation Initiative (CCI)..................................................30

  2.4.2 The Biodiversity Revisited Initiative...................................................................38

2.5 Summary of Context.....................................................................................................42

Chapter 3 – Practice-based theory about collaboration ...............................................43

3.1 Introduction to Chapter 3 ............................................................................................43

3.2 Overview of the Theory of Collaborative Advantage..............................................45
Chapter 4 – Methodology ........................................................................ 65

4.1 Introduction to Chapter 4 .................................................................. 65
4.2 Philosophy ....................................................................................... 66
4.3 Researching conservation collaborations ........................................ 68
   4.3.1 Collaborative interactions in action: Research-oriented Action Research (RO-AR) .................................................................................. 69
   4.3.2 Contextual social phenomena .......................................................... 70
   4.3.3 Research schedule ......................................................................... 71
   4.3.4 Researching the Cambridge Conservation Initiative .................. 73
   4.3.5 Researching the Biodiversity Revisited Initiative ......................... 76
   4.3.6 Validity .......................................................................................... 78
   4.3.7 Ethics ............................................................................................ 79
4.4 Research methods ................................................................................ 81
   4.4.1 Introduction .................................................................................. 81
   4.4.2 Participant observation .................................................................... 82
   4.4.3 Interviews ...................................................................................... 83
   4.4.4 Intervention conversations ............................................................. 83
   4.4.5 Surveys ......................................................................................... 84
   4.4.6 Key document review ..................................................................... 85
   4.4.7 Feedback opportunities ................................................................. 85
   4.4.8 Research journal ............................................................................ 86
4.5 Process of analysis for theory development ....................................... 86
   4.5.1 Introduction .................................................................................. 86
   4.5.2 Analysis in action: Constructivist grounded theory ...................... 86
   4.5.3 Survey analysis .............................................................................. 89
   4.5.4 Active theory building: In-depth analysis ...................................... 89
   4.5.5 Reflection and reflexivity ............................................................... 95
4.6 Summary of methodology ................................................................. 97
Chapter 5 – Change findings ................................................................. 99

5.1 Introduction to Chapter 5 ................................................................. 99
5.2 What is transformation? ............................................................... 100
  5.2.1 Change within a system – collaborating to improve effectiveness...... 101
  5.2.2 Change of a system – collaborating to fundamentally change ......... 106
5.3 How can change be achieved? ....................................................... 113
  5.3.1 Goal-oriented approaches to transformation ............................... 113
  5.3.2 Principles-based approaches to transformation ............................ 117
5.4 Responding to change ................................................................. 126
  5.4.1 Adaptability through flexibility ................................................. 126
  5.4.2 Experiential learning ............................................................... 129
5.5 Summary of change findings ........................................................ 131

Chapter 6 – Diversity findings ......................................................... 133

6.1 Introduction to Chapter 6 ............................................................. 133
6.2 The roles of diversity in conservation collaboration .......................... 134
  6.2.1 Assumptions made about ‘diversity’ ....................................... 134
  6.2.2 Observed roles of diversity in practice ..................................... 136
6.3 Collaborating across forms of individual difference .......................... 139
  6.3.1 Conservation approaches ......................................................... 140
  6.3.2 Disciplines ............................................................................ 144
  6.3.3 Philosophical positions ............................................................ 148
  6.3.4 Career stages ......................................................................... 151
  6.3.5 Other individual differences .................................................... 154
6.4 Collaborating across forms of organisational difference .................... 158
  6.4.1 Means of influence ................................................................. 158
  6.4.2 Organisation type and funding ................................................. 161
  6.4.3 The challenges of collaborating across organisations ................. 161
  6.4.4 Enabling collaboration across organisations ............................... 162
6.5 Summary of diversity findings ....................................................... 163

Chapter 7 – Funding findings ......................................................... 167

7.1 Introduction to Chapter 7 ............................................................. 167
7.2 Conservation funding sources ...................................................... 168
Appendix C – Survey results .............................................................. 271

C.1 Enabling collaboration in CCI survey results .............................................................. 271
  Spearman’s Rho test results ......................................................................................... 271
  Mann Whitney U test results ....................................................................................... 272

C.2 Biodiversity Revisited survey results ........................................................................ 273
  Spearman’s Rho test results ......................................................................................... 273
  Mann Whitney U test results ....................................................................................... 274

C.3 Conservation research preference results .................................................................. 277

List of figures

Figure 1. A diagrammatic framework of the study .......................................................... 4
Figure 2. The components of RQ1 .................................................................................. 6
Figure 3. The David Attenborough Building ................................................................... 33
Figure 4. A diagrammatic representation of the structure of CCI ........................................ 36
Figure 5. A diagrammatic representation of the structure of Biodiversity Revisited ............ 40
Figure 6. A timeline of the Biodiversity Revisited Initiative ........................................... 41
Figure 7. Themes of the TCA ......................................................................................... 47
Figure 8. The Inclusion Framework ............................................................................... 63
Figure 9. A diagrammatic representation of research undertaken within CCI ..................... 75
Figure 10. A diagrammatic representation of research undertaken within BioRev ............... 77
Figure 11. Coding progression example .......................................................................... 92
Figure 12. A diagrammatic representation of Chapter 5 ................................................. 100
Figure 13. Differences in ambitions for change impacted the determination of collaborative aims .... 107
Figure 14. The principles underpinning the Biodiversity Revisited research and action agenda .... 119
Figure 15. A diagrammatic representation of Chapter 6 ............................................... 134
Figure 16. Comparing the viewpoints held by BioRev Symposium participants to positions held within the broader conservation movement .................................................................................. 156
Figure 17. The continent distribution of (non-LHI staff) survey respondents ................. 157
Figure 18. A diagrammatic representation of the conservation approaches used by CCI partner organisations .............................................................................................. 159
Figure 19. A diagrammatic representation of Chapter 7 ................................................. 168
Figure 20. Types of funding for collaboration at programme level .................................. 178
Figure 21. The components of RQ1 ............................................................................... 186
Figure 22. Pathways of change within a field .................................................................. 196
Figure 23. The change paradox ........................................................................................................................................ 202
Figure 24. Conceptualising the change paradox ........................................................................................................... 203
Figure 25. The Three Horizons framework ................................................................................................................... 204
Figure 26. The overtness of different ambitions for change management tension ......................................................... 207
Figure 27. Revisiting the diagrammatic framework of the study ..................................................................................... 213
Figure 28. The change paradox revisited ....................................................................................................................... 217
Figure 29. The overtness of different ambitions for change management tension revisited ...................................... 217

List of tables

Table 1. The eight dimensions of change .......................................................................................................................... 51
Table 2. A summary of the culture paradox and associated management tension in the TCA ...................................... 59
Table 3. A summary of the philosophical position of this research .................................................................................. 67
Table 4. A summary of the data collection methods used ................................................................................................. 82
Table 5. A list of strategic analyses conducted during RO-AR during phase 2 ................................................................. 87
Table 6. A list of orienting concepts considered at the beginning of phase 3 ............................................................... 91
Table 7. A summary of the benefits, challenges and enabling and restricting factors associated with change within a system to improve effectiveness ............................................................................. 105
Table 8. Characteristics associated with ‘mainstream conservation’ .............................................................................. 110
Table 9. A summary of the benefits, challenges and enabling and restricting factors associated with fundamental change of a system ........................................................................................................ 112
Table 10. A summary of the benefits, challenges and enabling and restricting factors associated with goal-oriented approaches to transformation .................................................................................. 116
Table 11. Conditions that enable the process of innovation .............................................................................................. 123
Table 12. A summary of the benefits, challenges and enabling and restricting factors associated with principles-based approaches to transformation .............................................................................. 125
Table 13. Characteristics associated the career stage and/or age .................................................................................... 151
Table 14. A summary of the different forms of individual and organisational differences explored ......................... 164

List of boxes

Box 1. Clarifying my use of the terms ‘collaboration’ and ‘partnership’ .......................................................................... 2
Box 2. The meaning and importance of context ................................................................................................................ 11
Box 3. CCI founding partner organisations (reproduced directly from CCI, n.d.: 8–9) .................................................. 31
Box 4. Delineating the relationship between ‘conservation’ and ‘sustainability’ ............................................................. 44
Box 5. What characterises the ‘conservation mainstream’? ............................................................................................... 110
Box 6. The CCI Fika Group – a principles-based researcher-led initiative ................................................................. 120
Box 7. The principles guiding my research approach .................................................................................................... 220
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BioRev</td>
<td>Biodiversity Revisited Initiative</td>
</tr>
<tr>
<td>BTO</td>
<td>British Trust for Ornithology</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biological Diversity</td>
</tr>
<tr>
<td>CCF</td>
<td>Cambridge Conservation Forum</td>
</tr>
<tr>
<td>CCI</td>
<td>Cambridge Conservation Initiative</td>
</tr>
<tr>
<td>DAB</td>
<td>David Attenborough Building</td>
</tr>
<tr>
<td>ED</td>
<td>Executive Director</td>
</tr>
<tr>
<td>EDO</td>
<td>Executive Director’s Office</td>
</tr>
<tr>
<td>FFI</td>
<td>Fauna &amp; Flora International</td>
</tr>
<tr>
<td>FN</td>
<td>field note</td>
</tr>
<tr>
<td>IUCN</td>
<td>International Union for the Conservation of Nature</td>
</tr>
<tr>
<td>KD</td>
<td>key document</td>
</tr>
<tr>
<td>LHI</td>
<td>Luc Hoffmann Institute</td>
</tr>
<tr>
<td>LP</td>
<td>Listening Phase</td>
</tr>
<tr>
<td>NGO</td>
<td>non-governmental organisation</td>
</tr>
<tr>
<td>ODA</td>
<td>official development assistance</td>
</tr>
<tr>
<td>RD</td>
<td>research document</td>
</tr>
<tr>
<td>RO-AR</td>
<td>Research Oriented Action Research</td>
</tr>
<tr>
<td>RSPB</td>
<td>Royal Society for the Protection of Birds</td>
</tr>
<tr>
<td>RQ</td>
<td>research question</td>
</tr>
<tr>
<td>TBA</td>
<td>Tropical Biology Association</td>
</tr>
<tr>
<td>TCA</td>
<td>Theory of Collaborative Advantage</td>
</tr>
<tr>
<td>ToC</td>
<td>Theory of Change</td>
</tr>
<tr>
<td>TR</td>
<td>transcript</td>
</tr>
<tr>
<td>UCCRI</td>
<td>University of Cambridge Conservation Research Institute</td>
</tr>
<tr>
<td>UNEP</td>
<td>United Nations Environment Programme</td>
</tr>
<tr>
<td>WCMC</td>
<td>World Conservation Monitoring Centre</td>
</tr>
<tr>
<td>WWF</td>
<td>World Wide Fund for Nature</td>
</tr>
</tbody>
</table>
Chapter 1 – Introduction

1.1 Enabling collaboration in conservation

Interorganisational collaboration (Huxham & Vangen, 2005; see Box 1) is required to face ‘meta-problems’ that are “too extensive and too many-sided to be coped with by any single organization, however large” (Trist, 1983: 270). At the broadest extent, collaboration that seeks to address societal issues has been referred to as ‘supraorganisational’ (Pasquero, 1991). Nature conservation involves grappling with a number of complex, interconnected problems and therefore requires interorganisational collaboration at, and across, various scales (Westley & Vredenburg, 1997; Wyborn, 2015a).

Defined broadly, conservation constitutes “actions that are intended to establish, improve or maintain good relations with nature” (Sandbrook, 2015: 565). Conservation is a multidisciplinary and mission-driven field born from the natural sciences (Soulé, 1985) that combines research, policy and practice to protect nature (Toomey, Knight, et al., 2016). Conservationists work within complex socio-ecological systems that have interconnected components and emergent properties (Gavin, McCarter, et al., 2015). Decision-making within such complex contexts is challenging because causes do not lead to predictable effects and appropriate actions cannot be controlled or pre-determined (Snowden & Boone, 2007). Conservation problems are therefore commonly described as ‘wicked’ (Rittel & Webber, 1973) because they involve, “numerous interacting elements lacking any central control, nonlinear interactions between elements, constant change which is seldom reversible, and no clearly defined boundaries to the system” (Game, Meijaard, et al., 2014: 271).

Within conservation literature, collaboration is frequently put forward as a solution in itself or a means of addressing complex conservation challenges. Unfortunately, this literature does not sufficiently recognise the inherent complexity of the interorganisational collaborations that are proposed, nor does it offer enough in the way of practice-based insights into process and ways to enable collaboration in practice. Literature about interorganisational collaboration from the fields of management and public administration has much to offer conservation in this respect.
Box 1. Clarifying my use of the terms ‘Collaboration’ and ‘Partnership’

There is great confusion and inconsistency in the use of the terms ‘collaboration’ (Castañer & Oliveira, 2020) and ‘partnership’ (Stott & Murphy, 2020). Categorisations of each of these terms have been attempted based on the type and sector of their actors, their structure, or by the focus of their joint working (Castañer & Oliveira, 2020; Stott & Murphy, 2020). Adding to the confusion, both terms can be used as nouns, to describe a group that has come together (e.g. a collaboration, a partnership); as verbs, to describe the act or process of working together (e.g. collaborating, partnering); or as subjects, to describe those who are working in this way (e.g. collaborators, partners).

In general, the terms tend to be distinguished as follows, although authors rarely define or distinguish them explicitly:

*Partnership is a state of relationship, at organizational, group, professional or interpersonal level, to be achieved, maintained and reviewed. Collaboration is an active process of partnership in action.* (Whittington, 2003: 16)

Within the field of conservation I have observed that ‘partnership’ tends to be used to describe more formalised relationships between organisations, and particularly those involving private sector actors (e.g. corporate partnership); while ‘collaboration’ is used to describe a variety of types of collective effort among conservation actors, and the processes by which they work together to achieve conservation outcomes they could not have achieved on their own. Use of the term ‘partnership’ appears to be more common within the field of sustainable development, as “partnerships were endorsed as a key approach for achieving environmental and developmental change at the 1992 UN Earth Summit in Rio de Janeiro” (Stott & Murphy, 2020: 4).

Within this thesis I use the term collaboration, as defined by Huxham and Vangen (2005), to mean: “any situation in which people are working across organizational boundaries towards some positive end” (p.4). The focus here is therefore on interorganisational relationships (Cropper, Ebers, et al., 2008). I prefer to use the term ‘collaboration’, rather than ‘partnership’, as a noun to describe groups of actors (made up of organisations and/or individuals from across organisations) who deliberately come together for a common purpose, but also as a verb to describe the processes through which they work together. I use the term ‘partner’ specifically to describe organisational members of interorganisational collaborations because this is how the term was used by participants within research settings.

This research draws on the practice-based Theory of Collaborative Advantage (TCA; Huxham & Vangen, 2005) from the field of management to begin to address this gap. The TCA derives understanding about the complexity of interorganisational collaboration using a Research Oriented Action Research (RO-AR) approach (Eden & Huxham, 2006) to study issues of concern to actual collaborations in practice (Huxham & Vangen, 2005; Vangen & Huxham, 2014). It offers robust theoretical insights about
collaboration that are recognisable and useful to collaborative practitioners. This study was initially inspired by my early reading of TCA literature and the realisation that none of the useful collaborative concepts it presents have come up during my formal training in biology or forestry, nor were they being used by the conservation organisations I have worked for.

I became motivated to bridge collaborative theory and conservation in research and practice to explore ways to enable collaboration in conservation. Although my academic background is in environmental science, I established myself in a business school to conduct this research with the support and guidance of supervisors with expertise in interorganisational collaboration and environmental change. The study is therefore interdisciplinary in that it brings theoretical concepts from the TCA, situated within the management literature, into the context of conservation. It is additionally transdisciplinary in that it uses a RO-AR approach (Eden & Huxham, 2006), similar to that used for the ongoing development of the TCA, to make novel contributions to knowledge through practice-oriented research with actual conservation collaborations. Consistent with the RO-AR approach, the research journey presented within this thesis was emergent as it was directed by the actual needs of collaborative practitioners.

Theoretical concepts from the TCA were incorporated into research interventions with interorganisational collaborations within two settings: the Cambridge Conservation Initiative (CCI) and the Biodiversity Revisited Initiative (BioRev). These collaborations are also considered to be ‘supraorganisational’ in that they aim to address conservation ‘“metaproblems’... that is, multi-layered problems cutting across entire societies’ (Pasquero, 1991: 38). The research additionally investigated the institutional field of conservation and research settings themselves as the context of studied collaborations. Analysis of the data collected through a mixture of methods led to a focus on the three interconnected themes of change, diversity and funding. Figure 1 offers a diagrammatic framework of the study including elements that will be elaborated upon later in the thesis.

---

1 Transdisciplinarity describes the engagement of non-academic stakeholders throughout decision-making and research processes to create new knowledge and address important social issues (Armitage, Alexander, et al., 2015; Lang, Wiek, et al., 2012; Tress, Tress, et al., 2005).
Figure 1. A diagrammatic framework of the study.
1.2 Approach

Inspired by the practical utility and recognisability of the theoretical concepts presented in the TCA, this study adopted a Research-Oriented Action Research (RO-AR) approach (Eden & Huxham, 2006) similar to that used in the development of the TCA. The approach also honours my own personal commitment and belief in the value of bridging research and practice. Founded in a pragmatic philosophical position, as a RO-AR researcher I designed interventions that drew on my own expertise with the aim to enable participants to explore issues they needed to take action on that were of genuine concern to them (Eden & Huxham, 2006). Placing participants’ experience and perceptions at the heart of the study enabled me to study their actions and derive insights of broader relevance to the practice of collaboration in conservation. At the same time, the research also investigated the context and settings within which the studied collaborations took place.

Following an initial Scoping Study (involving interviews, observation and key document review) within the Cambridge Conservation Initiative (CCI) to develop a deeper understanding about the meaning and purpose of collaboration within this setting, I identified collaborative groups that were interested in working with me on ‘action interventions’ to identify their pressing collaborative challenges and explore ways to address them. I also unexpectedly gained access to study collaboration within the Biodiversity Revisited Initiative (BioRev) as a second research setting. During action interventions with participants I collected data about collaborative interactions using a mixture of methods including: participant observation, interviews, conversations, key document review and feedback opportunities. Surveys were used to investigate the wider context. During the RO-AR phase of the study I strategically analysed data using a constructivist grounded theory approach (Charmaz, 2014) in order to feed back findings within active interventions. Once data collection was complete, I gradually retreated from interventions and conducted an in-depth analysis across all forms of data. Three key themes – change, diversity and funding – emerged from the analysis and became the backbone of this thesis.

Following the write-up of research findings under these three interconnected themes, I reviewed relevant literature across disciplines. Although it is recognised that both change and collaboration are needed to address complex conservation issues, I found collaboration to be addressed simplistically and mostly theoretically within the conservation literature, and change to be underexplored within the collaboration literature. This research therefore plays an important interdisciplinary role in crossing insights relevant to conservation collaboration across disciplines. In the final stage I iterated between my findings and the literature to develop theoretical conceptualisations, write my discussion, and clarify the contributions of the study.

1.3 Research questions

Until the later stages of this research, the broad objective of the study remained to find ways to enable collaboration in conservation. Consistent with the “idiosyncratic nature of actual collaborative
situations” (Vangen & Huxham, 2014: 52) and the RO-AR approach, this took different shapes and forms within the unique circumstances of each intervention and collaboration. Analysis of the data collected from multiple collaborations, alongside consideration of relevant literature, led to the delineation of two more specific research questions (RQs) that associate with different types of contribution:

**RQ1. How can conservation collaborators operating within complex systems be enabled in practice?**

This first research question focuses on exploring the practical challenges of collaborating within complex systems as commonly required within the field of conservation. This initially involved investigating:

- **a. How can collaborators work together to achieve change in complex systems?**

  This component of the first research question aimed to uncover useful, practice-based insights about the collaborative processes needed to achieve change within complex systems to bring about conservation outcomes. Insights from the TCA were considered and integrated where relevant to help address this question. This initial investigation led to a second related consideration:

  - **b. How can the field of conservation itself be changed to further enable effective collaboration to achieve change in complex systems?**

  Addressing both components of this first question required researching collaborative interactions in practice but also the settings and wider context within which they took place. The two components of RQ1 are shown in Figure 2. The research considered relevant insights from the TCA and additionally drew on literature outside the field of conservation that directly related to the three key themes of change, diversity and funding to address RQ1.

**Figure 2. The components of RQ1 – Enabling collaboration in conservation was found to involve a combination of investigating: how can collaborators work to achieve change in complex systems (RQ1 a), and how can the field of conservation itself be changed to enable effective collaboration (RQ1 b).**
RQ2. How can the TCA be extended through RO-AR on collaboration in conservation such that it can be recognised as valuable within this field?

The second research question capitalises on the interdisciplinary nature of the research to utilise the experience and knowledge gained through RO-AR with collaborations in the conservation context to extend the TCA. The ongoing development of the TCA by Vangen and Huxham (Huxham & Vangen, 2000a, 2005; Vangen, 2016; Vangen & Huxham, 2010, 2014), and their colleagues with expertise in interorganisational collaboration, has involved decades of research with collaborations from a broad range of contexts. As my background is in conservation, this research comes from the opposite direction to bring valuable insights from the TCA into the conservation context to help address identified gaps in the literature. In so doing, it additionally aims to extend the TCA so that its application can be recognised as valuable within the field of conservation. The complexity of the systems involved in conservation, the need for change, and the need to work across many forms of differences to achieve conservation outcomes make contributions to theory on collaboration relating to complexity, change and diversity most likely.

1.4 Contributions of the research

This thesis makes novel contributions to the extension of both theoretical and practical knowledge. It generates valuable insights into how conservation collaborators operating within complex systems can be enabled in practice. These insights contribute ‘actionable knowledge’ (Argyris, 2005) derived from researched collaborative experiences but presented in a style that reflects their general relevance within the context of conservation (Eden & Huxham, 2006). The thesis identifies seven ways collaborators can work together to achieve change in complex systems (RQ1a):

1. Acknowledging the complexity and cost of interorganisational collaboration
2. Considering the nature of the collaborative context
3. Working more effectively across multiple forms of difference
4. Managing diversity for complexity and innovation
5. Clarifying understandings of change
6. Recalibrating expectations for the evaluation of collaborative achievements
7. Considering whether and how a collaboration can respond to change

It also identifies four ways that the field of conservation can itself be changed to enable more effective collaboration (RQ1b):

1. Fundamentally changing conservation funding so it can accommodate complexity
2. Improving inclusivity to enable collaboration
3. Learning to embrace uncertainty and risk
4. Considering if and how changes to the field can occur through collaboration
Although these higher-level changes to the field of conservation itself require a sustained and coordinated effort, they are critically important to enable collaborations to effectively address the complex challenges faced in conservation.

A novel theoretical contribution is also made through the extension of the TCA in relation to change (RQ2). The detection and conceptualisation of the change paradox through a combination of empiricism and rationalism describes the persistent underlying contradiction between pragmatic and idealistic ambitions for change within supraorganisational collaboration. Finally, the overtness of different ambitions for change management tension offers a conceptual tool that can be used by conservation collaborators to reflect on the best approach to managing different ambitions for change within their unique collaboration.

1.5 Structure of the thesis

The chapters of this thesis are presented in a traditional structure, however it is important to emphasise that the research process did not unfold in the order presented. The integrity of my approach relied on orienting Research-Oriented Action Research around the needs of participants, deriving key themes from data analysis, and being clear about the content of my findings before completing the literature review.

Given the interdisciplinary nature of this research, literature relating to the topic of enabling collaboration in conservation is reviewed across two chapters of this thesis. Chapter 2 introduces the field of conservation as the institutional context for this research about collaboration (Section 2.2). It identifies themes within the conservation literature about collaboration relating to why collaboration is needed, what research about collaboration has focused on, and how conservation collaborations work in practice (Section 2.3), and identifies a clear need for practice-based insights into collaborative process in conservation. The two collaborative research settings are introduced at the end of this chapter (Section 2.4). Chapter 3 presents an overview of the TCA as a practice-based theory that acknowledges the inherent complexity of managing collaboration in practice to achieve collaborative advantage (Section 3.2). The framing of paradoxes and tensions is described as an integral component of the theory. The chapter then focuses on themes that are most relevant to the context of conservation: change as a collaborative goal (Section 3.3), and cultural diversity (Section 3.4). The chapter integrates attributes of particular relevance to the field of conservation, namely: complexity of the systems involved, diversity of the skills and perspectives required, and a focus on the achievement of change.

The methodology of the study is described in Chapter 4, beginning with the underpinning philosophy (Section 4.2). The RO-AR approach is introduced and I describe how complementary approaches are used to study context alongside collaborative interactions (Section 4.3). The different methods I have used are introduced in turn (Section 4.4) and the process of analysis is described (Section 4.5).
Three interconnected findings chapters form the core of the thesis and provide a solid foundation for the study’s contributions. **Chapter 5** presents change findings, exploring the types of change that collaborations aimed to achieve (Section 5.2), and the different approaches to change they used (Section 5.3). A final section (5.4) considers whether and how collaborations respond to change. **Chapter 6** presents diversity findings, beginning with an investigation of the roles of diversity in conservation collaborations (Section 6.2). The chapter then explores a variety of individual (Section 6.3) and organisational (Section 6.4) differences that collaborations work across, highlighting challenges and enabling factors. Funding findings are presented in **Chapter 7** where the sources of conservation funding are considered (Section 7.2), project, programme and collaboration funding levels are described (Section 7.3), and intricacies surrounding collaborative fundraising are investigated (Section 7.4).

The discussion in **Chapter 8**, structured according to research question, considers findings in light of the reviewed literature. It draws on additional relevant literature to progress the conceptualisation of findings. **Chapter 9** concludes the thesis by summarising the contributions of the thesis under each research question (Sections 9.2 and 9.3). It concludes with a personal reflection about the research approach and how it relates to the study’s findings (Section 9.4) and recommendations for future research (Section 9.4).
Chapter 2 – The context of conservation

2.1 Introduction to Chapter 2

The collaborations investigated in this thesis take place within the variously defined context of conservation. In this chapter I provide a brief summary of literature about where the field of conservation has come from and different perspectives about where it may be heading (Section 2.2). Developing a thorough understanding of the field of conservation is especially important in this thesis because the research explicitly investigates the field as the context of researched interorganisational collaborations (see Box 2).

In Section 2.3 I hone in on conservation literature about collaboration. I first consider three prominent arguments made in the literature for why collaboration is needed in conservation. I then look at what collaborative studies have focused on: primarily conservation issues that are intrinsically collaborative and collaborating across various boundaries. Finally, I explore what the literature tells us about how to implement conservation collaboration, and consider how research on collaboration has been conducted in conservation. Although important contributions have been made, there remains a clear need for additional research on collaborative process and insights into how conservation collaboration can most effectively be implemented in practice.

The chapter concludes with a description of the two research settings: the Cambridge Conservation Initiative (CCI) and the Biodiversity Revisited Initiative (BioRev; Section 2.4).

Box 2. The meaning and importance of context

The term ‘context’ can be defined as “situational opportunities and constraints that affect occurrence and meaning of organizational behavior as well as functional relationships between variables” (Johns, 2006: 386). Within this thesis, as proposed by Bate (2014), context is recognised as a
it will be essential to challenge the conventional notion of context as a fixed entity... to this idea of a change journey that moves through and across an ever-changing context – a practice that will highlight the ongoing interactions between the ‘actors’ and their environment, and their constant need to adjust and adapt to these changes as they encounter them” (Bate, 2014: 12)

Philosophically (see Section 4.2), context is used within the thesis to describe the macro dimensions of social reality within which individual and collective agency take place (Layder, 1990, 1993). This includes both the ‘setting’, which I use to describe the high-level structure and processes of the researched interorganisational collaborations and their operational surrounding (see Section 2.4), and the wider ‘context’ of the field of conservation within which these settings are embedded.

As detailed in Sections 4.3 and 4.4, this study uses a mixed methodological approach to investigate collaborative interactions in action as well as contextual social phenomena. It is important to study context to better understand the interactions between actors and context, and it can increase the relevance of research and facilitate its application (Johns, 2006). Understanding context is particularly important when attempting to mobilise change in practice as this requires interaction between: an intervention, the setting, its wider context, the individuals involved, and the process of implementation (Bate, 2014).

2.2 Conservation

2.2.1 Defining conservation

Conservation is a mission-driven field born from the natural sciences to sustain the diversity of life on the planet (Meine, Soulé, et al., 2006). It is regarded a ‘field’ in the sense that it is “comprised of actors who share an interest in that issue or problems associated with it” (Gray & Purdy, 2018: 2). The field of conservation has contested boundaries and definitions and is changing rapidly (Mace, 2014). In this research I use the term ‘conservation’, as Sandbrook (2015) proposes, to broadly encompass, “actions that are intended to establish, improve or maintain good relations with nature” (p.565). This definition captures the diversity of existing conservation perspectives while acknowledging that conservation actions are not always successful, despite good intentions (ibid).

I recognise however, that many conservationists, including numerous participants of this research, use the term conservation more narrowly, including to mean, “actions that directly enhance the chances of habitats and species persisting in the wild” (Leader-Williams, Adams, et al., 2010: 5). The diversity of perspectives about what conservation is or should be, and how it should be conducted derive from the multiplicity of motives and values held by conservationists (Sandbrook, Fisher, et al., 2019), and
the continual evolution in the framing of both ‘nature’ and ‘conservation’. Differences in understanding about what nature means, and how and why it should be conserved contribute to the complexity of collaborating for conservation purposes.

A distinction is often made between conservation science, the multidisciplinary research that underpins the field (Kareiva & Marvier, 2012), and conservation practice, taking action to have a real-world impact (Salafsky, Margoluis, et al., 2002). A ‘research-implementation gap’ is widely acknowledged in the conservation literature between conservation science and practice (Knight, Cowling, et al., 2008; Lauber, Stedman, Decker, & Knuth, 2011; Pietri, Gurney, et al., 2013; Sunderland, Sunderland-groves, et al., 2009). Transdisciplinary conservation approaches offer a promising means to bridge research and practice (Colloff, Lavorel, et al., 2017; Reyers, Roux, et al., 2010; van Kerkhoff & Lebel, 2015). Transdisciplinarity, which is similar to co-production2 (Armitage, Berkes, et al., 2011), describes the engagement of non-academic stakeholders throughout decision-making and research processes to create new knowledge and address important social issues (Armitage, de Loe, et al., 2015; Lang, Wiek, et al., 2012; Tress, Tress, et al., 2005). There has been an exponential increase in the number of transdisciplinary publications over the last decade (Lawrence, 2015). As explained in Chapter 1 and elaborated in Chapter 4, the transdisciplinary research presented in this thesis aims to bridge the research-implementation gap by using a Research-Oriented Action Research (RO-AR) approach that prioritises the needs of those practicing collaboration in order to develop practice-based insights of relevance to the field of conservation.

2.2.2 A brief history of conservation

Long before it became an established science, conservation grew from a concern to protect nature for its aesthetic appeal and for its ‘peripheral importance’ to other interests (Evans, 1997). Countless organisms were shot or captured in the pursuit of Western science, and the long-standing relationships between these organisms and local people were not commonly recognised (Adams, 2004). ‘Fortress’ and ‘colonial’ conservation forcibly excluded Indigenous Peoples from natural environments in the belief that ‘protection’ required isolation from humans (Domínguez & Luoma, 2020) and conservation’s “imperialist roots... in many parts of the developing world”, created a negative legacy that continues to influence how some people perceive and interact with the field (Redford, 2011: 326).

The scientific foundations of the field, which persist at its epicentre, originally developed from positivist and deductive natural sciences at a time when ecological systems were believed to be predictable and “problems were considered discrete” (Colloff, Lavorel, et al., 2017: 1009).

Mace (2014) has described four main phases in the framing of conservation since the 1960s. In the earliest phase, conservation was mostly framed as ‘nature for itself’, and emphasis was on the preservation of species and ‘wilderness’ through protected areas management. By the 1970s there was...

---

2 Co-production describes a “collaborative process of bringing a plurality of knowledge sources and types together to address a defined problem and build an integrated or systems-oriented understanding of that problem” (Armitage, Berkes, et al., 2011: 996).
increased awareness about the impacts of human activity and conservation became oriented towards ‘nature despite people’ (ibid). During this second phase, the focus was on identifying and mitigating threats to nature through population biology and natural resource management. Unfortunately, threats to nature only continued to escalate as the costs of destruction became clearer. From the late 1990s, Mace describes how the third phase of conservation shifted towards management at increasing scales to sustain ‘nature for people’, with a focus on conserving ecosystems for the services and economic values they provide. Since the early 2000s the emphasis has shifted towards ‘people and nature’ and a more nuanced recognition of “the two-way, dynamic relationships between” them (ibid: 1559). This fourth phase of conservation emphasises the need to work across disciplines and scales to develop sustainable interactions between the natural environment and human societies. All of these phases continue to influence the bricolage of contemporary conservation, particularly the most recent one. As Redford (2011) has asserted, different conservation “approaches rise and fall but never disappear” (p.326).

Numerous studies have laid bare the disastrous impacts that humanity continues to have on the natural environment (Bar-On, Phillips, et al., 2018; IPBES, 2019; WWF, 2020), and scientists have declared the ‘sixth mass extinction’ event to be underway (Ceballos, Garcia, et al., 2015). In 2020 the World Economic Forum rated biodiversity loss “the second most impactful and third most likely risk for the next decade” (World Economic Forum, 2020: 7). It can be profoundly disheartening to read hopeful pleas for fundamental change to the systems that are negatively impacting nature within literature that is now over a decade old, but no less relevant. Anthropogenic influences have already so profoundly changed planetary processes that the current epoch is commonly referred to as the ‘Anthropocene’ (Dirzo, Young, et al., 2014). Calls for change to rampant consumerist behaviours (Assadourian, 2010), unsustainable resource extraction (Behrens, Giljum, et al., 2007), carbon emissions (UNFCCC, 2021) and the very idea of continuous economic growth (Raworth, 2017) have strengthened over the years as awareness of global ecological and social crises grows (Waddell et al., 2015). Yet intergovernmental initiatives such as the Convention on Biological Diversity have not slowed nature declines (Butchart, Walpole, et al., 2010) and funding for the field of conservation continues to be scarce (Maxwell, Cazalis, et al., 2020; McCarthy, Donald, et al., 2012).

There is increasing recognition that conventional conservation approaches are not succeeding in their mission to protect nature (Game, Meijaard, et al., 2014), and that collaboration will be essential to bring about necessary societal change (Kark, Tulloch, et al., 2015; Kuenkel, Kühn, et al., 2021). Some authors have suggested that the field of conservation itself needs to be transformed (Bennett, Blythe, et al., 2019; Diaz, Settele, et al., 2019) and in the next section I describe some of the key propositions for the future of the field of conservation.

Research to inform how conservationists can more effectively collaborate to bring about change is therefore badly needed. This is the aim of RQ1a of this study. Research is additionally needed to identify ways that the field of conservation itself could be changed to further enable effective implementation of collaboration in practice, and this is the aims of RQ1b.
2.2.3 The funding of conservation

Although funding for conservation is complicated to study and underexamined overall (Bos, Pressey, et al., 2015), this section reviews the extant literature in this area to contextualise the funding findings presented in Chapter 7. It is challenging to quantify both the amounts spent on and needed for conservation in part because there are differing perspectives about what conservation is and how it should be conducted (see Section 2.2.1). Conservation is multifaceted – it can be considered to include natural resource management (e.g. agri-environmental schemes that support biodiversity), the establishment and management of protected areas on land and at sea, certification schemes that encourage environmentally-friendly harvesting of resources, regulation to limit destructive activities, conservation research, avoided deforestation to maintain carbon stores and intact forests, just to name a few. Conservation is delivered by many actors (governments, non-governmental organisations, communities, intergovernmental organisations and conventions, etc.) with funding from a variety of sources as explored in this section.

There is generally a poor availability of financial data (Berger, Caruso, et al., 2019) and few comprehensive assessments of global conservation funding; with those that are most frequently cited now quite dated (e.g. Balmford & Whitten, 2003; Jang & Feiock, 2007; McCarthy et al., 2012; Parker, Cranford, Oakes, & Leggett, 2012). One thing that all authors in this area agree on is that conservation is severely underfunded. When shortage of resources was associated with the collective failure to meet the 2010 targets of the Convention on Biological Diversity (CBD; Waldron, Mooers, et al., 2013), McCarthy et al. (2012) produced a highly cited estimate that funding for conservation would need to be increased by an order of magnitude to meet the new 2020 CBD targets. Parker et al. (2012) estimated that in 2010 the “global scale of funding for biodiversity and ecosystem services” was USD 51.5-53.4 billion (p.28).

The annual gap between the funding available for biodiversity and ecosystem services, and the economic costs of environmental degradation globally, estimated to be USD 4-6 trillion per year (Dasgupta, 2021), lies somewhere in the trillions (Bos, Pressey, et al., 2015). Looking specifically at biodiversity conservation:

As of 2019, current spending on biodiversity conservation is between $124 and $143 billion per year, against a total estimated biodiversity protection need of between $722 and $967 billion per year. This leaves a current biodiversity financing gap of between US$598 billion and US$824 billion per year. (Deutz, Heal, et al., 2020: 9)

In the United States, conservation funding sources were found to be static or declining over the last 30 years while environmental challenges have increased (Echols, Front, et al., 2019). There is an urgent need for additional sources of conservation funding and to harness more from existing sources (Echols, Front, et al., 2019; Evans, Barnard, et al., 2012; Freeling & Connell, 2020; Maxwell, Cazalis, et al., 2020).
While funding shortfalls persist, limited funds need to be utilised as efficiently as possible and cost-effectiveness studies are on the rise (Pienkowski, Cook, et al., 2021). Unfortunately, different prioritisation approaches have highlighted divisions among conservationists (Gavin, McCarter, et al., 2018, see Section 2.2.3). The biodiversity crisis is considered so severe that ‘conservation triage’ emerged as a concept similar to that used in emergency medicine to describe the rational prioritisation of funding allocation based on a consideration of problems faced, consequences of inaction, net benefits of actions, and probability of recovery (Bottrill, Joseph, et al., 2008). Early calls to prioritise spending towards ‘hotspot’ areas of exceptional diversity under severe threat were popular at the turn of the millennium (Myers, Mittermeier, et al., 2000), but later criticised for quantifying biological value solely according to simplified measures of species richness (Kareiva & Marvier, 2003). Ecosystem-based approaches aim to maximise the sustained delivery of various ecosystem services derived from nature (Millennium Ecosystem Assessment, 2005; Vira, Elliott, Fortnam, & S, 2011). Systematic conservation planning has long been used as a structured approach to most efficiently achieve explicit conservation goals (Margules & Pressey, 2000), and the approach has evolved and expanded over time (Pressey & Bottrill, 2008). Whatever the approach taken, a severe lack of funding makes difficult decisions inevitable in conservation.

**Sources of conservation funding**

Funding that enables conservation is generated through non-market mechanisms, including government sources, official development assistance, and philanthropy; and market-related mechanisms, including direct-market mechanisms (e.g. ecosystem service fees and cap-and-trade mechanisms), indirect-market mechanisms (e.g. price premiums through certification), and other market mechanisms (e.g. natural capital bonds, financial transaction tax; Parker, Cranford, et al., 2012). I will now briefly consider the scale of contributions made through each.

**Non-market mechanisms** – Approximately 80% of the funding generated for conservation comes from a combination of domestic government budget allocation, agricultural subsidy reform, official development assistance (ODA) and philanthropy (Parker, Cranford, et al., 2012). Government spending has always been the largest contributor to environmental protection globally, but because this finance stays within a country and dwarfs the amount contributed to ODA, wealthier countries have more to spend and highly biodiverse tropical countries are most severely underfunded (Balmford & Whitten, 2003). Public biodiversity investment is particularly challenging to study because attribution and budget codes are inconsistent and funding that contributes to conservation is intertwined with a variety of other government activities (Seidl, Mulungu, et al., 2021). In a recent study of national budget data for 30 countries between 2008-2017, Seidl et al. (2021) found that national public biodiversity investment is increasing overall, but that “wealthier countries invest proportionately less than less wealthy countries” (p.530).

16
The economic crisis in 2008 led to huge cuts in statutory conservation funding in the UK, prompting Somper (2011) to predict “the next decade will be dominated by a period of retrenchment in the sector” (p.41). The economic repercussions of the global COVID-19 pandemic are expected to similarly impact conservation investment, particularly from non-market mechanisms, as environmental concerns are overshadowed by urgent humanitarian concerns (Kavousi, Goudarzi, et al., 2020) and shortfalls are compounded by the “collapse of the global ecotourism market” (Evans, Ewen, et al., 2020: 236).

The funding landscape for conservation research is also changing with federal funding for conservation research in the U.S. and many other countries decreasing and nongovernmental sources such as philanthropy becoming more important (Bakker, Baum, et al., 2010). Funding for conservation research is also likely to significantly decrease during periods of economic uncertainty (Bakker, Baum, et al., 2010), and especially while research is largely focused on addressing COVID-19 (Bates, Primack, et al., 2020).

ODA for biodiversity has substantially increased from 1990 but remains insufficient (Miller, Agrawal, et al., 2013). Philanthropy can broadly be described as “the application of private means to public ends” (Sulek, 2010: 201). Across sectors, philanthropy is happening at a greater scale and faster pace, is increasingly complex and global, and there is increased awareness about it (Ferris, 2016). In the context of conservation and the environment, philanthropic finance includes contributions from wealthy individuals, private and business-related foundations, and conservation non-governmental organisations (NGOs; with funds raised primarily from government, foundations and membership fees; Parker, Cranford, et al., 2012). Environmental philanthropy tends to come in the form of cash grants or land purchase for conservation purposes (Carter & Ross, 2014). The amount donated through philanthropy fluctuates in response to the global economy, and varies by country (ibid), but it was estimated back in 2010 to amount to USD 1.6-4 billion/year (Parker, Cranford, et al., 2012).

Associated with a “broader shift towards evidence-based practices”, philanthropists increasingly judge “cost-effectiveness based on objective, transparent, and quantitative evidence” (Freeling & Connell, 2020: 4). This has led to a rise in the use of theories of change3 in grant-making strategies (Ferris, 2016). Ramutsindela et al. (2011) caution that although philanthropy aims to deliver public good, it also has the potential to do harm through restrictive conditions (for example see Wu, Dodd, et al., 2020) and careless distribution of funds. Holmes (2012) argues that philanthropy, which is linked to capitalism, has contributed to the neoliberalisation of conservation, as explored below.

**Market-related mechanisms** – Many authors have written about the neoliberalisation of conservation and how this has led to an increase in the commodification of nature and interest in market-based mechanisms to generate finance for conservation (Arsel & Büscher, 2012; Castree, 2008; Holmes, 2012; Igoe & Brockington, 2007). The neoliberalisation of nature results from a combination of

---

3 Theories of Change (ToCs) are used “as an explication of the assumptions underlying [an] intervention strategy”... they provide a “rationale why outcomes can be expected and what might undermine causal relations” (van Tulder & Keen, 2018: 316). This is not to be confused with the theory this thesis contributes in Chapter 8 relating to change.
privatisation and marketisation of environmental phenomena, deregulation through “the ‘rollback’ of state ‘interference’ in numerous areas of social and environmental life”, followed by deregulation and “the deployment of public services along private sector lines” and by civil society (Castree, 2008: 142).

The neoliberalisation of conservation has transferred responsibility for environmental protection to intergovernmental organisations and non-governmental actors; increased partnerships between conservation and business through sponsorship (philanthropy), ecotourism and for-profit conservation (Igoe & Brockington, 2007); blended land ownership and management institutions (Adams, Hodge, et al., 2014; Hodge & Adams, 2012); and increased the prominence of market-based mechanisms (Holmes, Sandbrook, et al., 2017). ‘Nature™ Inc.’ has been used in critiques of the capitalist reconceptualisation of nature as ‘natural capital’ and ways to “make money out of saving the planet” (Arsel & Büscher, 2012: 57).

Influential reports like The Economics of Ecosystems and Biodiversity (TEEB, 2010) and UNEP’s Towards a Green Economy (2011) report have powerfully encouraged the development and use of market mechanisms in conservation (Arsel & Büscher, 2012).

Despite the attention they receive, direct, indirect and other market mechanisms collectively generate only 20% of global biodiversity finance (Parker, Cranford, et al., 2012). Among these, greening commodities are the most lucrative, generating USD 6.6 billion/year with high potential to expand further (ibid). This includes a variety of certification schemes which are considered indirect market mechanisms where the premium paid by consumers cover the public good derived through environmentally responsible production. Direct market mechanisms generate USD 3.0-4.6 billion/year, “through a payment from either the beneficiary (e.g. user fees) or the polluter (e.g. biodiversity offsets) to the provider of biodiversity and [ecosystem services]” (Parker, Cranford, et al., 2012: 65). This includes a range of sophisticated mechanisms such as ecosystem service fees (e.g. payments for watershed services), cap-and-trade mechanisms (e.g. for water quality or fishing quotas), biodiversity offsetting and voluntary carbon markets (ibid). Private sector finance currently accounts for “14% of global conservation investments”, and is expected to grow substantially over the coming years (CPIC, 2021: 8).

Structure and form of funding for conservation

While there is a continual need for additional funding in conservation, it is also important to consider the suitability of the structure and form of funding for conservation needs and objectives. Prioritisation approaches such as systematic conservation planning (described above) help to ensure cost effectiveness, but “the multiscale nature of conservation problems needs to be understood and negotiated so that strategies and actions are developed and applied at appropriate temporal and spatial scales” (Guerrero, McAllister, et al., 2013: 36). Conservation outcomes often require long-term commitment and continuity, however much of the funding is delivered through short-term projects (Adams, Hodge, et al., 2016; Curtin, 2014; Guerrero, McAllister, et al., 2013).

There has been a broader trend towards ‘projectification’ (Ison, 2017), including in conservation, however the detrimental ramifications of this trend remain underexplored (Munck af Rosenschöld & Wolf,
2017; Sjöblom & Godenhjelm, 2009). Although temporary projects can foster innovation, efficiency and adaptation for specific objectives (Munck af Rosenschöld & Wolf, 2017), when applied to the “cross-sectoral and multi-level policy problems and implementation processes” of environmental management they can be problematic (Sjöblom & Godenhjelm, 2009: 182). Adams et al. (2016) have shown in the UK that short project cycles disrupt the continuity of long-scale conservation initiatives and bring transaction costs not recognised by funders. Needs and conditions can change even within the duration of short-term conservation projects. Wu et al. (2020) stress the need for flexibility to reallocate funds within existing projects and propose “iterative budget reallocation” (p.8).

Conservation requires working across disciplines to address complex issues, yet institutions and organisational structures rarely adequately support interdisciplinary collaboration and funding is lacking or time-consuming to obtain (Dick, Rous, et al., 2017; Hernandez-Aguilera, Anderson, et al., 2021). Bromham et al. (2016) empirically show that interdisciplinary research is less likely to be funded, owing to proposals that are inevitably less focussed and reviewers who may not be qualified to evaluate all components.

This section has reviewed the available literature about funding availability and needs in conservation and highlighted the need for more funding suited to the needs of long-term conservation goals.

### 2.2.4 The future of conservation

Contemporary conservation is now considered within the expanded context of linked socio-ecological systems, which can be defined as:

*coupled human and natural systems that are complex, dynamic, unpredictable, and heterogenous at multiple spatial and temporal scales, shaped by reciprocal feedback loops, and characterized by nonlinear dynamics, time lags, thresholds, and linked social and ecological processes* (Gavin, McCarter, et al., 2015: 140).

The world has been described as ‘postnormal’ to reflect how it is changing rapidly and “characterized by complexity, chaos, and contradictions” (Colloff, Lavorel, et al., 2017: 1009). Conservation problems that were once believed to be solvable by experts through objective science are now widely accepted to be ‘wicked’, as originally defined by Rittel and Webber (1973) (e.g. Game, Meijaard, et al., 2014; Leong, Emmerson, et al., 2011). The complexity of linked socio-ecological systems leads to wicked problems that, “relative to ‘tame’ problems... cannot be framed and understood in linear cause-symptom-effect relationships (*knowledge uncertainty*), evolve unpredictably over time (*dynamic complexity*), and involve conflicts of values among stakeholders (*value conflict.*)” (Dentoni, Bitzer, et al., 2018: 334).

Traditional conservation approaches that seek to compartmentalise, control and predict have become outmoded as they fail to address the complexity at hand (Dick, Rous, et al., 2017; Game,
Meijaard, et al., 2014). Alternative approaches for the future of conservation have emerged, with two of the prominent polarised views being ‘new conservation’ and ‘Half Earth’ (Büscher & Fletcher, 2020). It is not possible to cover the full spectrum of positions within this brief introduction, however it is important to note that conservationists are strongly divided in their outlooks and some have been acrimonious in the academic defence of their positions (Tallis & Lubchenco, 2014). Advocates of ‘new conservation’ call for the protection of nature for its benefits to humanity through market-based approaches and partnerships with corporations (Kareiva & Marvier, 2012). Those who support “‘traditional conservation’ reject these views, arguing instead for the protection of nature for its own sake and emphasizing state-based protected areas and regulations” (Sandbrook, Fisher, et al., 2019: 316). ‘Half Earth’ represents an extreme traditional conservation position that endorses further prevention of human impact through the expansion of protected areas to cover half the Earth (Gavin, McCarter, et al., 2018; Wilson, 2016). Despite support from leading scientists, this position has been criticised for failing to tackle the root of problems or recognise the negative social impacts that would ensue from strict protection on this scale (Büscher, Fletcher, et al., 2017).

Two additional proposals relate to the growing focus on conservation futures that are more just and equitable for all human societies. Büscher and Fletcher (2020) recently put forward ‘convivial conservation’ as an explicitly political approach, “to transcend the unsustainable status quo” (p.284). This, they argue, should involve a rejection of both the capitalist economic system and the nature-people dichotomy, and a focus on structural change, equity and environmental justice. To achieve this ambitious transformation they highlight the need to address power and recognise the differential responsibilities of different actors, but transformation on this scale remains a daunting prospect for many. ‘Biocultural conservation’ similarly aims for just and sustainable conservation solutions, but through dynamic and collaborative approaches that incorporate multiple worldviews and objectives (Gavin, McCarter, et al., 2015, 2018). This emerging concept assumes that nature includes people and explicitly recognises “the rights and responsibilities of indigenous people and local communities to manage and safeguard their knowledge both for their benefit, and for the planet” (Bridgewater & Rotherham, 2019: 301). By involving diverse stakeholders to tailor conservation interventions to their particular socio-ecological context, biocultural approaches are purported to be better able to cope with dynamic, complex problems (Gavin, McCarter, et al., 2018).

This section has shown that although there is agreement about the complexity of the problems we face, the future direction for the field conservation is contested. In the next section I hone in on conservation literature about collaboration and show that there is widespread acknowledgement that collaboration has played, and will continue to play, a crucial role in conservation going forward.
2.3 Conservation collaboration

2.3.1 Why collaborate in conservation?

The use of collaborative approaches in conservation has grown rapidly across the world (Koontz, Jager, et al., 2020). Looking across the conservation literature in this area I identify three main arguments for why collaboration is needed in conservation: to do conservation better, to address complexity, and to transform broken systems. Each are briefly summarised below.

Collaboration to do conservation better

The conservation literature identifies various ways that collaboration can help to achieve conservation goals. For some, ‘better’ conservation means operating at larger scales and the case for collaboration is compellingly made in relation to the need for ecological connectivity across landscapes (e.g. Scarlett & McKinney, 2016; Wyborn, 2015b), watersheds (e.g. Imperial, 2005; Imperial & Koontz, 2007; Leach, 2006; Scott, 2016) and jurisdictional boundaries (e.g. Imperial, Ospina, et al., 2016; Jedd & Bixler, 2015; Kark, Tulloch, et al., 2015; López-Hoffman, Chester, et al., 2017; Midway, Wagner, et al., 2016). Collaboration with new actors outside conservation (e.g. corporations) can lead to positive outcomes for nature and help to raise funding (Kareiva & Marvier, 2012; Kretser, Beckmann, et al., 2018).

‘Effectiveness’ in conservation is traditionally determined through the achievement of tangible environmental outcomes, which can be notoriously difficult and costly to measure over appropriate geographic and time scales (Badalotti, van Galen, et al., 2021). Accounting for the outcomes of collaborative conservation activities is further complicated by the challenges of attribution within complex systems (Conley & Moote, 2003; Emerson & Nabatchi, 2015; Plummer, Dzyundzyak, et al., 2017). Critical perspectives have pointed to the lack of evidence that collaboration directly leads to environmental outcomes (Bixler et al., 2016; Koontz and Thomas, 2006; Scott, 2015), but I perceive these to critique the difficulty of measuring collaborative outcomes within complex socio-ecological systems more than the potential value of collaborative approaches per se. The social and cultural outcomes of collaboration should also be considered (Dickinson & Sullivan, 2014; Innes & Booher, 1999), and although a few studies have done so (e.g. Stacey, Izurieta, et al., 2013; Taylor, Cockburn, et al., 2016; Thomsen & Caplow, 2016) more research is needed in this area.

Others consider the effectiveness of conservation efforts in economic terms (Pienkowski, Cook, et al., 2021), given that the field is severely underfunded (McCarthy, Donald, et al., 2012). These have investigated the potential for collaborative approaches to improve the cost-effectiveness of conservation (Gordon, Bastin, et al., 2013; Kark, Tulloch, et al., 2015; McAllister & Taylor, 2015; Scott, 2016). Such proponents argue that “for collaboration to be worthwhile, the benefits must outweigh the costs” (Morgans, Guerrero, et al., 2017: 237), however many of the costs of collaboration are not acknowledged within the literature let alone quantified (Kark, Levin, et al., 2009). For example Gordon et al. (2013) model
the economic value of collaboration in conservation planning under different scenarios, but do not consider the associated transaction costs despite their acknowledgement that these “need to be weighed against the potential benefits from collaboration” (p.24).

Collaboration can help to do conservation better, but there is a general tendency for it to be presented within the conservation literature as a ‘silver-bullet’ solution to complex problems. There is a need to challenge normative assumptions that collaborative approaches are universally helpful (as Wyborn, 2015c has done), “such that they are used only where appropriate; and that expectations about their potential are realistic” (McAllister & Taylor, 2015: 87). More research into how collaboration can effectively address complex conservation challenges in practice is needed, and this study contributes to filling this gap.

**Collaboration to address complexity**

Many authors associate complexity with the need for collaboration. Many of the problems faced in conservation can be considered societal, ‘collective-action problems’ (Lubell, 2015) within ‘complex adaptive systems’ (Levin, Xepapadeas, et al., 2013). Conservation problems are not discrete and they do not have a single or best solution (Waddock, 2013). They are a ‘wicked’ (Rittel & Webber, 1973) and interconnected suite of meta-problems that cannot be addressed by any single organisation (Trist, 1983). The complexity of these shared problems necessitates collaboration between diverse stakeholders (Imperial, Ospina, et al., 2016; Kuenkel, 2019a).

Take the conservation of migratory birds as a poignant example. Nearly one quarter of the world’s bird species are migratory, and 92% of these migrate across country borders (Kark, Tulloch, et al., 2015). Migrant birds face numerous threats ranging from local habitat loss and illegal hunting to invasive species, diseases, pollution and global climate change. Effective conservation of migratory birds therefore requires collaboration between countries, scales (local to global), jurisdictions, sectors, disciplines and organisations to coordinate actions along migratory routes that can span up to 10,000 km (ibid).

Numerous other complex conservation problems similarly demand collaborative approaches, for example: invasive species control (Simpson, Jarnevich, et al., 2009), habitat connectivity (Wyborn & Bixler, 2013), the provision of ecosystem services across landscapes (Prager, Reed, et al., 2012) and the planning of integrated conservation responses to climate change (Hannah, Midgley, et al., 2002).

Uncertainty is an inevitable component of complex systems (Patton, 2011), and something that conservation collaborations must grapple with, as elaborated in Section 3.3.2 in the next chapter. Within complex contexts causes do not lead to predictable effects, and appropriate actions cannot be predetermined or controlled – actors need to ‘probe’ first, then sense, and then respond (Snowden & Boone, 2007: 5). Unfortunately there are many examples where management suited to simple and complicated problems is unsuccessfully applied in complex contexts (Gorod, Hallo, et al., 2018; Williams, Jonny Klakegg, et al., 2012), including in conservation (e.g. Game, Meijaard, et al., 2014).
Collaboration to transform broken systems

Sustainability literature increasingly calls for transformation of the systems\(^4\) that are causing environmental destruction (Blythe, Silver, et al., 2018; Horan, 2019; Sachs, Schmidt-Traub, et al., 2019).

‘Transformation’ is used in this context to mean a radical or “fundamental shift in ecological, economic and social conditions when existing system trajectories (ecological, social, economic) are untenable” (Armitage, et al., 2015: 246; Westley and Vredenburg, 1997). Transformation involves challenging established systems and structures to move towards new desirable outcomes and patterns of interaction (Blythe, Silver, et al., 2018; Patterson, Schulz, et al., 2017).

Transformation can be deliberate, but it often only becomes apparent after it has happened (Bennett, Blythe, et al., 2019; Sharpe, Hodgson, et al., 2016). Blythe (2018) has cautioned that as ‘transformation’ has become a buzzword, care is needed to ensure this discourse pays sufficient attention to the roles of power, politics and social differentiation and that it does not exclude the continued importance of resistance and other forms of change.

As Section 3.3.1 in the next chapter will explore, collaborative approaches are recognised for their ability to catalyse change (Taylor & McAllister, 2015) and influence purposive transformation towards sustainability (Senge, Lichtenstein, et al., 2007; Waddell, 2016; Waddell, Waddock, et al., 2015). In their extensive work on leading transformative change towards global sustainability, Kuenkel et al. (2021) recognise the vital role that collaboration plays, but also that:

> Unfortunately, it is clear that the capacity to collaborate in large system transformations is currently inadequate and not happening at the scale needed to progress towards the achievement of the global goals, nor to move human societies into decisive action on climate change or the prevention of biodiversity loss. This lack of capacity requires an effort of great magnitude towards increasing collaboration capacity if the challenges are to be adequately addressed in the short time necessary. (Kuenkel, Kühn, et al., 2021: 3)

Large scale collaboration is therefore needed to bring about systemic change to achieve the societal goals of global conservation. At the same time, there have been calls for transformation of the field of conservation itself to enable it to cope with rapid global change (Colloff, Lavorel, et al., 2017). Ecosystem management likewise “needs to be transformed to more adaptive, integrated, collaborative approaches to improve environmental and social outcomes” (Biggs, Westley, et al., 2010: 1; Folke, Hahn, et al., 2005). In summary, collaboration is needed to transform the broken systems that are leading to the degradation of nature; and the way that conservation operates also needs to be transformed so that it can tackle the complexity of global conservation problems.

\(^4\) A ‘system’ is “an integrated whole whose essential properties arise from the relationships between its parts” (Ison, 2008: 142). As previously described, conservation takes place within linked socio-ecological systems and therefore involves social, political and ecological systems at different scales.
2.3.2 What conservationists collaborate on?

Literature on conservation collaboration tends to fit into two main categories: research about conservation issues that are instinctively collaborative, and research about collaboration as a means of crossing different boundaries.

**Intrinsically collaborative conservation issues**

As I touched on above in the section about ‘collaborating to do conservation better’, there are some conservation issues for which collaboration is intrinsic. Various forms of collective resource-management fall into this category (Pretty & Smith, 2004). A great deal has been written about collaborative water management (e.g. Brisbois & de Loë, 2015; Imperial, 2005; Margerum & Robinson, 2015), catchment based partnerships (Potter & Jacklin-jarvis, 2019) and flood protection (Jacklin-Jarvis & Potter, 2017). Collaborative forest management has also been the subject of much research (e.g. Bixler, 2014; Coleman & Stern, 2017; Robitaille, Shahi, et al., 2017), and the vast geographic scale of many marine conservation initiatives also naturally leads to the need for collaboration (e.g. Berdej & Armitage, 2016; Friedlander, Wagner, et al., 2016; Massaua, Thomas, et al., 2017).

Collaboration is seen as a requirement for the protection of species or habitats that require connectivity across large areas; for example migratory species (e.g. Kark, Tulloch, et al., 2015; López-Hoffman, Chester, et al., 2017). Likewise, conservation activities that involve large-scale natural processes “can only happen through collaboration” (Nelson & Parrish, 2018: n.p.); for example invasive species control (Simpson, Järnevik, et al., 2009). Wyborn (2012, 2013, 2015b, 2015a) has extensively explored the collaborative philosophy of ‘connectivity conservation’ for conservation action across vast landscapes. Her research offers experience-informed principles for fostering effective collaborative practice relating to compromise, humility, learning, patience and flexibility (Wyborn, 2012).

Collaboration is additionally needed to address large scale system transformation (Kuenkel, Kühn, et al., 2021) and other societal meta-problems relating to conservation, for instance the impacts of climate change on threatened habitats globally (e.g. Plummer, 2013). Problems of this scale and nature have been described as ‘supraorganisational’ (Pasquero, 1991) and ‘extra-territorial’ (Sancino, Stafford, et al., 2021). Two fundamental studies have investigated conservation-related ‘supraorganisational collaboration’ that “aims at solving ‘metaproblems’... that is, multi-layered problems cutting across entire societies” (Pasquero, 1991: 38). Pasquero (1991) investigated a societal collaboration involving all sectors of Canadian society that aimed to transform environmental protection from a reactive to a preventative approach. He considered the contextual factors that made collaboration at such a large scale possible as well as the collaborative involvement of each stakeholder and used these details to consider how collaborative theory contributes to the case, and also how the case contributes to collaboration theory. It is a research framework similar in many respects to the one I have used. Through the use of this framework Pasquero highlights the importance of institutional analysis, as “[f]rom a supraorganizational
perspective, collaboration must be viewed as embedded in power and value networks, which are themselves located within processes of constant flux and transformation” (p.56). He draws attention to the complexity of societal learning which needs to take place at individual (including administrative, technical and psychological skills), organisational and collective levels. Finally, he shows that “a supraorganizational framework requires recasting power relationships in societal terms” (p.57). Westley and Vredenburg (1997) use grounded theory methods to examine the collaborative processes of the International Union for the Conservation of Nature (IUCN) – a supraorganisational collaboration in the domain of global biodiversity preservation. They find that extant collaborative theory does “not adequately explain collaborative processes in so complex a domain” (p.381) and offer a characterisation of the case’s founding and operating principles. Contrary to the collaborative literature, Westley and Vredenburg find that power dispersal and avoidance of centralisation and structuring were key for this dynamic supraorganisational collaboration and that “a pattern of continual uncoordinated redesign can be transformative in underorganized domains” (p.395).

Given the prominent attention paid to ‘wicked’, societal meta-problems in the conservation literature and the compelling arguments for collaboration as an approach to address them, it is surprising there is not more research on supraorganizational collaboration and how to make it work in practice.

Collaborating across boundaries

There is also a wealth of literature about collaboration as an approach for working across the various differences within the multifaceted field of conservation. This section summarises what is known about collaborating across sectors (transdisciplinarity), disciplines (interdisciplinarity) and scales (cross-scale collaboration) in conservation as these have been prominent foci within the literature. It also touches on collaboration across additional forms of difference and highlights the need for more research on the particular challenges that arise when simultaneously crossing multiple boundaries.

Transdisciplinary collaboration - As a ‘crisis discipline’, conservation requires action in the face of uncertainty to protect the “long-term viability of whole systems” (Soulé, 1985: 727). This means working across research, policy and practice to bring about positive outcomes for nature. Within the natural sciences there has traditionally been an assumption that objective knowledge created through research should be linearly transmitted for use by those concerned with policy and practice (Sunderland, Sunderland-groves, et al., 2009; Wyborn, 2015b). The failings of this simplistic assumption have led to a ‘research-implementation gap’ where, “research intended to inform conservation practice often does not, and practice often is not informed by the best science” (Lauber, Stedman, Decker, & Knuth, 2011: 1186). Transdisciplinary collaboration to bring various stakeholders into research processes has been recommended (Dick, Rous, et al., 2017; Harris & Lyon, 2013; Pooley, Mendelsohn, et al., 2014; Reyers, Roux, et al., 2010). The related concept of co-production, which sees knowing as inseparable from doing (Jasanoff, 2004), similarly calls for collaboration between a broad set of actors to integrate different types and sources of knowledge (Armitage, Berkes, et al., 2011) to target conservation problems (Muñoz-
Erickson, 2014; Wyborn, 2015c). Research about transdisciplinarity and co-production has improved the design of research so that it can better inform practice (Djenontin & Meadow, 2018), and highlighted the importance of structural connectivity in knowledge-action networks (Muñoz-Erickson & Cutts, 2016). Far fewer studies have explored how collaboration between conservation researchers, practitioners and other stakeholders can be more effective in practice. The role of ‘boundary spanners’ and ‘bridging organisations’ to help connect across sectors has been explored but these studies remain largely conceptual (Bednarek, Wyborn, et al., 2018; Berdej & Armitage, 2016; Crona & Parker, 2012; Safford, Sawyer, et al., 2017). Harris and Lyon (2013) have investigated the process of trust building in environmental collaboration between different professional cultures, and the differences between what incentivises academic, private and NGO sectors to collaborate, and there is much research on this topic in other fields (Vangen & Huxham, 2003a; Vangen & Winchester, 2014). The role of partnership ‘intermediaries’, ‘brokers’ or ‘facilitators’ – individuals or organisations that help to foster multi-stakeholder partnerships and facilitate change – is acknowledged within the sustainability literature (e.g. Masuda, Kawakubo, et al., 2022; Moreno-Serna, Sánchez-Chaparro, et al., 2020). Partnership brokering is recognised as a fluid form of cross-boundary leadership that can bridge across different levels of collaboration and encourage participation (Stott, 2018). The need for greater understanding about “how collaboration in projects operates in practice” in the environmental realm remains (Harris & Lyon, 2013: 117).

**Interdisciplinary collaboration** - Conservation biology has long been recognised as a multidisciplinary endeavour (Soulé, 1985) and the integration of a broad range of social sciences (such as political science, anthropology, economics and psychology) is increasingly seen to be vital to improve the resolution of conservation problems (Bennett, Roth, Klain, K. Chan, et al., 2017; Kareiva & Marvier, 2012). The conservation literature particularly focuses on the interdisciplinary integration of the natural and social sciences (Bennett, Roth, Klain, K. M. A. Chan, et al., 2017; Niemiec et al., 2021; Pooley et al., 2014; Robinson et al., 2019), yet despite the amount written on the subject, social science is still seen by many conservationists to reside outside the realm of conservation (e.g. Redford, 2018). Recommendations for collaboration between the natural and social sciences tend to be prescriptive and simplistic and there is a “conspicuous lack of explanation... of the corresponding processes necessary to facilitate integration” (Wallen, 2016). Turner et al., (2015) do delve into the complexities of implementing interdisciplinarity research to identify three ‘essential tensions’ that arise in interdisciplinary research: an epistemic tension between disciplinary pluralism or unity; a structural tension between flexibility and stability (see also Das & Teng, 2000) within research institutions; and an ‘affective’ tension between the comfort afforded within an established single discipline and the challenges involved in integrating disciplines to achieve novelty. They argue that although these tensions cannot be resolved they can be purposely managed to advance interdisciplinary research. There is a need to further explore how interdisciplinary collaborations are organised and to develop institutions to support collaboration between the natural and social sciences (Fischer, Tobi, et al., 2011).
**Cross-scale collaboration** – In can be difficult in conservation to match up the social scales of conservation activities with the ecological scales of the environmental problems that need to be resolved (Guerrero, McAllister, et al., 2013; Olsson, Folke, et al., 2007; Saunders & Briggs, 2002). Many conservation issues require working across geographic (i.e. local, regional, global) and temporal (i.e. short to long duration) scales. ‘Cross-scale collaboration’ is proposed to help resolve the problem of ‘fit’ or ‘scale mismatch’ in conservation (Guerrero, McAllister, et al., 2015; Wyborn, 2015a; Wyborn & Bixler, 2013). Literature in this area offers ‘co-management’, “the sharing of power and responsibility between the government and local resources users”, as a strategy to tackle multilevel conservation problems (Berkes, 2009: 1692). There is also a rich body of literature about collaborative governance in conservation (Bixler, Johnson, et al., 2016; Imperial, Ospina, et al., 2016; Lauber, Stedman, Decker, & Knuth, 2011) and adaptive governance to promote collaborative decision making at broader institutional levels by connecting actors across scales through social learning processes (Armitage, Plummer, et al., 2009; Wyborn, 2015c), however there is a need to consider the practical realities of achieving these ideals (Clement, Moore, et al., 2015). The beneficial roles of boundary organisations and knowledge brokers explicitly focused on the transmission of knowledge across scales has also been explored at length (Bednarek, Shouse, et al., 2016; Cash, Adger, et al., 2006; Nel, Roux, et al., 2016), including through social network analysis (Cvitanovic, Cunningham, et al., 2017; Meek, 2013). Wyborn and Bixler (2013) introduce the concept of ‘scale dependent collaborative advantage’, drawing on the notion of collaborative advantage (Huxham & Vangen, 2005) to suggest that collaboration across scales, “can achieve greater conservation outcomes than the sum of parts” (Wyborn & Bixler, 2013: 59).

The conservation literature explores collaboration across other boundaries to a to a lesser extent. Research about collaborating across political or jurisdictional boundaries, sometimes referred to as ‘cross-boundary collaboration’ (Kark, Tulloch, et al., 2015), has looked at the structure of interactions (Nita, Rozyłowicz, et al., 2016) and the need to share data internationally (Simpson, Jarnevich, et al., 2009). The involvement of multiple organisations in conservation collaboration is often implied but rarely explicitly investigated (exceptions include: Perz, Brilhante, et al., 2010; Westley & Vredenburg, 1997; both previously mentioned). There have been calls for the integration of different (i.e. not scientific) forms of knowledge for conservation (Miller, Baird, et al., 2008), particularly the inclusion of Indigenous Knowledge through coproduction with Indigenous communities (Hill, Walsh, et al., 2020; Rayne, Byrnes, et al., 2020; Wheeler, Danielsen, et al., 2020). Research has also looked into the different identities (Hurst, Stern, et al., 2019) and values (Sandbrook, Scales, et al., 2011) held by conservationists and identified three dimensions along which conservationists’ views vary, according to whether conservation should be: i) people-centred, ii) science-led and eco-centric, and iii) delivered through capitalism (Sandbrook, Fisher, et al., 2019).

This section demonstrates that the field of conservation requires collaboration across numerous differences or ‘boundaries’. Some of these boundaries have been extensively researched, but given the number of differences involved in conservation, surprisingly little consideration has been paid to the intersections of crossing multiple boundaries at once. There is some cross-over between the
interdisciplinary and transdisciplinary literature but this does not specifically address the practical implications of doing both at once (Miller, Baird, et al., 2008; Wallen, 2016). Perz et al. (2010) provide a rare investigation into the ways that challenges are compounded for collaborations that simultaneously cross disciplinary, organisational and international boundaries. The study, which draws on their experience within projects in the Amazon that crossed multiple boundaries, identifies strategic practices and highlights intersections. For example, “the challenges of organizational and cultural diversity were compounded by the disparate institutional systems of different countries” (ibid: 427).

2.3.3 How to collaborate in conservation

The literature offers a depth of insight into why collaboration is needed in conservation and what conservation collaborations focus on, but a significant gap remains concerning how to conduct conservation collaboration in practice. A similar gap has been identified in the human services:

_Scholars also seem to know more about the “why” and “what” question related to collaboration than the “how” question. In other words, we are generating a good stream of research on antecedents and outcomes but need more on the internal processes of partnership activity... The lack of emphasis on processes is a big knowledge gap from a practitioner’s point of view as anyone tasked with building and strengthening partnerships understands._ (Gazley, 2017: 4)

The majority of the conservation literature only gets as far as listing the numerous potential benefits and limitations of collaboration (e.g. Guerrero, Bodin, et al., 2015; Kark, Tulloch, et al., 2015; McAllister & Taylor, 2015). Kuenkel writes extensively about making collaboration work in practice and ‘enablers’ of multi-stakeholder collaboration (Kuenkel, 2019b; Kuenkel, Kühn, et al., 2021). She identifies six ‘collaboration catalysts’ each having three ‘recommended practices’, however these recommendation do not acknowledge the complexity and context-dependence of collaborative arrangements to address transformative change. For example, ‘goal clarity’ is proposed in a paragraph as a recommended practice to co-design strategy (Kuenkel, 2019b), however the extensive work on collaborative goals within the Theory of Collaborative Advantage shows how they are paradoxical, multi-dimensional and challenging to manage in practice (Vangen & Huxham, 2012).

Valuable contributions have of course been made and I have tried in the preceding sections to highlight studies that have explicitly considered collaborative processes and how to collaborate in practice. In addition to these, Kretser, Beckmann and Berger (2018) provide a rare account of a failed collaborative process and detail the lessons learned from the barriers faced in practice, which included: conflicting goals, power imbalance, lack of resources and mistrust. There is a recognised need for a “cultural shift in conservation to one that is open to the learning opportunity that failure provides”, and
for increased critical self-reflection (Catalano, Redford, et al., 2017: 584) and reflexivity⁵ (Montana, Elliott, et al., 2020). It is important to note that cases of failure are more formally recognised within the broader sustainability literature (e.g. Bebbington & Gray, 2001; Stott, 2007), including as a means to facilitate sustainability transformation (Newig, Derwort, et al., 2019).

Other work has shed light on the need for collaborative, distributive and architectural forms of leadership in large landscape conservation and a shift towards ‘enablement skills’ such as bridging, mobilising, persuasive and adaptive skills and a collaborative mindset (Imperial, Ospina, et al., 2016). Research on the research-implementation gap by Lauber et al., (2011) showed how less tangible factors such as dialogue and the quality of relationships impacted agreement about goals and the sharing of resources. Adams et al. (2016) highlight the perseverance required by partners to maintain collaborative actions over the long timescales needed for large-scale conservation despite short-term project funding and high staff turnover.

How conservation collaboration has been studied

During my review of the literature I noted that review articles (e.g. Kark, Tulloch, et al., 2015; Margerum & Robinson, 2015) and studies focussed on the quantification of collaborative interactions (e.g. Bodin, Robins, et al., 2016) and their achievements (e.g. Scott, 2015) tended to oversimplify the social dynamics involved. The diverse mesh of actors involved in contemporary conservation is often framed as networks (Imperial, Johnston, et al., 2016; Saz-Carranza & Ospina, 2011; Scarlett & McKinney, 2016) and collaboration can be understood as one type of network relationship (Imperial, 2005). Social network analysis methods are frequently used to quantify relationships (‘ties’) between actors (‘nodes’) to understand the function of interactions and to explore social processes (e.g. Bodin and Crona, 2009; Borg et al., 2015; Lauber et al., 2008; Meek, 2013). Network modelling approaches are also used to compare observed network configurations to “what would be expected to occur through chance alone”, in order to make inferences about “the presence of social processes (e.g. innovation and trust) important for conservation and natural resource management” (Morgans, Guerrero, et al., 2017: 239). These techniques have been used to investigate: information sharing, trust and shared interests as components of social capital (Borg, Toikka, et al., 2015), scale mismatches in conservation planning (Guerrero, McAllister, et al., 2013), and the structural phases of collaboration over time (Lauber, Stedman, Decker, Knuth, et al., 2011).

Although these approaches produce quantified results, they do not naturally produce insights that can be used in practice to inform decision-making in interorganisational collaborations. Social science approaches that use interview methods and detailed case studies have contributed important insights (e.g. Westley & Vredenburg, 1997; Wyborn, 2015c), and event ethnography has been used to study international conservation conferences (Corson, Campbell, et al., 2019), however participatory and action research approaches remain extremely rare in conservation. Participatory action research:

⁵ ‘Reflexivity’ describes an ability to take a step back to critically assess assumptions and consider one’s own actions in order to learn from the past and consider possible futures (Montana et al., 2020).
can be a valuable tool for the participatory management of natural areas, through the “co-production of knowledge”; which is understood as a collaborative endeavor of academic and non-academic actors with the goal that the results of their research will result in the promotion of natural resources management actions. (Valencia, Riera, et al., 2012: 46)

Action-research approaches are actor-oriented and grounded in local realities (Bacon, Mendez, et al., 2005). They directly involve non-researcher participants to explore issues they face in practice and are therefore transdisciplinary in nature. This research uses a form of action research (RO-AR) to contribute towards addressing the research-implementation gap in conservation and to generate practice-informed insights about how to enable collaboration in conservation (see Section 4.3.1). In so doing, it aims to contribute to the identified gap in the conservation literature in this area.

2.4 Research settings

This research investigates ‘supraorganisational collaboration’ (Pasquero, 1991) relating to conservation within two very different research settings: the Cambridge Conservation Initiative (CCI) and the Biodiversity Revisited Initiative (BioRev). ‘Supraorganisational collaboration’ represents a particular type of ‘interorganisational collaboration’ (van de Ven, 1976; Vangen, Hayes, et al., 2015) or ‘action set’ (Aldrich and Whetten, 1981; Imperial, 2005) that aims to address complex, societal meta-problems. Collaboration at this scale is badly needed (Kuenkel, Kühn, et al., 2021) but it remains understudied. Research within the two settings involved interorganisational collaboration that took place at different scales and durations including: specific, short-term collaborative projects, longer-term and more strategic collaborative programmes and sustained collaboration between entire organisations (sustained organisational collaboration).

As described in Section 1.2 and shown in Figure 1, this research additionally studies the research settings themselves and the broader field of conservation as the contexts within which researched collaborations took place.

The two research settings are introduced below in terms of their structure and process. Research findings that specifically relate to context are integrated into the three findings chapters (Chapters 5-7) later in the thesis.

2.4.1 The Cambridge Conservation Initiative (CCI)

The Cambridge Conservation Initiative (CCI) is a high-level, sustained collaboration founded in 2007 to address global challenges in the conservation of biodiversity and ecosystems. The collaborative relationships involved are interorganisational, but also cross-sectoral (involving NGOs and an academic institution) and multi-stakeholder (involving networks) (Stott & Murphy, 2020). CCI is additionally considered a ‘supraorganisational collaboration’ because partners are working together to address
societal conservation meta-problems (Pasquero, 1991; Westley & Vredenburg, 1997). Such collaborations are not common, however others do exist – for example the Center for Collaborative Conservation based at Colorado State University (Colorado State University, 2021).

CCI was created by ten independent partner institutions, including the University of Cambridge (across six departments) and nine organisations and networks, that are all based in or around Cambridge, UK (see Box 3 for details about the founding CCI partners). Working together, the partners describe the Initiative as a “unique collaboration of expertise and experience” and share a mission to, “deliver transformational approaches to understanding and conserving biodiversity and the wealth of natural capital it represents” (CCI, n.d.: 3). CCI was created to complement existing conservation efforts, and it is explicitly committed to helping others to achieve greater conservation impact.

Somewhat confusingly, CCI is both a research setting for various collaborative projects and programmes, and itself a researched collaboration at the broader level of sustained organisational collaboration. All three types of collaboration (project, programme and sustained organisational) are interorganisational in that they involve individuals from across the organisations that make up CCI.

CCI is funded through donations from a variety of benefactor Foundations and Trusts. In December, 2015 the Cambridge-based CCI community co-located into a purposefully refurbished building in the centre of Cambridge (CCI, 2019a). The ‘Cambridge Conservation Campus’, houses the Museum of Zoology, the Charles Babbage Lecture Theatre (one of the largest at the University of Cambridge) and the CCI Campus which has been named the David Attenborough Building (colloquially referred to as ‘the DAB’, see Figure 3). Donations from Foundations including the MAVA Foundation, the A. G. Leventis Foundation and the Garfield Weston Foundation made the £57.8 million refurbishment (£30 million representing the cost of the DAB) possible (ibid).

The following sections provide pertinent background information about the structure and processes of CCI as both a sustained organisational collaboration and collaborative context.

**Box 3. CCI founding partner organisations** (reproduced directly from CCI, n.d.: 8–9)

**University:**

**University of Cambridge** – Six departments of the University of Cambridge were directly involved when CCI was founded including: Zoology, Plant sciences, Geography, Land Economy, Cambridge Judge Business School and Cambridge Programme for Sustainability Leadership. The University of Cambridge Conservation Research Institute (UCCRI) was later established in 2016 as one of the University’s eleven Interdisciplinary Research Centres to bring “the natural sciences and technology into intellectual dialogue with the arts, humanities and social sciences” and form the academic ‘engine room’ of CCI (University of Cambridge, 2021). [www.conservation.cam.ac.uk/](http://www.conservation.cam.ac.uk/)

**Conservation Organisations:** (reproduced directly from CCI, n.d.: 8–9)
BirdLife International is a strategic global partnership of conservation organisations in over 100 countries, working to conserve birds, their habitats and global biodiversity, and to promote sustainability in the use of natural resources. ([www.birdlife.org](http://www.birdlife.org))

British Trust for Ornithology (BTO) is an independent scientific research trust specialising in impartial evidence-based knowledge and advice about populations, movements and ecology of birds and other wildlife. ([www.bto.org](http://www.bto.org))

Fauna & Flora International (FFI) acts to conserve threatened species and ecosystems worldwide, delivering global and regional programmes of conservation and community projects. ([www.faunaflora.org](http://www.faunaflora.org))

RSPB speaks out for birds and wildlife, tackling the problems that threaten our environment. It is the largest wildlife conservation organisation in Europe, with over a million members. It works to secure the conservation of wildlife through research, education, habitat management and advocacy. RSPB is the BirdLife International partner in the UK. ([www.rspb.org.uk](http://www.rspb.org.uk))

TRAFFIC is a global wildlife trade monitoring network that works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. ([www.traffic.org](http://www.traffic.org))

Tropical Biology Association (TBA) is dedicated to building the capacity and expertise of people and institutions to conserve and manage biodiversity in tropical regions. ([www.tropical-biology.org](http://www.tropical-biology.org))

UNEP World Conservation Monitoring Centre (UNEP-WCMC) is the specialist biodiversity assessment arm of the United Nations Environment Programme, the world’s most foremost intergovernmental environmental organisation. The Centre delivers scientific analysis to the UN, multi-lateral environmental agreements, national governments, organisations and companies to use in the development and implementation of their policies and decisions. ([www.unep-wcmc.org](http://www.unep-wcmc.org))

Networks:

International Union for the Conservation of Nature (IUCN) is the world’s oldest and largest global environmental network. It helps the world find pragmatic solutions to our most pressing environment and development challenges by supporting scientific research; managing field projects; and bringing together governments, NGOs the UN, international conventions and companies together to develop policy, laws and best practice. ([www.iucn.org](http://www.iucn.org))
Cambridge Conservation Forum (CCF) is a network that links the diverse Cambridge-based community of conservation practitioners and researchers working at local, national and international levels. (www.cambridgeconservationforum.org)

Figure 3. The David Attenborough Building – Some of the individuals that make up the Cambridge Conservation Initiative (CCI) posing in the David Attenborough Building (DAB). Photo credit: Phill Mynott
CCI structure

In this section I describe the structure of CCI as a sustained organisational collaboration (also referred to as ‘the collaboration’) between the 10 founding organisations (also referred to as ‘partners’). The CCI Council is the primary decision-making body for CCI. It consists of 14 members: a senior representative from each of the 10 partners, plus the Executive Director of CCI, the Director of the MPhil in Conservation Leadership⁶, the Director of the University of Cambridge Conservation Research Initiative (see below), and the Pro-Vice-Chancellor for Research at the University of Cambridge. The CCI Council works “on behalf of the CCI partners [to] adopt and oversee progress on achieving the CCI Strategy” (CCI, 2019b). An Advisory Board, made up of 9 prominent business and academic leaders and entrepreneurs, “provides guidance on the global niche and future direction of CCI, helping to identify new strategic opportunities and secure support for CCI collaborative activities” (CCI, 2019b).

The Executive Director’s Office (EDO, otherwise known as the ‘CCI Team’) facilitates and supports a broad range of CCI programmes, projects and collaborative activities on a day-to-day basis. The growing team, which is led by the Executive Director (ED) of CCI and based in the DAB, is not itself a legal entity but is hosted by the University of Cambridge Judge Business School. Of the three ideal forms of governing collaborations (‘networks’ in their terms), classified by Provan and Kenis (2008), the EDO is a form of centralised Network Administrative Organisation that acts independently from partner organisations and “plays a key role in coordinating and sustaining” the collaboration (p.236).

The DAB provides workspace for around 500 individuals; 150 of whom are associated with the University of Cambridge, and 350 from CCI’s other organisational partners (CCI, 2019a). Not all of CCI’s partner organisations fully re-located into the DAB – some chose to remain based at their original premises in and around Cambridge, and their staff occasionally make use of hot desks within the building. Other partners have a proportion of their staff based within the DAB, with other staff based elsewhere. The DAB is divided into separate areas for each of the partner organisations based there. There are also a number of shared areas including: seminar and meeting rooms, communal spaces, library, printing facilities, common room with kitchen, and atrium with reception. The structure of CCI is diagrammatically represented in Figure 4 below.

CCI process

Organisational partners of CCI have signed a Memorandum of Understanding (MoU) which outlines their commitment to conservation and to working together. The MoU (last updated in 2014) specifies that each partner commits to contributing ‘an appropriate share’ of resources, effort and senior representation for governance and decision-making and to playing a role in the promotion and business development of the collaboration. The collaboration has legally binding grant agreements with

⁶ Who incidentally also happens to be my husband. More on this in section 4.3.7 about ethics.
Foundations, for example with the MAVA Foundation for its contribution to the Cambridge Conservation Campus.

The CCI Council who govern the collaboration meet privately every two months to discuss Council Papers which are circulated in advance, and their deliberations are formally documented by the EDO. Members of the Council take it in turns to serve as Chair for six months following nomination. Decisions are categorised at different levels depending on the degree to which they require wider consultation at partner level. The CCI Council have an annual retreat to discuss broader issues of strategic significance to the collaboration. Council members also participate on Task Teams (temporary) and Working Groups (permanent) to progress work in specific areas or oversee ongoing collaborative programmes, reporting
Figure 4. A diagrammatic representation of the structure of CCI – Organisational partners (yellow), which differ in size (roughly represented by different sized boxes) and type (indicated), are each shown partially within and outside CCI (light green shading, extent not shown). The CCI Council (green), which has representation from each partner organisation, is the primary decision-making body of the collaboration. The Executive Director’s Office (EDO, orange) facilitates and supports collaborative activity within CCI and is governed by the CCI Council. It is technically hosted by the Cambridge Judge Business School (CJBS) within the University of Cambridge (not shown), and is not a separate legal entity. The Executive Director is a member of the CCI Council and leads the EDO. The Advisory Board (blue), which is external to the collaboration, provides strategic guidance through the CCI Council. CCI Services Ltd. (grey) was collectively created by the partner organisations to manage the Conservation Campus facilities. CCI lacks an outer boundary in the diagram to represent uncertainty and disagreement around what and who is considered to be part of the collaboration in practice.
back to the entire CCI Council. For example, there are Task Teams to develop the CCI Theory of Change⁷, and to oversee the development of the next CCI Strategy, and Working Groups to coordinate communications across the collaboration, and to oversee CCI’s collaborative programmes.

The CCI Strategy 2012-2020, the collaboration’s first, communicates its long-term vision and outlines strategic objectives, programme activities and themes of focus to guide collaborative activity. It states the mission of CCI, “to deliver transformational approaches to understanding and conserving biodiversity and the wealth of natural capital it represents”, and vision: “to secure a sustainable future for biodiversity and society through an effective partnership of leaders in research, education, policy and practice” (CCI, n.d.: 3). Achievement of the vision will require innovation and collaboration across differences:

*Delivering the [CCI] strategy requires institutions, and the people who work in them, to cross traditional boundaries between research, policy and practice, between disciplines and between cultures. It involves taking risks, exploring new ways of working and embracing new ideas. In adopting this strategy, all CCI partners are committing to work more closely together in the belief that this will make a significant difference to biodiversity conservation. (CCI, n.d.: 7)*

A more detailed Five Year Plan 2015-2020 was developed following the CCI Strategy (and later updated in 2016) to provide, “a direction of travel for CCI collaborations and the tools to shape them” (CCI, 2017: 1). The plan calls for transformational change and broadly divides the collaboration’s activities into: research to inform policy and practice, and developing capacity and leadership. It also describes the collaborative approaches that CCI has developed, which include (amongst others):

- **Masters in Conservation Leadership**, a collaborative degree programme that involves all CCI partners in offering an innovative, post-experience degree programme that seeks to establish a force for change
- **‘Big’ collaborations [programmes]** around globally significant conservation challenges (e.g. placing biodiversity at the heart of natural capital, large-landscape restoration), combining the skills, knowledge and networks of each partner to develop novel and transformative conservation solutions
- **Harnessing Cambridge’s convening power**, through the organisation of a comprehensive programme of events, targeted at a range of audiences, to promote conservation research, policy and practice

---

⁷ The term ‘Theory of Change’ (ToC) describes an established “decision support tool that illustrates the causal links and sequences of events needed for an activity or intervention to lead to a desired outcome or impact and articulates the assumptions underlying each step in the chain” (Biggs, Cooney, et al., 2016: 7). CCI used this tool in practice. It is important to clarify that this is different from the theoretical contributions this thesis makes in relation to change.


- **Funding collaborative approaches** – *CCI established the Collaborative Fund for Conservation in 2009, to stimulate partners to collaborate.* (CCI, 2017: 10)

CCI’s collaborative programmes include: the Endangered Landscapes Programme; the Natural Capital Hub; and the Arts, Science and Conservation Programme. Each of these programmes is governed by their own Working Group and managed by staff within the EDO. The EDO additionally organises seminars and trainings, raises awareness about CCI’s work, engages with the public and raises funds for collaborative work (CCI, 2021). Their work aims to create an environment where formal and informal collaboration can thrive. A four-phase process to develop CCI’s next 10 Year Strategy was initiated by the CCI Council in 2019 and carried out by the EDO. The first phase of this process, to consult the wider CCI community about their views on the future of the collaboration, became a primary focus of this research.

2.4.2 The Biodiversity Revisited Initiative

The Biodiversity Revisited (BioRev) Initiative began from a normative position of concern that the planet continues to be degraded and that the conceptualisation of ‘biodiversity’, which has lacked political and economic traction, has contributed to the biodiversity crisis we are currently experiencing. As its name suggests the project aimed to revisit the concept of biodiversity. With funding from the NOMIS Foundation, and subsequent additional funding from the MAVA Foundation and others, the project set out to develop a new five-year research agenda for biodiversity to effectively sustain the biosphere, based on “the first comprehensive review of the concepts, narratives, governance, science, systems and futures underpinning biodiversity science since the emergence of the term in the 1980s” (Luc Hoffmann Institute, 2021). The year-long Initiative was coordinated by the Luc Hoffmann Institute (LHI), in collaboration with World Wide Fund for Nature (WWF), FutureEarth, ETH Zurich Department of Environmental Systems Science, University of Cambridge Conservation Research Institute (UCCRI) and the Centre for Biodiversity and Environment Research at University College London (Luc Hoffmann Institute, 2021).

BioRev was therefore an interorganisational collaboration with a transformational, supraorganisational purpose. The design of the Initiative involved collaboration between organisations of different types (NGOs, universities, and networks) and its implementation involved participation by individuals from over 30 organisations. However, unlike CCI, which can be described as a sustained interorganisational collaboration, BioRev was a discrete and relatively short-term collaborative project with LHI as the lead organisation (Provan & Kenis, 2008).

**Biodiversity Revisited structure and process**

BioRev was conceived in late 2018 and progressed through three overlapping phases that can be described as: set-up, planning and implementation. The initial set-up phase began in early 2019 when the Secretariat team was formed and the Steering Committee was convened to govern the Initiative. The
Secretariat was made up of a combination of existing LHI staff and consultants hired for specific project roles, including myself to study the social dynamics of the Initiative. The Steering Committee, composed of invited senior representatives from the partner organisations and other influential individuals, met a total of four times over the course of the Initiative (twice face-to-face, twice virtually) to oversee its development and implementation.

The Initiative was developed through an intentionally emergent and iterative approach based on core principles that were established during the first Steering Committee meeting. These included: inclusivity; accessibility of outputs (open source); success through innovation, open-mindedness, flexibility and awareness of assumptions; long-term thinking and lasting impact; shared leadership to ensure shared ownership; strong focus on early- and mid-career experts and non-natural science; perceived as non-threatening by mainstream conservation (‘horizon 1’); and pluralist (i.e. not consensus-based) [2019-01-21KD–Design_Meeting_Agenda_summarised]. Although not explicitly stated in this original list, diversity also became a central principle for the project.

The planning phase involved the commissioning of research, provocative writing pieces and various other contributions alongside organisation of the Symposium event. This was largely carried out by the Secretariat, under the guidance of the Steering Committee. The Secretariat ran an Early Career Essay Competition inviting early-career researchers and practitioners to submit innovative essays related to the project’s mission (Luc Hoffmann Institute, 2020). Eight winners were chosen by a panel of six judges (mostly Steering Committee members) from the 149 essays received. Winners were awarded CHF 1,000 and an expenses-paid invitation to attend the Symposium. A series of background reviews and provocative essays were commissioned by experts and the remaining participants were selected and invited to the Symposium as plans took shape. The Secretariat worked closely with The Value Web, a hired consultancy of expert facilitators, to plan the Symposium.

The Symposium, which brought a total of 80 participants together in Vienna, Austria from September 11-13, 2019, marked the beginning of the implementation phase. Following the Symposium, a self-selecting sub-set of participants volunteered to develop the Research Agenda, the project’s ultimate deliverable. This smaller group of 30 worked together largely remotely, but also face-to-face during two ‘write shops’, to co-produce what became the ‘Research and action agenda for sustaining diverse and just futures for life on Earth’ (Wyborn et al., 2020). Figure 5 below shows a diagrammatic representation of the structure of the Initiative.

In a recent publication about the research and action agenda, Wyborn et al. (2020) include a description of the process of the Initiative and a timeline of events (directly reproduced in Figure 6). The project and its participants produced a variety of additional outputs including high-profile publications in Nature Sustainability about Imagining Transformative Biodiversity Futures (Wyborn, Davila, et al., 2020) and the Initiative’s collaborative process (Contestabile, 2020); a Thematic Issue about the Initiative in Environmental Conservation (for example: Beck & Forsyth, 2020; Elliott, 2020); a Fuller Seminar as part of the WWF Fuller Science for Nature series; Seeds of Change, a compilation document of the background reviews and provocative essays prepared for the Symposium (Wyborn et al., 2019); amongst others.
Figure 5. A diagrammatic representation of the structure of Biodiversity Revisited – Organisational partners (yellow) differ in type (indicated). The Luc Hoffmann Institute (LHI) is the Lead Organisation for the collaborative project (light green shading). The Steering Committee (green), which had representation from each partner organisation plus other influential stakeholders, was the primary decision-making body for the project. The Secretariat (orange), which sat within LHI, carried out much of the planning and implementation of the project. It worked closely with The Value Web to plan and implement the Symposium event. Participants of the Symposium (light blue) included some Steering Committee members and members of the Secretariat. A sub-set of these participants volunteered to work together to bring the Research Agenda forward following the Symposium event (dark blue). Biodiversity Revisited lacks an outer boundary in the diagram to represent uncertainty and disagreement around what and who was considered to be part of the project in practice.
Figure 6. A timeline of the Biodiversity Revisited Initiative – from February 2019 to June 2020. Orange hollow circles represent in person meetings, blue circles represent written inputs to the process and green circle represents a series of online meetings and discussions. The process involved close to 300 people in total, noting that the number of participants on the timeline is a total by event, there was a core group of around 5-10 who were present at events throughout (reproduced directly from: C. A. Wyborn, Montana, et al., 2020: 1090).
2.5 Summary of Context

In this chapter I have introduced conservation as the institutional field within which researched collaborations took place, but also a subject of the research in its own right. I have explored the extant conservation literature relating to collaboration, identifying themes relating to why collaboration is needed, what research on collaboration has focused on, and how collaboration is implemented. I identify a clear need for additional practice-based knowledge to inform the implementation of conservation collaboration, along with a need for more research about supraorganisational collaboration addressing societal meta-problems within the conservation domain.

To address these gaps, this interdisciplinary research draws on the TCA from the field of management and utilises a RO-AR approach to develop practice-based insights for collaboration in conservation. In the next chapter I will introduce the TCA, highlighting themes that are particularly relevant to the conservation context, to show how this theory can contribute to the field of conservation and to identify areas where the theory could potentially be expanded to meet the needs of this context.
Chapter 3 – Practice-based theory about collaboration

3.1 Introduction to Chapter 3

The previous chapter identified a need in conservation for additional research about how to make collaboration work in practice. The Theory of Collaborative Advantage (TCA) offers decades of insight gained through rigorous practice-oriented research into the management (Huxham & Vangen, 2005), leadership and governance (Vangen, Hayes, et al., 2015; Vangen & Huxham, 2014) of interorganizational collaboration and the realities of making collaboration work within a variety of contexts. This chapter begins by describing the key tenets of the TCA including the concepts of collaborative advantage and inertia and the use of paradox and tension as conceptual instruments. Once these foundations have been introduced the chapter goes on to explore what is known about two foundational themes of the TCA that are particularly relevant to the context of conservation.

All collaborations must negotiate goals and in Section 3.2 I summarise how the TCA conceptualises the inherent complexity of negotiating collaborative goals in practice. Goals relating to change are particularly important for collaborations in conservation and I explore the extant conservation and sustainability literature in this area and consider it alongside insights from the TCA. The theme of cultural diversity, which is also foundational to the TCA as it underpins the very concept of collaborative advantage, is introduced in Section 3.3. Diversity is a central consideration for collaborations seeking to address societal conservation issues because this regularly involves collaborating between disciplines, scales, sectors, organisations and jurisdictions (as shown in section 2.3.2). A review of literature in this area identifies a need for greater consideration of how to collaborate effectively across differences in practice.

It is important to note that as my research approach involved bringing ideas from these themes of the TCA into research oriented action research (RO-AR) interventions with conservation collaborations,
This review of TCA literature additionally serves to underpin the study’s methodological approach, which is presented in the following chapter.

This interdisciplinary review of literature about the TCA and collaboration in conservation shows that these disciplines have things to offer each other. The rigorous practice orientation of the TCA offers the field of conservation valuable insights about how to manage and govern interorganisational collaborations that are themselves incredibly complex in practice. At the same time, literature from the fields of conservation and sustainability (see Box 4) offer valuable insights into the particular requirements of collaborating to address ‘wicked’ problems, and towards goals for transformational change.

**Box 4. Delineating the relationship between ‘conservation’ and ‘sustainability’**

Both of the terms ‘conservation’ and ‘sustainability’ are variously defined. The term ‘conservation’ is used within this thesis (as stated in Section 2.2.1) to encompass, “actions that are intended to establish, improve or maintain good relations with nature” (Sandbrook, 2015: 565).

‘Sustainability’ is a broader term that was originally defined in the Brundtland Report (Brundtland, 1987) as follows:

*Humanity has the ability to make development sustainable – to ensure that is meets the needs of the present without compromising the ability of future generations to meet their own needs.* (p.24)

The concept of sustainable development incorporates consideration of the environment alongside economic development. Sustainability therefore requires simultaneous consideration of social, economic and environmental dimensions (Purvis, Mao, et al., 2019). In 2015, all member states of the United Nations adopted *The 2030 Agenda for Sustainable Development* which outlined the 17 Sustainable Development Goals (UN General Assembly, 2015). ‘Environmentalism’ has traditionally been used to describe social movements relating to the protection of nature, wilderness and eco-efficiency (Armiero & Sedrez, 2014), but also more recently to embrace, “multiple societal goals, including material and spiritual well-being, justice, sustainability and democracy” (Lele, 2021: 6)

The specific focus of this thesis is the field of conservation for two important reasons. Firstly, participant organisations and individuals generally identified with the field of conservation, although their work may intersect with wider sustainability issues. Secondly, I deemed it important for the successful delivery of this interdisciplinary thesis to draw the boundary of my investigation at conservation because I believed sustainability to be too broad a subject for this collaborative study.

Having said that, it is important to establish my understanding of the relationship between the two concepts. For me, the emphasis of the field of conservation is the environmental dimension, even though social and economic concerns are often relevant. Many conservationists are specifically committed to the preservation of biodiversity into the future. I therefore consider conservation to be a
subset of the wider concept of sustainability which invariably considers social, economic and environmental dimensions to ensure that future generations are able to meet their needs.

The review of literature within this chapter, and the wider thesis, is focused on the field of conservation; however, I have incorporated key references from the broader sustainability literature when they were deemed of particular relevance to this study.

3.2 Overview of the Theory of Collaborative Advantage

The Theory of Collaborative Advantage (TCA) is a comprehensive collection of theoretical conceptions about the management (Huxham & Vangen, 2005; Vangen & Huxham, 2014), leadership and governance of interorganizational collaboration (Vangen, 2016; Vangen, Hayes, et al., 2015). As the name suggests, the concept of ‘collaborative advantage’ is the cornerstone of the theory (Huxham & Vangen, 2005). The term was originally used in this way by Huxham (1993) to describe the additional creativity and synergy that is produced through collaboration, and not possible by any one organisation on its own. Kanter (1994) similarly used the term ‘collaborative advantage’ early on to describe the creation of new value through the combination of collaborators’ skills, however his focus was collaborative advantage as a corporate asset. The term contrasts ‘competitive advantage’ which considers the value a single firm can create through the implementation of competitive strategy (Porter, 1985).

In the words of Vangen and Huxham (2014), collaborative advantage describes “the synergy that can be created through joint working”, while collaborative inertia describes the all too frequent “tendency for collaborative activities to be frustratingly slow to produce output or uncomfortably conflict ridden” (p.52). Collaborative advantage, which is also sometimes referred to as ‘synergy’ (Huxham, 2003a; Vangen, 2016), is ultimately “achieved through the synthesis of differences” (Vangen, 2016: 264). It is important that the concept of collaborative advantage is introduced alongside the concept of collaborative inertia because collaborations very commonly experience inertia in practice, and though desired, collaborative advantage can be difficult to achieve (Huxham & Vangen, 2005). Huxham and Vangen (2005) feature ten tips for collaborating (p.37) which highlight the difficulties of achieving collaborative advantage, and the ongoing evolution of the theory to explore paradox and tensions in the management, leadership and governance of collaboration.

Siv Vangen and Chris Huxham have developed the TCA since it began in 1989, working with a number of practitioners and increasingly with other colleagues and PhD students to research collaborations of various types from many different contexts (Vangen & Huxham, 2014). What sets the TCA apart is its commitment to better understanding and theorizing the complexities of collaborative practice. In order to do so, the TCA is developed primarily through RO-AR, “a phenomenological methodology for researching organizational processes and practices”, to derive theoretical conceptualisations from the rich insights that can be gained by working with collaborators on issues that are important to them in the real world (Eden & Huxham, 2006: 388). Conducting research in this way
directly connects research and practice and grounds the resulting theory in the realities of everyday practice, enabling it to be academically robust, but also recognizable and usable to collaborative practitioners (Huxham & Hibbert, 2011; Huxham & Vangen, 2003; Vangen, 2019). RO-AR, and the TCA developed using this approach, offer a valuable means of bridging the so called ‘research-implementation gap’ that has been identified in conservation (see Section 2.3.2).

The TCA initially focused on the management of collaboration (Vangen and Huxham, 2005), but it additionally explores the governance of collaboration (Vangen, 2016; Vangen, Hayes, et al., 2015). A focus on governance is pertinent for the context of conservation because collaborative governance is a prominent subject of research in public administration (e.g. Ansell & Gash, 2008; Emerson, Nabatchi, et al., 2012), natural resource management (Guerrero, Bodin, et al., 2015; Imperial, 2005) and conservation (e.g. Bodin, 2017; Wyborn & Bixler, 2013); however, insight into the governance of collaboration and how collaborative structures and processes can be designed to help collaborations to work effectively in practice is badly needed in conservation, as the previous chapter established. Regarding governance, the TCA explicitly explores the governance of collaborative entities, and the ways that collaborations can themselves be governed to enhance their effectiveness, as opposed to collaborative governance which instead investigates how wider governance can be achieved through the establishment of collaborations (Vangen, Hayes, et al., 2015). In this work Vangen et al. (2015) use the term ‘structure’ to mean “different types of partners that are involved and the structural connections between them”, and ‘process’ to mean “ways of communicating, sharing responsibility and taking decisions” (p.1244). The previous chapter also showed that the conservation literature primarily focuses on collaborative structure at the expense of investigating collaborative process (see Section 2.3.3).

The TCA is organized into overlapping themes (Huxham, 2003a; Huxham & Vangen, 2005; Vangen, 2016) that have been “identified from research with practitioners as affecting the success of a collaboration” (Vangen, 2016: 264). Among the main themes that have been explored, which are shown in Figure 7 (reproduced directly from: Huxham & Vangen, 2005), this chapter focuses on reviewing what is known about two themes perceived to be of particular relevance to collaboration in conservation: collaborative aims (Section 3.2, as touched on in Section 2.3.1 and in the findings presented in Chapter 5) and cultural diversity (Section 3.3, as touched on in Section 2.3.2 and in the findings presented in Chapter 6). Additional concepts shown to be important within research findings that sit under other themes of the TCA will also be drawn on to a lesser extent (e.g. learning and risk). Under all themes, the TCA acknowledges, accommodates and helps to raise awareness and understanding about the inherent complexity of interorganisational collaboration and the challenges of implementing it in practice (Huxham & Vangen, 2005; Vangen & Huxham, 2014). In so doing, the theory can empower collaborative practitioners by legitimizing the challenges they inevitably face and help them to realise that they are not alone in their struggles to manage the complexity of collaboration (Huxham & Vangen, 2004, 2005). The TCA shows that the achievement of collaborative advantage requires “active attention and nurturing if problems of collaborative inertia are to be minimized” (Huxham & Vangen, 2005: 71).
Recognising that all collaborations are unique, complex and dynamic, the theory does not prescribe universal ‘solutions’ to the challenges faced; instead it is framed more broadly to highlight the underlying causes of common challenges to support practitioners to consider how they can make decisions that will best enable their collaboration to achieve advantage (Huxham, 2003a; Huxham & Vangen, 2005; Vangen & Huxham, 2010, 2012, 2014). The conceptualisations and frameworks presented in the TCA are referred to as ‘handles of reflective practice’ (Huxham & Hibbert, 2011; Huxham & Vangen, 2005) because they offer “a structure for sense-making and consideration of alternatives” (Huxham & Vangen, 2005: 35).

Figure 7. Themes of the TCA – The TCA is made up of overlapping themes that have been derived through ROAR with collaborative practitioners (Reproduced directly from: Huxham and Vangen, 2005: 12).

3.2.1 Paradox framing and conceptualised management tensions

The TCA uses the constructs of paradox and tension as conceptual tools to help understand how collaboration works in practice and to support practitioners to more effectively manage collaboration towards the achievement of collaborative advantage (Huxham & Vangen, 2005; Vangen, 2016; Vangen & Huxham, 2014). These terms can be difficult to pin down as they have been used inconsistently across the wider collaborative literature. In this section I describe how they are used within the TCA.

Vangen (2016) has written extensively on the use of ‘paradox’ as a lens through which interorganisational collaboration can be understood and enabled. In this work she uses the definition by Schad et al., (2016) of paradox as a “persistent contradiction between interdependent elements” (p.6). Vangen outlines five ways in which paradox can be used as a conceptual device to “develop practice-oriented theory on governing, leading, and managing collaborations” (Vangen, 2016: 264). First, collaborations are explicitly recognised as inherently paradoxical in nature because they simultaneously require difference to bring the potential for collaborative advantage, and similarity to be able to progress together. As such, collaborations are inevitably “characterized by contradictions and compromises” (ibid:
Second, a ‘paradox lens’ can form part of a research methodology that appropriately captures the complexity of collaboration rather than oversimplifying it, as was found in Chapter 2 (Section 2.3.3) to often occur within the conservation literature about collaboration. Third, once the paradoxes that manifest in collaborative practice are ‘detected and named’ they can be useful as tools to help convey “why there cannot be one optimal solution to aid action in practice” (ibid: 267). This realisation can be reassuring to practitioners who have found themselves unrealistically striving to resolve unresolvable collaborative paradoxes. Fourth, identified paradoxes lead to tensions in practice that can themselves be conceptually elaborated. Huxham and Beech (2003) provide an approach for doing so which is explored in more detail below. Fifth, well-constructed theoretical concepts can help practitioners to reflect about and consider “contradictory, equally valid, but opposing solutions to governing, leading and managing collaborations” (Vangen, 2016: 270) to determine what will work best for the unique circumstances of their collaboration.

Two key paradoxes have been detected, named and explored within the TCA. The goals paradox will be described in Section 3.2 about collaborative goals (Vangen & Huxham, 2012), and the culture paradox will be covered in Section 3.3 about cultural diversity (Vangen & Winchester, 2014). These underlying paradoxes generate a variety of observable ‘tensions’ during the enactment of collaboration that have been extensively studied and conceptually elaborated through RO-AR. The TCA seeks “to recognize and work with tensions in possible managerial actions rather than seeking to resolve them” (Huxham & Vangen, 2005: 250). One way of doing so is through the conceptualisation of management tensions that can support collaborative practitioners to consider different options for managing collaborative tensions in practice (i.e. reflective practice). Using the approach developed by Huxham and Beech (2003), management tensions are formulated to present “extreme opposite yet equally valid forms of possible actions” (Vangen, 2016: 268). Conceptualising options for managing tensions in this way encourages consideration of the costs and benefits associated with each extreme, and encourages the creation of practical alternative management options that lie somewhere between these extremes (Huxham & Beech, 2003). Examples of conceptualised management tensions that relate to cultural diversity are presented in Section 3.3 below, and the approach is explained in more detail within Chapter 8 – Discussion where I develop a management tension as part of the contribution of this thesis.

The next two sections of this chapter will elaborate on these foundations of the TCA under the themes of collaborative goals and cultural diversity, and summarise conservation and other relevant literature in these areas to provide an interdisciplinary picture of what is known in relation to the findings of this research.

3.3 Collaborative goals

Collaborations need to have some shared understanding about what it is they are aiming to achieve together. A great deal of literature points to the importance of goal ‘agreement’ for the success of
a collaboration (e.g. Ansell & Gash, 2008), but the complexity of negotiating collaborative goals in practice is often underappreciated. Through years of practice-oriented research with numerous interorganisational collaborations, Vangen and Huxham (2012) develop a goals framework and use paradox and tension as conceptual tools to explore the inherently complex development of collaborative goals. These conceptual instruments can then be used by practitioners as ‘handles for reflective practice’ to support consideration and understanding about the management, leadership and governance of collaborative goals (Vangen, 2016; Vangen & Huxham, 2014).

Vangen and Huxham (2012) identify a goals paradox in interorganisational collaboration between goal congruence and goal diversity:

*Goal congruence is therefore essential as it allows greater alignment between partners’ goals and the joint goal for the collaboration, which in turn increases partners’ commitment to it. Nevertheless, the reliance on congruent goals in collaborative contexts is problematic. In most situations, diversity of expertise and resources is essential to gaining truly synergistic advantage from collaborating and this, in turn, implies diversity of partners’ goals.* (Vangen & Huxham, 2014: 52)

Over the course of nearly two decades, as part of their wider program of work to develop theory about managing interorganisational collaborations (Huxham & Vangen, 2005), Vangen and Huxham used a RO-AR approach to “explore the relevance and validity of the goals paradox” (Vangen & Huxham, 2012: 732). They conceptualise the phenomenon through the development of a goals framework made up of six dimension that can be used to differentiate between collaborative goals. The dimension of this framework are as such:

- **Level** – recognising the scale at which collaborative goals are being considered. This includes: *collaboration goals*, “what partners aspire to achieve together” (ibid: 741); *organisational goals*, “the aspirations for the collaboration of each of the organizations involved” (p.741); and *individual goals*, “the aspirations of the individuals involved” (p.744).

- **Origin** – distinguishing the formulation of collaborative goals by members of the collaboration itself from the imposition or influence of external stakeholders.

- **Authenticity** – differentiating the expression of genuine goals that participants truly aspire to achieve, from pseudo goals that partners may not actually identify with.

- **Relevance** – distinguishing between goals that are dependent on the collaboration, when they “relate specifically to the collaborative agenda”, or independent, meaning they “are closely related but not explicitly part of it” (p.746).

- **Content** – recognising whether goals relate to substantive purpose – “what the collaboration is about”; or collaborative process – “how the collaboration will be undertaken” (p.746).

- **Overtness** – considering whether goals are explicitly discussed, or whether they may be unstated or hidden, whether unintentionally or deliberately.

The goals framework helps to enable deeper understanding about collaborative goals through characterisation under the six dimensions. The complexity of collaborative goals is further acknowledged
through the recognition that they are dynamic, perceived differently by everyone involved, and hierarchical (i.e. some goals are more important than others for the collaboration as a whole). Vangen and Huxham (2012) observe that “[p]rocess goals are often seen as means of achieving substantive ends and, in that sense, are usually subordinate to substantive collaboration goals” (p.750). This seems to be particularly the case in conservation, as shown in Chapter 2 (Section 2.3), where literature about collaboration predominantly investigates ‘substantive purpose’ – the environmental and social outcomes collaborations aim to achieve – with ‘collaborative process’ rarely explicitly identified or investigated as a collaborative goal. Thomsen and Caplow (2016) provide a rare departure from this trend in their study into the ways that collaborative large landscape conservation initiatives define success. They found social-focused successes (e.g. informal relationship building) were recognised, particularly during the earlier stages of initiatives, despite the fact they were less tangible than environmental-focused successes (e.g. environmental impact) and that relationship building was perceived by some to be a means to an end, and to others a positive outcomes in itself.

3.3.1 Change as a collaborative goal

Change is often implied as a collaborative goal but it is not explicitly explored within the TCA. Vangen and Huxham (2012) do highlight the dynamic nature of collaborative goals and that they are in “a constant state of flux” (p.752) as collaborations and the people that make them up change over time. The TCA also draws attention to the fact that the purpose of a collaboration can change due to internal factors (e.g. change in strategic direction) or external factors (e.g. change in government policy) (Huxham & Vangen, 2005; Vangen & Huxham, 2003b). The TCA does not however explicitly consider what collaborative structures and processes are used by interorganisational collaborations that specifically stive for change as a collaborative goal, nor does it consider the different types of change collaborations aim for. Because change is a central focus in conservation, an extension of collaborative theory in this area would be beneficial for conservation collaboration and the next section explores extant literature about collaboration for change in conservation.

During my review of literature generally I found there was a need for more clear and consistent communication about change in the domains of management, collaboration and conservation. Change has been described as episodic or continuous in nature (Weick & Quinn, 1999), incremental or transformational in degree (Dunphy & Stace, 1988; Foster-Fishman, Nowell, et al., 2007), and as either evolutionary or revolutionary (Greiner, 1972; Pettigrew, 1985), but these dichotomies were found to be simplistic and inconsistent. In the same way that the TCA conceptualises collaborative goals as a multi-dimensional framework (Vangen & Huxham, 2012), Maes and van Hootegem (2011) overcome simplistic dichotomist framings of change by identifying eight dimensions of change following an extensive review of 624 articles and 55 books on the subject. This multifaceted characterisation (summarised using quotes in Table 1), provides a holistic understanding of the complex topic of organisational change; one that I have found incredibly helpful to make sense of literature about change across different disciplines.
Table 1. The eight dimensions of change – and their associated attributes; the extreme ends of dimensional continuums. (expanded with quotes from: Maes & van Hootegem, 2011: 209)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTROL</strong></td>
<td>Emergent – starting ‘from the idea that an organization is continuously moving and that acknowledging and reinforcing this flux is the change management’s only task’ (p.209)</td>
</tr>
<tr>
<td>‘whether ‘agents are free to choose the strategy and its outcomes, or... their choices [are] determined by the environment or the nature of the system’ (p.208)</td>
<td>Adaptation – the formulation of ‘strategic responses to environmental change’ (p.210)</td>
</tr>
<tr>
<td><strong>SCOPE</strong></td>
<td>Continuous – ‘organizations are compelled to continuous change... [when] touched by powers such as adaptation to the environment, savings in expenditures... exertion of power and maintaining the competitive benefit (p.210)</td>
</tr>
<tr>
<td>‘the degree of change or the impact of the change on the organization’ (p.209-10)</td>
<td>Incremental – change that ‘unfolds in small consecutive adjustments in the organization’; ‘Organizations use feedback from previous actions to remediate the lack of congruence between strategy, structure, culture, and people’ (p.211)</td>
</tr>
<tr>
<td><strong>FREQUENCY</strong></td>
<td>Long – when a change ‘comes about during a good length of time’; incremental change is often assumed to ‘take longer than revolutionary changes, yet radical change can take years’ (p.212)</td>
</tr>
<tr>
<td>‘the number of times a change is happening... from inertia... over periods where relative stability succeeds periods of change, to periods with continuous change’ (p.210)</td>
<td></td>
</tr>
<tr>
<td><strong>STRIDE</strong></td>
<td>Slow – when change is ‘applied gradually’ (p.212)</td>
</tr>
<tr>
<td>‘the number of successive stages to realize the change and the upheaval that is caused by it’; not to be confused with scope (above) which ‘refers to the end state of the change’ (p.211)</td>
<td></td>
</tr>
<tr>
<td><strong>TIME</strong></td>
<td>Open – when ‘there is ambiguity with respect to the change’s finality’ (p.213)</td>
</tr>
<tr>
<td>‘the duration to implement to change’ (p.212)</td>
<td></td>
</tr>
<tr>
<td><strong>TEMPO</strong></td>
<td>Participative – ‘delegated approaches [where] almost the complete responsibility for the change is turned over to the subordinates’ (p.214)</td>
</tr>
<tr>
<td>‘the speed with which change actions succeed each other’ (p.212)</td>
<td></td>
</tr>
<tr>
<td><strong>GOAL</strong></td>
<td></td>
</tr>
<tr>
<td>‘the future end state when the change is accomplished’ (p.213)</td>
<td></td>
</tr>
<tr>
<td><strong>STYLE</strong></td>
<td></td>
</tr>
<tr>
<td>‘of leadership and decision making is particularly defined by the degree of participation’ (p.213)</td>
<td></td>
</tr>
</tbody>
</table>
There is surprisingly little written about change as a collaborative goal. Clarke and Crane (2018) look at the increasing focus of cross-sector partnerships on goals of broader systemic change. They emphasise that the concepts of ‘systemic change’ and ‘transformation’ remain unclear in relation to cross-sector partnership and are generally underdeveloped within the literature, and that studies have variously focused on the actions of partnerships toward systemic change, the systemic change itself, or the impact of change on the issue of concern. It is the first of these – the actions of partnerships (or collaborations) towards systemic change – that is of greatest interest in this research. Seitanidi et al. (2010) explore the formation of cross sector social partnerships for change and find that “organisational characteristics indicated the level of transformative capacity; the organisational motives indicated the level of transformative intent, and finally the history of interactions indicated the level of transformative experience” (p.152). Gray and Purdy (2018) offer a fascinating chapter about ‘How partnerships can transform institutional fields’ that is highly relevant to the findings of this research and it will be explored in more detail within Chapter 8 - Discussion.

3.3.2 Change as a goal in conservation collaboration

Change is a central goal for collaboration in conservation and there is an expanding body of largely conceptual conservation and sustainability literature on this topic. I noticed during my broad review of this literature that studies tended to draw on a combination of theoretical insights when considering and framing ‘change’ which consistently included elements from: complexity theory, systems science and organisational change. Recent studies about collaboration for change confirm the interdisciplinary nature of the topic and draw clear connections between these areas (Dentoni, Bitzer, et al., 2018; van Tulder & Keen, 2018). Expanding on what was written about complexity and transformation as justifications for the need for collaboration in conservation in Section 2.3.1 of the previous chapter, I consider the implications of complexity for conservation collaborations aiming for change, and the types of change that collaborations aim to achieve. Synthesising across this literature, I highlight three key themes that are commonly related to collaboration for change within complex conservation contexts: embracing uncertainty, emergent approaches, and alternative evaluation.

It is important to note that each of the concepts of conservation, collaboration and change are variously defined, communicated and subdivided within the literature, making it a real challenge to summarise what is known. As I described earlier in Section 2.2.1 the concept of ‘conservation’ is contested and much of the literature relevant to its mission relates to natural resource management, specific conservation issues or broader sustainability without any mention of conservation per se. ‘Change’ is inconsistently communicated within collaboration and conservation literature as the previous section attests. ‘Collaboration’ is also framed in many different ways and in order to review literature relevant to interorganisational collaboration in conservation, the focus of this thesis, it was additionally necessary to explore literature about various forms of partnerships (e.g. cross-sector, multi-stakeholder and public-private partnerships), networks and collaborative governance regimes.
Collaborating for change under conditions of complexity

Conservation involves grappling with a number of complex, interconnected problems and therefore requires interorganisational collaboration at, and across, various scales as shown in Section 2.3.1 (Westley & Vredenburg, 1997; Wyborn, 2015a). Supraorganisational collaboration to address societal conservation issues (Pasquero, 1991; Westley & Vredenburg, 1997) especially requires addressing ‘wicked’ meta-problems that, “cannot be framed and understood in linear cause-symptom-effect relationships (knowledge uncertainty), evolve unpredictably over time (dynamic complexity), and involve conflicts of values among stakeholders (value conflict)” (Dentoni, Bitzer, et al., 2018: 334). Collaborations grappling with such complex problems therefore need to develop goals under conditions of great uncertainty and constant change.

Traditional sciences and early management theories are often described using a machine metaphor because they use reductionism to build an understanding of an entity and to predict future outcomes based on detailed examination of component parts (Dooley, 1997; Innes & Booher, 1999; Turner & Baker, 2019). These approaches may work well for linear or ordered systems with central control and clear causal pathways, but they are not suitable for complex contexts that are unpredictable and in a constant state of flux (Dooley, 1997; Snowden & Boone, 2007). Conservation and sustainability literature increasingly draws on complexity theory (e.g. Game, Meijaard, et al., 2014; Kuenkel, 2015; Lubell, 2015; Turner & Baker, 2019) which recognises that complex contexts and problems need to be addressed differently since causes do not lead to predictable effects and appropriate actions cannot be pre-determined or controlled – they need to emerge (Kurtz & Snowden, 2003; Snowden & Boone, 2007).

Unfortunately, “the approaches, tools, and even institutional structures used in conservation are generally suited to simpler, more tractable systems” (Game, Meijaard, et al., 2014: 272). Conservation is a field in which scientific evidence and certainty are highly valued (Kareiva & Marvier, 2012; Sutherland, Pullin, et al., 2004; Sutherland & Wordley, 2017). It is also a field that is primarily funded through short-term projects with stringent reporting criteria (Adams, Hodge, et al., 2016; Curtin, 2014; Guerrero, McAllister, et al., 2013; see Section 2.2.3). According to Ison (2017), “the proliferation of targets and the project as social technologies (or institutional arrangements) undermines our collective ability to engage with uncertainty”’ (p.225). Both of these factors, I believe, lead to the prominence of planned approaches in conservation towards predetermined outcomes that can be quantified. In many cases planned approaches are appropriate and justified, but attempts to control complex socio-ecological systems can lead to detrimental and unforeseen consequences (Holling & Meffe, 1996).

It has been advised that collaborations (or ‘partnerships’ in these cases) explicitly consider whether the problems they seek to address are ‘wicked’ or characterised by complexity (Dentoni, Bitzer, et al., 2018; van Tulder & Keen, 2018). When they are, an “appreciation of complexity should inform... partnership configuration” (van Tulder & Keen, 2018: 317) and governance processes, such as deliberation, decision-making, implementation and monitoring (Dentoni, Bitzer, et al., 2018). For example, in a simple setting it may be possible for a collaboration to plan a pathway for change and test
achievements; however in a complex setting it may be impossible for collaborations to agree about intended change and they will need to revisit their theory of change along the way (van Tulder & Keen, 2018). Under conditions of complexity it is initially more important for collaborators to develop a “shared analysis of the origins of the problem” than it is for them to create “a common vision, mission and objectives” (ibid: 327).

Because complex problems are continuously and unpredictably changing, collaborations that seek to address them must additionally respond to change (Smajgl, Ward, et al., 2015; Waddock, 2013; Wyborn, 2015c). Adaptation is therefore a key concept for collaborations within complex contexts to enable resilience of governance and maintenance of function in response to change, and literature has explored the need for collaborations to be able to adapt (Armitage, Berkes, et al., 2011; Curtin, 2014; Emerson & Gerlak, 2014; Holling, Gunderson, Lance, et al., 2002). While adaptive strategies are needed to cope with change, it is important to note that they also enable the status quo to evolve and persist and potentially undermine or prevent more fundamental and transformative change that may be needed (Plummer, 2013; Sharpe, Hodgson, et al., 2016; Wise, Fazey, et al., 2014). There is therefore a “need to make explicit the tensions between adaptation policies... and those seeking broader and systemic change to social and political regimes” (Wise, Fazey, et al., 2014: 327). This point underpins the conceptualisation of the Change Paradox presented in Chapter 8 (Section 8.3).

Recommendations for collaborations addressing complex conservation problems are integrated into the synthesis of key themes at the end of this section. It is important to highlight that insights about collaborating under conditions of complexity remain largely conceptual and there is a need to explore the practical implications of these recommendations.

The types of change that conservation collaborations strive for

The complex problems facing the world simultaneously require different types of change – they require adaptation to improve the effectiveness and efficiency of current established systems and to maintain their function when unexpected things arise; however, as nature continues to decline there is also need for fundamental transformation toward novel or radically different ways of doing things (Sharpe, 2013; Sharpe, Hodgson, et al., 2016; Wyborn, van Kerkhoff, et al., 2016). Collaboration can be involved in the former but it is often deemed necessary for the transformation of systems and to address global conservation and sustainability issues, as was shown in Section 2.3.1 (Colloff, Lavorel, et al., 2017; Kuenkel, Kühn, et al., 2021; Westley, Olsson, et al., 2011).

Much of the literature about collaboration for change in conservation and sustainability therefore relates to transformation and systemic change and regularly draws on systems theory (e.g. Fritz, Schilling, et al., 2019; Senge, Lichtenstein, et al., 2007; Waddock & Kuenkel, 2020). By way of brief introduction, Ison (2008) provides a summary of systems theory oriented towards action researchers in which he defines a system as “an integrated whole whose essential properties arise from the relationships between its parts”; and differentiates systemic thinking, “the understanding of a phenomenon within the context of
a larger whole”, from *systematic thinking*, “which is connected with parts of a whole but in a linear, step-by-step manner” (p.142). A system of interest can be at any scale and is formulated for a particular purpose according to the perceptions of those involved (ibid). Ison also identifies an important epistemological distinction, initially made by Checkland (1985), between the traditions of ‘hard’ and ‘soft’ systems thinking. ‘Hard’ systems approaches that use mathematical equations or probabilities for predictive purposes are common in engineering, but often deemed unsuitable within social systems, where ‘soft’ systems approaches oriented towards a process of learning are more appropriate (Ison, 2008; Kirk, 1995). Unfortunately, in some fields (and I would argue conservation is among them), quantitative ‘hard’ approaches have been “perceived as more rigorous than ‘soft’” ones (ibid, p.148). Ison rejects this hard/soft dualism and calls for greater awareness of the traditions out of which we think and act such that both can be used where appropriate.

‘Systems change’ can broadly be defined “an intentional process designed to alter the status quo by shifting and realigning the form and function of a targeted system” (Foster-Fishman, Nowell, et al., 2007: 197). In relation to socio-ecological systems, transformation can be negative if it impacts the system “in a way that is undesirable and likely irreversible”; or positive, if change “significantly improves the situation” (Clarke & Crane, 2018: 308). ‘Large systems change’ has also been used to describe transformational change that incorporates both *breadth*, the involvement of many actors across multiple systems, and *depth*, “not simply adding more of what exists or making rearrangements within existing power structures and relationships, but rather changes [to] the complex relationships among these elements at multiple levels simultaneously” (Waddell, Waddock, et al., 2015: 7).

Another theoretical framework that has been used to differentiate types of change in conservation (e.g. van Tulder & Keen, 2018; Waddell & Khagram, 2007) is the ‘orders’ of organisational change originally developed by Bartunek and Moch (1987). According to this framework, first-order change describes, “the tacit reinforcement of present understandings”; second-order change, denotes “the conscious modification of present schemata [or paradigms] in a particular direction”; while third-order change describes, “the training of organizational members to be aware of their present schemata and thereby more able to change [them] as they see fit” (ibid, p.486). Awareness of the different orders of change is said to help change agents to target their efforts and improve success.

**Key themes**

Synthesising across the extant literature about collaboration in complex conservation contexts to achieve systematic change, I highlight three key themes that recur frequently: embracing uncertainty, emergent approaches and alternative evaluation.

**Embracing uncertainty** – As shown above, both complexity and transformation are unpredictable and involve uncertainty (Armitage, Alexander, et al., 2015; Waddell, Waddock, et al., 2015). According to Sharpe (2013), “Transformation... is a process of exploration, and to explore we must travel over the horizon towards the unknown” (p.9). Within complex contexts, actors are advised to recognise that rigid,
predictive or ‘hard’, systematic approaches are unlikely to succeed (Ison, 2017) and instead, “shift focus to the public process of working with wicked problems” (Xiang, 2013: 3). In practice this is likely to be a daunting and time consuming transition because descriptive and analytical forms of knowledge have gradually become dominant through the rise of scientific inquiry and issues key to transformational thinking such as conflict, dissent, uncertainty, pluralism, and asymmetrical power relations are widely unfamiliar and undertaught (Lang, Wiek, et al., 2012). The recognition that there are no transferrable ‘blueprints’ and that actors “engaged in transformative change have to coproduce approaches relevant to their particular circumstances” (Colloff, Lavorel, et al., 2017: 1011) aligns with the framing of interorganisational collaboration in the TCA as a complex practice that cannot simply be replicated (Huxham & Vangen, 2005).

The literature does put forward strategic practices for collaborations coping with uncertainty. Perz et al. (2010) emphasise the need for dynamic management of collaborations and the incorporation of multiple perspectives to enable them to respond to the unexpected. “Like ecosystems, networks must be resilient, that is, flexible but robust enough to incur changes and retain vital functions” (ibid: 427). Ison (2017) urges that we get away from ‘targets’ and ‘projects’ as these “undermine our collective ability to engage with uncertainty” (p.225). Gober (2018) concurs that “[r]igid and specific goal setting, difficulty working across sectors and agencies, inflexible decision rules, fixed allocation systems, short time horizons, and fragmented governance inhibit capacity to manage uncertainty” (p.46). And for collaborations that strive for transformation (which is unpredictable), Waddell et al. (2015) suggest that “efforts must be persistent and include a healthy dose of reflection and humility!” (p.20).

Emergent approaches – As a central concept of complexity theory, emergence represents the process by which solutions arise from dynamic circumstances (Snowden & Boone, 2007). Emergent strategy presents an alternative to deliberate approaches that is better suited to the unpredictable nature of complex issues, as Kania et al. (2014) describe:

*Emergent strategy does not attempt to oversimplify complex problems, nor does it lead to a “magic bullet” solution that can be scaled up. Instead, it gives rise to constantly evolving solutions that are uniquely suited to the time, place, and participants involved.* (p.28).

Adaptive management is an emergent approach commonly proposed in conservation to address uncertainty through continuous learning from the outcomes of management actions, as if they were ongoing, real-life experiments (Folke, Hahn, et al., 2005: 447). Although it is an elegant concept, it has proved challenging to implement (Armitage, Alexander, et al., 2015) and struggles when applied to broader institutional contexts that cannot “accommodate learning, experimentation and failure” (Wyborn, 2015a: 3). Adaptive governance promotes flexible and collaborative decision making at broader institutional levels by connecting actors across scales in a process of social learning (Armitage, Plummer, et al., 2009; Wyborn, 2015c). It is operationalised through adaptive co-management, which “combines the dynamic learning characteristics of adaptive management” with co-management, “the problem-solving
process involved in sharing of management power across organizational levels” (Folke, Hahn, et al., 2005: 448; Olsson, Folke, et al., 2004, 2007).

Although emergence is not planned the literature contains recommendations about how to take advantage of it and design for it. Darling et al. (2019) call for the creation of platforms where people can engage and experiment towards collaborative innovations. A shift in mindset from the notion of leaders to entrepreneurs can help collaborators to focus on the endeavour itself and how they can work together to innovate and transform (Westley, Tjornbo, et al., 2013). Dougherty (2016) emphasises that “taking advantage of emergence is a process of discovery” that requires abductive learning routines and “knowing grounded in doing” (p.4). Action research approaches, including the RO-AR approach used for the development of the TCA and in this research, are themselves emergent and lead to the development of emergent theory derived from participants’ needs and actions (Eden & Huxham, 2006; Huxham, 2003b; Huxham & Vangen, 2003).

Alternative evaluation – Evaluation is deemed an important means of ensuring accountability for public and private funds and it can also act to preserve funders’ control and power (Greenwood & Levin, 2007). It can be particularly challenging for “agencies with trusteeship” to acquire legitimacy and accountability – for these actors, “the degree to which risk is managed and distributed and the consistency of conforming to network/partnership rules and procedures will determine the scale of legitimacy and accountability” (Budd, 2007: 540). Funders and funding agencies expect evidence to demonstrate what their investments have achieved and to guide future decisions (ibid). Strategic philanthropy has for decades put “emphasis on clearly stated and measurable goals, a donor-driven theory of change, evidence-based strategies, performance measurement, and accountability” to address problems (Hardner, Gullison, et al., 2017: 135; Porter & Kramer, 1999). The desire for evaluations and evidence continues to rise (Freeling & Connell, 2020) and strategic philanthropy is likely to continue to play an important role, however its conventional tools and basis on linear logic “just don’t fit the realities of social change in a complex world” (Kania, Kramer, et al., 2014: 26). Emergent collaborative approaches centered on learning and embracing uncertainty cannot be evaluated using traditional, linear evaluation approaches (Ison, 2017).

Developmental evaluation has been suggested as a more suitable, collaborative option to “conceptualize, design, and test new approaches in a long-term, ongoing process of continuous development, adaptation, and experimentation, keenly sensitive to unintended results and side effects” (Patton, 2011: 1). Emergence should be evaluated by “measuring the effectiveness of the platform created (e.g. are the ideas that come out unanticipated, are diverse voices involved, etc.) in addition to the impact” (Darling, Guber, et al., 2019: 16). Cousins et al. (2013) propose collaborative inquiry in evaluation to focus on learning for positive change and responsible action. This involves “developing evaluation

---

8 Trusteeship can be defined “a situation in which someone’s money or property is managed by another person or organization” (“Cambridge Dictionary,” 2022). In the context of the neoliberalisation of conservation (see Section 2.2.3 under ‘Market-related mechanisms’), state actors increasingly transfer responsibility for environmental protection to various non-state actors.
habits of mind, questioning assumptions, and challenging the status quo” (ibid, p.15); however, based on my experience in conservation and expectations for quantified evidence of impact in this field, I believe adoption of such approaches will be difficult or unlikely. *Emergent philanthropy* applies the principles of emergence to the relationship between grantors and grantees, enabling them to work together flexibly to address dynamic, complex issues (McCarthy, Bornstein, et al., 2017: 64). Documented case examples show that although uncommon, emergent approaches are possible (Darling, Guber, et al., 2019; Hardner, Gullison, et al., 2017; McCarthy, Bornstein, et al., 2017).

This section has considered change as a central goal for conservation collaborations operating in complex contexts. Conservation literature in this area draws on a combination of complexity theory, systems theory and organisational change theory to highlight how collaborations should embrace uncertainty, develop emergent approaches and consider alternative approaches to evaluation. Overall, conservation literature about collaboration remains highly conceptual and it is oriented more towards what is perceived to be needed to address the complex problems of the world rather than how to go about doing it9. Incorporation of practice-oriented insights about collaborative goals from the TCA is therefore valuable and needed. At the same time, the particular focus in conservation on systemic change as a collaborative goal, and the need to consider collaboration under conditions of complexity provide an opportunity to extend collaborative theory in these areas.

### 3.4 Cultural diversity

In the TCA, the very notion of collaborative advantage – the synergy that can be derived by working together – is dependent on the merging of differences and diverse resources (i.e. perspectives, skills, expertise, knowledge, etc.) that partners bring when they decide to collaborate (Huxham & Vangen, 2005; Vangen, 2016, 2017). If individuals and organisations are similar in most respects, little value is added by coming together, and in fact being too similar can lead to competition and reluctance to share (Provan & Kenis, 2008; Vangen & Huxham, 2012). ‘Diversity’ is therefore a critical component of all interorganisational collaborations. In the TCA diversity is explored through a culture framing which recognises that different dimensions of diversity are associated with their own “habitual ways of being and acting” (Vangen & Winchester, 2014: 687).

In this thesis I use the term ‘diversity’ as Jackson et al. (1993) have done “to refer to situations in which the actors of interest are not alike with respect to some attribute(s)” (p.53). It is important to note that because the focus of this research is interorganisational collaboration, actor diversity is considered at the levels of individuals but also organisations.

---

9 The broader sustainability literature does offer some valuable insights into how to achieve effective change through collaboration (e.g. Stott, 2018), however a review of this literature is beyond the scope of the present study which is focused on the field of conservation.
In their foundational TCA paper about managing cultural diversity, Vangen and Winchester (2014) describe a *culture paradox* that is inherently part of interorganisational collaboration because “both similarity and diversity in culture can help and hinder the success of a collaboration” (p.687). As they describe in their own words, *cultural diversity* is “essential to gaining genuine synergistic advantage” but it also “causes conflicts, misunderstandings and points of friction”; while *cultural similarity* “yield[s] greater connectivity and shared understanding between partners which render the act of collaborating less problematic”, but it “may limit the potential for collaborative advantage” (p.687). Cultural diversity and similarity are therefore simultaneously needed but in opposition.

The TCA uses a RO-AR approach to explore how the culture paradox is navigated in practice and considers “what specific management tensions need to be addressed if cultural diversity is to yield advantage rather than inertia” (Vangen & Huxham, 2014: 59). A number of key management tensions relating to the culture paradox have been conceptualised using the approach described in Section 3.2.1 above (Huxham & Beech, 2003) and these are summarised in Table 5.

Table 2. A summary of the culture paradox and associated conceptualised management tension in the TCA – The level of diversity is indicated in brackets, with key references indicated.

<table>
<thead>
<tr>
<th>Theoretical conceptions (level of diversity)</th>
<th>Description</th>
<th>Key references (* source of row quotes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paradoxes</td>
<td>A “persistent contradiction between interdependent elements” (p.6)</td>
<td>(*Schad, Lewis, et al., 2016)</td>
</tr>
<tr>
<td>Culture paradox (individual, organisational)</td>
<td>Between <em>cultural similarity</em> which yields “greater connectivity and shared understanding between partners”, and <em>cultural diversity</em> which is “essential to gaining genuine synergistic advantage from the collaborations” (p.687)</td>
<td>(Vangen, 2017; *Vangen &amp; Winchester, 2014)</td>
</tr>
<tr>
<td>Theoretical conceptualisation of management tensions</td>
<td>Conceptual representations of “alternate (i.e. mutually exclusive) pieces of good practice advice... thought of as extremes on a scale of possible courses of action” (p.81)</td>
<td>(*Huxham and Beech, 2003; Huxham and Vangen, 2005b)</td>
</tr>
<tr>
<td>Accommodation management tension (organisational)</td>
<td>Between extremes of flexibility, where “partners alter their structures and processes to accommodate the needs of the collaboration”, and rigidity, where “partners retain their structures and processes to protect the needs of their own organisations” (p.697)</td>
<td>(*Vangen &amp; Winchester, 2014)</td>
</tr>
<tr>
<td>Agency management tension (individual)</td>
<td>Between extremes of autonomy, where ‘individuals have full autonomy to act on behalf of their organisations’, and accountability, where ‘individuals have no autonomy to act and are wholly constrained by their accountability to their organisations’ (p.699)</td>
<td>(*Vangen &amp; Winchester, 2014)</td>
</tr>
<tr>
<td>Quantity management tension (collaboration)</td>
<td>Between extremes of complexity, where ‘managers seek to embrace cultural diversity and complexity’ and simplification, where ‘managers seek to simplify the extent and impact of cultural diversity’ (p.702)</td>
<td>(*Vangen &amp; Winchester, 2014)</td>
</tr>
</tbody>
</table>

The concept of diversity, which is integral to the mission of conservation (i.e. biodiversity), is also of central importance when it comes to *doing conservation*. As previously outlined (see Section 2.3.2), the field of conservation is multidisciplinary, transdisciplinary and involves working across numerous boundaries, cultural and otherwise. Collaborations within this field therefore regularly involve working
across multiple forms of difference simultaneously. As such, TCA insights from the theme of cultural diversity are likely to be particularly valuable within this context.

3.4.1 Diversity and conservation collaboration

While work on the theme of cultural diversity in the TCA has focused on the management of tensions that arise in collaborations working across professional, organisational and national cultures, the context of conservation requires consideration of additional forms of difference. As Section 2.3.2 explored in the previous chapter, conservation collaborations additionally regularly involve working across sectors, disciplines and scales and it is common for collaborations to simultaneously cross multiple ‘boundaries’.

Once again, the complexity of conservation contexts is an important consideration. Diverse collaboration is proposed as a means to address ‘wicked’ problems (Dentoni, Bitzer, et al., 2018; Huxham & Hibbert, 2008; Kuenkel, Kühn, et al., 2021; Waddock, 2013) that are multifaceted and difficult to agree on, involve unstructured problem-solving processes that must accommodate different approaches and interests and diverse stakeholders who have different perspectives (Curşeu & Schruijer, 2017). Addressing societal meta-problems relating to conservation and sustainability requires working across various ‘boundaries’ to enhance the resilience of interconnected systems (Waddock, 2013), and to help “keep options open” to enable adaptation in the face of uncertainty (Holling, 1973: 21). The uncertainty that is inevitably part of wicked problems also drives collaboration between different stakeholders who wish to share and diffuse the risks associated with it (Armitage, Plummer, et al., 2009; Emerson, Nabatchi, et al., 2012).

For all of the above reasons, management of diversity towards the achievement of collaborative advantage is a crucial consideration for conservation collaborations, yet much of the conservation literature proposes collaboration as a means to cross boundaries and there is a need for greater consideration of how to do so effectively in practice. This section will hone in on what the literature from various disciplines does offer in the way of recommendations for collaborating across differences within complex contexts. Insights have been grouped into relevant areas and learning is an important focus that cuts across them.

**Bridging and boundary spanning** – A number of structural studies have explored the role of bridging organisations to connect diverse actors and enable learning and collaboration in complex systems (Berdej & Armitage, 2016; Guerrero, McAllister, et al., 2015; Olsson, Folke, et al., 2007). Research in this area commonly uses social network analysis methods and it is proposed that structural information can then be used to support social processes (e.g. Guerrero, McAllister, et al., 2015). Berdej and Armitage (2016) admit that “while such governance attributes have gained wide conceptual appeal… their implementation in practice has been limited” (p.2). Boundary spanning refers to activities that help diverse actors interact across physical, cognitive and social boundaries by making “differences between these groups visible… such as developing shared problem definitions, joint fact-finding or visioning” (Termeer & Bruinsma, 2016: 92). Bednarek et al. (2018) highlight the need for training and professional
development to specifically foster abilities to “read social cues, facilitate diverse viewpoints and navigate complex politics” that are needed for boundary spanning work between science and policy (p.1180). Other desirable traits for successful boundary spanning include being “client-driven; innovative, creative, and collaborative; inclusive and tolerant of different ideas and perspectives; and excellent communicators” (Safford, Sawyer, et al., 2017: 566).

Dialogue – It is well established that communication (Heath & Isbell, 2021) and ground-rules for interaction (Hall & Watson, 1970) are key for collaborative problem-solving. Dialogue is often mentioned simplistically in conservation literature about collaboration as a means to reach agreement (e.g. Lauber, Stedman, Decker, & Knuth, 2011) rather than a complex social process in itself. Outside the conservation literature, dialogue is used to describe “situations in which ideas and information are exchanged and communication is reciprocal and multidirectional” (Cowan & Arsenault, 2008: 18), and it variously concerns mutual respect, openness, learning, and relationship-building (Heath & Isbell, 2021; Jeffrey, 2003). Genuine dialogue can help diverse actors to formulate new understandings and ideas together (Heath & Isbell, 2021). In recognition that a number of philosophical challenges arise during cross-disciplinary collaboration addressing environmental problems, Eigenbrode et al. (2007) have developed a ‘toolbox for philosophical dialogue’ that supports researchers to self-reflect about their philosophical positions and how they differ from their collaborators. Montana et al. (2019) developed a questionnaire to support dialogue among cross-disciplinary conservation researchers by exploring differences and similarities in their research preferences. The Future of Conservation Survey designed by Sandbrook et al. (2019) can similarly be used to support dialogue by “identifying specific areas of consensus and disagreement” among conservationists (p.316).10

Conflict and consensus – Conflict is understood to be unavoidable in collaboration, particularly diverse ones, and therefore needs to be reconceptualised as something to be expected and explored as a potential source of synergy (O’Leary & Bingham, 2007) rather than something to avoid through averaging, voting (Hall & Watson, 1970) or premature or artificial consensus making (Haug, 2015). When appropriately managed, disagreements can, “move collaborating stakeholders from individual perspectives to shared perspectives” (Heath & Isbell, 2021: 7). Hall and Watson (1970) urge collaborators to investigate apparent agreement to ensure it is actually the result of complementary or similar reasoning rather than the result of repression or indifference. Conservationists have been encouraged to become adept at managing conflict (Imperial, Ospina, et al., 2016) and to use deliberative practices to work with conflict (Colloff, Lavoel, et al., 2017; Page, Wise, et al., 2016), but there is little advice about the details of how to do so (Graham, Metcalf, et al., 2018). Consensus decision-making is considered to be extremely important in collaboration yet it is not commonly mentioned in the context of conservation. Consensus can be defined “a communicative practice... through which the participants themselves consciously and interactively close their deliberation about an issue at a specific moment in time by

10 Elements from the research preferences questionnaire (Montana, Sandbrook, et al., 2019) and the Future of Conservation Survey (Sandbrook, Fisher, et al., 2019) were integrated into the surveys used during this research, as described in Section 4.4.5 and presented in Section 6.3.5.
observing the absence of opposition to a proposal which thereby becomes the collective decision that obligates them to some collective action” (Haug, 2015: 17). This is fundamentally different from unanimity which requires all participants to actively express their preference, usually through a vote (ibid). Haug (2015) highlights deliberative consensus as a preferred approach to actively integrate the objections and concerns of diverse participants into decisions that are “acceptable to all” (p.29). Margerum (2011) begins to explore how “consensus achieved through collaboration can be translated into effective results” (p.4) for conservation, but admits that the principles presented may not capture the messiness of practice.

Inclusion – It took me some time to realise that there are in fact three different ways that inclusion is considered in relation to conservation collaboration. Firstly, a need has been identified for the field of conservation on the whole to become more diverse and inclusive (Smith, Côté, et al., 2017; Tallis & Lubchenco, 2014; Taylor, 2014). An extensive study by Taylor (2014) of nearly 300 environmental institutions in the United States found that although gender diversity has begun to improve, the “state of racial diversity in environmental organizations is troubling” (p.4) and “cross-race and cross-class collaborations are still uncommon” (p.5). There is a ‘diversity crisis’ in conservation that needs to be addressed (Milner-Gulland, 2021; Smith, Côté, et al., 2017), but this is not the focus in this research.

Secondly, the literature calls for broader stakeholder involvement and inclusion within collaborations that are tackling societal conservation problems (Kuenkel, Kühn, et al., 2021; Pasquero, 1991; Perz, Brilhante, et al., 2010; Westley & Vredenburg, 1997). Because diversity is acknowledged to be beneficial when addressing complexity (as highlighted above), there is a tendency within the conservation and sustainability literature to propose that all stakeholders who may be affected by a problem are involved or represented (Gray & Purdy, 2018; Kuenkel, Kühn, et al., 2021). Kuenkel et al. (2021), for example, stress the need for “joint diagnosis of the current situation by all relevant stakeholders to the co-development of a future vision all stakeholders can identify with”, and acknowledge “that only a diversity of stakeholders representing the system – which needs to change collectively – will be able to bring about the necessary transformations” (p.271). The TCA shows, however, that diverse inclusion can lead to ‘collaborative inertia’ in practice (Vangen & Winchester, 2014) and tradeoffs need to be made between inclusiveness and efficiency as these are in tension (Provan & Kenis, 2008):

The primary tension regarding efficiency is between the need for administrative efficiency in network governance and the need for member involvement, through inclusive decision making... The more that organizational participants are involved in the network decision process, the more time consuming and resource intensive that process will tend to be. (Provan & Kenis, 2008: 242)

Thirdly, the extent to which those who are members of a collaboration feel they are part of collaborative processes and can meaningfully participate is an inclusivity consideration of importance in this research (Roberson, 2006). In their highly cited article, Shore et al. (2011) develop a framework of inclusion which distinguishes the concept of inclusion, which they argue simultaneously enables
uniqueness and belonging\textsuperscript{11}, from: exclusion (which fulfils neither), assimilation (belonging without uniqueness), and differentiation (uniqueness without belonging; see Figure 8). Although these conceptualisations were derived for individuals within organisational work groups, I believe based on my experience that they are more broadly relevant and can be useful for the consideration of inclusivity among individual and organisational members within interorganisational collaborations. Conservationists have diverse views about “why, what and how to conserve”, however strong opposing views from the most powerful actors have wrongfully given the impression that the field is completely divided (Sandbrook, Fisher, et al., 2019: 316). Internal battles within the field of conservation are perceived to be inhibiting progress (Tallis & Lubchenco, 2014) and it was recently alleged that the field “is still overwhelmingly dominated by the same privileged, white, wealthy, Northern hemisphere voices” (Milner-Gulland, 2021: 321). This need for inclusivity among the participants of conservation collaboration relates to power asymmetry, which is explored in section 8.2.2.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
\textbf{Low Belongingness} & \textbf{High Belongingness} \\
\hline
\textbf{Low Value in Uniqueness} & \textbf{Exclusion} \hspace{2cm} \textbf{Assimilation} \\
Individual is not treated as an organizational insider with unique value in the work group but there are other employees or groups who are insiders. & Individual is treated as an insider in the work group when they conform to organizational/dominant culture norms and downplay uniqueness. \\
\hline
\textbf{High Value in Uniqueness} & \textbf{Differentiation} \hspace{2cm} \textbf{Inclusion} \\
Individual is not treated as an organizational insider in the work group but their unique characteristics are seen as valuable and required for group/organization success. & Individual is treated as an insider and also allowed/encouraged to retain uniqueness within the work group. \\
\hline
\end{tabular}
\caption{The Inclusion Framework – which differentiates inclusion, exclusion, assimilation and differentiation on the basis of the presence or absence of belongingness and value in uniqueness (reproduced directly from: Shore, Randel, et al., 2011: 1266).}
\end{table}

This section has shown that bridging and boundary spanning, dialogue, conflict management and inclusion are foci in the conservation literature about collaborating across differences, but that recommendations for how to do so come from other fields (e.g. management, organisational change, communication and even philanthropy). There is a need in conservation to go beyond calls to bring

\textsuperscript{11} ‘Uniqueness’ can be defined “the need to maintain a distinctive and differentiated sense of self”, while ‘belongingness’ can be defined “the need to form and maintain strong, stable interpersonal relationships” (Shore, Randel, et al., 2011: 1264).
diverse groups together into collaborations to explore how they can actually work across differences in practice.

3.5 Summary of theory about collaboration

This chapter has introduced the TCA and used it to structure an interdisciplinary review of literature relevant to this research. It has shown how the TCA offers the field of conservation decades of practice-based insight into the complexities of managing interorganisational collaboration. Two themes of the TCA – collaborative goals and cultural diversity – that are foundational to collaboration but also key to the context of conservation were explored.

In relation to the theme of collaborative goals the goals paradox and goals framework of the TCA were introduced. The importance of the concept of change in conservation led to an exploration of literature about change as a collaborative goal, and found that change is inconsistently communicated and rarely the focus of collaborative literature. Conservation literature about collaboration for change was found to draw on complexity theory, systems science and organisational change and remains largely conceptual. The need to recognise complexity, embrace uncertainty and to develop emergent approaches and alternative means of evaluation were identified as key themes across this literature.

Regarding cultural diversity, the culture paradox and associated conceptualised management tensions from the TCA were introduced. Collaboration in the field of conservation is recognised to require working across multiple differences simultaneously, however little is written to this effect within the conservation literature. A synthesis of recommendations from other literature highlighted the importance of bridging and boundary spanning, dialogue, conflict management and consensus and the role of inclusion.
Chapter 4 – Methodology

4.1 Introduction to Chapter 4

Conservation is an applied field that combines research and practice to preserve nature. This transdisciplinary and interdisciplinary research combines theory about collaboration with conservation to enable collaboration in practice using a rigorous Research-Oriented Action Research (RO-AR) approach to derive contributions that can be useful in practice.

The choice of appropriate research methodology is contingent on assumptions made about the nature of reality (ontology) and the nature of knowledge and how it can be investigated (epistemology) (Morgan & Smircich, 1980). My multifaceted ontological and epistemological position is established in Section 4.2. This position is pragmatic but also combines empirical and rational insight to explore different dimensions of the social reality of collaboration. Based on this philosophical position, collaborative interactions are investigated through a RO-AR methodological approach using a constructionist epistemological framing (Section 4.3.1); while an examination of the contextual social phenomena of these collaborative interactions additionally required the use of more objective survey and interview methods (Section 4.3.2). The study progressed through three distinct phases described in Section 4.3.3: a scoping study, RO-AR, and active theory-building and thesis write up.

A variety of methods were used to meet the epistemological requirements of simultaneously exploring collaborative interactions and the contexts within which they took place, including: participant observation, interviews, intervention conversations, surveys, key document review, feedback opportunities and research journaling (Section 4.4). The mixed-methods approach also enabled triangulation of findings, adding validity to results. The chapter concludes with a comprehensive description in Section 4.5 of the processes of analysis that were used to derive the contributions of this thesis from the data collected.
4.2 Philosophy

Pragmatism

This research explores the ways participants experience collaboration (Dewey, 1925), and their means of using reality (Reason, 2006), which are pragmatic concerns. Pragmatism considers “theories, concepts, ideas, hypotheses and research findings not in an abstract form, but in terms of the roles they play as instruments of thought and action, and in terms of their practical consequences in specific contexts” (Saunders, Lewis, et al., 2016: p.143). This interdisciplinary study brings the pragmatic Theory of Collaborative Advantage (TCA) into RO-AR with collaborations within the context of conservation to address real world problems (Feilzer, 2010).

Argyris’ (2005) concept of ‘actionable knowledge’ is central to the RO-AR approach I have used and the epistemological position of this thesis. According to Argyris, knowledge is actionable when its use allows actors to effectively implement their intentions. He makes a central distinction between ‘espoused’ theories in action, which reflect what individuals intend to do based on their values, attitudes and beliefs; and ‘theories in use’, which reflect what they actually do (Argyris, 1993). This research compares participants’ ‘espoused’ theories, as expressed in documents and verbal description, with ‘theories in use’, observed through their day-to-day activities and decision-making within research settings to explore collaborative processes.

The study aims to bring everyday action and intellectual knowledge closer together and to emphasise the importance of contributing to ‘practical knowing’, which is participatory, experiential and based on “normative theory of what act is timely now” (Reason & Torbert, 2001: 7). Through a transdisciplinary exploration of collaboration in action, this research is able to hone in on what Schön (1983) has described as the process of ‘reflection-in-action’ – which combines ‘knowing-in-action’, the knowledge that is “inherent in intelligent action”, with reflection about action (p.50):

It is this entire process of reflection-in-action which is central to the “art” by which practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict. (Schön, 1983: 50)

By researching real collaborations in action, this study aims to make theoretical contributions that are practically useful. The research approach involved working with collaboration participants to reflect-in-action and to expand theoretical conceptualisations that can be of general use to other collaborative practitioners to help them reflect about actions within their own collaborations.

Social reality – simultaneously studying collaborative actors and contexts

Beyond its pragmatic orientation, this research intentionally combines empiricism (knowledge acquisition through perception and experience) and rationalism (knowledge acquisition through reason,
independent of the experienced world) (Vanzo, 2013). As Layder (1990) has proposed, it is through the meaningful consideration of both of these epistemological positions that social reality can be most deeply explored and the kinds of claims and limitations placed on knowledge should reflect the problems being addressed.

Ontologically, Layder (1990, 1993) delineates four stratified but interwoven dimensions of social reality, ranging from micro to macro in scale. This thesis, which explores ways to enable collaboration in conservation, touches on all of these dimensions of social reality, and therefore required the use of methods appropriate to the different epistemological underpinnings of each dimension (see Table 3).

At the micro end of the scale, the first two dimensions of social reality relate to agency or types of actor (Layder, 1990, 1993). ‘The self’ describes an individual’s relations with their environment at a personal level (Layder, 1993). This includes one’s personality, identity and perceptions of the world. The next dimension, ‘situated activity’, extends beyond the individual to consider the “emergent dynamics of social interaction”, such as collaborative action and decision-making (Layder, 1993: p.9). Epistemologically this dimension encompasses intersubjective processes of meaning-making (Cunliffe, 2003), phenomenological understandings of experience (Spencer, Pryce, et al., 2014) and interpretivist understanding of the motives and meanings behind behaviour and interaction (Chowdhury, 2014).

Table 3. A summary of the philosophical position of this research — The study is oriented towards pragmatism (shown on the right) and recognises both empirical and rationalist contributions across four dimensions of social reality to explore ways to enable collaboration in the field of conservation (drawing from Figures 5.1, 6.1 in Layder, 1990; and Figure 6.2 in Layder, 1993).

<table>
<thead>
<tr>
<th>Scale and type</th>
<th>Ontology: Dimensions of Social Reality</th>
<th>Epistemological underpinning (methodologies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of context (macro)</td>
<td>Context (structures)</td>
<td>Objectivism (demographic characterisation, statistical), theoretical/interpretivism</td>
</tr>
<tr>
<td>Setting (situations)</td>
<td>Constructionism, phenomenology, interpretivism, intersubjectivism</td>
<td>Pragmatism</td>
</tr>
<tr>
<td>Types of actor/ Agency (micro)</td>
<td>Situated activity (collective)</td>
<td></td>
</tr>
<tr>
<td>The self (individual)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Within these agency dimensions, social reality is constructed by individuals and between collective actors as they make sense of the world through their actions, language, routines and “symbolic modes of being” (Morgan & Smircich, 1980). As such, participants were recognised as ‘knowledgeable agents’ capable of explaining their thoughts, intentions and actions (Gioia, Corley, et al., 2013), and their multiple truths were subjectively explored (Crotty, 1998). By immersing myself as a researcher into the world of participants, I was able to explore how meaning is made through social interaction (Gray, 2014). In doing so I acknowledge that I have affected this world and been affected by it (Charmaz & Belgrave, 2012). The approach is ‘radically-reflexive’ as I have been “active, along with other participants, in constructing and making sense of social and organizational realities” (Cunliffe, 2003: p.494).

Beyond the realm of social agency, Layder (1993) identifies two additional dimensions of social reality that pertain to the context (see Box 2) within which individual and collective agency take place. This research sets out to explore ways to enable collaboration in conservation, and thus required developing
an in-depth understanding of the context of conservation. As Phillips et al. (2000) assert, “it is essential to examine... patterns of institutionalized rules and resources”, in order to “fully understand the dynamics of collaboration” (p.38). I therefore considered the ‘settings’ of CCI and BioRev (see Section 2.4) as “intermediate forms of social organisation, providing the immediate arena for social activities” (Hewege & Perera, 2013: 350), within the broader ‘context’ and structures of conservation. Stott and Murphy (2020) concur that:

Attention to the close interaction between individual, organizational and wider contextual levels can thus assist us in more deeply understanding the potential that collaborative relationships may play. (p.9)

I recognise that although the context of conservation has gradually formed through human activity, it can now be considered relatively autonomous from individual and collective agency (Layder, 1990). Settings and structures themselves influence actor dimensions. Due to their relative autonomy, the contextual dimensions cannot be fully understood through ‘observable behavioural events’ or constructionist epistemological framing and more objectivist (although not positivist) approaches were used to aggregate circumstances and explore wider social phenomena (ibid).

The objectivist framing that I used for contextual dimensions was not based in naïve realism or positivist beliefs in the empirical derivation of universal laws (Spencer, Pryce, et al., 2014). That would contradict all that I have said above. My objectivist epistemological position for the study of research settings and context acknowledges that these wider social phenomena have emergent properties that develop over time and that these can be explored more objectively than the actor dimensions of social reality (Layder, 1990). Macro social phenomena, such as the setting of CCI or the context of conservation, remain ‘open systems’, and more objective methods such as surveys offer a wider vantage point from which to explore them, and how they interact with agency dimensions.

It is important to recognise also that macro social phenomena are not ‘closed’ or static. They can and do change through transformational actions but at differing rates depending on historical factors and power relations (Layder, 1990). The study of transformation, a central theme of this thesis, required consideration of both actor and context dimensions of social reality and the interactions between them. This required an openness to the integration of the different epistemological positions that underpin the respective dimensions of social reality (summarised in Table 3), which in turn impacted the methodological choices described in the next section.

4.3 Researching conservation collaborations

The objectives of this research evolved and narrowed over the course of the emergent study, but they always centred on finding ways to enable collaboration in conservation. This required combining investigation into collaborative interactions in action (see Section 4.3.1) with investigation of contextual social phenomena (see Section 4.3.2).
4.3.1 Collaborative interactions in action: Research-oriented Action Research (RO-AR)

At its core, this study follows an action research methodology that is well established as a pragmatic approach in management research (Eden & Huxham, 1996; Reason & Torbert, 2001) to subjectively explore social interactions within conservation collaborations. Understanding of collaborative relationships and functioning is said to require “deeper appreciation of the importance of inter-personal connections” (Murphy & Stott, 2021: 1)

Action research for academic accreditation simultaneously involves an ‘action cycle’ to plan and implement an action intervention to address problems of genuine concern to a ‘client’; and a ‘reflection cycle’ by the researcher to reflect about the action cycle (Coghlan & Brannick, 2014). Action ‘interventions’ can take many forms depending on the nature of the practical problem being addressed, but they are, “explicitly intended to change the way practitioners think about or act in a situation” (Vangen, 2016: 385).

Action research combines first-, second- and third-person perspectives, since “all good research is for me, for us, and for them: it speaks to three audiences” (Reason & Marshall, 1987: p.112). In this sense, the first-person perspective involved my inquiring approach ‘upstream’ to consider the purpose of the inquiry and my own perspective and assumptions (critical subjectivity), as well as ‘downstream’, to critically examine my actions and their impacts (Reason & Torbert, 2001). The second-person perspective involved face-to-face engagement with research participants and the outcomes of this process which were shared in various ways within research settings. The third-person perspective involved contributions of broader theoretical relevance to the literature through this thesis and subsequent publications.

In the context of interorganisational collaboration, action research, as a form of ‘reflective intervening’, emphasises the importance of developing ongoing learning processes between collaborative partners (Gray, 2008). Action research methodologies for academic accreditation (such as a PhD) require, “an involvement by the researcher with members of organisations over matters that are of genuine concern to them and over which they intend to take action”, coupled with a commitment to advancing knowledge beyond the immediate case (Eden & Huxham, 2006: p.388). This involved working with different collaborative groups to identify the challenges they faced, researching efforts to improve situations, trying things in practice, and analysing the data collected throughout this process to draw out conceptual lessons of broader relevance. In this way, the action research simultaneously aimed to achieve practical and research aims by grounding iterative cycles of action and reflection “in the phenomenology of everyday experience” (Reason, 2006: p.189).

It is important to identify a ‘client’ in action research – the person (or group) the intervention is with and for, who ultimately decides whether it has been effective in practice (Eden & Huxham, 1996). Valid actionable knowledge comes out of action research that is deemed of use from the perspective of the client (Argyris, 1993). The multiple ‘clients’ involved in this research are described in more detail below.
Research-Oriented Action Research (RO-AR)

Research-Oriented Action Research (RO-AR) was considered the most suitable form of action research for this study because it enabled my primary commitment as a PhD candidate to advancing knowledge about collaboration beyond the immediate research settings (Eden & Huxham, 2006). Importantly, it is also the approach that has been used for the ongoing development of the Theory of Collaborative Advantage (TCA) – the theoretical construct that this research used to inform collaborative interventions, and ultimately aspired to extend (ibid; see Section 3.2). The RO-AR approach is a particular form of action research specifically developed by Colin Eden and Chris Huxham (2006) “for researching organizational processes and practices” (p.388). It can be differentiated from other forms of action research on the basis that it:

*Is concerned with a system of emergent theoretical conceptualizations, in which theoretical constructs develop from a synthesis of that which emerges from the data and that which emerges from the use in practice of the body of theoretical constructs which informed the intervention and research intent.* (Eden & Huxham, 2006: p.396)

RO-AR is similar to ethnography in its focus on ‘naturally occurring data’, “in the form of the expressed experience, views, action-centered dilemmas, actual actions of participants, and events in the life of the practitioners” (Huxham & Vangen, 2003: p.385). During the data collection phase of the study I immersed myself in the settings over a sustained period of 18 months and developed a close working relationship with participants involved in interventions (Breen, 2007; see Section 4.3.3 for more details about this phase of the research). This allowed me to observe participants and share experiences with them in a range of different situations, which was key as people often display different sides of themselves under different circumstances (Agar, 1996).

Over the course of the study relationship between me and research participants evolved. As we worked together trust was formed, additional opportunities presented themselves and I developed a deeper understanding of research settings and collaborative relationships. All of us were influenced in different ways through the experience of working together and capturing these insights as data and in reflexive journals was an important component of the approach (Cunliffe & Karunanayake, 2013).

4.3.2 Contextual social phenomena

Research Oriented-Action Research, with its focus on naturally occurring data, provides the means for in-depth analysis of social interactions in collaborative practice. This study additionally strived to understand the contextual social settings and structures within which these interactions took place.

While contextual social phenomena are intricately linked with social interaction, they have emergent properties that are distinguishable from human behaviour and action (Layder, 1998a). As such, broader social phenomena can be investigated from a wider vantage point using more objective methods.
By distinguishing and simultaneously investigating social interactions and contextual social phenomena it was possible to explore the interactions between them. An exploration of ‘transformation’, which became a central focus during my analysis, required consideration of both the actor and context dimensions of social reality (described in Section 4.2 above). As described in Section 1.3, the study initially explored the collaborative processes needed to achieve change within complex conservation systems (RQ1a). The exploration of contextual social phenomena through surveys (see Section 4.4.5) enabled further consideration about how the context of conservation itself impacts collaborations (RQ1b).

4.3.3 Research schedule

The study was divided into three distinct phases: 1) scoping study, 2) RO-AR, and 3) active theory building and thesis write-up. Preceding these phases was a period of planning during which I attended numerous courses and trainings and read the methodological literature that contributed to the development of my methodological approach and Probation Report\(^\text{12}\). At the same time I prepared my ethical proforma for the research, presented introductions to my research to the CCI Council and wider CCI Community, and navigated what became a lengthy process of acquiring access within CCI.

The RO-AR approach required a commitment to focussing on participants’ needs in practice (Eden & Huxham, 2006). As such, it was not possible at the outset of the research to identify which literature would become relevant. The literature review presented in Chapters 2 and 3 was conducted during the third phase of the research, after data was analysed, the three key themes had been identified and findings had been written up (Dick, 2011). This also helped to ensure that knowledge of the extant literature, beyond methodological considerations and insights from the TCA that were introduced during RO-AR, did not directly influence initial data analysis.

**Phase 1: Scoping study**

The aims of this initial phase of the research were to develop an understanding about the meaning and purpose of ‘collaboration’ within CCI and to identify collaborative challenges and groups potentially interested to be involved in Phase 2 of the research. Data collected during the Scoping phase were analysed and written up into a Summary Report that was shared with the Executive Director of CCI and selected members of the CCI Council in October, 2018 to ensure results aligned with their understanding and check that it was not perceived to be sensitive in nature.

\(^{12}\) A mandatory report and oral ‘mini viva’ for graduate students at the Open University to upgrade to PhD status at the end of the first year.
Phase 2: Research-Oriented Action Research

During October, 2018, I explored various leads with potential ‘client groups’ interested to work with me to address collaboration challenges. Leads were identified during the scoping study and through general observations within CCI and conversations with new and existing colleagues. At this stage I was not certain whether any of these leads would develop into interventions so I explored many possibilities. With each potential ‘client group’ I began (with their permission) by observing their regular day-to-day operations such as meetings and events to develop an understanding of their work. I also collected relevant project documents. For the interventions that progressed I organised initial meetings with ‘clients’ to discuss the primary collaborative challenges they were facing. Where useful I shared my Scoping Summary Report as a starting point for these discussions. Specific action research interventions are detailed in Section 4.3.4 and 4.3.5.

It is important to note that interventions were not formalised in the way I expected they would be. Intervention aims were derived from the practical needs of participants, as they arose, but they remained loosely defined. Some intervention actions were taken through my own personal initiative and understanding of the situations I was immersed in, rather than through formalised discussions with ‘clients’, primarily due to time constraints (for example see Box 6). Various times I attempted to use the ‘Action Research Consent Form’, that I prepared as an extension to my ethical proforma (see Section 4.3.7), but participants were not interested to formalise action research interventions in this way, likely because they feared the possibility of additional time commitments in settings where time was already scarce. I did continually check in to ensure that all participants were comfortable with my approach and with their involvement in the study.

An unexpected opportunity to work with the Biodiversity Revisited (BioRev) Initiative arose during a conversation with a former colleague in January, 2019 when we realised there were substantial overlaps between their developing initiative and my research. Following a conversation about it with my supervisors, I signed a contract with the Luc Hoffmann Institute (LHI) to conduct a Study of the Social Dynamics of the Biodiversity Revisited Initiative. A contract was deemed necessary since the study would involve outputs beyond my research requirements. Participants within the Initiative were clearly informed in advance that all of the data I collected would be used for LHI outputs and for my doctoral research. This development expanded my study to two ‘research settings’ from which to draw multiple forms of data about collaboration in conservation.

Sections of data were strategically analysed according to the needs of participants and the situations I was involved with and then fed-back or integrated into interventions during this phase. Provisional findings from these strategic analyses were also presented during feedback sessions (see Section 4.4.7 and Table 5), giving participants opportunities to respond, share their views and make suggestions. Having provided due warning within both research settings I gradually and sensitively retreated from the ‘action’ between September and December, 2019.
Phase 3: Active theory-building and thesis write-up

At the start of this phase I prepared a complete inventory of the data I collected and identified ‘orienting concepts’ for the analysis (see Section 4.5.4; Layder, 1998a). During early coding I developed an evolving coding structure which I then used for in-depth analysis of major codes. Three focal themes were selected and I drafted Chapter 5 – Change Findings, Chapter 6 – Diversity Findings, and Chapter 7 – Funding Findings. I then reviewed literature relevant to these themes and iteratively drafted Chapters 2 and 3 through a review of relevant literature. Moving iteratively back-and-forth between my findings (Chapters 5, 6 and 7) and the reviewed literature I then developed the theoretical conceptualisations and discussion presented in Chapter 8.

4.3.4 Researching the Cambridge Conservation Initiative

This project was initially conceived by me, with early input from the Executive Director of CCI (ED). My initial proposal to CCI Council was specific in the delineation of a research objective which was chosen following initial discussions with the ED about CCI’s needs. It was important to present something specific to the CCI Council, and to the Open University in my application for the PhD, in order to start the conversation and gain interest (McArdle, 2008). In my second written correspondence with the Council I presented two broader, potential research objectives and tried to make it clear that these would adapt according to the specific needs of CCI and the participants involved.

Negotiating access was a challenge during the first year and a half of the study. Operations of the CCI Council have become increasingly formalised. Without the support of the ED, and my previous experience and contacts within the setting, I do not believe I would have gained permission to conduct the research. Early written correspondence with the CCI Council was arranged through the ED, with the exception of one introductory face-to-face meeting. The ED understood my research intensions, and was a crucial ‘gatekeeper’ for the project (Marzano, 2007).

Clients

I originally perceived the CCI Council as my ‘client’ for the study, but later realised that Council members were generally too busy to be directly involved in interventions. Only four Council members (including the ED) were able to attend the presentation I prepared to introduce my research to Council (2018-05-25). During this meeting the Council agreed to set up a ‘Task Team’ – a subset of four Council members – to liaise with me throughout my research. They also agreed to revise and share with me a folder of CCI Council meeting notes and files about the collaboration’s challenges and achievements.

I was assured along the way that the difficulties I faced in communicating with the CCI Council were not uncommon, nor due to a lack of interest but to lack of available time. The CCI Council formally approved my research proposal at a Council meeting (2018-01-31) but raised concerns about the potential
sensitivity of the research. Regular communication with the Task Team was important to ensure that the research remained of use to CCI and publishable once appropriately anonymised. I agreed to meet with the Task Team approximately every six months to update them on my progress and acknowledged at the start of this journey that it might not be possible for me to publish all findings if some were considered by CCI Council to be particularly sensitive in nature.

In light of these conditions, my research within CCI in effect had ‘clients’ at two different levels. The ED was a key client for CCI and a crucial gatekeeper for the PhD. To a large extent my research in CCI was with and for the ED who ultimately decided whether our efforts had been effective in practice (Eden & Huxham, 1996). Those I worked with directly during RO-AR interventions were also clients, as described below.

**Interventions**

During my time at CCI I was primarily involved with two RO-AR interventions (see Figure 9). Initially I worked with the co-managers of the Natural Capital Hub to explore collaborative challenges within the nascent Working Group, and to help facilitate the narrowing of the group’s aims and purpose. I was asked to take minutes during the first WG meeting I attended (2019-02-04) and to add my reflections. I met with the co-managers to discuss our observations of the group and summarised for them a conceptual framework on goals from the TCA (Vangen & Huxham, 2012). I was asked to help organise and facilitate the following Working Group meeting (2019-03-13), after which we had a de-briefing meeting. Other commitments prevented further interventions with the Natural Capital Hub, but I worked with the co-managers at the end of their contracts to reflect about and summarise lessons learned.

Following my scoping study and a presentation of the results from the CCI survey I was asked by the ED to be involved in the CCI Strategy Development Process. This initially involved presenting at and participating in a CCI Council Strategy session (2019-03-25), and helping to organise and facilitate a strategy session with the Executive Director’s Office (EDO; 2019-04-24). I then worked closely with the ED, the Communications and Collaboration Manager (a member of his team), two CCI Council members and an external consultant to prepare the strategy process with the specific aim of enabling wide participation across the CCI community during the initial ‘Listening Phase’. Throughout the summer I worked closely with the Communications and Collaboration Manager, under the direction of the ED, to execute the Listening Phase, collect and organise data and conduct an initial analysis. I was invited to the yearly CCI Council Retreat (2019-09-25) to present an early summary of findings from the Listening Phase and to help facilitate an exercise and subsequent discussion with the CCI Council.
Figure 9. A diagrammatic representation of research undertaken within CCI – Shaded boxes represent outputs/inputs, circular arrows represent RO-AR interventions, and rectangular boxes represent contextual research methods. Asterisks show instances where conceptual ideas from the TCA were introduced.

**My roles**

As an action researcher I simultaneously managed my roles as researcher, striving for “reflective distance and rigorous analysis”, and facilitator of action (Levin, 2012: 133). Within CCI the latter involved a variety of different things including: taking and sharing notes from observed meetings and events (adding my personal views when requested), preparing and circulating formal minutes, summarising and presenting relevant literature, strategically analysing data and presenting preliminary results, facilitating workshops, editing and providing feedback on key documents under development, and actively participating in various events as requested.

With the co-managers of the Natural Capital Hub, I initially played a role in working with them to identify their key collaborative challenges. We then worked together to plan upcoming meetings and debriefed after each of them. I assisted with note-taking during meetings, and shared notes that included my reflections afterwards.

During the later stages of the study, participants across CCI came to see me as a resource because I had observed and documented a variety of different collaborative interactions within the setting. The ED offered to pay me for “the work [I was] doing in support of the CCI Strategy development” (2019-04-17), and, as it later became clear, so that he and his team could enlist my help on strategy
matters that were not directly related to my research. I politely declined, choosing to remain focused on my research.

As a researcher I have tried to remain open to being ‘surprised’ by findings that have emerged from the data while interpreting “data in light of theory” (Mantere & Ketokivi, 2013: 82). While conducting RO-AR during the second phase of the research, I prioritised analysis of data that was specifically requested by participants or that I believed was most useful to feedback within each intervention (see Table 5, Section 4.5.2). Periods of analysis tended to involve retreating from the setting in order to get some “reflective distance” (Levin, 2012).

Studying contextual social phenomena from a broader and more detached vantage point, through targeted semi-structured interviews and a survey, helped me to challenge my interpretations of the collaborative interactions I observed. Feedback session were also helpful to confirm that my interpretations aligned with participants’ perceptions and that my record was a true reflection of the process (Coghlan & Brannick, 2014).

4.3.5 Researching the Biodiversity Revisited Initiative

Clients and intervention

In January, 2019, an opportunity to study the social dynamics of the Biodiversity Revisited (BioRev) Initiative as a consultant serendipitously arose. The aims of the consultancy aligned with my PhD but involved additional deliverables. In April, 2019 I signed a contract with the Luc Hoffmann Institute with the stated objectives to: i) chart shifts in how participants conceptualise the problem and potential solutions to the ‘biodiversity crisis’, ii) establish a baseline of participants’ perspectives pre- and immediately post-process from which to track the potential impact of the project process, iii) generate recommendations for the design and implementation of convening processes that bring together diverse perspectives to deliberate on critical conservation challenges, and iv) contribute to donor reporting. Clear communication with participants enabled me to use all of the data collected within the Initiative for both the consultancy and my PhD research.

To achieve that above objectives I designed a study that included a combination of interviews and a survey for Symposium participants pre- and post-event. Analysis of the results from the pre-event survey were presented to the Secretariat to help with the development of the Symposium, and a results poster was displayed at the event.

The primary intervention within the BioRev setting consisted of regular meetings with the Project Owner throughout the Initiative to identify and monitor collaborative tensions that arose (as described in Section 3.2.1) and to discuss how they could be actively managed. The Project Owner was my client for this RO-AR intervention.
My roles

Within the setting my roles as consultant and PhD researcher were intertwined. On numerous occasions when I attempted to observe meetings and events I was asked (and sometimes pushed) to actively participate. I previously worked for the Luc Hoffmann Institute with key members of the team and in this way, as within CCI, I was an ‘insider’ (Taylor, 2011). At the same time, the Initiative, its partners and many of the staff were unknown to me before I was brought on board. As a consultant it was my role to prepare a report about the Initiative, and this role enabled me to gain consensual access to thoroughly research the Initiative.

Figure 10. A diagrammatic representation of research undertaken with the Biodiversity Revisited Initiative. Shaded boxes represent outputs/inputs, circular arrows represent a RO-AR intervention, circles represent observed events and ethnographic activities and rectangular boxes represent contextual research methods. Asterisks show instances where conceptual ideas from the TCA were introduced.
4.3.6 Validity

Eden and Huxham (2006) distinguish RO-AR from the following other action research approaches:

- organizational intervention projects that do not satisfy characteristics of rigorous research
- research within an organization that does not satisfy characteristics of action orientation; and
- forms of action research that do not have research output as their primary raison d’être. (Eden & Huxham, 2006: 388)

Johnson et al. (2006) convincingly articulate that the quality and evaluation criteria of qualitative research should be contingent on the philosophical stance and mode of engagement adopted. Traditional positivist measures of ‘validity’ and ‘reliability’, such as internal objectivity and experimental design are not appropriate for this study (Argyris, 2005). Instead, Vangen (2019) outlines how the validity of RO-AR concerns rigour and relevance. Research using this approach cannot be repeated as interventions are always unique, and it is unlikely the entire research process can be entirely documented; however, methodological rigour is achieved through the provision of adequate detail to convey a “precise and accurate understanding of the phenomenon researched” (ibid: 137). Theory derived through RO-AR may be deemed valid when “the views, experiences and actions of organization participants – on issues that were of genuine importance in practice – are accurately captured and accounted for in the development of the theory” (ibid: 137). Opportunities to validate the data with participants (see Section 4.4.7) helped to ensure their experiences had been accurately interpreted (Torrance, 2012). Vangen additionally emphasises that the validity of the resulting theory relies on it being relatable to participants while enabling generalisation. Research of this kind is therefore valid when it has been robustly developed and deemed useful.

For the study of contextual dimensions, validity was achieved through the use of well established statistical analyses that were appropriately selected for the type and distribution of data collected, and the appropriate interpretation and use of results. The use of a mixture of different methods within two different settings offered important opportunities for triangulation – “the combination of methodologies in the study of the same phenomenon” (Denzin, 1978: 291). ‘Discrepant accounts’ (Torrance, 2012) that arose through the comparison of ‘espoused theories’, as portrayed in key documents and during interviews with ‘theories in use’, as observed in practice, were particularly insightful for conceptual development (Argyris, 1993). In these ways triangulation improved the validity of the study.
4.3.7 Ethics

Initiating contact

Key participants, namely the Executive Director of CCI, his team, and members of the CCI Council, were contacted before I applied to the Open University to establish whether CCI could provide the context for an action research-based PhD study. During this initial ‘setting up’ phase I broadly informed the aforementioned participants about my research approach and plans via written correspondence.

The ED and CCI Council formally confirmed their willingness to participate in the research during a Council Meeting (2018-01-31). I then prioritised the submission of my ethical proforma to the Open University Human Research Ethics Committee (HREC), receiving a favourable opinion (2018-06-20: Reference 2854).

Consent

The design of this study was guided by a virtue-based approach to ethics and supplemented with principle-based ethics (Banks, 2018; Carpenter, 2018). Because the research was action-based and emergent it was not possible to specify in advance exactly who would be involved and in what capacity. As a result, ‘consent’ was an ongoing relational process that was continually negotiated throughout the research period (Murphy & Dingwall, 2001). Because the research involved ethnographic observation within the David Attenborough Building (DAB) I used all possible means to inform people about my research and to provide contact information should anyone have questions or concerns.

At the start of the research period I put up information posters throughout the DAB and on the CCI Intranet site (Appendix A.1). I delivered a series of open lunchtime seminars to introduce my study and provide updates about preliminary findings along the way. At the beginning of each meeting and event that I observed I briefly introduced myself, my roles as researcher and observer, and checked that everyone was comfortable with my presence, giving the option to contact me afterwards if preferred. A project information sheet was shared with all potential participants before they were asked to take part (Appendix A.2). Signed individual consent forms were obtained for interviews and ‘clients’ were asked to make a commitment in principle to take part in interventions over the duration of the study but were also free to withdraw from the study at any point without giving a reason. Approximately every 6 months I met with the CCI Council Task Team, and more frequently with the Executive Director, to ensure that the research continued to be of relevance and that it was not considered overly sensitive in nature.

For the Biodiversity Revisited Initiative all communications about the Study of the Social Dynamics of the Initiative included information about my PhD research. During a virtual Steering Committee meeting (2019-03-11) I delivered a presentation to introduce the Study, and it was confirmed that all of the data collected for the study could also be used for my PhD. A description of the Study was included on their website (which has not been available since the close of the project) and at the start of
both online surveys that were conducted, giving participants a clear option about whether they wanted to proceed. My project information sheet and an information sheet about the Study (Appendix A.3) were shared with all potential participants within this setting. And similar to the CCI setting, I obtained signed individual consent forms before interviews and introduced myself and my roles before the meetings and events that I observed. In both research settings I was told by participants that if anything I was excessively careful about being transparent about my research aims and approach.

Insider research

Having previously worked for organisations within CCI and for the Luc Hoffmann Institute I was already familiar with both research settings, knew many people working there, and could be considered an ‘insider’ (Taylor, 2011). This allowed me to have an initial understand about working cultures and to interact naturally with participants, however it also posed challenges (Breen, 2007).

My husband is a successful conservation academic and a key participant in this research. He was promoted to the position of Director of the MPhil in Conservation Leadership, one of CCI’s flagship collaborative Programmes, just before I was offered my PhD funding. In association with this role he also became a member of the CCI Council. We took the ethical implications of our relationship on my research and his position on the CCI Council extremely seriously throughout. During the Council Meeting in which my research was first discussed my husband announced a ‘conflict-of-interest’ and was permitted to stay without contributing. During subsequent Council conversations about my research he volunteered to leave the room. It was mutually agreed that he would not be a member of the CCI Council Task Team that I liaised with and all of the ethical principles that I have outlined extend to him.

Over time we worked out how we could discuss some things ‘on the record’ while confidential information needed to be avoided. He was careful not to share confidential CCI Council information and I was careful not to reveal any information I had obtained in confidence from other participants.

The most difficult encounter we faced was before I observed a Working Group meeting that he was chairing. Before the meeting he asked how I was planning to introduce myself to the group. By this stage of the research I had observed a number of meetings of this kind, and had invested a lot of effort within the setting to inform people about my research as I take matters of ethics very seriously. Unfortunately, my husband did not initially feel my description of the self-introduction I planned to give would allow participants ample opportunity to say if they did not want to be observed. In doing so he inadvertently implied that I was being unethical which was deeply upsetting for me. Consent within action research is a delicate and evolving matter. I was so careful to constantly remind participants about my role as a researcher that I had been told on a few occasions to ‘relax’. This event made me second-guess my ethical approach and led to a series of conversations with participants to double check that they were comfortable with their involvement in the study. Everyone I asked was. In one email response a participant assured me,
I have no doubt your research is well conducted and valuable. And quite frankly, I’d love to hear more in person as I don’t understand it all and I’m sure I would be wiser for it. I have no problem with you taking as many notes as you see fit about anything - including my own observations. I know you’ll use them well and trust your judgement, including on how to use anonymity. Sorry if my jesting has led you to question my intent. Perhaps I am a bit too self-conscious; perhaps it is a (weird) way of drawing attention to your work, which I think is important... [2019-07-16EM–095-12–email]

In the end I gave a thorough introduction at the start of the Working Group meeting and both my husband and I were confident that everyone was comfortable for me to be present. We did not have any issues after this, helped by the fact that I chose not to ask my husband to review any of my thesis before it was submitted.

4.4 Research methods

4.4.1 Introduction

As outlined in the philosophical outset of the chapter, this research explores different dimensions of the social reality of collaboration. The epistemological positions that underpin these dimensions warrant the use of different methods. To study collaborative interactions in practice (‘the self’ and ‘situated activity’ dimensions), ethnographic methods to collect ‘naturally occurring data’ were most appropriate. RO-AR also involved direct participation and data were captured in field notes, memos and research journal entries. For broader contextual dimensions (‘setting’ and ‘structures’) more objective methods were utilised to gain a wider vantage point. This included targeted semi-structured interviews and the collection of both qualitative and quantitative data via surveys.

The mixed-method approach came from many different angles to crosscheck the validity of findings through ‘triangulation’ to produce a “multi-perspectival ‘overview’ which increases the potential for more and more robust theoretical ideas” (Layder, 1998b: 15). The data collection methods that were used are summarised in Table 4 below and described in turn below.

In addition to contributing to understanding about contextual dimensions, survey and interview methods served a vital dual purpose as an ‘insurance policy’ during the early stages of the research. Action research of this kind requires a terrifying leap of faith and belief that it will be possible through an emergent process to address issues of genuine relevance to participants and to make an original contribution to knowledge within the strict confines of a PhD project. Interventions were to a large extent out of my control, and surveys and interviews reliably produced valuable data (albeit of a different nature). In this way there were both theoretical and practical justifications for a mixed-methods approach.
Table 4. A summary of the data collection methods used – including the types of data produced.

<table>
<thead>
<tr>
<th>Data collection methods (data type signifier)</th>
<th>Description</th>
<th>Data types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant observation (field note – FN)</td>
<td>Ethnographic observation of day-to-day activities, meetings, workshops, seminars and other events</td>
<td>Field notes, minutes, digitised event outputs</td>
</tr>
<tr>
<td>Interviews (transcript – TR)</td>
<td>Flexible in-depth interviews with open-ended questions</td>
<td>Audio recordings transcribed verbatim</td>
</tr>
<tr>
<td>Conversations (field note – FN)</td>
<td>Co-constructed accounts of collaboration in action</td>
<td>Field notes (including my contributions)</td>
</tr>
<tr>
<td>Surveys (survey xxx)</td>
<td>Online surveys including a combination of question types</td>
<td>Quantitative and qualitative data in spreadsheet format</td>
</tr>
<tr>
<td>Key document review (key document – KD)</td>
<td>Collection and analysis of relevant reports, publications, evaluations, graphics and images from research settings</td>
<td>Documents in digital format</td>
</tr>
<tr>
<td>Feedback opportunities (field note – FN) (email – EM)</td>
<td>Discussion or other feedback following periodic presentation of results with ‘clients’ and ‘users’</td>
<td>Field notes and audio recordings, emails received</td>
</tr>
<tr>
<td>Research journal</td>
<td>An account of my responses, decisions and feelings throughout the study</td>
<td>Dated electronic entries stored in NVivo</td>
</tr>
</tbody>
</table>

4.4.2 Participant observation

I conducted ethnographic research within the two research settings over an extended period to better understand participants’ perspectives and collaborative group interactions (Agar, 1996). Participant observation was an invaluable method to explore collaboration in action. According to Creswell (2018), “a qualitative observation is when the researcher takes field notes on the behaviour and activities of individuals at the research site... in an unstructured or semi-structured way” (p.185-6). Observations during day-to-day activities, meetings, workshops, seminars, and other events were captured in field notes as they took place or directly following. These notes documented what took place in the form of what was said and how people interacted. My personal reflections and emotional responses to what took place were also often captured in field notes, but were marked in green to distinguish them from direct observations of what took place.

Data derived through direct observation were considered ‘naturally occurring’ data appropriate for the RO-AR approach (Huxham & Vangen, 2003). Over the course of the study I observed a large number of events (across both research settings) that I attended, participated in or organised myself. As the study progressed and trust was built with participants, I was invited to attend more meetings and events in person. Key outputs from observed events were digitised and also included as sources of naturally occurring data. This included: agenda, circulated meeting minutes, flipchart outputs and summary reports.
Direct observation also enabled an investigation into participants’ ‘theories-in-use’ – the theories that they actually employed in practice (Argyris, 1993). During analysis, these observations were compared with participants’ ‘espoused theories’ as captured through interviews and in key documents.

4.4.3 Interviews

As a research method, interviewing is more directive than participant observation and the resulting data is not considered ‘naturally occurring’. Interviews inevitably involve interaction between interviewer and interviewee to produce co-constructed accounts (Rapley, 2001), nevertheless they produced rich accounts that were particularly valuable for triangulation with other forms of data. I utilised an informal, in-depth interviewing technique to conduct a total of 33 interviews during the research. In-depth interviews can be considered “performed retrospective accounts in response to open-ended questions” (Charmaz & Belgrave, 2012: 6). In CCI I conducted 15 interviews that were flexibly and loosely structured. Seven were conducted during the initial Scoping Study (during Phase 1) with CCI participants across institutions and levels of seniority. The purpose of these early interviews was to gain an in-depth understanding, from various perspectives, of collaboration, collaborative experience, collaborative challenges and collaboration in the context of conservation, as compared to other contexts. Initial interviewees volunteered or were identified as someone of interest to speak to; some through snow-ball sampling (Goodman, Leo, 1961). Rough interview guides were prepared before each interview, and adapted to the participant involved. Interviews were informal and conversational, lasting between 20 and 75 minutes. Each started with a brief introduction to the research, followed by open-ended questions and related follow-up questions (Charmaz & Belgrave, 2012) and ended in a positive way (Charmaz, 2014). An additional eight interviews were conducted within CCI with interviewees who were either purposively (Patton, 2014) or theoretically sampled (Charmaz, 2014) to gather data relating to active interventions and ongoing analyses.

As part of my work with the BioRev Initiative I prepared interview guides to gather data before and after the BioRev Symposium event. In total I conducted 18 semi-structured interviews within this setting, nine pre-event and eight following-up with interviewees post-event. These averaged 27 minutes in length and roughly covered questions from the interview guides in a natural order.

All of the interviews conducted during the study were audio recorded with participants’ consent and these were transcribed either by myself or a professional transcriber. Participants were able to review their transcript and were given two weeks to retract the information if they chose to, but none did.

4.4.4 Intervention conversations

RO-AR involved a number of ongoing conversations with intervention participants. Working with participants, I actively engaged in interventions through conversation to help find ways to address the collaborative challenges they identified.
Conversations represent active, co-constructed accounts which were captured in field notes that included my contributions. Although these data are not purely ‘naturally occurring’ they do contain valuable insights about decision-making during collaborative action. This method is similar to the ‘informal conversational interviews’ described by Turner (2010) which relies “entirely on the spontaneous generation of questions in a natural interaction” (p.755).

4.4.5 Surveys

Online surveys were used in both research settings to collect a combination of quantitative and qualitative data from participants. Survey tools are commonly used as research instruments in conservation, including within both research settings.

In CCI I used my findings from the Scoping Study to develop the Enabling collaboration in CCI Survey during January, 2019 to: i) collect data about collaborative experiences and preferences, ii) explore different forms of diversity within CCI (based on what I had observed to this point), and iii) help to initiate collaborative actions. The survey was piloted by six people and improved before I circulated it across the CCI community through the digital CCI Newsletter, formal channels of communication within the collaboration (i.e. partner focal points), and using posters within the David Attenborough Building. I also organised a prize draw for an original nature painting as an incentive to encourage responses. The survey was ‘open’ during February and extended until midnight on March 4th, 2019. On the final day of the survey I sat in the CCI Common Room and informed people about the survey while they made coffee.

The final survey comprised 33 questions organised into the following sections: 1) collaboration experience (5 questions), 2) collaboration preferences (3 questions), collaborative actions (3 questions), 3) information about respondent (14 questions) and, 4) future contact and participation (Appendix B.1).

For the Biodiversity Revisited Initiative I created two different surveys; a Pre-event survey that was circulated by email to Symposium participants before the event, and a Post-event survey that was circulated by email afterwards. The pre-event survey was developed during May and June, 2019 to: i) gather Symposium participants’ perspectives about the concept of ‘biodiversity’, how the ‘biodiversity crisis’ could more effectively be addressed, and the roles of the initiative in contributing towards the post-2020 global biodiversity framework, ii) explore participants’ values and preferences using existing conservation survey instruments, and iii) collect demographic information to allow for the exploration of trends and to feed into the design of the Symposium. The survey was piloted by six people and subsequently improved over July, 2019. It was circulated by email using personalised links and was ‘open’ between 5-16 August, 2019. The Pre-event survey comprised 17 questions organised into the sections: 1) questions relating to Biodiversity Revisited, 2) questions about your values and preferences, and 3) questions about yourself, followed by information about future contact and participation (Appendix B.2). The Post-event survey contained an additional 8 questions, and enabled respondents of the Pre-event survey to skip questions they had already answered.
4.4.6 Key document review

Throughout the study I collected documents of potential relevance to the research. These ‘key documents’ (KD) included reports, publications, evaluations, graphics and images from research settings, participants, and organisations, that were in the public domain or shared with me for the purposes of the research. They also included ‘research documents’ relating to or resulting from events and research activities held within the settings, for example feedback presentations and workshop minutes and outputs.

Key documents provided a valuable account of ‘espoused theories’ – the things that individuals and groups intend to do based on their values, attitudes and beliefs (Argyris, 1993). Documents that were produced to be shared publicly also shed light on the ways that participants want their actions to be portrayed. Triangulation of these accounts with the ‘theories in use’ that were observed during day-to-day actions (see Section 4.4.2) offered valuable insights into collaborative processes and were key for analysis and conceptualisation of results.

As Bowen (2009) describes, my review of key documents “entail[ed] finding, selecting, appraising (making sense of), and synthesising data contained in documents” (p.28). Sections of relevant text from key documents were included in analyses alongside other forms of data.

4.4.7 Feedback opportunities

Feedback presentations were periodically held within research settings to verify the accuracy and rigour of data interpretation and analysis (Breen, 2007; Howard-Payne, 2016). Some feedback sessions were held with ‘clients’ to discuss the data and insights gained through interventions, while others, especially during the later stages of phases 2 and 3, were advertised across research settings so that all potential ‘users’ of the research within research settings could be involved. It was particularly valuable for feedback sessions to involve those who had not directly contributed to the research so that their views could also be represented (Hibbert, Sillince, et al., 2014). Even cases of disagreement between feedback session participants presented opportunities to explore alternative perspectives (Agar, 1996). Two of these sessions were audio-recorded/livestreamed to enable virtual participation. Comments were captured as field notes, and included as valuable data.

Approximately every 6 months I also met with the CCI Council Task Team to discuss how the research was progressing and to collectively monitor the overall sensitivity of the material and how it could be reported.
4.4.8 Research journal

Journaling allowed me to capture my thought progression and experiences throughout the study, helping me to understand my reasoning processes and plan for future action and analysis (Breen, 2007; Coghlan & Brannick, 2014). According to Corbin and Strauss (2008),

"The researcher must walk a fine line between getting into the hearts and minds of respondents, while at the same time keeping enough distance to be able to think clearly and analytically about what is being said or done—a good reason for the researcher to keep a journal of his or her responses and feelings. (p. 98)"

Journaling was an important tool for reflexive observation, helping me to look inwards (Taylor, 2011), and to increase research rigour by acting as an ‘audit trail’ (Breen, 2007). I began my research journal before I accepted my position at the Open University, and consulted it during analysis and write-up (Phase 3).

4.5 Process of analysis for theory development

4.5.1 Introduction

This thesis strives to make two types of contribution: 1) practical insights for collaborators who are navigating complex conservation challenges (RQ1), and 2) extension of collaborative theory through an exploration of collaboration in the context of conservation (RQ2).

This section details the two types of analysis that were utilised during the study to derive these contributions. Sub-section 4.5.2 describes how constructivist grounded theory was used during RO-AR in the second phase of the research to analyse data in action, feeding results back into ongoing interventions. Sub-section 4.5.3 details survey analysis and sub-section 4.5.4 then describes the process of analysis used for active theory-building during the third phase of the research. The section ends with a brief clarification of the crucial roles that reflection and reflexivity played in the process of analysis.

4.5.2 Analysis in action: Constructivist grounded theory

Theoretical concepts were developed through RO-AR “from a synthesis of that which emerge[d] from the data and that which emerge[d] from the use in practice of the body of theoretical constructs which informed the intervention and research intent” (Eden & Huxham, 2006: 396). In this research, the Theory of Collaborative Advantage (TCA, see Section 3.2) served as the ‘body of theoretical constructs’ that informed the research intent and interventions (ibid). The entire study was initially motivated by my curiosity about the potential utility of the TCA within conservation, based on my varied experience within this field.
The research therefore simultaneously utilised and aimed to expand the TCA. Core concepts from the TCA were introduced during RO-AR interventions to determine their utility in practice within research settings (see ‘*’ in Figure 9 and Figure 10 above). In particular, insights about collaborative advantage and the inevitability of tension in collaboration were introduced within both research settings, and The tangled web: Unraveling the principle of common goals in collaborations by Vangen and Huxham (2012) was summarised and shared during interventions with the CCI Strategy Development Process and the Natural Capital Hub. Beyond these insights from the TCA, I refrained from reading literature during the scoping study and RO-AR phase of the research to ensure that action interventions were guided by clients’ needs in practice (Eden & Huxham, 1996).

As RO-AR interventions progressed, some of the collected data were strategically analysed using a constructivist grounded theory approach (Charmaz, 2014) to inductively synthesise what was emerging and feed it back into ongoing interventions (see Table 5). Grounded theory is a set of qualitative data analysis strategies that were used in this exploratory research to derive conceptual thinking from data. It is the method most frequently used across disciplines and professions to analyse qualitative data (Charmaz & Belgrave, 2012), and an appropriate choice for action research because it involves reflexivity and self-awareness and keeps the analysis grounded in the data (Dick, 2011; Eden & Huxham, 2006).

The ‘constructivist’ approach to grounded theory considers data and analysis to be constructed through relationships and shared experiences with participants (Charmaz & Belgrave, 2012). This approach is also called ‘Straussian’ as it was originally distinguished by Strauss (Strauss & Corbin, 1990) and more recently developed by Charmaz (2014), who I had the pleasure of meeting at a training I attended during the first year of this study.

**Table 5. A list of strategic analyses conducted during RO-AR during phase 2** – These analyses were conducted using a constructivist grounded theory approach. Analysis marked with * did not involve initial coding due to severe time limitations.

<table>
<thead>
<tr>
<th>Month</th>
<th>Description</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-10</td>
<td>Scoping Study analysis: 7 interviews, field notes and key document review from phase 1</td>
<td>▪ Scoping study report (35 pages); Lunchtime seminar presentation (2019-11-19) <em>The benefits and challenges of conservation collaborations – gathering perspectives within CCI</em></td>
</tr>
<tr>
<td>2019-05</td>
<td>Analysis of Biodiversity Revisited field notes to identify and describe ‘tensions’</td>
<td>▪ Summary for ongoing discussions with Project Owner (2019-06-04 onward)</td>
</tr>
<tr>
<td>2019-08</td>
<td>Analysis of qualitative responses to Biodiversity Revisited pre-event survey</td>
<td>▪ Biodiversity Revisited pre-event survey report (47 pages); Poster for Biodiversity Revisited Symposium</td>
</tr>
</tbody>
</table>
This was the most appropriate choice for data analysis for the scoping study and during the RO-AR phase of the study because it aligned with my constructionist epistemological position for exploration of collective activity (Howard-Payne, 2016; see Section 4.2) and worked well with my pragmatic orientation by emphasising both meaning and action. Using this approach enabled me to acknowledge that my lived experience and existing theoretical knowledge “colour the way in which [I] understand and interpret the data”, while generating novel theory (Howard-Payne, 2016: 55). This is not the case in the ‘Glaserian’ form of grounded theory which operates within a post-positivist paradigm and expects researchers to remain objective and uninfluenced by literature or previous experience (Glaser, 2012).

I used Charmaz’  Constructing Grounded Theory (2014) as my guide for data analysis during the first and second phases of the study (the remaining content in this sub-section is derived from this source unless otherwise stated). I used NVivo 11 Plus software to store data and to aid with qualitative analysis. The first stage of analysis was initial coding which involved line-by-line coding by hand in the margins of pages (using my tablet laptop with electronic pen and custom margins to afford enough space) using active gerund (‘-ing’) words to start to explore the data (e.g. describing..., feeling..., acting...). As Charmaz (2014) suggests, “the openness of initial coding should spark your thinking and allow new ideas to emerge”, while “curb[ing] our tendencies to make conceptual leaps and to adopt extant theories before we have done the necessary analytic work” (p.117).

Focused coding followed. This involved studying and comparing initial codes to decide which “make the most analytic sense to categorize… data incisively and completely” (ibid, p. 138). This step was conducted electronically in NVivo 11 Plus, categorising sections of primary data with electronic ‘codes’, and nesting them into an evolving structure as I worked through the data. For example, the following comment was made during the CCI Council Strategy Development Session that I observed:

“people need to be booked to projects! People will do it [collaboration] in their free time because they are so committed, but they are limited in what they can leverage” [2019-03-25FN–Council_Strategy_Session, paraphrased]. This section of text was coded to ‘project funding’, nested under the broader ‘funding for collaboration’ code. This same section of text was also coded to other relevant focussed codes including: ‘fundability’ (under ‘fundraising’), and ‘rigidity’ (under ‘change as a collaboration’>’flexibility vs. rigidity’).

The organisation of focused codes into a logical structure highlighted what was most important and advanced the direction of conceptual thinking. As data accumulated under each focussed code it was considered to refine the definition and implication of the code and to identify gaps that could be further explored. Using this approach ensured that codes continued to reflect primary data. Memo-writing throughout helped to capture the analytic journey and to develop conceptual thinking.
It was not possible during the busy RO-AR phase of the research to work through multiple rounds of analysis to raise focused codes to *conceptual categories* – the makings of a substantive theory. This level of conceptual development was reserved for active theory building during the systematic review of data during the third phase of the research, as described in the next section. Theoretical sampling was used during the RO-AR phase to inform the choice of participants to interview, and activities and events to observe, helping to further develop data-derived concepts.

### 4.5.3 Survey analysis

Surveys were used in both research settings to collect qualitative and quantitative data. Qualitative survey data were analysed using a constructivist grounded theory approach as described above. This section will briefly describe how quantitative survey data were analysed. Complete results from survey analyses are presented in Appendix C.

IBM SPSS Statistics 24 software was used to analyse all quantitative survey data. Initially I tested to see whether the data from each question was skewed (i.e. unevenly distributed) by dividing ‘skewness’ by ‘standard error of skewness’. A value below 1.96 indicates that data are not skewed and that the use of the statistical tests described below is appropriate (Orcan, 2020). I did not analyse data that were found to be skewed.

Two statistical tests were used, depending on the types of data involved, to explore whether there were any relationships between different variables. The *Spearman’s rho test* ($r_s$) was used to assess correlation between ordinal and/or interval variables (i.e. ordered data from Likert scales, for example amount of collaborative experience; or data with meaningful numerical values, for example age). The *Mann Whitney U test* ($U$) was used to compare the difference in an ordinal or interval variable between two independent categorical groups (i.e. with no numerical value, for example the level of seniority of those with qualitative training compared to those without qualitative training).

Results from both tests were considered to be significant at a level of $p < 0.05$. The Bonferroni correction (Holm, 1979) is often used in studies involving multiple statistical tests to control for Type 1 error – “the probability of incorrectly rejecting a null hypothesis in a long run of exact replications in which samples are randomly drawn from the exact same population” (Rubin, 2017: 2). In this research the Bonferroni correction was not used because it was exploratory in nature, i.e. no null hypotheses were identified a priori (ibid). Regardless, I was conservative in my interpretation of significance and utilised quantitative results for triangulation alongside qualitative findings.

### 4.5.4 Active theory building: In-depth analysis

This research strived to expand the Theory of Collaborative Advantage (TCA) through an exploration of collaboration within the context of conservation, and in so doing support reflective practice for conservation collaborators. Theory of this kind has the potential to positively influence collaborative

The approach that I used to build theory was iterative and emergent. Although it is challenging to describe, my approach generally proceeded through the steps: data inventory and systematic review, early coding, in-depth analysis, selection of themes and write up. Each of these steps is described below.

**Data inventory and systematic review**

At the outset of the third phase of the research I created an inventory of all of the data I had collected. This involved creating a master spreadsheet that included each data ‘source’ (or file), listing: file name (made up of the date, data type signifier and few word description), type (field note, email, key document, interview transcript, research document, listening phase data or survey response), and a brief description. Data from the two research settings were kept on separate sheets: one for CCI, another for BioRev. All of the sources were broadly categorised as one of the following:

− **Naturally occurring data (N)** – direct observation of collaborative meetings and events
− **Active account (A)** – data collected during meetings, conversations and interviews that I played an active role in, for example by deciding what questions to ask or through facilitation or participation
− **Key document (D)** – relevant documents collected from the public domain or shared with me
− **Feedback (F)** – feedback from research participants following presentation of results
− **Listening Phase data (LP)** – data collected from participants across CCI during the Listening Phase of the CCI Strategy Development Process (this included various formats)
− **Research documents (R)** – documents that I produced and shared with participants during the course of research. Although I did end up coding some of these, they were not included in my tally of ‘data’ as they are my files

‘Orienting concepts’ (Layder, 1998a), also known as ‘sensitising concepts’ (Charmaz & Belgrave, 2012), were identified at this stage as potential lines of inquiry for active theory-building and as a starting point for early coding of data. These were drawn from: empirical data collected during RO-AR as ‘practitioner defined’ concepts, including ideas put forward by participants during the study; as well as ‘sociologically defined’ concepts, constructed by me as researcher based on my experience of the interventions and the ongoing analysis of the data collected (Layder, 1998a). Orienting concepts were also influenced by my understanding of relevant theoretically defined concepts from the TCA. Table 6 lists the orienting concepts considered at the outset of analysis during the third phase of the study.
Early coding

Using the orienting concepts as a broad initial coding structure, I began by analysing ‘naturally occurring data’ and all sources associated with them. I used separate codes and coding structures for the two research setting – CCI and BioRev – so that differences between them could be reflected. As I worked through the data, file by file, additional codes were added when the existing codes did not fully capture something presented within the data. The coding structures continually evolved as I went along to reflect the data. Review of the accumulating ‘references’ (highlighted sections of text) under a code led to a better understanding of the meaning of that code. Codes were occasionally merged if they ended up having similar meanings, and the structure was reorganised to reflect emerging relationships between codes. Figure 11 provides an example to show how the codes evolved during the analysis from the initial orienting concepts through to the eventual coding structure.

Once I had coded naturally occurring data and all files associated with them (i.e. the active accounts and key documents relating to the same project) I reviewed the remaining files from my inventory and prioritised analysis of content that potentially related to orienting concepts (Huxham, 2003). This included survey and interview data. In total I coded 89% of data collected from CCI and 72% of data collected from BioRev. The proportion was lower for BioRev due to the tight deadline for my consultancy report – a pragmatic condition of my access within this setting that impacted the order in which I analysed data.

Table 6. A list of orienting concepts considered at the beginning of phase 3 – Orienting concepts are categorised into type (theoretically, sociologically and practitioner defined) and include inspirations for inclusion.

<table>
<thead>
<tr>
<th>Orienting concepts</th>
<th>Type</th>
<th>Inspirations</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘cultural diversity’, ‘different forms of difference’ ‘diversity’</td>
<td>Practitioner defined</td>
<td>‘Diversity’ was a key focus among organisers of the BioRev Symposium</td>
</tr>
<tr>
<td></td>
<td>Sociologically defined</td>
<td>Many forms of difference in the context of conservation; premise of my presentation at the EMES Social Enterprise conference (2019-06-26)</td>
</tr>
<tr>
<td></td>
<td>Theoretically defined</td>
<td>(Vangen, 2017; Vangen &amp; Winchester, 2014)</td>
</tr>
<tr>
<td>‘challenges’, ‘benefits’, ‘barriers’, ‘enabling factors’</td>
<td>Practitioner defined</td>
<td>At the Biodiversity Revisited ‘Design Team meeting’ (2019-05-10), discussions</td>
</tr>
<tr>
<td></td>
<td>Sociologically defined</td>
<td>Arising from the Scoping Study analysis</td>
</tr>
<tr>
<td></td>
<td>Theoretically defined</td>
<td>(Vangen, 2016; Vangen &amp; Huxham, 2012)</td>
</tr>
<tr>
<td>‘tensions’, ‘managing tension’</td>
<td>Practitioner defined</td>
<td>Explicitly discussed within both research settings; the focus of an intervention with the Project Owner of BioRev; one focus of my presentation during the EDO Strategy Session (2019-04-24)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>'uncertainty', 'emergence'</th>
<th>Practitioner defined</th>
<th>Explicitly discussed during the BioRev intervention and Secretariat discussions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociologically defined</td>
<td>Identified as codes through constructivist grounded theory analysis during RO-AR within both research settings</td>
<td></td>
</tr>
</tbody>
</table>

| 'transformation', 'transformational aims' | Practitioner defined | Often used within both research settings. Collaborations within each of these settings had explicitly transformational aims |

**Figure 11. Coding progression** – an illustrative comparison of high-level codes and how these evolved during data analysis, with a closer look into ‘collaboration dynamics’. The ‘uncertainty’ code that began as an orienting concept was moved under ‘emergence’ by the second coding structure shown (snapshot from 2020-03-12), and this ‘emergence’ code was later moved under ‘change’ (shown with →). ‘Change’ was raised to a high-level code during the later stages of analysis due to its central importance and the frequent use of the codes that were structured under it.
In-depth analysis

Following the initial coding of data I worked through each of the major codes within the eventual coding structure to consider all of the references they contained. The order that I decided to analyse the codes was influenced by practical needs within the research settings. For example, I was given two opportunities to comment on drafts of the next CCI Strategy which led me to prioritise analysis of ‘governance’ and ‘the how’ codes so that I could feed back within their tight timeline. In retrospect, it would have been much easier to work through the data in a more systematic fashion. My decision to analyse data as it was needed made the process less efficient overall, but further demonstrates my commitment to participants’ needs in practice.

Data references within a code were categorised into sub-codes where useful. Data references were used to develop a better definition or understanding of what each code represented, and to reconsider how the code related to others. Sometimes data described something that was missing from the coding structure. In these cases I conducted word searches across the data within NVivo 11 to explore concepts that may have been overlooked (or called something different), and this occasionally led to the addition of codes. Higher-level codes were also occasionally added if they were found to help organise or make sense of groups of codes. For example, ‘collaboration for change’ and ‘responding to change as a collaboration’ were created to help make sense of the interconnections between various codes under ‘change’. As Section 3.3.1 showed, change is often inconsistently communicated and it took trial-and-error of the structuring of change codes to make sense of what the data revealed.

Once all the data within a high-level code had been considered they were copied (with sources listed) under sub-headings into a word file and re-organised into a logical order for description. The most powerful quotes were highlighted in bold and I added notes in a separate colour as I organised the data under sections to describe my interpretations and justifications.

Analysis of qualitative data inevitably involved my interpretation – about what people meant by what they said, how ideas could be grouped, and how they were interrelated. Analysing data in this way allowed me to work directly from primary data throughout. My direct involvement within research interventions and position as an insider were believed to help with data interpretation, but reflection and reflexivity were also vital (see Section 4.5.5 below). To check assumptions during analysis I considered the context surrounding each data reference and my involvement (i.e. the type of data, whether I may have influenced it directly, and the degree to which the account was based on my interpretation). Occasionally I went back to check all the data references under a code to ensure they had all been adequately considered and that I had not been selective.

Selection of themes and write-up

Once the in-depth analysis of all the major codes was complete it was necessary to decide on a focus for the thesis as it would not have been possible to cover all findings within the limitations of a
thesis. Narrowing my focus to three themes enabled a thorough exploration into each of them and into their interconnections. My justifications for deciding to focus on the themes of change, diversity and funding are as follows:

- **Change** – (particularly ‘transformation’) was central to collaborations within both research settings. Additionally, the world and the field of conservation were perceived to be changing rapidly during the research period. Numerous issues relating in some way to change were identified during coding and in-depth analysis and it took much thought and trial-and-error to uncover how these issues were related and to find ways to communicate this clearly. Change was therefore an obvious choice as a theme to focus on.

- **Diversity** – From the very beginning my research focussed on identifying and finding ways to address challenges that participants were facing within their collaborations. Within both research settings, collaborations intentionally aimed to work across differences and I decided early on to use surveys as a method to help me to explore differences from a broader perspective within both settings. The TCA also emphasises the central role of diversity as the basis for collaborative advantage within interorganisational collaborations (Vangen, 2017; Vangen & Winchester, 2014). Diversity was therefore another obvious choice as a theme of focus.

- **Funding** – was not something I expected to focus on in this research, but analysis revealed that it related in various ways to all other codes. It was so important to collaboration within the researched settings that it simply could not be ignored. It was also something that the CCI Council Task Team asked me to explore further through my analysis (see Section 4.3.4). My early commitment to simultaneously studying collaborative actors and contexts (see Section 4.2) made it possible for me to explore funding as a third theme of focus.

The final step was to use my organisation of the data to write up findings under these themes. I decided to write a separate findings chapter for each theme, drawing on data from both research settings, and to emphasise how the themes were interconnected using numerous cross-references. Initially I used the coding structure to help organise ideas for each findings chapter and then worked through a process of trial-and-error to find ways to present data most accurately and logically. It was helpful to have data in word files organised under sub-sections so that I could clearly see how much support there was for each result I was presenting, and to determine which data to include as quotes and in tables. Through this process I was able to gradually develop more generalised insights, while demonstrating the origin of ideas (Huxham & Hibbert, 2011). Findings were later further conceptualised through the consideration of relevant literature as presented in Chapter 8 – Discussion.

This approach to analysis enabled me to gradually move from the data I collected to theoretical conceptualisations that are “applicable significantly beyond the specific situation” (Eden & Huxham, 2006: 394), and, as Huxham and Hibbert (2011) suggest:
- sufficiently recognizable to seem relevant to users – framed to mirror the way users are likely to experience organizational processes...;
- sufficiently generic to be translatable by them for application to their own context;
- sufficiently creative to provide beyond that which users would naturally have themselves...;
and have:
- integrity – it is not expected to provide solutions, but it is nonetheless important that it does not mislead the user towards inappropriate action... (p.276-277)

4.5.5 Reflection and reflexivity

Reflection and reflexivity played central roles in this research because action research encompasses the first person perspective (Reason & Torbert, 2001) and my philosophical position placed me within the research such that I affect the system of study and was affected by it (Charmaz & Belgrave, 2012). ‘Reflection’ and ‘reflexivity’ are distinguished and defined as follows within this thesis:

Reflection is learning and developing through examining what we think happened on any occasion, and how we think others perceived the event and us, opening our practice to scrutiny by others, and studying data and texts from the wider sphere. Reflection is an in-depth consideration of events or situations outside of oneself...

Reflexivity is finding strategies to question our own attitudes, thought processes, values, assumptions, prejudices and habitual actions, to strive to understand our complex roles in relation to others. (Bolton, 2010: 13)

Reflection is always an integral component of action research and ethnographic approaches (Cunliffe & Karunanayake, 2013). Action research for academic accreditation simultaneously involves an ‘action cycle’, and a ‘reflection cycle’ to reflect about the action cycle (Coghlan & Brannick, 2014). For action research to succeed it must involve “regular, systematic and critical reflection” (Dick, 2002: 168). In the context of inter-organisational partnership, action research, as a form of ‘reflective intervening’, emphasises the importance of developing ongoing learning processes between collaborative partners (Gray, 2008).

As an action researcher I additionally had to be reflexive about what I brought to this research (Charmaz, 2014). As an ‘insider’ to the research settings this involved a degree of autoethnography and demanded reflexivity about my positioning (Taylor, 2011). This was achieved through constant journaling and the use of coloured text within field notes and other data to capture my reflexive interrogation, personal accounts and assumptions throughout the research process (Howard-Payne, 2016). Whenever reflexive thinking led to doubts about my approach or interpretation, I consulted my notes or spoke to participants to delve deeper and to check my assumptions (see Section 4.3.7 for an example of this relating to ethics). As Hibbert et al. (2014) suggest, it was also useful for me to expand from one to two
research settings, thereby enhancing my ‘peripheral vision’ and the variety of collaborations that were involved in the research (p.291).

Challenges faced

All PhD researchers face challenges they must overcome as part of their research journey. My research was no exception. Here is a brief list of some of the challenges I faced and how they were overcome:

− **Access within CCI** – Members of the CCI Council were initially worried that my research could be time consuming and potentially reveal sensitive collaborative matters. Through the establishment and regular meetings with the Task Team I was able to check in with my progress and ensure that I did not venture into territory deemed overly sensitive. I explained the purpose and approach of my research frequently, and worked closely with participants on matters that mattered to them, gaining their trust over time.

− **Uncertainty about my approach** – Initially some participants (including CCI Council members) seemed apprehensive about whether my (non-scientific) action research approach would contribute useful results. I delivered a number of presentations to inform participants about my approach and presented findings along the way to get feedback. This helped participants to see that my research aims aligned with their practical needs, and could be useful, which led to increased trust and interest for me to be involved in collaborative activities.

− **Risk of negative implications of interventions** – In RO-AR there is always a “risk that the interventions can result in negative rather than positive implications in practice” (Vangen, 2019: 136). In one instance within the BioRev setting, while seeking to explore the team’s differing perceptions about the project I inadvertently raised contentious issues that had previously been avoided. In doing so I risked jeopardizing trust within the Project Owner. Luckily I promptly realised my mistake and was able to discuss the issue directly with the Project Owner, who accepted my apology as this was not my intent. I was able to rectify the matter with the team and I learned to be more sensitive in my exploration through the experience.

− **Consultancy requirements** – In order to gain access to study the BioRev Initiative in detail I needed to complete a consultancy which included tasks that did not directly align with my research. The tight timeline for the consultancy forced me to prioritise the analysis of data from this setting. This necessitated analysing data from the research settings independently in the first instance, which added time to the analysis, and prevented it from being more systematic. In the end I was able to bring the analyses together during active theory building, and drew on both settings to write up my findings.

− **Researching my husband** – The ethics of this research became more complex when my husband was promoted during the beginning of the research period and became a member of the CCI Council. As
described in Section 4.3.7 this led to one particularly difficult moment, but generally helped me to constantly consider the importance of consent and confidentiality throughout the research.

- **COVID-19** – the unforeseen global pandemic had major implications for my research progress and timeline. Although I was already working from home on analysis and write up when the pandemic hit, I needed to share the responsibility of home-schooling our children during lockdowns and school closures. My supervisors, the Business School and the Open University were all incredibly supportive during this time and I was able to get additional funding and an extension to cover the exceptional circumstances. It was a challenging period.

In summary, the Theory of Collaborative Advantage, to which this study aims to contribute, serves to support reflective practice (Vangen & Huxham, 2014). This study involves reflective and reflexive research that aims to contribute to theory which can be used to support reflective practice.

### 4.6 Summary of methodology

This chapter has described how the study adopted a multifaceted philosophical outlook to explore collaborative interactions but also their settings and contexts. A Research-Oriented Action Research approach was used to investigate collaborative interaction in practice within two research settings, whereas more objectivist survey and interview methods are employed to explore the conservation contexts.

The chapter described the different methods used to collect and analyse data and detailed the nature of my role as an action researcher and the measures I used to ensure that my approach was ethical.

Using this methodological approach I collected and analysed data from multiple collaborations within CCI and the BioRev Initiative. The next three chapters present the findings from my analysis under the three key themes of change (Chapter 5), diversity (Chapter 6) and funding (Chapter 7).
Chapter 5 – Change findings

5.1 Introduction to Chapter 5

There is no denying that humans have impacted the natural world at an unprecedented rate. Chapter 2 detailed the growing acknowledgement that the field of conservation has yet to stem the exceptional damage and loss. It is recognised that the ‘biodiversity crisis’ we currently face involves a multitude of complex and interconnected problems across scales. Collaboration is put forward as a means to address the complexity of issues and compelling cases were made within both research settings for the need for ‘transformational change’ to conserve nature. Change is therefore a central goal for conservation collaborations.

Within the Cambridge Conservation Initiative (CCI), the collaborative Strategy 2012-2020 described how ‘environmental awareness has never been greater, conservation science is at its most advanced and the policies, practices and organisations created to conserve biodiversity have never been more numerous and effective, yet biodiversity loss is more rapid and more widespread than at any other time in human history’ [2012KD–CCI_Strategy_2012-2020]. To address this loss, the Strategy called for innovative collaborative approaches to biodiversity conservation to, ‘transform how the world manages and sustains the natural resources upon which humanity depends’ [ibid]. The focus within this research setting was primarily on change to the way conservation is approached – through collaboration.

In the Project Outline for the Biodiversity Revisited (BioRev) Initiative, the problem was defined even more broadly as severe degradation of the biosphere. Conservation responses to the ‘biodiversity crisis’ were described to be ‘piecemeal and ineffective’, the concept of biodiversity was perceived to have lacked traction in policy and mainstream economic activity, and there was concern that the way biodiversity has been framed, ‘may have taken us down the wrong path in terms of the issues to which society ought to be paying attention’ [2018KD–BioRev_Project_Outline]. In response, the project aimed to

---

13 Within the findings chapters (Chapters 5,6 and 7), quotations from documents are indicated with single quotation marks, while spoken quotations are indicated with double quotation marks.
create a new research agenda to effectively sustain the biosphere. The focus within the BioRev setting was to revisit the concept of biodiversity itself and consider the transformation of conservation.

The researched collaborations within both settings strived to achieve change in these different ways, however they were also forced to respond to changes within the contexts they operated.

This Chapter presents change-related findings from the analysis of different forms of data across both research settings (see Figure 12). It begins with a consideration of the different ways the term ‘transformation’ was used within research settings (Section 5.2); distinguishing two types: change within a system to improve effectiveness (Section 5.2.1), and fundamental change of a system (Section 5.2.2).

Section 5.3 then presents findings about different perceptions about how transformation can be achieved. More traditional ‘goal-oriented’ approaches (Section 5.3.1) are distinguished from ‘principle-based’ approaches that embrace uncertainty (Section 5.3.2). The benefits, challenges, enabling and restricting factors for each type and approach to change are summarised in tables at the end of each of these sections. The Chapter concludes with a presentation of findings relating to the ability of collaborations to respond to change through adaptability and experiential learning (Section 5.4).

---

**Figure 12. A diagrammatic representation of Chapter 5 – Change findings.**

### 5.2 What is transformation?

‘Transformation’ was presented as a solution to resolving complex conservation problems within both research settings, however the term was broadly used in two ways that differed with respect to the scale of desired change. In some cases ‘transformation’ was used to mean change in the effectiveness of conservation action under current conditions. This type of transformation is explored in Section 5.2.1.

Collaborations seeking transformation of this kind were found to be enabled through the determination of
clear objectives and means of measuring the impacts of collaborative efforts. In other cases, ‘transformation’ was used to signify systems change towards something fundamentally different or new. Section 5.2.2 considers how collaborations seeking transformation of this kind were found to be enabled.

Many references to transformation related to systems change. Within CCI, and with the Natural Capital Hub in particular, the discussions I witnessed about systems change most commonly referred to the global economic system. The current economic system is believed to require transformation because it ‘strives for infinite growth in a world of finite resources’ [2018-11-13KD–Overview_of_the_Hub].

The other system that commonly came up during discussions about transformation was the field of conservation itself. Transformational change of conservation tended to be framed in terms of change to the ways conservation is approached. Again, there were different perspectives about whether this change could or should take place through the modification of the existing conservation system, or whether a fundamentally different approach to conservation is needed. It is important to note that conservation is not a clearly delineated system in practice – there are different ways to conceptualise ‘conservation’ and individuals have different perspectives about who is considered to be a ‘conservationist’ (see Box 5 in Section 5.2.2 below).

5.2.1 Change within a system – collaborating to improve effectiveness

One of the ways the term ‘transformation’ was used was to describe the change achieved through collaborative approaches within the existing field of conservation. ‘Transformation’ was used by the CCI Council and in documentation about CCI to denote a desired ‘increase [in] the effectiveness of conservation actions by catalysing innovative and collaborative interdisciplinary work’ [2012KD–CCI_Strategy_2012-2020]. Effectiveness was determined through the measurement and demonstration of ‘impact’.

As a collaboration, CCI’s vision of transformation is framed within the existing system of conservation. As a collaboration ‘between the University of Cambridge and the largest distinct geographical cluster of leading biodiversity conservation organisations in the world’, CCI can be considered to be squarely positioned within the mainstream conservation system [2016KD–CCI_Five_Year_Plan_2015-2020]. According to an interviewee from the BioRev Initiative, “Cambridge is like one of the most ‘old boy’ networks on the planet in this context, and Cambridge is just one of those reasons why things don’t move” [2019-10-07TR–093-12_post-event_interview]. Transformation within the CCI context primarily referred to the development of different or new conservation approaches made possible through collaboration and the integration of research, policy, practice and capacity development (see Section 6.3.1). It also referred to the scale of impact that can be achieved through these approaches.

Three broad ‘areas of transformative change’ were identified in the CCI Five Year Plan 2015-2020, along with eight more specific ‘transformative actions’. These represent vital conservation ambitions, but they are not unique to CCI; they align with the ambitions of many other conservation actors [personal experience]. Instead, CCI aims to achieve ‘significant impact’ in these areas through its collaborative
approaches. Within this setting transformation therefore primarily relates to a “gear change” in the impact that can be achieved together [2019-09-25FN–CCI_Retreat_notes].

**Pragmatism – change in the impact achieved**

During data analysis a distinction continued to emerged between pragmatism – tangible change *within* the rules of an existing system; and idealism – fundamental change to a system and its rules (see also Idealism in Section 5.2.2 below). Put differently, pragmatism describes working within the realities of the current context, while idealism describes determining what would be ideal, regardless of current contextual realities. This distinction was recognised in relation to different systems including: the global economic system, the conservation system, and the academic system. Collaborating within the existing field of conservation to improve effectiveness can be described as a pragmatic pursuit. The tangible change that can be achieved as a result was described as ‘impact’.

Analysis of data relating to ‘impact’ did not uncover a precise definition, but the term was generally used to describe change achieved in the real world as a result of activities. The focus of this research was on the impact arising from collaborative activities. Wider conservation impact was perceived to occur when the immediate outputs and outcomes of collaborative activities are taken up and used by others [2018-07KD–Collaborative_Fund_Report].

Different types of impact were recognised in CCI. An independent external evaluation of the CCI Collaborative Fund distinguished between field, policy and capacity building impacts, and these categories were generally observed to be recognised by participants within the setting. Impacts in each of these areas could be either direct, if project outputs themselves had demonstrable conservation impact (e.g. technical toolkits and training materials that directly ‘strengthened conservation management at specific sites’), or indirect, if the project led to wider outcomes (e.g. papers in scientific journals contributing to evidence base and briefing papers for policy makers that influence policy and eventually field-level outcomes)[2018-08KD–Collaborative_Fund_Report].

Impacts were also distinguished according to their timescale. The impacts of CCI Collaborative Fund projects were considered to be short-term in nature as, ‘there is no systematic effort to monitor and evaluate the longer-term impacts of outputs and outcomes after submission of the final project report’ [2018-07KD–CCI_Collaborative_Fund_Evaluation]. The report recommended the development of an ongoing, integrated monitoring and evaluation effort by CCI partners with support from the Executive Director’s Office. Reporting long-term impacts would require partners to periodically review the projects they had led and ‘provide brief updates on any new outcomes or impacts that have been tangibly influenced by the original project outputs or impacts’ [ibid]. This would require that projects allocate some of their overall budget to follow-up and additional reporting.

Other data suggested a distinction between environmental and social impacts and the need for greater consideration of the latter. One interviewee told me that in her experience of collaboration within the field of conservation it is quite common for biological, physical and ecological indicators to be
rigorously thought through compared to those that are societal or related to wellbeing [2018-07-13TR–033-05_interview].

Measuring and demonstrating impact were regarded extremely important within CCI for two main reasons highlighted in the CCI Collaborative Fund Evaluation, which aligned with other observations. Firstly, impact evaluation can allow those involved to ascertain whether they are fulfilling their intended purpose. Secondly, demonstrating impact can be ‘vital for engaging and maintaining the interest and support of donors and external collaborators’ [2018-07KD–CCI_Collaborative_Fund_Evaluation]. Conservation funders expect recipients to monitor and report on their achievements (see Section 7.2.1). There are different ways to evaluate impact. A visiting academic delivered a presentation about impact evaluation in which she outlined four different approaches. Randomised control trials and quasi-experiments quantify impacts, while participatory and theory of change approaches consider qualitative perspectives [2018-10-17FN–060-12_presentation]. Quantification of impact was found to be highly valued within CCI (see Section 6.3.3). Another participant who specialises in impact evaluation told me that it is necessary, “to clearly set out what impact you want from [something] in order to measure it” [2019-01-22FN–WICL_Fika_meeting]. For some collaborative projects, including many of the CCI Collaborative Fund projects that were evaluated, intended impacts were specific and agreed at the time of applying for funds, making it possible for them to be assessed. For the collaborative programmes I researched, and for CCI as a whole, intended impacts tended to be more broad, making impact evaluation more challenging in practice.

At a programme-level, one of the difficulties of measuring the overall impact of the CCI Collaborative Fund was the large disconnect between those who do the projects and those impacted by them [2018-07-09FN–001-04_conversation]. At the level of CCI as a whole, the collaboration must monitor and report on its progress under the Grant Agreement associated with funding that enabled the development of its Conservation Campus. Twelve indicators were identified to assess ‘against a baseline established by CCI partners in 2015 to measure progress’, however I was told that in practice it was acknowledged this was a, “wish list for how we would monitor and evaluate, and they haven’t all come off” [2018-11-21TR–001-04_interview]. In 2018 the Executive Director’s Office (EDO) temporarily hired a recent graduate to help with reporting and to suggest how they could put better monitoring and evaluation systems in place. During one lunchtime seminar a member of the EDO openly admitted that measuring change was a challenge:

_Inevitably in a collaboration, people are conscious of the need to monitor to see change, but this will be very difficult, I have to be honest. The [CCI Five Year] Plan talks about how we will measure change, and we have done some work on that; have had others in to look at us... But balancing how much time you do that vs. make collaboration work... it is difficult and I think we know that. There are sophisticated ways to try. [2019-01-28FN–CCI_ToC_lunchtime_seminar, paraphrased]_

During an interview with a conservation impact evaluation specialist I asked whether she thought it was possible to measure the impact of a collaboration like CCI, and if so how. She replied,
“I think it has to be a theory of change approach, I don’t think there’s any other approach – so qualitative evaluation is the only way to go for that” [2018-11-09TR–060-12_interview]. The CCI Council have developed a Theory of Change for the collaboration (see Section 5.3.1), yet expectations for CCI to quantify its impact remain. A ‘failure to produce acceptable metrics for measuring/demonstrating [the] ‘added value/synergy’ of CCI driven collaborations’ was identified by Council to be a risk to the collaboration [2017KD–Council_risks_and_threats]. It has also been perceived that CCI is ‘pushed towards short-term fixes in order to show impact’, missing opportunities for, ‘taking up longer-term agendas which might take more time to achieve results (but could be bigger impact)’ [ibid].

**Evolution – incremental change from within a system**

The term ‘evolution’ was used within the context of BioRev to describe incremental or step-wise change within an existing system. This was also referred to by one participant as ‘first order change’ [2019-09-11FN–Symposium_Day1]. CCI’s ambitions to increase the effectiveness of conservation actions through collaboration could be considered to represent evolutionary change within existing conservation structures. CCI may even potentially help to define the rules and norms of this conservation system. Many participants within CCI did not explicitly allude to a need for broader systemic change within the field of conservation. Most individuals appeared to be primarily concerned with getting on with the day-to-day challenges of conducting their roles [personal experience]. A few participants did however call for systemic changes when consulted during the Listening Phase of the process to develop CCI’s next Strategy; for example, ‘people are aware of it but don’t want to give up their lifestyle – needs systemic change’ [2019-09-03LP–Soiree_data].

Overall, participants were observed to differ with regards to whether or not they believed systemic change was possible, but even among those who believed it was, some considered attempts at systemic change to be an inappropriate use of scarce time and other resources. A few participants within both research settings expressed concern that the idealistic pursuit of broader systemic change would detract from urgent pragmatic needs. In meetings of the Natural Capital Hub, for example, practical action was framed in opposition to transformational change, and a few participants urged the group to focus on actions with tractable and tangible metrics [2019-02-06FN–NCWG_meeting]. Similarly, one BioRev participant expressed concern that reinventing global governance would “burn up energy”, and that ‘disruption’ should instead focus on “ways of working, getting things done and catalysing changes that aren’t hostage to these systems” [2019-05-30FN–Boston_Biodiversity_Talks_notes, paraphrased].

**Benefits, challenges and enabling and restricting factors for change within a system**
Data analysis identified a number of benefits and challenges associated with collaboration for change within the system to improve effectiveness. It also identified factors that act to enable or restrict change of this kind. These are summarised in Table 7, along with illustrative quotes.

**Table 7. A summary of the benefits, challenges and enabling and restricting factors associated with change within a system to improve effectiveness – A selection of illustrative quotes are included.**

<table>
<thead>
<tr>
<th>Collaboration for change within a system</th>
<th>Illustrative quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
</tr>
<tr>
<td>- If you have specific predetermined objectives, it is possible to quantify progress towards them</td>
<td>“To deliver this strategy [of the Convention on Biological Diversity], parties to the Convention have agreed a set of goals with targets... to be met by 2020... CCI intends to make a significant contribution to achieving [them]” [2012KD–CCI_Strategy_2012-2020]</td>
</tr>
<tr>
<td>- Measurement of impact is possible, especially for collaborative projects (vs. programmes)</td>
<td></td>
</tr>
<tr>
<td>- Desired change is likely to be recognised as worthy of attention and funding</td>
<td></td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td></td>
</tr>
<tr>
<td>- This type of change may not be broad enough to resolve ‘root’ systemic problems (e.g. unsustainable economic growth)</td>
<td>“…it’s not straightforward, because it isn’t obvious what it is that we intend to do. So. i mean, and that’s understandable.” [2019-02-12TR–014-11_interview]</td>
</tr>
<tr>
<td>- Broad objectives, especially at the level of interorganisational collaboration and collaborative programmes, can be more difficult to measure</td>
<td>“I think CCI is a really interesting experiment... but it is always going to be really difficult to... be able to evaluate and really show, I think, what impact this has had on biodiversity” [2018-11-21TR–001-04_interview]</td>
</tr>
<tr>
<td>- Different types of impact can require different measurement approaches (e.g. social indicators can be less well thought through)</td>
<td></td>
</tr>
<tr>
<td>- There can be a disconnect between those doing a project and those impacted by it, making it more difficult to measure</td>
<td>“Behaviour change – people are really on the ball. But how do you evaluate what you did?... This collaboration should be driving some of this stuff.” [2019-07-25LP–Strategy Café]</td>
</tr>
<tr>
<td>- It is difficult to fund the measurement of long-term impacts</td>
<td></td>
</tr>
<tr>
<td>- It is not possible to measure all impacts quantitatively, although that is expected</td>
<td></td>
</tr>
<tr>
<td><strong>Enabling factors</strong></td>
<td></td>
</tr>
<tr>
<td>- To improve the effectiveness of conservation through collaboration, there is a need for ways to measure collaborative impact – this requires funding from within project budgets or additionally</td>
<td>“Experimental design... CCI could be leading in this field – how do we evaluate this intervention, and know that it had the outcome we wanted? Testing interventions.” [2019-07-25LP–Strategy_Café]</td>
</tr>
<tr>
<td>- More specific objectives against which progress can be measured is needed at collaboration and collaborative programme levels – but is this possible?</td>
<td>[How would you spend 10,000 or 100,000? “Quantify CCI’s impact – do some analysis” [2019-08LP–Common_Room_Questions]</td>
</tr>
<tr>
<td><strong>Restricting factors</strong></td>
<td></td>
</tr>
</tbody>
</table>
| - Difficulty of quantifying and attributing progress towards broader objectives at | “And because the outcomes are often unknown, the potential benefit is unknown, then it’s hard for people to dedicate that time. Because they have
This section has shown that within CCI, ‘transformation’ primarily referred to an increase in the effectiveness of conservation actions through collaboration. Transformation of this type was associated with pragmatism (the achievement of tangible impact) and evolution (incremental change) which both take place within existing systems. Different types of impact were recognised and measurement of impact was deemed important to ascertain progress and to maintain financial support. Different approaches were recognised for measuring the impact of specific projects, but quantitative approaches tended to be preferred. In practice, it has been challenging for CCI to measure the impact of the entire collaboration, particularly over the long-term.

Not all participants involved in this research considered transformation to mean a ‘gear change’ in effectiveness. The next section explores a different understanding of the term.

### 5.2.2 Change of a system – collaborating to fundamentally change

‘Transformation’ was also used by participants to describe change toward something that is fundamentally different or even completely novel. At its broadest and most ambitious, transformation referred to fundamental change of an entire system. As one participant eloquently described it, at this scale of transformation, “once [it’s] out of the box, you can’t pack it in in the same way; you need a different shaped box” [2018-08-13TR–002-04_interview]. This tended to be what was meant by the term ‘transformation’ within the context of BioRev. Some participants within CCI also called for this type of transformation within the Natural Capital Hub and during the Listening Phase of the CCI Strategy Development process.

The BioRev Initiative intentionally took a step back to consider the field of conservation and how it could be different. It revisited the ‘concept of biodiversity, and the research, policy and practice that it has inspired’ from a normative position that the concept has ‘struggled to lead to effective action to sustain life on earth’ [2019-03-11KD–Virtual_SC_meeting_agenda, p.7]. Project documentation intentionally avoided using the term ‘conservation’, and although some participants considered themselves to be conservationists, many did not. One of the organisers told me the project aimed to “interrogate [the] foundations of conservation itself” [2019-11-08FN–026-12_meeting]. Following the Symposium, an interviewee described it as, “the start of a journey” and stressed the need for, “continuation of thinking about what do we need to do now to make conservation different” [2019-09-24TR–094-12_interview]. Transformation within this setting was more about considering how the entire field of conservation could be fundamentally different.
Idealism – seeing beyond current realities

I use the term ‘idealism’ to describe the determination of what participants would consider ideal, regardless of current contextual realities. The realisation of idealistic objectives may require change to an existing system and its rules. Within the Natural Capital Hub at CCI, views about the global economic system distinguished pragmatists (see Section 5.2.1), who wanted to focus on internalising the values of biodiversity into existing economic structures, from idealists, who wanted to fundamentally change the capitalist, growth-based global economy.

Generally speaking, natural capital approaches seek to frame nature in economic terms so that these values can be considered in economically-based decision making. Some of the services we derive from nature are readily quantified, but the relationships between these services and the biodiversity that underpins them are not fully understood, and many values of biodiversity cannot (or should not) be directly quantified [personal experience]. Interestingly, members of the Natural Capital group differed substantially in their ambitions for transformation of the economic system, and this was observed to contribute to difficulties in narrowing down collaborative aims for the group (see Figure 13).

Figure 13. Differences in ambitions for change impacted the determination of collaborative aims – within the Natural Capital Working Group [all quotes from 2019-03-13FN–NCWG_meeting].

Some members of the Natural Capital group wanted to transform economic visibility and the importance of biodiversity within the current economic system. For example, the group considered whether to focus on doing so within government policy, business and/or finance sectors and whether to help support conservation practitioners to use natural capital approaches [2019-03-13KD–NCWG_presentation_slides]. Others wanted to consider how the entire economic system could be fundamentally transformed from growth-oriented to ‘no-growth’ or even ‘de-growth’. Both of these aims
would involve change; the former within the existing economic system, and the later to fundamentally change that system. This ongoing tension between pragmatic and idealistic ambitions for change was not explicitly addressed during the meetings I attended. The closest the discussion came to doing so was during an early Working Group meeting when one participant asked whether the co-managers of the Hub had, “checked that there is a shared understanding on ‘growth’”, and whether “we are ‘pro-growth’, or for ‘de-growth’”, and “do we need to see if these are shared up front?” [2019-02-04FN–NCWG_meeting, paraphrased]. Co-managers replied that this question – whether a focus on natural capital detracts from the possibility of re-inventing the economic system – had come up at recent events, and it had been concluded that there is a, “need to recognise that we aren’t all going to come behind the same view” and that, “this larger debate doesn’t prevent us from moving forward in either direction” [ibid].

Regarding the field of conservation as a system, the BioRev Initiative could be considered to be idealistic overall in the sense that it explored how to “shift the foundations of the system” [2019-11-08FN–026-12_meeting]. Although the BioRev Initiative challenged current understandings of conservation, it inevitably took place within the context of the existing economic and academic systems. As such, a variety of pragmatic conditions were perceived to limit exploration. During the Symposium, some participants idealistically pushed back against the rules and limitations of the current academic system. Some questioned whether the funder-led determination of a research agenda as an outcome was appropriate or sufficient to bring about the transformation they perceived to be required. Many additionally or alternatively called for an action agenda. One participant stated, “just mentioning the term ‘research agenda’, that’s the limit!” [2019-09-12FN–Symposium_Day2]. In response, some academic participants pragmatically emphasised that their involvement with the initiative would be restricted unless it led to outputs that were published in a traditional way. Organisers did their best to compromise by encouraging the diverse group to ‘think big’ and to challenge what a research agenda could be, but ultimately they were responsible to deliver a research agenda and peer-reviewed publications, and some of the more idealistic participants were left frustrated. For example, one stated in the post-event survey, ‘I thought we missed the occasion of really challenging business as usual, which I think is manifestly not working’ [BioRev_Post-event_Survey].

In the BioRev Initiative there was a general desire to challenge systems that were perceived to be failing, but these systems acted to restrict what was possible within the project. This dilemma was succinctly articulated when one of the organisers accidentally stated on the first day of the Symposium, “we are only limited by our own creativity... and time... and resources!” [2019-09-11FN–Symposium_Day1].

The struggle between idealism and pragmatism persisted throughout the BioRev Initiative. For example, idealistic aspirations for participant diversity delayed the sending of invites until it was almost too late to book travel and a Steering Committee member warned, “don’t let the perfect be the enemy of the good” [2019-05-29FN–Boston_SC_meeting]. This constant interplay between idealistic ambitions and practical limitations was perceived by one of the key organisers to drive innovation and add value.
Revolution – radical change of a system

A revolution strives to fundamentally change a system or even create a new one. This was also described by one participant as ‘second order change’ [2019-09-11FN–Symposium_Day1]. Some participants clearly believed change on this scale to be necessary and that incremental, evolutionary change within existing systems would not be sufficient. From this perspective, an evolutionary approach could be perceived as “doing the wrong thing better” [ibid]. But how can revolution take place?

Reference was made to the ‘Three Horizons framework’ during multiple BioRev meetings (later discussed in Section 8.3) and Bill Sharpe, co-creator of the framework, had been invited at the start of the project to introduce it to the Luc Hoffmann Institute team and their partners14. The BioRev Initiative intentionally framed itself as positioned within the disruptive and innovative second horizon. Interestingly, the principles of the project also specified that it should be, “perceived non-threatening to Horizon 1”, which represents ‘business as usual’ or in this case ‘traditional conservation’ [2019-01-21KD–First_BioRev_SC_meeting]. I observed different opinions among project organisers and participants about whether, and if so how, mainstream conservationists should be involved in the project. The following excerpt from a Steering Committee meeting reveals different opinions among project organisers:

[Member a] For those who live and breathe biodiversity – how do you want them to engage? How active as part of a redefinition, if there needs to be one, do they need to be?

[Member b] In the Three Horizon approach, horizon 1 is the existing system, horizon 2 is the innovators – tend to be looking here for message for horizon 1 – and horizon 3 is the future. The problem is how to get onto that. [We] want to aim for horizon 2 but we can’t afford to piss off the establishment (in horizon 1).

[Member a] But they are critical and they aren’t there – the establishment using this [biodiversity] concept... [2019-05-29FN–Boston_SC_meeting, paraphrased]

Many participants at the Symposium perceived the conservation mainstream to be missing during the event (see Box 5). Some of these participants were perceived to believe that ‘traditional’ conservationists should be directly involved in transformation. Although organisers did not overtly exclude ‘traditional’ conservationists from participating, some clearly believed it would not be possible to have a critical conversation if many were present. Organisers targeted participants who accepted the project’s normative stance (that the current approach is manifestly not working) in order to enable a discussion about “a new kind of conservation system” [2019-11-08FN–026-12_meeting]. In the following excerpt one of the project organisers described his belief that its revolutionary approach aimed to create an alternative to the current conservation system:

---

14 A recording of the talk can be accessed at: https://www.youtube.com/watch?v=tHRyNnwiGz0
If you look at the [conservation] community, of which we [organisers] are all members, it’s part of the establishment. It’s pointless to try to change it, we shouldn’t be driving that change. Instead, we should be looking outside the community. We don’t need to engage with everybody – not everyone will accept our normative stance. But there are others who are more open to dialogue and that’s where we should target our efforts. We need to create a movement so that it has a momentum of its own. [2019-05-30FN--Boston_Biodiversity_Talks, paraphrased]

Organisers did recognise that it would be a challenge to bring traditional conservationists on board down the line if they had not been directly involved throughout the process. One of the organisers told me, “if you come up with a great plan, and [traditional conservationists] weren’t involved, how do you make it stick?” [2019-06-04FN--026-12_meeting]. Despite this concern, organisers prioritised the enablement of an innovative discussion that could “interrogate the foundations of conservation itself” [2019-11-08FN--026-12_meeting]. During a meeting, one of the project organisers admitted that the team had not had an open conversation about their differing positions on change:

If you want to disrupt a system and build a new one, sometimes you can’t take the existing system with you. But it’s a very interesting philosophical question that I don’t think we offered a solution to because of the fact that everyone is going to have different responses. Opening it up wasn’t worth it, but this was involved in the question of audience. [2019-11-08FN--026-12_meeting, paraphrased]

**Box 5. What characterises the ‘conservation mainstream’?**

Participants of the BioRev Symposium were generally positive and appreciative of the efforts made by organisers to convene a diverse group of people for the event (see next Chapter about diversity), however one third of those who attended (including project staff) identified one or more groups they felt were missing. Eighteen comments (roughly a third of comments about who was missing) related in some way to a perceived underrepresentation of various forms of ‘conservation mainstream’ (my generic term).

Analysis of these comments showed that attendants of the BioRev Symposium characterised the conservation mainstream they perceived to be missing in terms of its: disciplinary basis (biology, natural and physical sciences); approach basis (pragmatic or conservation area focus or basis in economics); historical approach (traditional, conventional, business as usual); and majority or numbers (community or big organisations; see Table 8).

**Table 8. Characteristics associated with ‘mainstream conservation’ – from quotes about under-representation during the BioRev Symposium.**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>No. of comments</th>
<th>Example quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disciplinary basis</td>
<td>Biologist (conservation, field, molecular)</td>
<td>5</td>
<td>“A glaring gap were the conservation scientists. I know many of them in my...”</td>
</tr>
</tbody>
</table>
Interestingly, eight separate comments specifically referred to an underrepresentation of biological or natural scientists, yet nearly half of survey respondents (22 people) identified they had a background in the biological sciences, with 6 respondents ticking this as their sole discipline. The majority (5) of these eight comments came from participants who themselves identified as having a background in biological sciences (and 2 of the 8 did not select any background disciplines). This could suggest they felt outnumbered or less comfortable with the content of the Symposium or that a few more natural scientists could have “put an elephant that was clearly present into the conversation” [124]. It could also, or alternatively, suggest that these biological scientist commenters did not feel that they represented the conservation mainstream.

Overall, the varied descriptions of the underrepresented conservation mainstream reflects that there are many different types of conservationists and/or that these are understood in different ways. It is also possible that less visible or detectable forms of difference, such as philosophical, methodological and values, underpin some of the above descriptions even when they are not explicitly described.

### Benefits, challenges and enabling and restricting factors of idealistic transformation

Data analysis identified a number of benefits and challenges associated with collaboration for fundamental change of a system. It also identified factors that act to enable or restrict change of this kind. These are summarised in Table 9 below.
Table 9. A summary of the benefits, challenges and enabling and restricting factors associated with fundamental change of a system – A selection of illustrative quotes are included.

<table>
<thead>
<tr>
<th>Collaboration for change of a system</th>
<th>Illustrative quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
</tr>
<tr>
<td>- Seeking to address the root of systemic issues – potentially having greater long-term impact</td>
<td>“Setting these red lines is particularly complicated by the fact there is not a scientifically determinable level of nature we ‘need’” [2019-02-04FN–NCWG_meeting]</td>
</tr>
<tr>
<td>- Can accommodate complexity, and situations where desired outcomes may not yet be known, or cannot be predicted or reliably orchestrated</td>
<td>“Capitalism... has to be addressed directly as being a root cause for the biodiversity crisis.” [2019-08-21–Pre-event_survey]</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td></td>
</tr>
<tr>
<td>- Organisations operate within the systems that are perceived to need to change – it is difficult for them to lead systemic change from this level</td>
<td>“The organisations working in the system are choking – we need systems change at scale.” [2019-09-27FN–113-05_meeting]</td>
</tr>
<tr>
<td>- Challenging existing systems can be uncomfortable – it often involves uncertainty</td>
<td>‘Respondents encouraged CCI to be more courageous – even if taking some partners out of their comfort zone.’ [2019-09-25–LP_Report]</td>
</tr>
<tr>
<td>- Unclear how to involve those embedded within the current system i.e. innovate separately or try to bring status quo along through change?</td>
<td>“perhaps we need to look at how we make the aspirational pragmatic.” [2019-09-12FN–Day2]</td>
</tr>
<tr>
<td>- How to fund revolutionary work that the current system is not set up to support?</td>
<td>“The easiest thing to do in the world is to say, well, that meeting didn’t do that we thought, but it evolved, when actually, it should have just done what you said it was going to do. So the danger is letting flexibility, I suppose, become an excuse for lack of performance. So that we can’t allow.” [2019-05-15TR–029-12_interview]</td>
</tr>
<tr>
<td>- Difficult to measure systemic change with traditional monitoring &amp; evaluation approaches</td>
<td></td>
</tr>
<tr>
<td>- Different systems can be interconnected and co-dependent, meaning that it might be necessary to strive for change in multiple areas</td>
<td></td>
</tr>
<tr>
<td><strong>Enabling factors</strong></td>
<td></td>
</tr>
<tr>
<td>- Striving for societal change together rather than individually, to share experience and values – but this requires coordination</td>
<td>“You can’t re-design a transport system by yourself!”</td>
</tr>
<tr>
<td>- Supporting people to challenge assumptions and the status quo – changing policies and cultural expectations</td>
<td>“Empowering people to question things.” [2019-02-28FN–Behaviour_Change_talk_by_086-12]</td>
</tr>
<tr>
<td>- Diverse and inclusive processes – for example, giving youth a voice</td>
<td>“Kids have a special voice... and they are listened to because they can’t vote yet. They can ask the tough questions and expect us to try to answer them.” [2019-03-01–Pamela_Matson_panel_discussion]</td>
</tr>
<tr>
<td>- Bringing about change through grassroots involvement, from the bottom-up</td>
<td></td>
</tr>
<tr>
<td><strong>Restricting factors</strong></td>
<td></td>
</tr>
<tr>
<td>- Expectation and pressure for transformation</td>
<td>“transformational paralysis... the expectation for transformational change actually constrains creative thinking.” [2019-02-14FN–009-11_conversation]</td>
</tr>
<tr>
<td>- Lack of clarity around what is meant by the term ‘transformation’</td>
<td></td>
</tr>
<tr>
<td>- Unwillingness to accept risk, uncertainty</td>
<td></td>
</tr>
</tbody>
</table>
Both types of change at once

It is important to note that individuals’ ambitions for change were not normally entirely idealistic or pragmatic. Some perceived that transformation will need to simultaneously take place within and outside existing systems. For example, when asked what could be done to more effectively address the biodiversity crisis, one BioRev post-Symposium survey respondent answered, “destroy capitalism? Only half joking… but more pragmatically, work more closely with small and large businesses and the finance and insurance sectors...” [125_12-Post-event_Survey].

5.3 How can change be achieved?

We have knowledge about the problem, but what about how to make this change? [2019-05-30FN–Boston_Biodiversity_Talks, paraphrased]

In this section I will present findings about participants’ perceptions about the different ways that change can be achieved, highlighting factors that were found to restrict or enable these processes.

During the BioRev Symposium I sat in on a fascinating break-out group discussion about transformative change [2019-09-12FN–Symposium_Day2]. The discussion led to a fundamental disagreement between two senior academics about how transformation can be achieved. One believed it was necessary to first agree a vision, and then to create a pathway towards that vision. The other called for wholistic movement embedded in values to “re-think what the hell we’re supposed to do” [ibid]. This distinction between what I am calling ‘goal-oriented’ and ‘principles-based’ approaches to transformation helped to make sense of the data collected and proved to be a powerful (although not mutually exclusive) distinction. It is important to note that either of these approaches can, in theory, be used for pragmatic change within a system, or for idealistic change of the system itself. The following sections will present findings related to each approach.

5.3.1 Goal-oriented approaches to transformation

Goal-oriented approaches to transformation were found to start with the identification of a shared goal or vision followed by the development of steps or a pathway to achieve it. In this approach
the required change needs to be known to some extent in order to determine and agree on a vision [2019-09-12FN–Symposium_Day2].

Goal-oriented approaches were found to be commonplace within the conservation contexts studied. At a project-level, collaborative aims tended to be specifically defined over a relatively short period. The majority of the collaborative projects that were observed took place through a linear process of identifying clear objectives, developing a sensible approach to achieve them, and then delivering the plan to produce agreed outcomes which were measured and reported against the original objectives.

Considering ‘the what’ of collaboration over ‘the how’

Much of the CCI Council meeting time that I was able to directly observe during the Strategy development process was devoted to narrowing down three-to-five ‘focal areas’ or specific challenges that CCI should concentrate on addressing. These “big things CCI should do to save the planet” became colloquially known as ‘the what’ [2019-04-30FN–001-04_conversation]. The CCI Council deliberated at length but struggled to identify focal areas that could simultaneously: suit the needs and interests of all partners, help to attract badly needed funds and ultimately deliver the collaboration’s broad vision, ‘to secure a sustainable future for biodiversity and society’ [2016KD–CCI_Five_Year_Plan_2015-2020, p.3]. It was acknowledged that the process to identify key collaborative foci had also been difficult during the development of the previous CCI Strategy, and that “the ones that made it in were popular with a few partners or driven by external forces” [2019-03-25FN–Council_Strategy_Session]. The current strategy development process espoused to open up the question – what should CCI do to save the planet? – to the wider CCI community, and the Listening Phase succeeded in enabling a broad discussion. Ultimately, however, it was the CCI Council who decided what the focus would be.

In contrast, ‘the how’ or the ‘ecosystem’ were colloquially used to describe ways of working together: collaborative processes, structures and governance. During my direct observations of the CCI Council ‘the what’ received significantly more attention than ‘the how’. This was understood to be influenced to some extent by a perceived belief that focal areas are more fundable than collaborative processes (see Section 7.4). The prioritisation of ‘the what’ further demonstrates how CCI’s approach to transformation has predominantly been goal-oriented and focussed on the pathways to achieve and measure pre-determined goals.

During the early stages of planning the process for developing the next CCI Strategy, I summarised key elements of the paper: The tangled web: Unraveling the principle of common goals in collaborations (Vangen & Huxham, 2012) for members of the EDO in advance of their team strategy session [2019-04-01RD–Potential_utility_of_Goals_Framework_for_CCI_Strategy_Development]. In this summary, and in the subsequent session I facilitated for the EDO, I highlighted the ‘content dimension’ of collaborative goals and the distinction between ‘collaborative process’ (the how of collaboration) and ‘substantive purpose’ (the why of collaboration) goals. I highlighted in my presentation to the EDO and at the CCI Council Retreat that CCI’s Strategic Objectives were a complete mixture of the two, and
participants were interested in this distinction and my observation that collaborative process goals received much less attention within the collaborations I had observed. However these conversation always reverted back to a focus on ‘the what’ over ‘the how’.

Theory of Change as an approach

At programme and collaboration-wide levels, collaborative aims tended to be more broadly defined over a relatively longer period. I observed that at these higher levels a theory of Change\textsuperscript{15} approach was frequently used. Theory of Change (ToC) is a goal-oriented approach that ‘starts with your desired impact (or vision) and checks you have identified the causal pathway that will bring about the change you want to see’ [2019KD–CCI_ToC_Consultation_doc]. By working backwards from the desired endpoint the approach aims to highlight gaps and break down habitual ways of thinking. It also seeks to identify and scrutinise the assumptions that are made during planned pathways to change. For example, it was observed that “there is a massive assumption that CCI is extremely good at conveying evidence in a way that it will change behaviour and there’s a big question about whether we have the capacity and approaches to do this” [2019-01-28FN–CCI_ToC_lunchtime_seminar, paraphrased].

In 2017 the CCI Council embarked on a process to create a ToC for the collaboration in recognition that ‘neither the CCI Strategy nor its Five Year Plan elaborated clearly the process through which CCI’s collaborative activities might actually trigger the sort of transformational change necessary for our common vision to be fulfilled’ [2019KD–CCI_ToC_Consultation_doc]. The CCI Council devoted valuable time to this process, consulted the partners’ senior leaders and created a Working Group to carry it forward. Yet despite these efforts, the CCI Council highlighted in the consultation document it produced that there remained a need to ‘formulate a more precise long-term goal as an expression of intended impact’ [2019KD–CCI_ToC_Consultation_doc]. The vision was perceived to remain too broad.

Benefits, challenges and enabling and restricting factors of goal-oriented approaches

Analysis revealed a number of benefits and challenges associated with goal-oriented approaches to transformation, along with factors that can enable or restrict them (see Table 10).

\textsuperscript{15} The term ‘Theory of Change’ (ToC) describes an established “decision support tool that illustrates the causal links and sequences of events needed for an activity or intervention to lead to a desired outcome or impact and articulates the assumptions underlying each step in the chain” (Biggs, Cooney, et al., 2016: 7). CCI used this tool in practice. It is important to clarify that this is different from the theoretical contributions this thesis makes in relation to change.
Table 10. A summary of the benefits, challenges and enabling and restricting factors associated with goal-oriented approaches to transformation – A selection of illustrative quotes are included.

<table>
<thead>
<tr>
<th>Goal-oriented approaches to transformation</th>
<th>Illustrative quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
</tr>
<tr>
<td>- A more efficient way to achieve specific, known objectives – regularly used at project level</td>
<td>“need to think about how it is fundable and where resources are coming from.” [2019-03-25FN–Council_Strategy_Session]</td>
</tr>
<tr>
<td>- Perceived to be more ‘fundable’ because can clearly describe at the outset what aims are</td>
<td>“It’s more rigid, but that can be an effective way of achieving results” [2018-07-13TR–031-11_interview]</td>
</tr>
<tr>
<td>- Can measure progress against a specific vision</td>
<td></td>
</tr>
<tr>
<td>- Naturally aligns with ambitions for change oriented towards increased effectiveness / measurable impact</td>
<td>“Quantify CCI’s impact” [2019-08LP–Questions]</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td></td>
</tr>
<tr>
<td>- Not possible if the change that is required is unknown – i.e. when the current situation is not working, but it is uncertain what will work</td>
<td>“CCI goals are nebulous so hard to know if they will be achieved” [2017KD–Council-Risks_and_Threats]</td>
</tr>
<tr>
<td>- Difficulty narrowing down specific focus for collaborative activities at the level of entire interorganisational collaboration or programmes – challenging to satisfy partners’ different interests, fundability, and progress towards a broad vision</td>
<td>“I think it’s quite possible that however hard you try, you will not be able to show that the [CCI] Collaborative Fund has had an impact on the conservation of biodiversity” [2018-11-21TR–001-04_interview]</td>
</tr>
<tr>
<td>- Activities may be less flexible if working towards predetermined and/or set targets</td>
<td>“may not be able to show impact for investment – funders will go elsewhere” [2019-03-25FN–CCI_Council_strategy_session]</td>
</tr>
<tr>
<td>- Selecting a few focal ‘whats’ could be restrictive – wider considerations may not happen</td>
<td>“rapidly evolving field – to identify niche, need to know what everyone else is doing but this is constantly evolving!” [2019-02-04FN–NCWG_meeting]</td>
</tr>
<tr>
<td>- The vision/goal may disproportionately reflect the values of those who get to make decisions e.g. the CCI Council</td>
<td></td>
</tr>
<tr>
<td><strong>Enabling factors</strong></td>
<td></td>
</tr>
<tr>
<td>- Setting clear, measurable objectives</td>
<td>“need to clearly set out what impact you want from it in order to measure it” [2019-01-22FN–WICL_Fika_meeting]</td>
</tr>
<tr>
<td>- Engaging the collaborative community for diverse inputs – resources needed to conduct this process and to feed back – e.g. Listening Phase of the CCI Strategy Development Process</td>
<td>“If you have a lot of diversity in your environmental problem-solving team… you get to get the observations and context from perspectives from all these different groups… you have a better understanding of the context and then you ask better, more appropriate questions.” [2019-03-14TR–086-12_interview]</td>
</tr>
<tr>
<td><strong>Restricting factors</strong></td>
<td></td>
</tr>
<tr>
<td>- Expectation and pressure to be transformational as a collaboration</td>
<td>“The expectation is that something amazing is going to happen… It would be nice it the concrete objectives were that by working together we can all achieve slightly more, and there’s a possibility</td>
</tr>
<tr>
<td>- Collaborative decision-making may not involve or incorporate the diversity of</td>
<td></td>
</tr>
</tbody>
</table>
5.3.2 Principles-based approaches to transformation

Principles-based approaches were found to come at transformation from the opposite direction. Rather than starting with known and agreed goals, this approach centred on principles or processes to guide collaborative decisions towards desirable, as yet unknown solutions.

The BioRev Initiative used a principles-based approach to explore potential solutions to the complex problems associated with the ‘biodiversity crisis’. It did not identify a specific vision to strive towards because solutions to these complex problems were not assumed to be currently known. Instead, it developed a flexible and open-ended process of exploration based around core principles that were established during its first meeting. These included: inclusivity; accessibility of outputs (open source); success through innovation, open-mindedness, flexibility and awareness of assumptions; long-term thinking and lasting impact; shared leadership to ensure shared ownership; strong focus on early- and mid-career experts and non-natural science; perceived as non-threatening by mainstream conservation (‘horizon 1’); and pluralist (i.e. not consensus-based) [2019-01-21KD–Design_Meeting_Agenda, summarised]. Although not explicitly stated in this original list, diversity also became a central principle for the project as shown in Section 6.2 of the next chapter.

The funding of this project required that deliverables take the form of a research agenda and publication in Nature Sustainability (see Section 7.3.1), however neither the process of the project, nor the content of its exploratory outputs were predetermined. The project aimed to enable a diverse and provocative dialogue without controlling what would come out of that process. As one organiser described, it aimed to build, “the scaffolding to set the stage for a conversation that could lead to a completely different approach” [2019-06-19FN–026-12_meeting]. The inherent flexibility of this open-ended approach brought benefits and challenges which are covered below (see Table 12). Participants differed in their comfort and openness to a principles-based approach. Some were confused or frustrated by a perceived failure to clarify objectives up front, while others understood that the flexible and open-ended nature of the project was intentional and designed to challenge current understandings.

At the Symposium event in Vienna the diverse group of participants was encouraged to, “be open, be curious, be vulnerable” [2019-09-11FN–Symposium_Day1]. The three days were filled with impassioned debate, creative ideas and the formation of new personal connections. Following the event, a self-selecting subset of Symposium participants volunteered to work together, mostly remotely, to co-
produce what became the Biodiversity Revisited Research and Action Agenda (Wyborn, Montana, et al., 2020). Although the project’s ‘deliverables’ did eventually take the forms agreed with funders, they were innovative in important ways. Diverse and ambitious expectations for the project (see Section 7.3.1) pushed it to produce a combined Research and Action Agenda that highlights the inherent interconnections between knowledges, actions and ethics (ibid). The agenda explicitly extends the normative focus on biotic diversity to include humans and their cultures, and recognises the need to rectify historical and contemporary injustices. The project developed a principles-based approach, ‘based on a set of principles and practices that could create a common focus across diverse perspectives, and could underpin research and action’ (ibid, p.6). The nine principles shown in Figure 14 shaped how ‘the complex and contested problems inherent in the agenda’s goal’ were approached, and these principles were in turn proposed ‘as a starting point for those wishing to contribute’ [ibid, p.7]. In this way the resulting agenda advocates the use of principles-based approaches to transformation:

there are opportunities to improve where and how these principles are enacted by those in the biodiversity arena (i.e. researchers, policymakers, practitioners, NGOs, businesses, funders, etc.)... through sharing research and experience that examines the extent to which specific methods and approaches contribute to enacting these principles’ (Wyborn, Montana, et al., 2020: 8)

During a breakout group about transformative change at the BioRev Symposium, a few participants highlighted their belief that principles-based approaches to transformation revolve around lived experience and values. They emphasised the need to bring in diverse understandings of values to shape direction of change, rather than a singular dominance of colonial values. One participant expressed a belief that goal-oriented and principles-based approaches are, “not mutually exclusive – you can have both” [2019-09-12FN–Symposium_Day2].

Principles-based approaches were observed in the CCI setting also, however these tended to be less explicit. Although the CCI Strategy and Five Year Plan do not specifically identify overarching principles or values that guide the collaboration, these are implicitly communicated within the strategic objectives and descriptions of how CCI believes it can make a distinctive contribution. The following excerpt from the CCI Strategy 2012-2020 clearly communicates the collaboration’s belief that by working across various forms of difference it can add value and contribute to the resolution of complex conservation issues:

CCI’s distinctive contribution to conservation derives from the unique combination of a world class university that is active in conservation research and teaching, with the world’s largest cluster of conservation organisations that focus on biodiversity research, policy and practice. Building on each partner’s existing programme of conservation work, CCI joins these organisations together to tackle complex and challenging issues with

---

16 The term ‘co-production’ was generally used in this context as defined in a paper published by one of the project’s organisers: ‘processes that iteratively bring together diverse groups and their ways of knowing and acting to create new knowledge and practices to transform societal outcomes’ (Wyborn et al., 2019: 322).
innovative approaches, using a multi-disciplinary approach that cannot be achieved by any one organisation alone. [2012KD–CCI_Strategy_2012-2020]

| 1. Pluralist | Explicitly recognises that there are multiple ways of knowing, doing, and valuing life on Earth. Pluralism emphasises the benefit that comes from this diversity of thought rather than forcing consensus or privileging dominant approaches. |
| 2. Reflexive | Emphasises the value of being open-minded and aware of our own assumptions and biases, to engage in ongoing learning and improvement. Reflexivity enables flexibility, adaptation, and innovation, and – if required – transformation, in the face of change. |
| 3. Humble | Humility is vital in urgent and uncertain times, as it compels us to listen and to consider the ethical implications of actions, and to cultivate an awareness of the limitations of our knowledge and actions in a globally connected and complex world. |
| 4. Adaptive | Adaptability acknowledges that change is constant, unexpected, and often contested, and therefore enhances the ability to respond to changing conditions as they emerge. |
| 5. Pragmatic | Pragmatism emphasises a middle ground where knowledge is gained through practical experience and adjusted through observation, experimentation, and conscious reflection on existing knowledge, habits, and beliefs. |
| 6. Inclusive | Inclusivity fosters meaningful participation of new or previously unacknowledged and/or underrepresented human and non-human voices. Inclusivity values diverse contributions to change, and shared leadership in sustained and equitable outcomes. |
| 7. Fair | A commitment to fairness is rooted in solidarity with and response-ability towards the diversity of human and non-human life on Earth now and in the future. This requires us to actively work against sources of injustice in research and practice. |
| 8. Innovative | Innovation fosters creativity, embraces experimentation, and removes unnecessary barriers to exchanging and developing new ideas. It recognises learning beyond academic institutions, to facilitate open source solutions and knowledge exchange. |
| 9. Accountable | Accountability, includes responsibility for, is sensitive to, and is explicit about the (un) intended implications throughout the process of research and practice. It emphasises the need for a shared liability and commitment. |

Figure 14. The principles underpinning the Biodiversity Revisited research and action agenda (reproduced directly from: Wyborn, Montana, et al., 2020: 8).

In Section 5.3.1 above I described how the goal-oriented approach of identifying a few “big things CCI should do to save the planet” [2019-04-30FN–001-04_conversation], which became colloquially known as ‘the what’, was contrasted with ‘the how’ or the ‘ecosystem’, which represented ways of working together. During the course of analysis it became clear that ‘the how’ /‘ecosystem’ represent a principles-based approach to addressing complex problems faced in conservation. This approach centres on implicit principles and processes of diverse collaboration that are rarely evidence-based or leading to precise, predicted outcomes. Compared to ‘the whats’, ‘the hows’ are less tangible and measurable and more difficult to describe. I observed a clear discrepancy between the emphasis on ‘the how’ in documentation about CCI, and the little attention paid to it in practice.
During one CCI Council meeting the distinction between ‘the what’ and ‘the how’ was explicitly acknowledged and Council members considered whether these approaches needed to be exclusive [2019-03-25FN–Council_Strategy_Session, paraphrased]. One Council member recognised that they had not had time to creatively consider alternative approaches for the collaborations to achieve transformation, as shown in the excerpt below:

[Member 1]: One of the differences [Member 3] has picked up on is that some support creating an ecosystem for transformative change which is about process – working together at the interface and then applying that as and when, all over the place, versus [Member 3] asking for 3-5 programmes or initiatives, but these are different approaches. I wonder whether we can do both?

[Member 2] Perhaps this is not a barrier. We haven’t had a chance to discuss this yet. Talking about transformative conservation, we could have different approaches. We haven’t had that conversation or planning process as you would in an organisation. That’s where often we don’t have time. We have a good governance system set up but spend more time on governance rather than creative thinking. [2019-03-25FN–Council_Strategy_Session, paraphrased]

One Council member eloquently captured the distinction between goal-oriented and principles-based approaches when they commented, “there’s a difference between being known for 3-5 things in 10 years, and needing to know what these things are now and working towards them” [2019-03-25FN–Council_Strategy_Session].

During the Listening Phase of the CCI Strategy Development process, participants were asked what they felt about these different approaches, and which CCI should use going forward. Respondents did not generally feel that it had to be one or the other approach, and acknowledged that, “both need to be done” [2019-09-04LP–Strategy_Café_notes].

Box 6 below presents the CCI Fika group I established as an example of a principles-based researcher-led initiative.

**Box 6. The CCI Fika Group – a principles-based researcher-led initiative**

The Scoping Study conducted during the first year of this research revealed that although most staff of the CCI members based in the DAB primarily worked from the same building, they still struggled to meet people within other organisations including those in similar areas of conservation. I decided to set up an intervention of my own to try to help connect people across CCI. After considering different possibilities through conversations with a range of people, I decided to launch the CCI Fika Group using my CCI Survey to inform people about it.

From the beginning it was a principles-based initiative to see if I could find a simple way to help connect people. Although an impact evaluation specialist I consulted about the idea advised me to
set measurable targets for the group at the outset, I opted instead for the initiative to remain broad in its ambitions.

The idea for a Fika group initially came from a former colleague who had set up a similar group at FFI, one of CCI’s partners. ‘Fika’ is a Swedish culture of regularly making the time to have a quality conversation over coffee and cake. The logistics for the group were relatively straightforward. Each month I used a spreadsheet to randomly pair members of the group, ensuring that everyone was paired with someone from a different CCI organisation, and with someone they had not previously been paired with. On the first Friday of each month I emailed members to tell them who they were paired with, and then it was up to them to arrange a time to meet for up to 20 minutes before the next pairing.

The group started in March, 2019 with 52 members who signed up through their response to my CCI Survey. Since that time I have arranged 24 rounds of pairing. At its largest, the group had 96 members and a total 146 people have taken part for various periods. Taking a broad, principles-based approach to the group enabled it to be flexible along the way. I conducted two online surveys with the group to check it was being run in a way that suited as many members as possible and to get their feedback. This was particularly important when the COVID-19 pandemic hit to ensure that members were comfortable conducting their Fika meetings online. Analysis of survey data collected in March, 2020 (46 responses) revealed that some group members were keen to interact more frequently and in new ways during lockdown while others preferred not to meet virtually and to leave the group until face-to-face meetings were possible again. The vast majority of respondents agreed to varying extents that their experience with the group had: been enjoyable (84%), worth the time it had involved (80%) and helped them to better understand different perspectives (73%).

It has been an extremely positive experience to help people make new connections across CCI, especially during lockdown when there were few opportunities for people to interact. Although I cannot quantify the impact it has had (as targets were not specified), I consider it to be successful as a flexible group that has brought enjoyment to participants and helped to build connections. The EDO have agreed to take over the organisation of the group once I am finished my PhD and the group has led to the formation of 6 new Fika groups set up by members who enjoyed their experience. Here are a few of the comments I have received along the way:

*My first two pairings were brilliant, I really enjoyed meeting them and I’m sure we’ll stay in touch. Thanks!... I also got the last [person I was paired with] to agree to write a masterclass for our members’ magazine, which she is now doing.* [2019-10-25–email]

*Thanks so much for keeping this going – since the DAB has been closed [due to COVID] the Fika group has become all the more important as a way (the way?) to meet and stay in touch with everyone.* [2021-02-05–email]

“I do like that it’s evolving and staying fresh” [2020-03–CCI_Fika_Survey_results]
The inevitability of uncertainty

Exploration towards unknown solutions inevitably involves uncertainty and risk. Many participants within both research settings were uncomfortable with the uncertainty associated with principles-based approaches.

In CCI, tangibility and certainty were observed to be highly important and there was a strong emphasis on being ‘evidence-based’. One of CCI’s Programme managers commented generally that scientists are less comfortable dealing with uncertainty, compared to artists who embrace it. This sentiment was reflected in the abundant use of the term ‘anecdotal’ to describe any finding or experience not published as statistically significant in a peer-reviewed journal. Participants regularly described their own lived experience as ‘anecdotal’ and therefore not ‘evidence-based’ or certain.

Within CCI I also observed a general aversion to risk and a reluctance to openly discuss failure of any kind. The CCI Council discussed risks and threats to the collaboration behind closed doors. During one meeting I observed a Council member acknowledge that the collaboration was now, “old enough to talk about weaknesses and barriers”, and would indeed need to in order to, “achieve all these visions” [2019-03-25FN–CCI_Council_Strategy_Session, paraphrased]. But fostering a culture that accepts failure and uncertainty remains a challenge. During one meeting someone expressed that conservationists do not “think outside comfort zones” enough [2019-09-20FN–Strategy_Champions_meeting_planning]. In another, someone questioned how it would ever be possible to embrace failure in a, “blame culture and scientific world” [2019-04-24FN–EDO_Strategy_Session].

Uncertainty was approached differently in the BioRev Initiative, at least by core organisers. Because the Initiative’s process was intentionally open-ended, organisers were prepared to wait and see what emerged. Some even appeared energised by this uncertainty. For example, one interviewee told me, “I don’t know what’s next, but that’s just what I’m hoping for” [2019-09-23TR–111-12_interview]. During a project meeting one of the organisers stated:

_Things have not changed and this [Initiative] is an opportunity for change. I don’t know where it’s going, but that is exciting. I don’t like predictable endings._ [2019-05-10FN–Gland_Design_Team_Meeting]

Not everyone involved with the Initiative was comfortable with the uncertainty associated with this approach however. One organiser acknowledged that for many participants it was “tricky to sit in uncertainty” [2019-05-10FN–026-12_meeting]. Even members of the Initiative’s Advisory and Steering Committees struggled with the uncertainty about what it would achieve and its lack of ‘concreteness’. During the Symposium event there was a discussion about how “science doesn’t do uncertainty and ambiguity”, and scientists tend to be more comfortable with straight line fixes rather than ‘curvature’.
One participant described the format of the Symposium itself as a ‘tug-of-war between flexibility and structure’ as shown in the following excerpt:

I could feel some people say, ‘we need a programme, we need an agenda to be able to work’, and it could also feel like no, but that’s exactly what we’re trying to resist, that idea that there has to be already a pathway that exists that we have to follow, otherwise, we’re doing the same thing all over again. [2019-09-19TR–107-12_interview]

**Innovation as a principles-based approach**

Innovation was perceived to be desirable within collaborations in both research settings. ‘Innovative’ was a recurrent adjective within collaborative documents and funding proposals. The term was typically used to describe the hopeful emergence of novel solutions through diverse collaboration. For example, the CCI Strategy states that the ‘partners together combine and integrate research, education, policy and practice to create innovative solutions for society’ [2012KD–CCI_Strategy_2012-2020]. The BioRev Initiative aimed to innovate through its explicit commitments to open-endedness, diversity and co-production. As with all forms of principles-based approaches, innovation cannot be predetermined or guaranteed – it represents the potential for positive outcomes to arise from exploration and uncertainty.

Although innovation is never guaranteed, data analysis identified various conditions that help to enable it. Time, space and flexibility were found to be central for enabling innovation, and each of these can in turn be impacted by funding. Diverse ideas and participation were also believed to contribute to innovation, and these are covered in more detail in Section 6.2.2. Table 11 lists enabling conditions for innovation alongside descriptive quotes. It includes conditions that were observed or experienced to enable innovation, as well as those that were proposed or assumed to contribute.

Innovation was often communicated as purely positive, however some participants recognised its association with risk. The CCI Collaborative Fund Report acknowledged, ‘the fact that innovative, experimental or otherwise cutting-edge project concepts by definition carry an inherent degree of risk that the planned approach and activities will fail to generate the anticipated outputs’ [2019-07KD–Collaborative_Fund_Evaluation_Report]. But what about when the approach and outputs are not predetermined? Are actors prepared to accept the risk associated with activities that are intentionally exploratory?

**Table 11. Conditions that enable the process of innovation** – A summary of conditions identified from data, including illustrative quotes. The type of statement (experience, assumption or my observation in practice) is indicated in brackets following each quote.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Illustrative quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>“Innovate team work models... time to think, think tank sessions, creation of a role that helps to free up time for people” (assumption) [2019-09-03LP–Strategy_Soiree]</td>
</tr>
<tr>
<td></td>
<td>“Finding time for free thinking... I just think I can’t really afford to do it. It’s a shame!” (experience) [2018-08-09TR–041-02_interview]</td>
</tr>
</tbody>
</table>
| Physical space (and opportunities for people to interact there) | “IdeasSpace, a physical space in the Conservation Campus designed to foster collaboration between participants from across CCI and beyond, focused on new issues or novel solutions to conservation challenges.” (assumption) [2016KD–CCI_Five_Year_Plan_2015-2020]
“the physical space offered by the [DAB] allowed for staff to think and reflect on these wider issues, which could thus help incubate innovative ways to solve these problems.” (experience, observation) [2019-11-28RD–Summary_Report]
“I suspect that a hallmark of success of those projects is the birth of other collaborative ideas that people have when they are working together in a room... it’s just offering a space where people can have those ideas.” (assumption) [2018-08-13TR–002-04_interview] |
| ‘Space’ (a combination of freedom and opportunities to interact) | “What CCI offers in an ideal world, or can offer, is a kind of empty space that people can step into. And there’s a process of shedding an institutional skin... you can operate in a space where you can try things out together which then don’t immediately ricochet back into what you do in your normal day job.” (assumption) [2018-08-13TR–002-04_interview]
“what I did try to do... is provide [researchers] with a space where it’s ok to be interdisciplinary, explore, have freedom, it’s not going to impact on your research, let’s just have this free-flow space.” (experience) [2018-07-27TR–040-11_interview] |
| Freedom, flexibility | “I think [BioRev] is very innovative. I think our challenge is to maintain the innovativeness... the management impulse is always to figure out how to manage it, and then it becomes ‘projectised’, if you will. And so very often those practical things come at the cost of what was exciting, and innovative in the first place.” (experience) [2019-05-31TR–092-12_interview]
“institutionalising time to step out of day jobs” (assumption) [2019-04-10FN–EDO_Planning_Session]
“A million pound grant would ruin it because then they would need to write lengthy reports about everything. At the moment they have the freedom to do what they like and at their own pace.” (experience) [2018-11-06FN–009-11_conversation] |
| Diverse participation | “Broader meetings that brought people together from much wider across the organisations. They were great fun, they generated loads of ideas.” (experience) [2018-11-21TR–001-04_interview]
“By definition you pick the people who take it to interesting places – including people who aren’t necessarily rowing in the same direction” (experience) [2019-03-11FN–Virtual_Steering_Committee_meeting] |
| Funding for innovative collaboration | “There is strong evidence from the responses to the online survey that the Collaborative Fund has contributed significant added value to the work of the CCI partners, in particular by... stimulating/catalysing innovative collaborations that probably would not have happened otherwise.” (experience) [2018-07KD–CCI_Collaborative_Fund_Evaluation]
“Creative funding models – ability to say to funders collectively ‘this is the way we need to be funded’... using collective voice to come up with collaborative and creative solutions” (assumption) [2019-09-03LP–Strategy_Soiree] |
| Taking risks | “More thought creation and leadership from CCI – taking more risks, rather than responding, helping to set the agendas with creative thinking” (assumption) [2019-04-24FN–EDO_Strategy_Session]
“We’re going to have to be much more live and innovative, and that means making some bold [decisions] and making mistakes.” (experience) [2019-01-24TR–063-11_interview] |
| Decision-making processes | “Don’t just choose the things that get the most votes –[you will] lose the things that are really good ideas and potentially off the wall. Careful not to weed out... “ (experience) [2019-11-28RD–Summary_Report] |
The following excerpt demonstrates one interviewee’s perspective that the field of conservation must accept such risks and innovate:

I think conservation absolutely needs to innovate... the biggest thing I've learned in the last five or ten years is that the model we've done conservation on for the past 30 years is not going to cut it. Of identifying problems, taking them to governments, getting governments and intergovernmental organisations to then regulate, legislate, incentivise and then things go down to the work on the ground... so we're going to have to be much more live and innovative, and that means making some bold decisions and making mistakes. And so can CCI do that, and is it up to that, or... are we a bit too careful? [2019-01-24TR–063-11_interview]

Benefits, challenges and enabling and restricting factors of principles-based approaches

My analysis revealed a number of benefits and challenges associated with principles-based approaches to transformation, along with factors that can enable or restrict them (see Table 12).

Table 12. A summary of the benefits, challenges and enabling and restricting factors associated with principles-based approaches to transformation – A selection of illustrative quotes are included.

<table>
<thead>
<tr>
<th>Principles-based approaches to transformation</th>
<th>Illustrative quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
</tr>
<tr>
<td>- A way of working collaboratively to address complex problems with unknown solutions – has the potential to derive innovative solutions that could not have been predetermined</td>
<td>“It’s not straightforward because it isn’t obvious what it is that we intend to do” [2019-02-12TR–014-11_interview]</td>
</tr>
<tr>
<td></td>
<td>“We developed an approach based on a set of principles and practices that could create a common focus across diverse perspectives” (Wyborn et al., 2020, p.6)</td>
</tr>
<tr>
<td></td>
<td>“the flexibility of the Steering Committee of being able to also change their thought process or their ways of organising” [2019-09-19TR–107-12_interview]</td>
</tr>
<tr>
<td>- Potential to incorporate the diversity of perspectives involved in a collaboration – plurality in decision-making possible</td>
<td></td>
</tr>
<tr>
<td>- Flexibility – this approach is inherently flexible and able to respond to changing circumstances</td>
<td></td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td></td>
</tr>
<tr>
<td>- Maintaining openness and flexibility can cause confusion and involves uncertainty and risk which can be uncomfortable</td>
<td>“it was almost as though they didn’t want the kind of thing where you think outside the box, and you challenge where you were doing it, and you ask the difficult questions” [2019-01-24TR–063-11_interview]</td>
</tr>
<tr>
<td>- Cannot be evaluated in a traditional way – as it is not based on the achievement of specific pre-determined objectives – requires an ongoing learning approach?</td>
<td></td>
</tr>
</tbody>
</table>
If a focus is not adequately defined, could become very generalised or not progress

“the danger is letting flexibility, I suppose, become an excuse for lack of performance, so that we can’t allow” [2019-05-15TR–029-12_interview BioRev]

### Enabling factors

- Requires time, space and flexibility but also co-production among diverse viewpoints, critical debate, plurality
- Need to foster a culture that accepts uncertainty and the risk of failure and where challenging the status quo is welcome
- Acknowledgement of all types of experience, reflexivity
- Need for an orientation towards learning
- Developing principles that everyone can get behind

“achieving success – this will need to involve innovation and open-mindedness, flexibility and awareness of assumptions.” [2019-01-21KD–BioRev_Design_Meeting_Agenda]

“self-critical in the sense of learning from our experiences and charting a more effective course in the future.” [2019-06-11TR–091-12_interview]

“We need to change the architecture around incentives to evaluate things properly, share what we learn with each other.” [2019-07-25LP–Strategy_café]

### Restricting factors

- Traditional evaluation approaches are not suited to this approach – requires new ways to measure ‘success’
- May not be perceived to be ‘fundable’ or be accepted by funders who want to quantify the impact of their investments
- Reluctance to accept uncertainty and risk – inhibits exploratory processes
- Existing systems (e.g. academia, economic) reinforce working in similar ways

“I think scientists come into it with different perspectives as to how much failure they’ve experienced, and how comfortable they are with it, and what the culture is around it.” [2019-03-14TR–086-12_interview]

“Donors want to fund big sexy transformative things, and people really do actually want this – but we’re caught in our own institutional settings” [2019-02-14FN–009-11_conversation]

### 5.4 Responding to change

The content above explores what was meant by transformation, and how it can be approached through collaboration. But there is another important side of change that also needs to be considered – change to the contexts in which collaborations are taking place. As one participant put it, “change is not the outcome but an ongoing process that is always happening”; the trick is to manage this ongoing change in a desirable direction [2019-09-12FN–Symposium_Day2].

### 5.4.1 Adaptability through flexibility

Collaborative activities take place within dynamic contexts, and changes can sometimes profoundly and unexpectedly impact what they are able to achieve. During the course of this research, conditions were constantly changing. For some of the CCI partners, leadership, funding sources and membership numbers changed dramatically. There was also unprecedented environmental interest and
activism at a global scale in the forms of the Global Climate Strikes, Fridays for Future and Extinction Rebellion protests. During the later stages of the research the Amazon fires blazed and then the global COVID-19 pandemic hit, sending many into lockdown and postponing the long-anticipated Post-2020 Biodiversity Framework of the Convention on Biological Diversity. Everyone was forced to adapt to varying degrees during this period.

‘Adaptability’ was used by participants to describe the ability to adjust or respond to change. For short-term collaborative projects, adaptability referred more to the ability to respond to sudden changes; whereas for longer-term collaborative activities, adaptability additionally described the ability to adjust over time to gradual changes. Collaborative activities capable of adapting are described here as ‘flexible’, whereas those not capable of adapting are described as ‘rigid’. Analysis of data from BioRev revealed that the process, content and deliverables of the collaborative initiative were each found to vary between flexible and rigid.

**Adaptability of collaborative projects**

Collaborative projects that employ goal-oriented approaches begin by identifying desired impacts and causal pathways to achieve them (as shown in Section 5.3.1). The extent to which such projects adhere to their original proposals when faced with changing circumstances can vary. Certain scientific approaches require rigidity of process, content and deliverables in order to robustly test hypotheses. Randomised control trials, for example, are “strictly set up and not at all adaptive” [2018-10-17FN–060-12_presentation]. Other collaborative projects may be rigid in some, but not all of these ways. Rigid adherence to detailed plans can enable carefully crafted collaborative projects to efficiently deliver specific predetermined outcomes, as one interviewee described in the following excerpt:

*If it’s like we’ve got a very, very specific thing to do, we have the expertise to [do] it within the team, and the leader, in a sense, is just much more kind of task oriented, and dishing out tasks... It’s more rigid, but that can be an effective way of achieving results.* [2018-07-13TR–031-11_interview]

But while rigidity can improve efficiency, it was also found to be limiting. Unanticipated circumstances have the potential to impact the effectiveness of rigid plans or the relevance of predetermined outcomes. Collaborative projects that have flexible processes have the ability to respond to unanticipated circumstances and potentially capitalise on opportunities that unexpectedly arise along the way. Flexibility may be particularly important when conditions are dynamic, unpredictable or complex. According to one BioRev participant, ‘the changing landscape of the topic, especially with the growing Extinction Rebellion movement, means that adaptation may be key to the success of the project’ [2019-05-10EM–096-12_email]. Funding requirements can also potentially be a key determinant of how rigid or flexible a collaborative project can be (see Section 7.2.2). Disciplinarity was also suggested to influence
expectations for rigidity or flexibility within a collaborative project; with scientists perceived to be more rigid in their approach overall:

I've got nothing against scientists, but sometimes scientists do want to see the mechanics of how things open out, and the potential hypothesis and the potential pathways. Whereas, me, as a more constructive social scientist, I'm happy for things to take the particular pathway that they might. And I understand that what got pitched to the funder, is not what we're going to deliver on in a year's time. [2019-09-10TR–109-12_interview]

To some extent, the degree to which a collaborative project is flexible can also be a matter of choice and managerial preference, and may be impacted by the potential discomfort that can be associated with the uncertainty of adaptation. The following excerpt describes how a collaboration can be rigidly managed if the individual driving it is unwilling to adapt their agenda:

I think there have been cases where people have wanted to achieve something and they haven’t really deviated- or they haven’t been willing to be open and flexible to deviate from what they wanted. So, people have just come along as a sort of collaboration but it’s been driven by a single person or a single institution with one agenda. [2018-08-13TR–002-04_interview]

Adaptability of interorganisational collaboration

At the level of the entire CCI collaboration, and its ongoing collaborative programmes, intended impacts were found to be more broad and therefore potentially more flexible. At this higher level, however, I observed a stark discrepancy between stated intentions to be responsive, and the ability to do so in practice. An early draft of the new CCI Strategy stated, “we have created an ecosystem for collaboration that allows us to be agile and responsive to emerging conservation issues” [2020-09-09KD–Draft_of_the_CCI_Strategy]; yet the CCI Influence Agenda justifies why the collaboration requires time to react to emerging issues:

CCI’s structure is relatively complex and the Council requires adequate time to deliberate on new proposals that require CCI branding. CCI partners should therefore not be expected to provide rapid reactions to emerging issues in a unified voice, yet individual partners/groups of Partners will continue be able to influence decision makers. [2017KD–CCI_Influence_Agenda_Framework]

In practice, CCI struggled to respond quickly to the changes that took place during the research period. The Global Climate Strike in September, 2019 was a prime example. It had been suggested to CCI Council in advance that the partners could do something together for the strike. The Executive Director happened to be on leave at this time and the consulted Council members decided that a CCI-wide action would not be possible, giving the example that one partner in particular would be opposed to participating. In the end, however, the stated partner ended up doing more than any of CCI’s other
partners, offering its staff two hours leave to encourage them to participate. In retrospect, it was concluded that for CCI it may have been “more harm not to be involved” [2019-09-16FN–Strategy_Champion_meeting_planning]. This experience aligns with perceptions that CCI: has “issues with speed of change and ability to respond to change”; may be separated from what is currently going on [2019-04-24FN–EDO_Strategy_Session, paraphrased]; and should be more engaged with grass-roots activism [2019-11-28–LP_Summary_Report]. Having said that, within CCI, “some of the partners have clear mandates not to campaign… [and w]ithout their support, giving a unified position on critical issues becomes more difficult” [ibid]. In the next Chapter, Section 6.3.1 distinguishes advocacy and evidence-based informing as policy approaches in more detail. CCI have considered developing a rapid response mechanism to deliver swift responses to unexpected threats and practical opportunities, however this mechanism has not yet been developed [2016KD–CCI_Five_Year_Plan].

Flexibility is inherently part of collaborations that adopt a principles-based approach. Although funding for the BioRev Initiative required rigid determination of the format of its deliverables (a research agenda and publication in the Journal Nature Sustainability), the content of those deliverables, and the process to create them were intentionally open-ended and unusually flexible. The Steering Committee of the Biodiversity Revisited Initiative was encouraged to embrace the project’s intentionally ‘fuzzy’ process, allowing it to adapt as it went along. The process was described to be like “jazz, re-written in the act of making it” [2019-03-11FN–Virtual_Steering_Committee_meeting, paraphrased]. One of the project’s organisers described that in addition to keeping the substance of the project open, key participants were encouraged to contribute through various entry points, allowing them to be involved, “in the ways they want[ed] to see themselves in the journey, which ke[pt] them engaged” [2019-09-10TR–026-12_interview].

5.4.2 Experiential learning

*I think it’s about creating a new conversation about biodiversity, which is self-critical, but also not in a negative way, but self-critical in the sense of learning from our experiences and charting a more effective course in the future.* [2019-06-11TR–091-12_interview]

Learning can mean many things and can take many forms. This analysis focusses on ‘experiential learning’ or the learning that can be derived from practical experience. The Luc Hoffmann Institute, which led the BioRev Initiative, demonstrated through a range of activities that it is committed to learning from its experience. I was told during conversations with staff that they are expected to keep a ‘learning journey’ and to enter this information onto CRM Copper, a central database system the Institute uses to track learning. Feedback forms are circulated to participants following all of LHI’s events. It also organised a Lessons Learned meeting following the Symposium event to give members of the team an opportunity to openly share and discuss their reflections about the experience. At the end of the meeting everyone was thanked for their inputs – which included some very critical comments – and assured that this would be used to help the Institute learn and improve [2019-10-28FN–Lessons_Learned_Meeting]. LHI’s
commitment to learning was further exemplified by the fact they hired me to conduct a study of the social
dynamics of the Biodiversity Revisited Initiative, as part of this PhD, to learn as much as possible from the
project. As a ‘neutral sounding board’ I was told by core project organisers that ongoing conversations
provided an opportunity to reflect about management decisions as they were made. It is hoped that these
organisational learning approaches will enable LHI to bring lessons learned through previous experience
into the design and implementation of future activities.

While some of CCI’s partners have independently developed organisational learning strategies,
there is no such strategy, to my knowledge, to learn from collaborative experience at the level of CCI. In
fact, discussions by CCI Council about the development of the new CCI Strategy emphasised that “most
effort should be placed on seeking input on the future direction, priorities and opportunities for CCI”, with
only up to 15% of consultation engagement time devoted to “reflections on, and learning from, the past”
[2019KD–Council_Paper_about_Strategy].

‘Reflexivity’ describes an ability to take a step back to critically assess assumptions and consider
one’s own actions in order to learn from the past and consider possible futures (Montana, Elliott, et al.,
2020; see Section 4.5.5). It is thereby an important component of experiential learning. During my time
with CCI I witnessed extremely few examples of critical self-reflection from participants, organisations or
collaborations. Instead, I experienced a culture dominated by ‘evidence-based’ certainty that was
reluctant to openly discuss failure. The closing of the Natural Capital Hub provided a rare example of
reflexivity when Co-managers of the Hub prepared a document detailing the lessons they had learned
based on their experience in preparation for a meeting with CCI Council. As a CCI Programme that grew
from the bottom-up, the Natural Capital Hub was understood by its Co-managers and the Executive
Director of CCI to grapple with many of the same collaborative challenges that CCI faces more broadly. As
such, it offered a prime opportunity to learn from collaborative experience. I found the final point made in
this lessons learned document to be particularly poignant:

Experience: We have yet to find the best model for implementing collaboration. Whilst
the key strength of CCI is the diversity of expertise it can apply to a problem, the
mechanisms of harnessing this expertise still need to be refined for management of both
internal and external relationships. The [Natural Capital Working Group] explored
models involving inclusion of all partners at all stages, asking particular partners to lead
different stages and using the Hub to coordinate collaboration. Each model had its
advantages and disadvantages but we are yet to identify the best way of working
together.

Lesson learned/recommendations: The pros and cons of each of the collaborative
approaches should be recorded to avoid future projects going through the same learning
steps. [2019-11-25KD–Natural_Capital_Hub_Lessons_Learned_Doc]

In the end, the Natural Capital Hub was prevented from fundraising or developing any more
detailed plans when the CCI Council, “was unable to secure a unanimous view” on the value proposition
that the group developed [2019-11-25KD–Natural_Capital_Hub–discussion_with_CCI_Council_Group]. It remains unclear how CCI plans to learn from this and other collaborative experiences.

CCI is committed to providing world-class learning opportunities through collaborative approaches such as the Masters in Conservation Leadership (MPhil) and the Student Conference on Conservation Science, however it has yet to establish an approach to learn from its own collaborative experience. There seemed to be a general aversion within CCI to being reflexive, openly self-critical or the subject of study. One participant told me that she was “very surprised” that I had been allowed to conduct research on CCI at all [2018-11-09TR–060-12_interview].

Experiential learning and reflexivity can be an important means for collaborations to improve their effectiveness over time if individuals and/or organisations can openly and honestly reflect about their experiences and find ways to use this information to inform future decisions.

5.5 Summary of change findings

The findings presented in this chapter examined the different types of change that researched collaborations strived for and the different approaches they employed to achieve change, highlighting the benefits, challenges, and enabling and restricting factors for each case. The (in)ability for collaborations to adapt to change was also explored. Overall, these findings clearly demonstrate that change is an important, multifaceted and often underexplored consideration for conservation collaborations.

The chapter included numerous cross-references to the other findings chapters, demonstrating their interconnection. In the next findings chapter I will delve into the ways that conservation collaborations were found to be diverse, and consider the challenges of collaborating across different forms of difference as well as ways to enable diverse collaboration.
Chapter 6 – Diversity findings

6.1 Introduction to Chapter 6

An appreciation of diversity is essential to enabling collaboration in conservation. Conservation – as described in Chapter 2 – is an applied field that requires a broad array of skills and experience to tackle complex and interconnected threats to nature globally. The field has always straddled the research-policy-practice divide and required expertise from multiple disciplines. Collaboration between organisations, sectors and jurisdictions has become increasingly common with the neoliberalisation of the field (see Section 2.2.3). Similarly, as discussed in Chapter 3 and throughout the thesis, diversity is essential to the notion of collaborative advantage and the Theory of Collaborative Advantage (TCA). Collaboration in conservation therefore, as shown in my research findings, inherently involves working across various forms of difference.

To that end, this chapter draws on all forms of data collected (including surveys) to present findings that relate to ‘diversity’ – variety across one or more forms of difference at an individual or organisational level (see Figure 15). Diversity can be a moral imperative, but it is also often assumed to be beneficial for collaboration. The TCA shows that collaboration across difference brings the potential for synergy and collaborative advantage, but it is also often associated with practical challenges that cause inertia (see Section 3.2). Section 6.2 explores assumptions that are made about diversity and identifies five roles that diversity was observed to play in conservation collaborations.

Section 6.3 looks at different forms of individual differences within the researched collaborations. It identifies the challenges that were associated with collaborating across these differences and highlights proposals within the data for ways to enable diverse collaboration. Section 6.4 then explores collaboration across organisational differences.
6.2 The roles of diversity in conservation collaboration

This section explores the roles that diversity played in the pursuit of collaborative aims within the two conservation research settings. CCI brings together 10 different partners who ‘seek to transform global understanding and conservation of biodiversity through the integration of research, practice, policy and capacity development’, referred to here as different ‘conservation approaches’ [2016KD–CCI_Five_Year_Plan]. CCI also aims to catalyse ‘innovative and interdisciplinary collaborations’ [2012KD–CCI_Strategy_2012-2020]. As a collaboration, CCI is therefore explicitly and intentionally diverse in terms of conservation approach, organisational partners and disciplines.

Diversity also became a key focus for the BioRev Initiative. Steering Committee members, who were themselves a diverse group, were asked to nominate potential participants for the Symposium that ultimately reflected diversity aspirations with respect to: gender, discipline, career stage, geography, and sector (meaning from academia, non-governmental organisations, government, inter-governmental institutions, private sector, media or think tanks)[2019-03-11KD–Second_Steering_Committee_meeting_agenda]. The Symposium was described by a member of the Secretariat as, “the most diverse meeting we’ve ever held,” [2019-10-31FN–039-12_meeting] and participants were generally very positive about the Initiative’s ambition and efforts to convene a diverse group.

But why was diversity deemed important within these contexts? The next section will present results about the assumptions that were made about diversity, how they were challenged, and the benefits that were observed in practice.

6.2.1 Assumptions made about ‘diversity’

Across both research settings participants generally held assumptions that diversity was something positive and worth striving for. Some participants expressed beliefs that diversity can be a
means to particular ends. It was suggested for example that diversity can make outcomes ‘better’ and ‘more sustainable’ and that bringing diverse perspectives together can enable ‘opening things up’ and may be required for transformation.

...if we are envisioning a transformative research agenda we need to take sufficient consideration of the views from participants with more diverse backgrounds and different geographies. [160–post-event_survey]

Various specific forms of diversity were assumed to be important. It was assumed that bringing diverse skills, expertise and experience into a collaboration should enable partners to complement one another and achieve more overall. Demographic diversity of various kinds was assumed to bring diverse ideas and perspectives, which could lead to innovation. The opposite assumption was also expressed; that if participants were “all coming from the same background [we] will get similar views” [020FN–SC_Meeting BioRev].

In the BioRev Initiative some participants acknowledged that assumptions were being made about the role of diversity and questioned these assumptions or called for further research. For example, during a discussion about the Initiative’s objectives someone simply asked, “why are we bringing these different people together?” [094–Design_meeting]. Others directly challenged assumptions about diversity. During the design of the BioRev Initiative process someone challenged a suggestion the Early Career Competition should accept submissions in multiple languages:

You are trying to throw too many spaghetti at the wall! I appreciate you are trying to include people, but as a non-white early career person I don’t think it’s necessary. [157–SC_meeting]

Some participants alluded to the notion that convening people with diverse demographics does not ensure that their ideas will be diverse or valuable for a given task, and that a person’s ideas are not representative of all of the demographic groups they are part of.

The diversity of ideas is much more interesting, and just because I’m from [a developing country] does not mean I am more likely to say something that is a developing country, right? [092–pre-event_interview]

If diversity of ideas is ultimately the goal, the same participant suggested that ticking demographic boxes is not in itself sufficient to get you there.

I think it’s true for everything, I think it’s true for gender, I think it’s true for age, I think it’s true for race, I think it’s true for nationality. If you honestly want diverse ideas, then you have to really look very hard and that’s a much more difficult enterprise. [092–pre-event_interview]
6.2.2 Observed roles of diversity in practice

Looking beyond participants’ assumptions about diversity, data analysis identified five ways in which diversity was observed in practice to be beneficial in the pursuit of collaborative aims. The first two roles were directly derived from the diversity of the group: increasing access to existing knowledge and experience, and improving relevance and dispersal of collaborative ideas. Three additional roles were indirectly derived from the diversity of perspectives that were convened, including: leading to learning and reflexivity, empowering by being diverse but aligned, and minimising division and hierarchy. These will now be described in turn.

Diversity can increase access to existing knowledge and experience

The direct involvement of people from a diverse range of sectors, disciplines, national cultures, etc. at the BioRev Symposium allowed the group to collectively draw on specific knowledge and experience from all of these areas. Conversely, if nobody from a relevant group was present it was more difficult to access and fully understand knowledge within that area, as demonstrated in the following quote:

There were many ideas, but many of those ideas are actually being investigated by people within fields [that] weren’t represented. Environmental and behavioural psychologists would have also been a real benefit. [143–post-event_survey]

A few participants in CCI emphasised that diversity is particularly essential when addressing complex or ‘overarching’ problems that require integrating knowledge and experience from many different areas:

just bringing in different perspectives and different backgrounds and disciplines. I think that’s really powerful to bare on problems which are kind of overarching... [2018-08-13TR–002-04_interview]

...if you have a lot of diversity in your environmental problem-solving team... or your research team, then you get to get the observations and context from perspectives from all these different groups. And as you move forward, you have a better understanding of the context and then you ask better, more appropriate questions and then... with more appropriate questions, more useful methods, more likely that the results and the outcomes will be informative first... and by that I mean... you can publish them, you can improve scholarship, dah-dah-dah, that is the easy part. The harder part is change-making, is transformation. And the chance of that is almost zero, but once in a while it happens, and... you’re definitely not going to get transformation without some very diverse inputs, from different perspectives. [2019-03-14TR–086-12_interview]

For CCI, the ability to integrate conservation research and practice brings credibility and reputation. The Natural Capital Hub, one of the collaboration’s programmes, identified ‘diversity of
membership’ and ‘partnership between academia and implementation’ as key elements of CCI’s competitive advantage. One participant described how ‘depth of combined experience’ was something distinctive that CCI was able to contribute at the World Economic Forum in Davos [2019-01-28FN–CCI_ToR_Lunchtime_Seminar; paraphrased].

**Diversity can improve relevance and dispersal of collaborative ideas**

When a diverse collaboration produces something together it is more likely it will be appropriate for the multiple contexts from which participants are coming – provided a convergence of ideas is possible. In the case of the BioRev Research Agenda there was, “quite important work to be done to draw the threads into something coherent, and something that will work across sectors, disciplines and geographies” [2019-11-29FN–039_Webinar], but this was enabled through the inclusion of participants from different sectors, disciplines and geographies throughout the entire process.

Direct involvement by a diverse group of participants who are willing to bring collaborative ideas back to their respective constituencies can additionally enable the ideas to be dispersed widely and in contextually appropriate ways.

*There was this understanding that we have to make this a growing thing to move in all directions, like mobilise different kinds of actors in different sections, from grassroots movements to bigger players...* [107–post-event_interview]

These first two roles of diversity – access to existing knowledge and experience, and relevance and dispersal of collaborative ideas – are directly derived from demographic diversity. The following three roles were derived from diverse perspectives or ideas. Demographic diversity is sometimes used in practice as a proxy for diverse perspectives. Although demographic diversity does not guarantee that perspectives and ideas will be diverse (as stated above), organisers of the BioRev Initiative were perceived to believed it would make it more likely, and also that it was a moral imperative to be as inclusive as possible within the confines of the project.

The diversity of perspectives at the Symposium was perceived to contribute to the richness of discussions, making them more interesting. One participant commented that the, “diversity was really good, and it enabled quite a lot of rich conversations, really futures-oriented” [109–post-event_interview]. Another described it as “thought provoking – not least because of the varied personalities that participated, with varying degrees of exposure, experience and expertise” [135–post-event_survey].

**Diverse perspectives can lead to learning and reflexivity**

Beyond enabling rich and interesting discussion, some participants alluded to the potential for diverse perspectives to lead to innovation, however the data collected did not provide strong evidence for
this. Consideration of different perspectives did allow new connections to be made between ideas and created an environment where people could learn from one another.

_The exchange between experienced and young people was rich, the sharing of views and ideas was [stimulating and inspiring], and learning on both sides was immense._ [146–post-event survey]

_Slightly chaotic at times, but it clearly generated new connections and, I hope new ways of thinking._ [148–post-event_survey]

For CCI, co-locating into the David Attenborough Building has helped to enable ongoing learning and knowledge exchange between partners and individuals through an increasing number of seminar series, trainings and events. During the Strategy Listening Phase, participants called for additional training opportunities within the collaboration, especially for early career conservationists.

Consideration of different perspectives was also acknowledged by a couple of participants to help enable reflexivity by challenging people to consider their own perspective in relation to others:

_I think there’s also something about the impact [that] working together has on the individuals who are doing that working – because… when it works well, I think it challenges people to think about themselves and how they are and their views and values. I think that's really powerful, and that kind of works in all directions…_ [2018-08-13TR–002-04_interview, CCI]

_From a personal point of view, an outcome of the activity was how it challenged my own perceptions and how it managed to give me a good overview of the social and political issues that surround conservation action._ [157–post-event_survey, BioRev]

**Diverse perspectives can be empowering by being diverse but aligned**

In BioRev, the combined realisation among participants of the Symposium that the group was diverse, but also aligned in its mission to critically analyse and revisit the concept of biodiversity gave participants a powerful sense of shared purpose. In some cases this was described as ‘energising’, ‘uplifting’ or ‘renewing’. The fact that there was agreement that there is a problem was comforting common ground within the diverse group.

_The idea of different people from different specialties, different disciplines, expertise coming together to talk about a problem; that we all agreed that there was a problem. So that was something good._ [107–post-event_interview]

_Uplifting to see colleagues from around the world passionate about re-inventing our approach to biodiversity conservation._ [119–post-event_survey]
Diverse perspectives can minimise division and hierarchy

Diverse collaborations have the potential to minimise divisions and hierarchies when members of a diverse group are equally valued and fully enabled to participate. At the BioRev Symposium a participant remarked, “how horizontal things were” [107–post-event_interview]. The event was designed to treat participants equally. For example, Early Career Competition winners were reimbursed the same amount as more senior contributors, and this was deemed “really important to break down the hierarchy” [060–SC_meeting]. Organisers also decided to cover travel expenses for all invited participants which helped to minimise the potential impacts of geographic and socio-economic differences on participation.

During the Symposium, someone suggested that inclusion of more ‘hard-core’ conservationists could have “brought an amount of reduction to this divide” [128–Symposium]. Although it is not certain which divide within the conservation community this participant was referring to, their comment highlights the reconciliatory potential of developing shared understanding together. However, if the ‘divide’ is too deep, addressing it could be more disruptive than productive in practice. This was presumed to be the case when organisers decided not to invite more ‘mainstream conservationists’ to the event (see Section 5.2.2 and Box 5). A number of informal hierarchies were also observed within CCI (as shown in the following sections), however many of these acted to restrict the effectiveness of collaboration.

In summary, most participants assumed diversity to be beneficial and only a few challenged these assumptions. Analysis revealed five important roles that diversity played within researched conservation collaborations. Diversity was also found to bring a number of challenges, detailed below, that need to be managed in order for potential benefits to be realised in practice. These challenges were not always acknowledged. The next section will explore various forms of difference that were found to be particularly important in the context of conservation.

6.3 Collaborating across forms of individual difference

As described in Section 2.3.2, conservation collaborations inherently involve working across many forms of difference. This section explores individual-level differences that collaborations were found to be working across. Sub-sections present findings relating to each form of individual difference including: conservation approach, discipline, philosophical position and career stage, which were initially derived from analysis of CCI data. A final sub-section considers other individual differences that were initially derived from analysis of BioRev data including: values, gender and nationality. The challenges of collaborating across each of these forms of difference are highlighted, along with participants’ suggestions for enabling collaboration across these boundaries. The findings are the result of analysis across multiple forms of data from both research settings.
6.3.1 Conservation approaches

Conservation is an ‘applied science’ and a mission-driven field. Different ways of doing conservation are broadly differentiated into what I am calling ‘conservation approaches’. CCI recognises and explicitly aims to integrate four main conservation approaches: research, policy, practice and capacity development. Although these broad categories are commonly used and generally understood they lack precise and consistent definitions. Conservation approach can be considered at the level of the individual working in conservation or the conservation organisation, which often utilise a combination of different approaches (see Section 6.4.1).

Documentation about CCI presents a clear perception that the collaboration derives value from – and makes a distinctive contribution through – the integration of different conservation approaches.

CCI is uniquely placed to feed new thinking and training into worldwide conservation practice and policy through the partner conservation organisations and their networks. Similarly the experience, knowledge and information from on-the-ground implementation of policy and practice is fed into CCI’s research and teaching. [2012KD–CCI_Strategy_2012-2020].

The BioRev Initiative intentionally convened individuals from a broad mixture of approaches. The term ‘sector’ was used in this context to distinguish participants’ employment experience into the categories: academia, not-for-profit or non-governmental organisation, private sector, government, and intergovernmental organisation. Participants from think tanks, funders and the media were also involved. One organiser referred to funders as “the most powerful actors”, and efforts were made for them to be directly involved [2019-07-10FN–Virtual_Design_Team_meeting]. An individual from the project’s primary funder was present during the Symposium, and his enthusiasm for the process helped to give organisers the confidence to keep the content and process open and flexible for longer. The Symposium also unusually involved three participants from the media, one of whom wrote an article about the project directly following his return (Vidal, 2019). After the event, one interviewee told me:

I also appreciated the fact that there were journalists. I mean, I’ve been in - I didn’t really think it was so important, but it is very important” [2019-10-10TR–110-12_interview].

Each of the conservation approaches will now be briefly considered in turn and I will then summarise the challenges of collaborating across conservation approaches, and ways to enable it.

Conservation research – strives to improve our understanding of the natural world and how it can be maintained and protected. An increasing number of disciplines are involved in conservation-related research and this is explored in Section 6.3.2. CCI participants identified a distinction between researchers based within NGOs and academic researchers based within the University of Cambridge (and other academic institutions affiliated with CCF, one of the CCI partners). Interviewees told me:
Conservation... is different from some other academic fields in the fact that a lot of the best people are actually not – they are obviously academics of training, but they are not located in a classic academic institution. [2018-08-01TR–051-11_interview]

I was still trying to get my head around the fact that a researcher in an NGO didn't mean the same thing as a researcher in the University. [2018-07-27TR–040-11_interview]

Collaboration between academic and NGO researchers can be challenging because their organisations are incentivised in different ways (see Section 6.4.2). As an Institution, the University of Cambridge has tremendous power and a strong international reputation for credible research. The University is often communicated as the central partner of CCI (it is literally in the centre in Figure 18 on page 159 below), however for some participants it also has negative associations with elitism and colonialism. I observed a shortage of available academic researcher collaborators because they are far outnumbered by NGO staff within CCI, yet the CCI Collaborative Fund requires at least one academic from the University to be involved with every proposal. In doing so, academic researchers are prioritised for collaborative funding over NGOs researchers. This adds to what is already perceived to be a hierarchy among conservation researchers, as demonstrated in the following quote by a University academic:

I think there’s a lot of people outside academia who see themselves as the experts... even though I’d be very willing to say that I’m not an expert, I would also say ‘how dare they think that they are because I’m actually working within the research community on this so I probably know more than them’. [2018-08-01TR–051-11_interview]

‘Applied research’ was used to describe research (either academic or NGO) with close links to practice. It is valued by some as a grounded and pragmatic approach to research. One participant told me that for “any endeavour where you are trying to make the world a better place in the difficult complexities of the real world, if there is an academic discipline behind it, that academic discipline needs to be connected to the field!” [2018-11-09TR–060-12_interview]. Another suggested that CCI now needs to explore how researchers who did not previously have a link to practice can become committed to applied research [2019-02-12TR–014-11_interview].

Conservation practice – is associated with ‘implementation’, ‘practical’ conservation, or work that is ‘tangible’, ‘on the ground’ or ‘in the field’. Conservation practice is often project-based, solutions-oriented, and conducted at a more local scale, wherever that might be. It is typically undertaken by NGOs and is therefore shaped by the characteristics of this type of organisation (see Section 6.4.2).

There was a general perception among conservation researchers that practitioners lack time to read research and think things through and rush to “get on and do it” to deliver project outputs [2018-11-09TR–060-12_interview]. On the flip side, there was a general perception among conservation practitioners that academics have an abundance of time and freedom and can be far removed from realities on the ground, as demonstrated in this interview excerpt:
I have also felt the kind of frustration as a practitioner where... you are dealing with the day-to-day of conservation work and you are worrying about – can you... employ your staff, or is someone going to tread on a land mine when they are on a patrol in the forest... Then when you are exposed to sort of academic thinking which seems so far removed – it’s so frustrating because it’s just like, these brilliant minds and [laughs]... there is this kind of disconnect, that people talk about and is, in my view, there to a degree. It’s kind of like wasted brain power. I mean, that’s my view. I think others would say that brain power needs to be applied to higher-level thinking, and that is like the thought leadership. It directs things over the long term and people need that kind of freedom from the practicalities to develop ideas and new thinking. I don’t know. I haven’t kind of analysed it that much. But the frustration is quite real, particularly when people come with like ‘oh you guys are doing it wrong’ or ‘you shouldn’t be doing it this way’. It’s like [laughs], well we are just kind of hanging on here by our fingertips. [2018-07-13TR–031-11_interview]

**Conservation capacity development** – loosely refers to efforts to build skills and potential within the field of conservation. In CCI this includes: delivery of training to a diverse set of audiences, development of improved ways to monitor conservation impact, sharing expertise and support within CCI and general awareness-raising about the importance of conservation among key sectors [2016KD–CCI_Five_Year_Plan_2015-2020].

The CCI survey showed that participants with capacity development experience were more senior ($U = 759.0, p = .004$) and reported having more collaboration experience ($U = 582.5, p = .000$) compared to those without capacity development experience (Appendix C.1).

**Conservation policy** – is less direct as a conservation approach within CCI as none of the partners are policy-makers themselves. Individual staff do research, practice or capacity development, however if their work is policy-relevant they aim “to influence those who are making policy,” through different means [2018-11-20FN–001-04_MPhil_lecture].

Analysis of policy-related data revealed that individuals (and their respective organisations) within CCI use two distinct approaches to influence policy: advocacy and evidence-based informing. ‘Advocacy’ can be defined as, “public support for an idea, plan, or way of doing something” ("Cambridge Dictionary," 2022), while ‘evidence-based informing’ tended to require impartiality in the production of robust (scientific) data to inform decision-making. This distinction is explored at an organisational level in Section 6.4.1 below.

During the Listening Phase of the Strategy development process, individuals from the CCI community called for more advocacy and for CCI to develop a collective voice on more issues. The CCI Council has developed an Influence Agenda to inform the ways that CCI will collaboratively influence, however this remains a challenging area for the collaboration [2019-01-28FN–ToC_lunchtime_seminar].
Challenges of collaborating across conservation approaches

Data revealed a number of persistent challenges to working across conservation approaches. For a start, what I have described as ‘conservation approaches’ are inconsistently communicated and often confused with ‘disciplines’ and ‘sectors’. This lack of clarity impedes CCI’s ability to investigate more effective ways to collaborate across conservation approaches.

CCI has not tracked or measured – to my knowledge – the extent it has managed to integrate conservation approaches. The Grant Agreement for the CCI Campus identifies measures against which progress is to be monitored, but indicators do not specifically target the integration of approaches. During a discussion about working across conservation approaches one member of the EDO highlighted that, “we have an assumption that it’s working, but are we sure? Can we demonstrate it… should we look into research that shows that we really are making it work?” [2019-04-24FN–EDO_Team_Strategy_Session; paraphrased].

Collaborations that bridge research and practice have the potential to generate pragmatic outputs that are informed by good quality research. Unfortunately, academic journal publishing trends present another challenge. I was told by multiple participants that conservation journals prioritise the publication of studies with the broadest applicability and geographic scope. This makes it very difficult for NGO or applied researchers who frequently focus on the practicalities and complexities of a particular (or few) context(s) to publish site- or even country-level findings [2018-10-04FN–055-01_meeting]. This means these more practical results are not widely accessible, and the academic community can have the perception that this work is not being done.

I think it’s useful when you do something that involves a case study and a huge amount of detail, but you choose your case study to be something that is interesting more broadly, and then you try to write it up in a big way. The problem is, it’s very, very hard to get those published… whereas you can get some fancy GIS map of the world and it gets published- and what does it tell you about practice? [2018-11-09TR–060-12_interview]

As previously mentioned, application requirements for the CCI Collaborative Fund also act to prioritise academic researchers over NGO researchers for collaborative funding.

Enabling collaboration across conservation approaches

Participants shared their experience and ideas about ways that collaboration between conservation approaches could be enabled. One interviewee suggested the first step is to understand more about the needs of each conservation approach so that innovative collaborative activities can be designed to meet the differing needs and expectations for the conservation approaches involved [2019-01-24TR–063-11_interview]. Any means of getting researchers and practitioners to spend time working together can potentially lead to improved understanding [2018-08-13TR–002-04_interview]. Internships
and secondments between research and practice were recommended. A visiting academic to CCI encouraged NGOs partners to take on researchers interested to study their practical work so that findings could be used to improve practice if relevant [2018-10-17FN–060-12_presentation]. It was also suggested that CCI could learn from the experience of partner organisations that are successfully bridging research and practice internally.

Co-locating into the David Attenborough Building, and holding lunchtime talks and seminars hosted by individuals who use different conservation approaches was believed to be helping to gradually build understanding across approaches. The CCI Collaborative Fund provides financial support for projects that combine conservation approaches and ‘exploration sessions’ seek to help connect practitioners and researchers to prepare applications to the Fund. Informal opportunities for chance meetings and the development of personal connections between researchers and practitioners were encouraged, and shown to be beneficial through the initiation of the CCI Fika Group as part of this research (see Box 6). The Research Excellence Framework (REF) has also helped to increase the importance of research impact, incentivising the link between academic research and practice, but this is limited to academic Institutions and impacts remain difficult to evaluate [2018-10-17FN–060-12_presentation].

6.3.2 Disciplines

Disciplines distinguish particular areas of study. As a mission-driven field, conservation draws on a broad variety of different disciplines which have their basis in academia, but also apply to other conservation approaches. For example, ecology is an academic discipline that explores the relationship between living things and their environment. Ecologists may be researchers, but they may also work for a conservation organisation in the field, or on policy for a government agency.

When CCI was formed, it initially involved the Departments of Zoology, Plant Sciences, Geography, and Land Economy; the Cambridge Judge Business School; and the Cambridge Institute for Sustainability Leadership. Individuals from a broad range of other disciplines have since become involved in conservation collaborations at CCI. Although conservation was born from the natural sciences, there seems to be a growing acceptance that many disciplines are relevant to the field and are indeed needed in order to tackle the complex issues at hand.

*conservation does feel like it’s getting a bit more accepting of the fact that we need all those different perspectives and disciplines, which I think is a very fertile ground for collaboration because that’s a kind of natural follow-on from that.* [2018-08-13TR–002-04_interview]

My CCI survey (N=96) asked respondents to identify the discipline(s) of their working knowledge under the following categories:

- Physical sciences (eg. chemistry, physics, earth sciences, etc.)
- Biological sciences (eg. zoology, biology, genetics, etc.)
− Social sciences (eg. anthropology, economics, political science, geography, etc.)
− Arts and humanities (eg. history, classics, languages, philosophy, etc.)
− Applied sciences (eg. engineering, technology, clinical medicine, etc.)

The vast majority (81%) of respondents indicated disciplinary knowledge in the biological sciences, followed by the social sciences (36%) and fewer from the other categories.

The experience of participants at the BioRev Symposium differed noticeably compared to CCI. Results from the pre-event survey showed that the majority of respondents (68%) had a background in the ‘social sciences’, while 40% had a background in ‘biological sciences’, with 22% having both and 14% choosing neither of these options. The composition of the BioRev Symposium group was perceived to differ dramatically from ‘mainstream conservation’ in this way, which was intentional to some extent to enable an open discussion about the field itself (see section 5.2.2 and Box 5). Those who identified ‘social sciences’ as a background were found to be younger ($U = 148.5, p = .021$) and less senior ($U = 131.0, p = .010$) than those who did not have this background.

Given their prominence within the settings, biological and social sciences were the focus of the following analysis. ‘Natural’ science was often used synonymously with biological sciences, or to include physical and/or applied sciences that relate to nature. It also occasionally connoted quantitative approaches as compared to qualitative social science approaches.

**Interdisciplinarity**

The University of Cambridge Conservation Research Institute (UCCRI) is an Interdisciplinary Research Centre that brings academics from all six Schools of the University of Cambridge into the “academic engine room of CCI” [2019-09-23FN–Lunchtime_Seminar]. Interdisciplinarity is more than simply bringing different disciplines together; it involves integrating knowledge from different disciplines and understanding their respective cultures, as described in this interview excerpt:

> you have such a myriad of cultures, and being able to know how to access those is tricky. It’s a learning curve for sure. Because you even have different cultures within the Departments in the University. I mean first of all you’ve got it at School level, because physical science… researchers, academics, work in a different way to social science and humanities people. So you’ve got those different cultures for a start. And then you bring it down to the department level, each department has its own culture. Then you’ve also got the discipline siloes as well and they have their own cultures and ways of thinking. So it’s really multi-layered. And so... interdisciplinarity, I think is not just rocking up and working with someone, it’s having to be broadminded enough to be able to access each one of those different cultures, respecting them, understanding how they could work with you and also how you can work with them, and also understanding when it won’t work. You’ve got to understand that sometimes you cannot force people to work at an interdisciplinary level. [2018-07-27TR–040-11_interview]
My CCI survey asked respondents to identify research approaches they had a working knowledge of. This included ‘interdisciplinarity’ and also ‘transdisciplinarity’ which was defined as, “combining interdisciplinarity with a participatory approach – involving different types of actors (eg. local communities, politicians, businesses…) in the process to reach a common goal”. Among the 96 respondents of the survey 40% stated a working knowledge of interdisciplinarity and 28% of transdisciplinarity, with 19% responding they had experience of both and the majority (51%) stating they had experience of neither. Additionally, respondents with experience of interdisciplinarity were found to consider themselves significantly more collaborative as a person compared to those without experience of interdisciplinarity ($U = 719$, $p = .002$). The composition of BioRev Symposium participants was markedly different in this respect as well – the vast majority of BioRev survey respondents stated they had experience with interdisciplinarity (83%) and transdisciplinarity (78%).

There can be fundamental differences between the disciplines involved. As one interviewee put it, there “are epistemic differences and ways of thinking, ways of doing, ways of valourising what counts as good science... and it’s difficult to break some of those barriers down” [2019-02-12TR–014-11_interview]. I observed, for example, during an interdisciplinary training about the theory of change approach, that participants had fundamentally different understandings about what ‘theory’ was. Natural scientist were looking for specific theories, and one participant in particular could not understand that in this case ‘theory’ represented a process for critical analysis.

It was suggested during one meeting that people in the earlier stages of their career are much better at crossing disciplinary divides, although it was uncertain whether they will carry this ability with them as they become more senior and “set in their ways” [2019-04-24FN–EDO_Strategy_Session].

**The challenges of collaborating across natural and social sciences**

Despite widespread acknowledgement of the value of working across disciplines, there remains a general lack of understanding between the natural and social sciences and it can be “quite hard” to bring them together [2018-07-27TR–040-11_interview]. The importance of the social sciences to the field of conservation was observed to be growing. One interviewee told me that inevitably, “people will be involved and so you need social scientists as much as you need physical scientists” [2018-07-13TR–033-05_interview]. However, the natural sciences remain dominant – in their influence on the overall culture and also in terms of the number of people involved (as reflected in the results of the CCI survey). I was told, “there’s still quite a poor representation of social scientists... and zoology have always had the largest stake” [2018-07-27TR–040-11_interview]. Even when social scientists are involved, this often does not occur until the later stages of an initiative. One social scientist told me that you can feel, “like a tool to be brought out to help a biologist understand the world” [2019-01-21FN–009-11_conversation].

The dynamic that I broadly experienced within CCI, with the natural sciences attracting more rigorous consideration compared to the social sciences, is demonstrated in the following interview excerpt:
033-05: ... I mean there are non-scientists hiding all over the place.

Researcher: People hiding, but do they feel they need to hide?

033-05: I don’t know. It isn’t the first thing they talk about, but then I don’t know that they necessarily would. It might not be the most relevant things to what they are doing at the time. I mean you always have people with different backgrounds in things like finance teams or a legal team or HR, and it’s kind of recognised that those support functions are different professions. I think once you get more into the programme side of it, research and programmes in particular, then you get very focussed on science. When I was looking at some of the Endangered Landscapes [Programme] guidance, I think it was on the indicators, the ones for biodiversity and physical, ecological connectedness and ecosystem services to me looked to be very well thought out as a set of... proposed indicators, and the examples they were giving were quite thoughtful. There was some rigorous thinking behind them – to my eyes anyways. And then when you got to the societal, wellbeing ones it was like number of people trained, which are outputs. They are not actually indicators that change, and they are certainly not what you would expect at the end of a five year multi-million year programme! So that type of thing, and that’s just one example, and I know XXX did get lots of other people involved in it, including people with more social science backgrounds – but that’s quite common. Just how evolved the thinking is.

Researcher: Ya, is that to some extent because it’s a difficult thing to measure? Or just you think it hasn’t been thought through as clearly?

033-05: Do you think it’s difficult to measure? The Development Agencies seem to be doing alright. I mean I think they would find tigers very difficult to measure. Because you know, where are they?... They are walking around all over the place. You can’t register them, they haven’t got papers... they can’t tell you whether they are happy or not. So, you know [both laugh]. [2018-07-13TR–033-05_interview]

Enabling collaboration across disciplines

During a few different conversations it was suggested that instances when natural and social scientists spent time working together helped them gain an understanding about other disciplinary perspectives. For example I was told during one interview:

...it was one of the very first Collaborative Fund Projects but they both [social and natural scientists] came away saying ‘wow! You know we had no idea that’s how the others sort of felt about this part of the world, and what the issues were and how you might resolve them’. [2018-11-21TR–001-04_interview]

Other suggestions were made during the Listening Phase of the Strategy development process. The possibility of expanding CCI membership to include organisations from other disciplines was discussed, including: technology, development, health, business and engineering [2019-11-28RD–LP_Summary_report]. It was also suggested that CCI could partner with other departments within the
University of Cambridge and with other academic institutions around the world in order to access different ways of thinking [2019-09-03LP–Soiree_data]. Round tables and seminars involving different disciplines could help to challenge people and lead to future collaboration. The arts were proposed for their potential to play a role in helping to shape interdisciplinary processes within CCI. The Arts, Science and Conservation Programme strives to bridge the worlds of art and conservation, develop the potential for art to help communicate across cultures, and to help conservationists foster their creativity and bring the whole of themselves to work [2019-07-16FN–ASCGW_meeting].

6.3.3 Philosophical positions

A person’s philosophical position, which is sometimes referred to in this context as their ‘worldview’, describes how they view the nature of knowledge, reality and existence. It underpins how and why people behave in the ways they do. Not everyone has considered their own philosophical position, and even when they have, it may not be something they tend to discuss. My CCI survey was used as a means to explore whether differences in philosophical position relate to other forms of difference and how they might impact collaboration. Presentation of the results from this survey during a Lunchtime Seminar at CCI offered an opportunity for open discussion about philosophical positions.

In the survey, respondents were asked to what extent they had considered their own philosophical position, from ‘not at all’ to ‘a lot’. The responses were normally distributed overall, however respondents with a working disciplinary knowledge in the social sciences were more likely to have considered their philosophical position compared to those without this disciplinary knowledge (U=712, p=0.004; Appendix C.1).

Both ontology and epistemology were explored and will be presented below, followed by a summary of the challenges of collaborating across philosophical positions and ways to enable it.

Ontology – refers to the nature of existence and reality. Both the CCI and BioRev surveys included statements designed by Montana et al. (2019) to situate conservationists along a continuum between the extremes: realist, which “considers that there is only one reality, which can be directly studied [and] known through research”, and relativist, which “sees reality as something that is constructed in the minds of individual humans [and] is unique to each” (p.4).

CCI survey results showed, as you might expect, that those with experience of social science (U = 482, p = .000) and qualitative research approaches (U = 568, p = .000) were significantly more relativist in their ontological perspective, compared to those without these experiences, respectively. There was a negative correlation between level of seniority and ontology scores ($r_s = -.258, n = 96, p = .011$), meaning that those who were more senior tended to be more realist in their philosophical position. A positive correlation was also found between ontology scores and the degree to which respondents had considered their philosophical position ($r_s = .322, n = 96, p = .001$), meaning that those who were more relativist tended to have considered their philosophical position more than those who were more realist.
Responses to the BioRev survey showed that respondents’ ontological positions were skewed towards relativism.

One participant made an interesting distinction during a meeting, between storytelling based on scientific data, and storytelling based on qualitative narrative [2019-04-24FN–EDO_Strategy_session]. He felt there was a “palpable tension” between the positioning of data as truth or fact, and that ‘narrative’, which is coming from a different tradition in the humanities, is often perceived to be “anecdotal and requiring trust”. He suggested that conservationists could overcome this barrier by speaking from their own experiences because they are then “automatically right as your own stories”.

**Epistemology** – refers to the nature of knowledge, what can be known and how we can know it. In CCI there is a clear preference for quantitative knowledge which is generally perceived to be more valid and valued than qualitative knowledge. This came out during my experience in the setting and in all forms of data collected. My CCI survey asked respondents to identify research approaches they had a working knowledge of, including:

- Qualitative research – based on information that cannot be easily measured, such as people’s opinions and feelings, rather than on information that can be shown in numbers.
- Quantitative research – related to information that can be shown in numbers and amounts.

Among the 96 respondents of the CCI Survey, 70% had a working knowledge of quantitative research approaches and 41% had a working knowledge of qualitative research approaches, with 33% stating that they had experience of both and 22% stating neither. Interestingly, CCI survey analysis showed that those with experience of qualitative approaches tended to be less senior compared to those without experience of qualitative approaches ($U = 823, p = .022$). The same trend was not seen for social science experience, which could suggest a distinction between qualitative and quantitative social scientists. Qualitative findings highlighted a preference for quantitative social science over qualitative social science. Qualitative data was not seen by some to be ‘robust’, even when it was agreed that quantitative analysis would not be possible or appropriate. For example:

*So it’s a method to evaluate subjective wellbeing, which people define themselves. So you clearly can’t use data in a quantitative way or comparatively. It looks at what is important to those participating. This doesn’t provide ‘robust’ results, but it does give a wealth of information about what people perceive to be important.* [2018-10-17FN–060-12_presentation]

In BioRev, more survey respondents stated a working knowledge of qualitative approaches (84%) compared to quantitative approaches (60%). Similar to findings from CCI, analysis of BioRev survey results found that respondents who ticked ‘qualitative work’ as an approach were significantly younger ($U = 68.0, p = .004$) than those who did not, but there was no equivalent trend with level of seniority.
The challenges of collaborating across philosophical positions

During the course of my field work I came to realise that although rarely acknowledged or openly discussed, differences in philosophical position can make it profoundly difficult to collaborate. One interviewee described that he was more likely to collaborate with people that share a similar ‘worldview’, and I suspect this is the case for many people, whether they recognise so, would admit so, or not:

I think probably I’m more likely to collaborate with people that are similar, and by similar... I don’t just mean similar in personality or temperament – I mean similar in terms of probably like worldview, skillsets... I find it harder to think about collaborating with other parts of, say the University that I don’t understand or I don’t understand their kind of worldview or angle where they are coming from. [2018-07-13TR–031-11_Interview]

There were different examples within the data collected that showed how realist, positivist and certainly quantitative positions were dominant. As previously mentioned, ‘anecdotal’ was commonly used in CCI to describe qualitative arguments or lived experience and there is a general expectation for everything to be ‘evidence-based’ — within a narrow understanding of what evidence constitutes. Although seemingly harmless, the continual use of this terminology acts to reinforce the perceived validity of quantitative knowledge and positivist approaches while restricting other positions.

During the EDO Strategy session someone brought up the “ideological divide in conservation”, and suggested the “need to get together, but there is lots of work to be done to reconcile differences within the conservation community” [2019-04-24FN–EDO_Strategy_Session].

The philosophical positions of BioRev Symposium participants differed from CCI in that ontological positions were more relativist and qualitative experience was more common. Interestingly, comments from eight respondents specifically referred to an underrepresentation of biological or natural scientists, yet nearly half of survey respondents (22 people) identified having a background in the biological sciences, and five of these comments came from respondents who had identified themselves as having a background in biological sciences (see Box 5). This could suggest that biological scientists felt underrepresented, or unused to being in the minority.

Enabling collaboration across philosophical positions

Based on my personal experiences in conservation, I believe that finding mechanisms to bridge philosophical differences within the conservation community is essential, but did not find suggestions of how to do so within the data I collected beyond a proposal for personal bias training for everyone within CCI to help increase awareness of different ways of seeing the world [2019-04-24FN–EDO_Strategy_Session].

Open discussions and awareness raising about philosophy could be an important starting point. When I presented findings from the CCI Survey during a lunchtime seminar, a senior participant who is
known for his strongly positivist approach and position questioned the value of exploring ontological perspectives within CCI, and this led to an interesting discussion. More conversations like this could be useful to raise awareness about the existence of different philosophical perspectives.

CCI survey results showed that respondents with a working knowledge in the social sciences were more likely to have considered their philosophical position compared to those without this disciplinary knowledge (U=712, p=0.004). The inclusion of philosophy in biological science training could support conservationists to better understand the different positions that exist, potentially helping to enable collaboration across philosophical differences.

6.3.4 Career stages

Within both research settings, career stage was explored as a form of difference across which individuals were collaborating. Analysis of qualitative data revealed a variety of associations which are listed in Table 13. In this analysis career stage and age were often associated or used synonymously by participants so it was not appropriate to differentiate between them.

Table 13. Characteristics associated the career stage and/or age.

<table>
<thead>
<tr>
<th>Associations with more ‘junior’ or ‘younger’ people</th>
<th>Associations with more ‘senior’ or ‘older’ people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having more available time – to participate in trainings, organise events, collaborate</td>
<td>Choosing/able to do things on their own terms</td>
</tr>
<tr>
<td>Being enthusiastic, full of energy</td>
<td>Having more ego and/or pushing an agenda</td>
</tr>
<tr>
<td>Not being ‘set in their ways’; willing to try things differently – more open to change</td>
<td>Being more established, so less willing to shift – ‘set in their ways’ – more resistant to change</td>
</tr>
<tr>
<td>Being more open-minded and self-reflexive</td>
<td>Not listening as well</td>
</tr>
<tr>
<td>Being more likely/able to move between organisations, disciplines, conservation approaches</td>
<td>Having more organisational responsibilities – less able to see bigger/collaborative picture</td>
</tr>
<tr>
<td>Being more involved in activism – frank honesty and willingness to confront challenges</td>
<td>At times, being out of touch with the reality ‘on the ground’</td>
</tr>
<tr>
<td>Lacking the authority to act or the agency to share their views</td>
<td></td>
</tr>
</tbody>
</table>

Results from the CCI Survey (Appendix C.1) showed that amount of collaboration experience was positively correlated with level of seniority ($r_s = .405$, $n = 96$, $p = .000$), which makes intuitive sense given that more senior respondents would have more experience in general, including with collaboration. Seniority level was negatively correlated with how much more time respondents would spend collaborating if they could ($r_s = -.329$, $n = 96$, $p = .001$), however this could have been partly because those who were more senior were already spending a greater proportion of their time collaborating, on average.

As previously mentioned (Section 6.3.3), those who were more senior tended to be more realist in their philosophical position.
Results from the BioRev Survey (Appendix C.2) showed that female respondents were younger ($U = 144.5, p = .003$) and less senior ($U = 140.0, p = .003$) than male respondents. They also showed that respondents who identified ‘social sciences’ as a background discipline were younger ($U = 148.5, p = .021$) and less senior ($U = 131.0, p = .010$) than those who did not have this background. Respondents who ticked ‘qualitative work’ as an approach were younger ($U = 68.0, p = .004$) but no less senior than those without this experience. These survey results substantiate qualitative findings that there were discernible differences among levels of seniority within both research settings.

The challenges of collaborating across career stages

Although younger/more junior staff were generally recognised as being more self-reflexive, more able to shift between disciplines, approaches and organisations and more willing to approach things differently, they were also perceived to lack the confidence to input into collaborative strategy or to request from their superiors additional time to work collaboratively. It was suggested that more junior staff may feel nervous about sharing their opinions, fearing they should not be ‘speaking for their organisation’ [2019-04-24FN–EDO_Team_strategy]. Alternatively, younger staff may not feel that they are expected, or paid, to deal with broader strategic issues [2019-09-20FN–Strategy_Champion_meeting].

Following a consultation event about the CCI Theory of Change, a junior participant told me that he had not felt comfortable to ask critical questions because everyone speaking was senior and had been directly involved in the development of the outputs that were being presented [2019-02-01FN–001-04_conversation]. Other staff revealed they were not even aware who the CCI Council member from their organisation was, and therefore did not know how to share their views [2019-02-04FN–002-04_meeting]. If younger/more junior staff are not able, comfortable or willing to participate or feed into governance and decision-making for the collaboration, their unique characteristics and perspectives will not be reflected.

Qualitative data revealed a disconnect between career stages, particularly within larger organisations, and a perception that senior staff are more resistant to change. For example:

*The most senior staff at XXXX [organisation] simply don’t get it... they are more worried about fundraising rather than affecting change.* [2019-09-27FN–113-05_meeting, paraphrased]

*The ones who are most difficult to shift are the ones who have been in the profession for a long time. Because they’ve got established ways of working, they are successful at what they do, why rock the boat?* [2019-02-12TR–014-11_interview]

Enabling collaboration across career stages

Data contained a number of recommendations from participants about ways to support ‘early career conservationists’. Finding additional ways for “young to middle career people to connect” and to
build their networks was encouraged. [2019-01-24TR–063-11_interview]. The University of Cambridge Conservation Research Institute has focussed on developing training for early career researchers to learn about and experience working in an interdisciplinary way in the hopes that “when they get more established... they’ll remember the conversations they’ve had, which isn’t necessarily transforming what we do, but it’s building that future” [2019-02-12TR–014-11_interview].

In CCI, the David Attenborough Building helps to enable important interaction between different career stages. Bumping into senior people at tea/coffee, “humanises senior people” [2019-07-24LP–Listening_Phase_café] and Masters in Conservation Leadership Programme students have found the opportunity to meet senior and influential conservation leaders inspirational and energising during their time in the programme [2018-09-01FN–CLAN_event]. The CCI Fika Group that I set up also helped participants to make connections across levels of seniority (see Box 6). A survey conducted with the group in March, 2020 found the self-identified level of seniority among the 46 respondents to be normally distributed.

In BioRev, the Steering Committee included members who were in the early stages of their career, and an early-career essay competition was organised to ensure that there would be a ‘core mass’ of early-career participants at the Symposium; enough to enable “them to feel comfortable and [to] integrate them through the process” [2019-03-11FN–Virtual_SC_meeting]. The competition received 150 applications from 46 countries, from which eight winners were chosen and invited to the Symposium. The enthusiastic participation and creative contributions of early-career participants was a highlight of the event for many of those interviewed afterwards.

One Symposium participant suggested that opportunities to boost intergenerational collaboration would be valuable. As an example she described during an interview a model that has been successfully used by the National Socio-environmental Synthesis Center (SESYNC) and the National Center for Science and Engineering Statistics (NCSES) in the US:

[NCSES] existed to provide a platform or a place where people could connect in working groups, and then they would have postdocs, graduate students who worked alongside them, who would be there with all the older folks who didn’t have any time, and then they would provide the power between each of the meetings, so the legs. And their voice, their tools, their way of thinking, because they did all the work, became central and integral to advancing the topic... It’s about the connection... the asking of questions across generations, and having a new generation articulate, sometimes not just what the tools should be, but what the questions should actually be, given what the data says, given where the world is going and so on. Incredibly valuable!....

What I think is valuable... is providing people who know tonnes and tonnes and tonnes in a specific way, the mid-career folks, a place to get together and talk with the next generation who is going to carry it forward. And have an opportunity for them to shape a research agenda, and then have that older generation support that research agenda both in terms of intellectual contact, financial support, giving them leadership and opportunity to connect that to other people in other contexts.” [2019-10-07TR–093-12_post-event_interview]
6.3.5 Other individual differences

The BioRev Symposium explicitly aimed to convene a group of participants that was diverse in multiple ways. Through a combination of surveys, interviews and observation, three additional forms of individual difference were explored, including: values, gender and geography. These are briefly covered in turn below, including findings from CCI where relevant.

Values

Values are, ‘the beliefs people have, especially about what is right and wrong and what is most important in life, that control their behaviour’ (“Cambridge Dictionary,” 2022). Conservationists hold a diversity of values that lead them to conduct conservation in different ways and for different reasons.

As part of my study of the BioRev Initiative I explored value differences using two established conservation survey methods. The Conservation Research Preferences Survey developed by Montana et al. (2019) enables exploration of: i) sense of reality (see Section 6.3.3), ii) propensity for collaboration, iii) beliefs about the connections between nature and society, and iv) the scales at which participants tackle problems (Appendix C.3). The BioRev survey included statements relating to each of these four dimensions, allowing calculation of a score for each along respective spectrums between extremes. Analysis revealed that respondents were highly collaborative overall and strongly aligned in the view that nature and society are hybrid entities that can never be truly separated. Participants’ preferences about the scale at which to tackle problems were found to be more distributed between the extremes of a ‘local specifics perspective’ and a ‘general trends perspective’.

The Future of Conservation Survey was initially developed to find out what a broad range of conservationists felt about what, why and how to conserve (Sandbrook, Fisher, et al., 2019). Their original study involving 9,264 conservationists from 149 countries showed that, ‘conservation viewpoints can be distinguished on three dimensions – ‘people-centered conservation’ (relating to the role that people should play in conservation), ‘science-led ecocentrism’ (relating to the role of science and the conservation of species and ecosystems), and ‘conservation through capitalism’ (relating to the role of corporations and market based approaches in conservation).’ (GO-FOX, 2019: 1).

These three dimensions can be used to describe different positions within the conservation movement (see Section 2.2.3). ‘New conservation’ describes a viewpoint that sees, ‘conservation as being for the benefit of people as well as non-human life, and supports working with business to achieve conservation goals’ (GO-FOX, 2019: 1). Responses by individuals with this viewpoint tend to result in high values on the ‘people-centered conservation’ dimension, low values on the ‘science-led ecocentrism’ dimension and high values on the ‘conservation through capitalism’ dimension (see Figure 16 (a)). In contrast, a ‘traditional conservation’ viewpoint, ‘is focused on protecting nature for its own sake and rejects working with business’ (ibid, p.1). Responses by individuals aligned with this viewpoint tend to have low values on the ‘people-centered conservation dimension’, high values on the ‘science-led
ecocentrism’ dimension and low values on the ‘conservation through capitalism’ dimension; the opposite from the ‘new conservation’ perspective (see Figure 16 (b)). An additional position named ‘critical social science’, ‘entails being critical of conservation activities that can have negative effects on people’ and ‘of a nature-for-nature’s sake rationale for conservation and the use of natural science within conservation’ (ibid, p.16). This viewpoint is characterised by high values on the ‘people-centered conservation’ dimension and relatively low values on ‘science-led ecocentrism’ and ‘conservation through capitalism’ dimensions (see Figure 16 (c)).

The BioRev survey included the 19 statements from the Future of Conservation Survey, the results from which were used to calculate values for each respondent along the three dimensions. Figure 16 (d) shows the values of all 50 respondents in black over a sample of the global dataset of responses in grey. The white dots in this figure represent the neutral point on each dimension – the response if someone answered ‘neither agree nor disagree’ to each statement relating to that dimension. The graphic is oriented so that the average response is located in the middle for each dimension. Figure 16(d) shows that as a group, the BioRev respondents are highly in favour of ‘people-centred conservation’. There was a range of ‘science-led ecocentrism’ scores but respondents were generally less in favour compared to the global dataset of responses. On the ‘conservation through capitalism’ dimension there was a broad spread, but few were strongly in favour. Over all, it appears that both ‘new conservation’ and ‘critical social science’ positions were represented within the responses, and ‘traditional conservation’ positions were markedly absent. Whether it was an explicit decision or not, organisers appear to have minimised the involvement of participants with ‘traditional conservation’ perspectives in order to enable a conversation that could question the status quo. Minimising the diversity of participants’ conservation values may have aligned with the objectives of the BioRev Initiative.

Within the context of CCI, during a Natural Capital Working Group meeting, participants questioned whether there was a need to develop a shared position about ‘growth’; whether the group was ‘pro-growth’ or supported ‘no growth’ or ‘de-growth’. One of the Co-managers of the group firmly decided, “we need to recognise that we aren’t all going to come behind the same view... that larger debate doesn’t prevent us from moving forward”, and the conversation moved on [2019-02-04FN–NCWG_meeting]. Avoiding this discussion may have prevented a falling out between participants, but this fundamental difference remained, under the surface, and may have contributed to the difficulties the group faced solidifying collaborative priorities.
Figure 16. Comparing the viewpoints held by BioRev Symposium participants to positions held within the broader conservation movement – A depiction of the (a) ‘New Conservation’, (b) ‘Traditional Conservation’, and (c) ‘Critical Social Science’ positions as a combination of the three dimensions of the Future of Conservation Survey: ‘people-centered conservation’, ‘science-led ecocentrism’ and ‘conservation through capitalism’. (d) Black lines show the 50 responses from the pre-event BioRev Survey against a randomised subset of the global dataset of responses in grey.

Gender

A great deal of effort was made to ensure gender balance in the BioRev Initiative, for members of the Steering Committee and Symposium participants. Looking at the full list of Symposium participants, nearly half were female (48%). Despite gender balance among those who attended, I observed that male participants (particularly those who were senior) were more likely to take control within breakout groups and witnessed instances where senior male participants were disrespectful to female participants. One female participant told me that she often ‘sits’ on her critical views fearing they could de-rail the process...
or be perceived as negative towards organisers (who were predominantly women), while male participants who are often more senior put criticism forward and then get credit for helping to improve things [2019-09-12FN–Symposium_Day_2]. Results from the pre-event BioRev survey (Appendix C.2) showed that female respondents (44% of all respondents) were younger \( (U = 144.5, p = .003) \) and less senior \( (U = 140.0, p = .003) \) than male respondents.

In the context of CCI the Council was not found to be gender balanced, with only 3 of 14 members being female, raising to 4 by the end of data collection. Results from the CCI survey showed that female respondents had significantly higher ontology scores \( (U = 733.5, p = .009) \), meaning they tended to be more relativist in their philosophical position within this setting, compared to male respondents.

**Geography**

Geography of origin and work experience were demographic criteria that the BioRev Initiative aspired to diversify among invited participants. The BioRev surveys (pre- and post-event data in this instance\(^\text{17}\)) asked respondents to state their country(ies) of nationality and up to three countries where they have done most of their work. These responses were then converted to continents. Seven respondents had dual-nationality from different continents, both of which were counted. Figure 17 below shows the continent distribution of respondents regarding origin and work experience.

---

\(^\text{17}\) Everyone invited to the Symposium (excluding facilitators) was asked to complete pre- and post-event surveys. In total 25 participants completed only the pre-event survey (2 of whom were not in the end able to attend the Symposium), 26 completed both surveys and 7 completed only the post-event survey. This provides full demographic details for 56 (or 75%) of the 75 Symposium attendees. LHI staff were asked to complete the surveys in order to explore whether their values and perspectives changed over the course of the Symposium, however this section summarises the demographic data of the 46 non-LHI participants (referred to as ‘invited participants’) who completed at least one of the surveys (referred to as ‘respondents’; they represent 74% of all ‘invited participants’).
After the Symposium, one of the organisers told me, “I felt like there was enough diversity but also enough ‘clusters’ of people who had some sort of regional or cultural affiliation that enabled people not to feel like fish out of water” [039-post-event_survey]. Efforts to enable diverse participation at the Symposium succeeded in many ways, but not all. I observed that a geographically diverse range of participants reported back from breakout groups, including many for whom English was not their first language, however language did present some challenges. Following a request by participants after the first day of the Symposium, facilitators asked everyone to speak more slowly so that those who do not speak English as their first language could have time to reflect and respond. Unfortunately, participants had to be reminded of this, and I observed instances in groups where it was difficult for some participants to keep up with the speed of conversations. Groups were also given tight time limits to report findings from breakout activities which acted to undermine calls to slow down.

Respondents of the CCI survey represented 23 different nationalities, however the vast majority were British (66%). None of the respondents had South American nationalities, while 81% were European, 7% were North American, 5% were Asian, and 3% were African and Oceanian respectively. The geographic diversity among CCI respondents was therefore far less than among BioRev respondents, and South American nationalities were underrepresented in both contexts.

6.4 Collaborating across forms of organisational difference

In coming together into a sustained collaboration, the organisational partners of CCI aspire to create a ‘critical mass of skills and expertise’ and global convening power, and ultimately be more than the sum of their parts [2016KD–CCI_Five_Year_Plan]. Doing so requires finding ways to ‘work beyond organisational boundaries’ [ibid]. The previous section highlighted individual-level differences and how they were found to impact collaboration. This section explores the challenges presented by organisational-level differences and highlights findings that suggest ways to enable collaboration across them.

I think if [conservation organisations] have distinct strengths, networks, histories, brands, background, reputations, skills, people, then it’s better to keep that. But if you can get them effectively to work together then you get the best of both worlds. [2018-11-21TR–001-04_interview]

6.4.1 Means of influence

Each of the CCI partner organisations use a different combination of conservation approaches (see Section 6.3.1). In 2016 the Executive Director’s Office produced a diagram to represent the conservation approach profiles of the CCI partners (Figure 18). In this figure the work of each organisation is broken down into: research and analysis, data and information holdings (together broadly considered ‘research’), policy knowledge and advice (‘policy’), delivering practical action on the ground (‘practice’),
and capacity development and teaching/learning (together broadly considered ‘capacity development’). The Figure clearly shows how CCI partners are diverse in this respect.

Figure 18. A diagrammatic representation of the conservation approaches used by CCI partner organisations – Each of the CCI partners is proportionally represented by the conservation approaches they use. This diagram was originally constructed based on available financial data and then adjusted through consultation with partners (Credit: CCI Executive Director’s Office, 2016; used with permission).

Data analysis revealed two distinct ways that organisations seek to influence policy: advocacy and evidence-based informing (Section 6.3.1). Looking at Figure 18, those organisations with the greatest proportions of ‘research and analysis’ and ‘data and information holdings’ (i.e. UNEP-WCMC, BTO, Traffic, the University, and IUCN), tend to use evidence-based informing to influence policy and this was perceived to require impartiality. The RSPB is unusual among partners in that it uses both of these policy approaches; scientific outputs produced by its large science team are used to underpin the organisation’s advocacy and practice endeavours worldwide [2019-09-23FN–Lunchtime_Seminar–Organisation_Introductions].
The Global Climate Strike in September, 2019 demonstrated how CCI partner organisations, including those that influence through evidence-based informing, are becoming more bold in their public support for such causes:

Given my organisation was furthest [most conservative] on the spectrum – we’ve moved substantially. We still don’t campaign but do put out opinion blogs and would support... becoming more bold in this area. We need to tread the line carefully as an impartial evidence provider. [2019-09-25FN–Council_Strategy_Retreat]

Data also reflected the importance of working across scales in conservation. Grassroots initiatives are important to ensure local relevance and support, while there is also a need to scale up and work at larger levels in order to influence governments and corporations [2018-11-20FN–001-04_MPhil_lecture]. There is a desire for collaborations to have ‘global impact with local connections’ [2019-07-28KD–NCWG_Value_Proposition]. Bringing partners that work at different scales together is desirable but can also be challenging. Conservation work at a local-level tends to be more pragmatic and action-based, and indeed CCI partners that focus on delivering practical action influence at a national (e.g. RSPB) or local (e.g. CCF) levels, or through a global network of more localised partnerships (e.g. FFI and BirdLife). Global coordination is also necessary because “nature is a supranational and global resource”, especially during this “time of nationalism” [2019-04-24FN–EDO_Strategy_Session]. National-level activity, which often relates to policy, seemed to be lacking to a great extent. According to one participant, ‘CCI’s global focus means there is a gap in influencing the UK Government’ [2019-08LP–Questions].

Engaging others

One means of influence that was identified during analysis, but not explicitly as an approach, related to organisations’ ability to engage others – meaning conservationists outside CCI, other sectors, or ‘the public’ or society at large. CCI partners have access to different networks and audiences. For example some of the NGOs have regional access to practitioners and governments, while the University can access other departments and disciplines. Some CCI partners engage with society more directly through citizen science (e.g. BTO) or through activities with their large membership (e.g. RSPB).

Partners were found to access networks at different scales including local (e.g. CCF), national (e.g. BTO), international (e.g. TBA) and global (e.g. IUCN, FFI and BirdLife). They also have different geographic ‘footprints’ – the regions or countries that they are tapped into. The diversity and potential complementarity of partners’ networks and audiences came out during a meeting of the Natural Capital Hub when participants were asked how their organisation could contribute to the proposed collaborative agenda [2019-03-13FN–Natural_Capital_meeting]. Different partners offered access to the business sector, intergovernmental processes, local action groups, networks within the University and practitioners working ‘on the ground’ in different regions.
6.4.2 Organisation type and funding

CCI is described in Section 2.4.1 as a collaboration between NGOs, networks (CCF, IUCN), and a research institution (the University of Cambridge), which represent different types of organisation. Although this distinction relates to differences between research and practice as conservation approaches, it also encompasses fundamental differences in organisational culture, funding and incentives.

Data portrayed a persistent division between the University and NGO partners which were described as ‘sides of the collaboration’ during a CCI Council Retreat [2017KD–Council_Retreat-Risks_and_Threats_notes]. In the CCI Strategy 2012-2020, participating departments of the University were presented separately from conservation organisations. One interviewee described a profound difference in cultures and lack of understanding between them [2018-07-27TR–040-11_interview]. Another described her perception that they are expected to play different roles:

_I think there is sometimes a categorisation, I’m putting it very, very crudely, that conservation organisations have a problem and they want to find a solution to it. Whereas I think within academia there is a sort of sense that people should be able to explore and not necessarily come up with a solution._ [2018-08-13TR–002-04_interview]

The challenges for University academics and NGO staff to collaborate were often found to be more profound than those of collaborating between research and practice per se due to differences in organisational culture, funding and incentives. Academic institutions typically strive for peer-reviewed articles in the most reputable journals as these are connected to academic credibility, job security for staff, and ultimately research funding. NGOs strive to make a difference on the ground, “but unless money is attached there is no incentive to collaborate as everyone is project funded” [2019-07-24LP–Strategy_Café]. It can be challenging for a single collaborative initiative to incentivise the involvement of different types of conservation organisation.

Differences between organisational types stem in part from differences in the ways they are funded, which impacts time flexibility for staff and working culture. Funding is explored in greater depth in Chapter 7, including the different sources of funding conservation organisations receive (see Section 7.2), and how this impacts flexibility (see Section 7.2.2).

6.4.3 The challenges of collaborating across organisations

As with other forms of difference (e.g. conservation approaches and disciplines), there is a need for greater awareness between organisations and an appreciation of the different skills and strengths each partner brings to the collaboration [2019-03-25FN–Council_Strategy_Session]. Participants can have a fundamental lack of understanding about what other organisations are working on. One interviewee told
me, “people are busy, they don’t have time to actually sit down without an agenda to talk about what people are doing” [2018-08-13TR–002-04_interview].

Competition between partners that are most similar, and between the CCI and individual partner organisations remains a challenge [2018-11-20FN–001-02_MPhil_lecture]. One interviewee told me, “I think a lot of us working in conservation are frustrated about collaboration – that we should be much more collaborative than we are... there’s loads of stuff we do that isn’t collaborative and should be” [2018-08-09TR–041-02_interview]. It was noted that the ‘NGO world’ can be particularly competitive at a national level [2018-11-20FN–01-02_MPhil_lecture], and that ‘territorial’ behaviour, either geographically or thematically, among conservation organisations is deeply rooted [2018-07-13TR–031-11_interview].

When organisations are funded differently it can make it very challenging for them to work together. Organisations that raise funding primarily through project delivery tend to have much less flexibility with their time, making it difficult for them to contribute to collaborative activities unless it is written into projects. The partners have different involvement with CCI, and unequal contributions could lead to resentment [2019-04-24FN–EDO_Strategy_Session]. Partner commitment to CCI was raised and questioned during the research period. It was agreed during the CCI Council Retreat that each Council member would share their organisation’s strategy along with an indication of the schedule for their next strategy, and a description of how they see it fitting with CCI [2019-09-25FN–Council_Retreat]. To my knowledge this information was never shared and remains to be explored. As one Council member put it in an email:

CCI is rather an EU issue in microcosm! A grouping of individual organisations which want to maintain their absolute independence. And yet they want to work together for some bigger goals. The council members agree bigger goals, but these are not translated into fundamental agreement by their organisations because these goals don’t get written into their annual or longer-term plans” [2018-06-13EM–007-03email].

6.4.4 Enabling collaboration across organisations

Co-location into the DAB has helped people interact between organisations. A survey (conducted by other researchers within CCI) that was designed to help measure the impacts of the building on collaboration between late 2015 and 2017, showed that six measures of collaborative activity had increased, including: number of ongoing work-related activities, emails, spoken conversations, meetings, seminars, and networking events with people from other CCI partner organisations. The time spent on collaboration overall was not found to have significantly increased. Results from my CCI survey (Appendix C.1) showed that there is already high cross-over of staff experience between CCI partners, with 35% of respondents having previously worked for, interned with or conducted postgraduate study at (an)other CCI organisation(s).

The experience of the Listening Phase of the CCI Strategy Process showed that the efforts of the Strategy Champions, along with the Strategy Cafés and other events helped to encourage ‘mingling between organisations’ [2019-09-20FN–Strategy_Champions_meeting; personal experience]. There were
calls for additional opportunities for organisations to better understand each other, including an annual, multi-day collaborative event for partners to showcase to each other what they are working on [2019-07-24–Listening Phase; 2019-09-20FN–Strategy_Champion_meeting] and to promote ‘team building’ across organisations [2019-08LP–Questions].

During one interview a participant shared an ambition that it could be possible to “buy out a bit of everyone’s time... a bit, I guess, like the Google model of giving people 20% of their time to kind of pursue their own things” [2018-08-13TR–002-04_interview]. According to the interviewee, “successful projects that I’ve seen at CCI, some of them have really been on the periphery of what organisations are interested in, but that individuals are very interested in” [ibid]. Freeing up time to enable exploratory thinking could be particularly valuable for those working for organisations that are strictly beholden to timesheets. It was also suggested that all partner organisations should include CCI in their organisational strategies and workplans so that it is more of a fundamental part of what they do [2019-09-20FN–Strategy_Champions_meeting]. A member of the CCI Council remarked:

We haven’t actually looked at each others’ strategies. But we could all think about how our individual strategies might need to change in order to beef up this transformative collaboration. I could make the CCI link more explicit in many ways in my own organisation’s strategy. It’s how you make the collaboration explicit in your strategy what is the issue for all of us – the context of the fundraising and activities and governance is different from organisation to organisation. [2019-09-25KD–Council_Retreat, professional consultant notes]

6.5 Summary of diversity findings

Analysis across the different forms of data collected through this research has shown in this chapter that diversity plays important roles in conservation collaborations, and that conservationists collaborate across many forms of difference simultaneously. Table 14 below provides a summary of the differences explored, including the challenges that each presented and identified ways to enable collaboration across each type.
Table 14. A summary of the different forms of individual and organisational differences explored – including the challenges associates with each and identified ways of enabling collaboration across them.

<table>
<thead>
<tr>
<th>Form of difference</th>
<th>Challenges of collaborating across this form of difference</th>
<th>Ways to enable collaboration across this form of difference</th>
</tr>
</thead>
</table>
| Conservation approach  | - Lack of clarity about approaches vs. disciplines and sectors  
- Measuring the integration of approaches, testing assumptions  
- Journals favour publishing studies with broad applicability and geographic scope – more difficult to publish NGO/applied research  
- CCI Collaborative Fund rules prioritise academic researchers over NGO researchers for collaborative funding                                                                 | - Improve understanding about the differing needs of each approach – design collaborative activities that meet the needs of all approaches  
- Improve understanding across approaches through internships, secondments and research at NGOs  
- Co-location and the seminars and talks it facilitates across approaches  
- Formal incentives (e.g. CCI Collaborative Fund) and informal opportunities (e.g. CCI Fika Group)                                                                 |
| Discipline             | - Biological scientists vastly outnumber social scientists (CCI), despite recognition both needed  
- General lack of understanding between natural/social sciences  
- Dominance of natural science culture  
- Social scientists involved during later stages of collaborations                                                                                                                       | - More opportunities for natural and social scientists to work together  
- Involve other disciplines and academic institutions to access different ways of thinking  
- Hold round tables and seminars that involve multiple disciplines  
- Use art as a means to communicate across disciplines                                                                                                                             |
| Philosophical position | - Philosophical positions/differences are rarely acknowledged or discussed  
- Relativist perspectives are less common overall (CCI), especially among those who are more senior  
- Clear preference for quantitative knowledge which is seen to be more valid and robust (CCI)  
- Difficult to collaborate across different ‘worldviews’  
- ‘Ideological divide’ reinforced with use of ‘anecdotal’ and narrow focus of what evidence means                                                                                   | - Personal bias training to increase awareness of different ways of seeing the world  
- General awareness raising about philosophy and worldviews  
- Inclusion of philosophy in biological science training – social scientists are more likely to have considered their philosophical position (CCI)  
- Open discussions about philosophical perspectives                                                                                                                              |
| Career stage           | - Younger/more junior staff may lack confidence, ability or willingness to input into collaborative strategy and decision making – their unique characteristics and perspectives will not be reflected  
- Perceived disconnect between career stages, particularly in larger organisations                                                                                                         | - Support early career conservationists to build networks and skills (e.g. interdisciplinarity)  
- Co-location to enable interaction across levels of seniority  
- Early career representation in decision-making and governance (BioRev)  
- Participation of ‘core mass’ of early career participants to ensure they can participate fully                                                                                   |
| Values, gender and nationality | Conservationists hold many different values which influence behaviour and decisions yet they can stay hidden/unacknowledged  
Dominance of (senior) male voices, even when attendance is gender balanced  
Language barriers can prevent geographically diverse participants from participating fully | Consider/incentivise models that foster intergenerational collaboration  
Survey tools can be useful to explore value differences among collaborators  
Recognise that it may not be helpful for partners to be diverse in every respect, align diversity priorities with the scope and aims of collaborative initiatives  
Involving clusters of participants from any given culture so they do not feel alone |
| --- | --- |
| Organisational differences | Need for greater awareness across organisations  
Competition between similar organisations and with CCI – could be more collaborative  
Difficult for organisations funded differently to work together  
Project-funded organisations have less flexibility  
Collaborative goals are not included in organisational strategy | Co-location increases interaction between organisations  
Mingling between organisations through engagement events and participation of champions  
Incentivising time for exploratory thinking at the periphery of organisational interests  
Inclusion of CCI in organisational strategies and workplans |

This chapter has also shown that certain perspectives and approaches dominate over others within research settings (particularly within CCI), as will be explored further in Chapter 8. Academic researchers were found to have more opportunities and flexibility compared to NGO researchers and published scientific results were considered most valid; there were many more biological scientists compared to social scientists or participants from other disciplines; social scientists were younger and less senior and often not involved until later stages; those who were more senior tended to be more realist in their philosophical perspectives; and quantitative knowledge and approaches were valued more than qualitative ones and lived experience.

Findings relating to funding, the third and final key theme, will be presented in the next chapter.
Chapter 7 – Funding findings

7.1 Introduction to Chapter 7

Although it is not something that previous research on collaboration in conservation has tended to focus on directly, funding emerged as a key factor when considering how conservation collaborators operating within complex systems could be enabled in practice (RQ1). Participants within both research settings clearly recognised the significance of funding for collaboration, and members of the CCI Council Task Team specifically expressed their interest for this research to explore funding in depth.

Section 2.2.3 previously outlined how funding for conservation comes from a variety of sources, but remains severely insufficient globally. In this final findings chapter I presents findings about the funding of collaboration within the researched conservation settings (see Figure 19). In the first sub-section the sources of conservation funding that contribute to collaboration within the two research settings are considered, including the power that funders hold and the important role that flexibility can play (Section 7.2). The second sub-section investigates collaborative funding at the levels of the project, programme and collaboration, and highlights the importance of ‘process funding’ (Section 7.3). The third sub-section examines the challenges of collaborative fundraising and describes the funding ‘chicken-and-egg’ dilemma that was observed within researched collaborations (Section 7.4).

In combination, these sub-sections offer a thorough consideration of the role that funding plays to enable (or restrict) collaboration. The chapter also underpins the upcoming discussion in Section 8.2.2 about ways that conservation funding could be fundamentally changed to enable collaboration that can achieve change within complex systems (RQ1b).
7.2 Conservation funding sources

The field of conservation is generally perceived to be severely underfunded and it was evident during research that most participants and organisations faced an ongoing struggle to secure the funds they needed to conduct their work. It was very common for conservationists, regardless of their role, to spend a proportion of their time fundraising; particularly within NGOs, but also in academic institutions. Comments like: “I’ve got plenty of work to be doing to raise funds for the organisation to keep it running, I can’t really afford to spend time doing something that isn’t a priority” were commonplace [2018-08-09TR–041-02_interview]. This constant “pressure to survive” impacts the way that people work, including limiting their ability to devote time to collaboration which was perceived by some participants to be non-essential.

I also perceived a sense that the funding situation for the field has gotten worse. I was told, “the pressure of funding at the moment is horrendous,” [2018-08-09TR–041-02_interview], and that, “10 years ago the funding situation was much better than it is now and these organisations are actually struggling more to find money than ever before” [2019-11-21TR–001-04_interview]. In the UK, conservation organisations are facing, “Big Society all over again with government saying they are going to rely on the charity sector to do more” [2018-08-09TR–041-02_interview]. As a result, “a lot of funding [is] coming from charitable donations rather than any kind of state funding… [and] that does change the nature of how kind of, how stressed or how much pressure people are under to a degree” [2019-08-13TR–031-11_interview].

Conservation funding comes from a variety of sources and it can be difficult to get an overall picture. Governments remain a crucial source of conservation funding, despite the perception they
provide less funding than they used to. Unfortunately, with government funding, “there’s absolutely no clarity on how much is actually being given to anything within the scope of conservation” [2018-07-13TR–033-05_interview]. A participant who works in fundraising for one of the CCI partners explained to me during an interview that in the UK, climate finance is managed by the Department for International Development (DFID), biodiversity falls under the remit of the Department for Environment, Food & Rural Affairs (DEFRA), oceans may or may not be covered, and research funding is completely separate [ibid]. The Darwin Initiative, a UK government grants scheme to help protect biodiversity in developing countries, is an important source of conservation funding in the UK. Investment in conservation research largely comes from the Economic and Social Research Council (ESRC) and the Natural Environment Research Council (NERC), which now sit under UK Research and Innovation (UKRI), a non-departmental public body that supports research in England. The funding landscape of higher education has also changed, but details about how lie beyond the data collected.

Interestingly, one CCI Council member felt that government funding should be used to deliver impact rather than to support collaborative processes. As she put it, “we cannot take tax payers’ money to chat amongst ourselves – we need to find our mechanisms to collaborate and work together by delivering on impact” [2019-03-25FN–Council_Strategy_meeting; paraphrased]. Some of the CCI partners raise money through partnerships with the private sector. For example, Fauna & Flora International work directly with multinational conglomerates in mining, energy, agriculture and finance sectors to help decrease their impacts on the planet [personal experience]. BirdLife International also has global strategic partnerships with multinational corporations. Other partners, including IUCN, RSPB and BirdLife International, raise significant funds through membership fees from individuals, organisations and governments.

Philanthropic funding was commonplace within both research settings. This encompasses donations from foundations, trusts and individuals, but essentially means funding “from the super-rich who have a global interest” in conservation [2018-11-20FN–001-04_MPhil_lecture]. The CCI Collaborative Fund, for example, was established with generous support from Arcadia, and has subsequently received funding from: the A. G. Leventis Foundation, the Mitsubishi Foundation, the Grantham Foundation, the Rothschild Foundation, the Isaac Newton Trust, the Prince Albert II of Monaco Foundation and the Paul and Louise Cooke Endowment [2020-11-05KD–CCI_Website]. The BioRev Initiative was also made possible through philanthropic funding from the NOMIS Foundation, and MAVA Foundation.

### 7.2.1 Funder power

Philanthropists award funding to recipients they believe will help to progress their mission. Because it is their money, philanthropists establish the conditions and expectations associated with the funding they provide. Conservation actors who depend on philanthropic support to conduct their work must meet the requirements associated with it.
Funders have different evaluation and reporting requirements associated with the support they provide. For example, the MAVA Foundation require the Luc Hoffmann Institute to report against five measures of success, including the amount of other money their activities bring in [2019-05-10FN–026-12_meeting]. The Grant Agreement between the University of Cambridge (on behalf of CCI because it is their property) and the MAVA Foundation for the funding that enabled the construction of the CCI Conservation Campus requires the University to provide reports two, five and ten years after project completion. The reports must measure progress against 14 indicators [2012–Campus_Grant_Agreement], and this has proved challenging in practice (see Section 5.2.1). According to the Agreement, the University will also share a draft of the collaborative plan and ‘take into account, to the extent reasonably possible, any comments made by MAVA prior to the formal adoption of that plan’ [ibid].

Because conservation funding is hard to come by, funders have a great deal of power to influence what takes place in the field. Conservation activities are often designed or adapted to suit funders’ specific interests in order to raise much needed funding (see Section 7.4 below). Over time there becomes a risk that ‘CCI funders start to dictate priorities and agenda’ [2015–Council_risk_analysis]. One interviewee explicitly described this power dynamic during an interview:

So the donor comes and [says], ‘here’s ten million, do this’. None of us do it already or none of us think of it as our expertise, but because the donor said it, we’ll do it… and that’s the wrong way around! How can we be bolder about that and say to the donors, ‘actually, we don’t agree with you’?… That reversal of direction is very difficult. [2019-01-24TR–063-11_interview]

The “changing landscape of funding and a new generation of philanthropists” could pose a risk to CCI if it is not well placed for this change [2019-04-24FN–EDO_Strategy_Session]. The CCI Advisory Board is a group of leading experts and entrepreneurs who provide guidance to CCI and help to identify opportunities and support. Many of CCI’s most generous supporters are represented on the Advisory Board, and thus have a great deal of power to influence CCI’s direction. One interviewee told me, “the Five Year Plan was originally written in response to a perceived need for such a plan from the Advisory Board, and then within it having ambitious targets of change” [2019-02-12TR–014-11_interview].

There is often great pressure within organisations, programmes and CCI as a whole to establish and maintain personal relationships with donors in the hopes that they will continue to provide support. People and organisations tend to be “unwilling to share” their relationships with donors [2019-09-20FN–Retreat_planning_meeting]. The Summary Report of the Strategy Development Listening Phase recognised that competition between CCI partner organisations over funding has the potential to reduce capacity for collaboration within the Initiative [2019-11-28RD–LP_Summary_Report]. In one case where partners already shared funders, I witnessed one organisation contribute significant staff time to the other because it was “in both of their best interests to make a success of [an] event” [2018-09-01FN–Clan_event_discussion, paraphrased]. In this instance the pressure to keep funders happy led to collaboration.
7.2.2 Funding and flexibility

Funding was found to impact flexibility in different ways. The nature of the funding and how tightly tied it is to specific processes or outcomes affects how flexibly it can be used. Additionally, the degree to which recipients are expected to strictly adhere to what was originally agreed with funders impacts whether they are able to adapt or respond to changing circumstances.

At an organisational-level the terms ‘unrestricted’ or ‘core’ were used to describe funding that can be flexibly deployed, including for work that is not tied to a specific project or outcome. Staff time for collaboration with other organisations and for strategic or ‘big thinking’ was perceived by some participants to require core funding. One participant commented that “collaboration works best when core funding is deployed to it” [2019-09-23FN–Lunchtime_seminar; paraphrased]. At the Council Retreat it was observed that “for many organisations there is little unrestricted funding, it’s mostly project-based because that’s how the donors want it to be” [2019-09-25KD–Idenk_presentation_Council_Retreat]. Organisations that are primarily project-funded tend to have a reputation for being inflexible with their time. At UNEP-WCMC for example, it was perceived that, “they have timesheets, everything is project funded so they really have to justify the time they are spending on everything” [2018-07-27TR–050-07_interview]. The, “different time availability between project-funded bodies versus those with a good flow of unrestricted funds” [2017–Obstacles_follow-up_document] was described as an ‘elephant in the room’ that restricts staff of project-funded organisations from taking part in collaborative activities that are not project-funded. A Council member noted that for partners, “in reality, there is very little unrestricted [funding] left to play with!” [2019-09-25FN–Council_Retreat].

Funds raised through membership fees can potentially be more flexibly deployed. For example, one participant told me, “we are member funded and the members give us the money to do what we think we need to be doing... obviously there’s strategy and objectives and things like this but it’s much more flexible” [2018-07-27TR–050-07_interview]. On the other hand, membership organisations must operate within members’ expectations, which can limit their ability: to advocate certain positions that might be unpopular or respond quickly if they need to consult members. Additionally, membership organisations may be financially vulnerable if members leave for any reason, which did happen to one of CCI’s partners during the course of this research.

Although it was suggested during a Council meeting that CCI will need to raise funds by delivering on impact, as “few will fund for the sake of it” [2019-03-25FN–Council_Strategy_Session], CCI has managed to secure over £100 million of ‘new’ funding for the collaboration. Funding was considered ‘new’ if it came from a source that had not previously contributed to partners, or from existing funders who assured that additional funding would not impact pre-existing support [2018-11-20FN–001-04_MPhil_lecture]. Much of this funding directly supported collaborative infrastructure (e.g. grant for the Conservation Campus), processes (e.g. endowment of the Executive Director’s Office), or staff time (e.g. coordination of the Natural Capital Hub).
Recipients may sometimes simply assume that they are expected to rigidly adhere to the content, process or deliverables initially agreed with funders (see Section 5.4.1). I found no evidence within the data I collected of recipients asking funders whether changes were possible (beyond requests for extended deadlines) or of funders refusing to allow changes to what was initially proposed, although this does not mean that these do not occur. During one BioRev Steering Committee meeting I observed, organisers were actively advised not to take contracts too seriously [2019-05-29FN–Boston_SC_meeting]. Another member then commented in response that, “having been in a funder position myself, I reiterate that!”. Rigidness can alternatively be driven by individual or organisational agendas or influenced by disciplinary cultures (see Section 5.4.1).

Unusually, the BioRev Initiative involved funders directly in the project so that they could, “feel like they are part of the process”, as opposed to having a “technocratic approach” and simply following it through [2019-05-30FN–Boston_Biodiversity_Talks_notes; paraphrased]. A representative from the NOMIS Foundation, the project’s primary funder, attended the Symposium event. During a meeting to discuss lessons learned after the event, one of the organisers commented, “having [the funder] on site allowed him to see the process, the qualitative things that people were getting out of the event rather than the outputs – he was super excited about it and this was a positive thing for me, it worked in our favour!” [2019-10-28FN–BioRev_Lessons_Learned_Meeting; paraphrased].

This section has presented an overview of the funding environment within the field of conservation based on collected data. It has identified governments, philanthropic donors, private companies and the general public (through membership fees) to be key sources of funding and highlighted how funders are powerful actors. The nature of funding was found to impact how flexibly it can be deployed and whether it can be used for collaborative activities, however participants may be adhering more rigidly to contracts than funders expect them to. The next section will take a more detailed look into funding at project, programme, and collaboration levels.

**7.3 Funding levels**

Funding, and its implications for collaboration, can be considered at different levels. *Projects* tend to involve short-term funding for the achievement of pre-determined ‘deliverables’ or impacts (see Pragmatism under Section 5.2.1). *Programmes* were found to relate to wider strategic objectives and are sustained over the medium- to long-term. As such, they require substantial initial or continued funding, or a combination of sources over time. At the level of the entire *sustained interorganisational collaboration*, partners commit to contributing their share towards the fulfilment of CCI’s potential. As part of the Strategy Development Process, CCI Council is now considering how it will fund bolder, transformative ambitions going forward. This section will present findings relating to funding at each of these levels.
7.3.1 Project level

Project funding tends to be short-term in nature and associated with the achievement of pre-determined outcomes or impacts. The external evaluation of the CCI Collaborative Fund found that ‘with very few exceptions over the course of the eight or nine years, projects supported by the Collaborative Fund have delivered in the short term what they committed to delivering in their original application’ [2018-07KD–CCI_Collaborative_Fund_Report].

Project funding can come from a variety of sources including governments, philanthropic sources and the private sector. Without having collected specific data about funds raised, my general sense was that much of the funding available to NGO partners in CCI (outside the University, and membership fees) is raised through projects. One participant who works in fundraising for an NGO partner explained to me during an interview the importance of lining up a series of complementary projects. She told me that tiny awards involve start-up, peak and write-up within one year. Darwin awards from the UK Government last three-to-four years, but “they probably wouldn’t fund you back-to-back, so you’ve got a gap” [2018-07-13TR–033-05_interview]. Smaller single-year projects can ‘plug’ these gaps, but the time between longer grants was perceived to be valuable for taking stock of what was learned and a “fresh look at what you are doing next and why” [ibid].

Limitations of project funding

Organisational dependence on project-funding has important implications for collaboration. As reported above, staff can be restricted in the work time they are able to contribute to collaborative activities unless it is associated with paid projects. During one meeting a Council member questioned, “with who’s money are you going to do the internal collaboration?” [2019-03-25FN–Council_Strategy_Session]. This exemplifies a distinction that was often made between funded project work and the staff time and energy that goes into collaborative processes and governance. I am generally referring to funding that directly supports collaborative processes and governance outside of project funding as ‘process funding’. One interviewee describes in the following excerpt how collaboration can be perceived to be too expensive for project-oriented organisations when finances are tight:

You know there’s a cost to getting a lot of people together in a room... if you added up their charge out rates for the half day that we were together then that’s not insignificant. And I mean it’s obvious, but there’s a trade-off there between the potential long-term benefit of the collaboration, and the amount of time people will have to put in. And because of that issue of everyone being so project-oriented and also, I guess, kind of flying close to the wind when it comes to finance, how the expectations around the outputs that people have to produce – people are under a lot of pressure I think in reality! So... there’s a very limited amount of space for them to give to those things. It doesn’t surprise me, I guess is what I’m saying, that there isn’t more collaboration across the [CCI] building just because people are trying to survive in a sense. [2018-07-13TR–031-11_interview]
Other participants emphasised the timescale mis-match between short-term project funding and long-term collaborative aims. One interviewee explained how the administrative costs of collaboration, to establish agreements and ways of working together, are concentrated at the beginning of collaborative activities and that the combination of upfront costs and delayed benefits can put organisations off long-term collaborations:

> if you are trying to do more collaborative work with longer-term benefits, you have this great big ramping up period that cuts across these [pointing to small projects on diagram she drew], but then you also have this [pointing to sustained high] for a long time afterwards... it would normally be over 5 or maybe 8 years. So the amount of annual admin and the background work – it’s almost like it’s ‘front-loaded’ in the language of a project. There’s so much more time spent in thinking and setting up any agreements, ways of working together, and how you are all adding value and what you are all working towards, but once you’ve done it [pointing to ‘ramping up period’] you then have a much longer period when you can get on with it compared to individual projects... especially if you are fighting for a great big long chink of strategic funding – whereas if you are looking at one of these things [pointing to short project] you are kind of doing it all on your own all of the time, which is less fulfilling, but you probably have the same amount of overall background work, it’s just spread out... There’s much more of an upfront cost, which will put people off, and also you’re doing it without getting the benefits until later. [2019-07-13TR–033-05_interview]

A member of Council cautioned during a discussion about risks that they may be “pushed towards ‘short-term’ fixes in order to show impact and not take up longer term agendas which might take more time to achieve results (but could be bigger impact)” [2017KD–Risks_and_Threats_at_Retreat]. There is also the issue that the impacts of longer-term and larger-scale collaborative activities may be more difficult to measure (see Section 5.2.1).

The BioRev Initiative, itself a collaborative project led by the Luc Hoffmann Institute, provided interesting insights into the impacts that mixed funding can have on a single collaborative project. Funding for the project primarily came from three different sources: the NOMIS Foundation (63% of initial funding); the MAVA Foundation – also the primary donor for the Institute (28% of initial funding); and WWF-International (9% of initial funding). The project found itself carrying out a “balancing act” between the differing missions of its funders, and this created uncertainty among participants about its objectives. The NOMIS Foundation supports ‘insight-driven science across disciplines, focusing on researchers who put forth bold new ideas’ [2020-11-08KD-NOMIS_website], while the MAVA Foundation has a societal change mission to ‘conserve biodiversity for the benefit of people and nature’ [2020-11-08KD-MAVA_website].

The BioRev Project Outline clearly stated that the objective of the project was to ‘develop a new five-year research agenda for biodiversity to effectively sustain the biosphere’ [2018-11-06KD–Project_Outline], yet at the same time it was “clear that there [wa]s a desire from the Steering Committee, Secretariat and beyond, for this project to have a broader influence beyond the research
community” [2019-05-29KD–Boston_Agenda_papers]. As a result, organisers found themselves trying to achieve multiple objectives within a strict timeframe and with finite resources.

In the end, the tension between demands for a research agenda and wider societal change was constructively utilised by the participants who co-produced the research agenda to push the boundaries of what a research agenda could be. The result was a Research and action agenda for sustaining diverse and just futures for life on Earth, which ‘calls for new ways of thinking and acting’ (Wyborn et al., 2020). One of the organisers explained to me during an interview that it was ambitions for the project to deliver more than it was required to that forced innovation:

**Because without the ambition we wouldn't be forced into making these creative constructions. You would have thought they'd want a global consultation, the steering committee wants a global consultation and we think it’s ideally a good thing to do, but how do we pragmatically do that? Those things wouldn’t be forced in a tension with each other. We would never have got to that level of value-add, all these potential solutions. So without the ambition you’re not forced into innovation… If you have all the resources on earth, you are never innovative. It’s so, so, so, so stressful and it's really hard, because some people don’t respond to that level of ambition because they just want a manageable workload, right? Whereas the ambition drives innovation, and you never meet your ambition ever... but it needs to be excessive without being daunting and stupid, where you’re like ‘I'm not even bothering aiming for that thing’.** [2019-09-10TR–026-12_interview]

In summary, much conservation work is funded through individual projects which tend to be short-term in nature and designed to deliver specific, measurable impacts. Organisations that are primarily project-funded are limited in the amount of time their staff can contribute to collaborative activities that are not project-based. The time and energy that go into collaborative processes and governance are often distinguished from funded project work, and ‘process funding’ is perceived to be lacking. Organisations can be reluctant to attempt longer-term collaborative initiatives due to the upfront concentration of costs and delay in outcomes, even though they may lead to bigger impacts overall. Finally, projects with multiple sources of funding can find themselves pulled in different directions, however in the case of the BioRev Initiative this led to innovation. In the next section I will explore funding at the programme level.

### 7.3.2 Programme level

CCI collaborative programmes are funded in fundamentally different ways. This section explores three of CCI’s programmes from a funding perspective: the Endangered Landscapes Programme, the CCI Collaborative Fund and the Natural Capital Hub. All of these programmes focus on enabling and delivering collaborative conservation projects.

The Endangered Landscapes Programme (ELP) was initiated in 2016 through generous philanthropic support from the Arcadia Foundation. A full time Programme Manager was hired as well as a
Programme Assistant and a part-time Science Coordinator. The Programme funds collaborative projects, ‘to create a sustainable and hopeful future where people and nature can thrive’. Collaborators, who include CCI partners and other organisations, share a vision, ‘to restore Europe’s most treasured, but endangered, landscapes’ [2020-11-04KD-ELP_Website]. The programme includes ‘implementation projects’ that restore natural processes and degraded landscapes, and ‘enabling projects’ that aim to overcome barriers to landscape-level restoration in Europe [ibid]. Additional support from Fondation Segré also funds ‘planning projects’ that encompass preparatory work for the creation of innovative landscape initiatives. Although I did not directly study the ELP Programme during my research, participants I worked with often referred to it positively as an example of a well-funded, large-scale, regranting-style programme. It was also recognised to be funder-driven and more ‘top-down’ as an approach.

The CCI Collaborative Fund (see Section 2.4.1), is another example of a regranting-style programme. It was established in 2008, shortly after CCI was founded, with generous support from Arcadia, and has subsequently received funding from seven other philanthropic trusts and foundations (see above in Section 7.2). The Fund was initiated to ‘facilitate innovative and necessary collaborations between CCI members’ that address one or more of the collaboration’s agreed goals and themes [2020-11-09KD-CCI_Website]. Application guidelines were specifically designed to encourage interorganisational collaboration, particularly between the University of Cambridge and other organisational partners of CCI. They stipulate that ‘each application requires at least three CCI partner organisations/University Departments to be actively working together on the project,’ and that, ‘this must include at least one University Department and one conservation organisation’ [2018-07KD–CCI_Collaborative_Fund_Report]. Applicants can apply for funding within the range £3,000 to £75,000 for projects lasting between 1 month and 5 years [ibid].

Over 60 collaborative projects have been funded through the Collaborative Fund to date [2019KD–Council_Accomplishments_Annex] and within CCI people regard the programme to be ‘one of the most, if not the, most important and tangible expression of CCI’ [2018-07KD–CCI_Collaborative_Fund_Report]. One Council member expressed his belief that the Fund is one of the things that keeps CCI together [2019-03-25FN–Council_Strategy_Session]. Another Council member told me that compared to issue-based CCI Programmes (e.g. ELP, Natural Capital, etc.) the Collaborative Fund enables staff across CCI to get involved in collaboration, but he warned that the size and timescale of grants is limiting [2019-08-27FN–011-06_meeting]. In his view there are a lot of good collaborative ideas that people do not bother applying with, either because the money would not be enough once divided among collaborators or because people do not feel they will be able to get a University collaborator on board. He told me that “if the amount could be more significant, there would be more applications and the projects could have a greater chance of leading to transformative change” [ibid, paraphrased]. During the Listening Phase of the CCI Strategy Process many expressed ‘concern that the size of the fund was not big enough to cover the cost of collaborating’ [2019-11-28RD–LP_Summary_Report].
Bottom-up programme funding

In contrast to the CCI Collaborative Fund and ELP Programme, work relating to Natural Capital developed “organically” from the bottom-up on a project-basis [2018-07KD–Marine_collab_workshop_report]. Following the successful, collaborative production of a joint statement for the Natural Capital Protocol, the A. G. Leventis Foundation funded a full time Hub Manager position for 15 months to coordinate a Natural Capital ‘Hub’ (programme). This position was filled through a job share between two Co-managers, both seconded from CCI partners, and later extended by three months with additional funding from the Executive Director’s Office (EDO) to the end of December, 2019 [2019-11-25KD–NCWG_review_meeting]. Figure 20 diagrammatically represents the funding framework of the Natural Capital Hub based on my analysis. During a follow-up meeting, the (then former) Co-managers confirmed that this representation matched their interpretation of the funding situation for the Programme.

In the Natural Capital Hub, ‘there [wa]s no set system for initiating, funding or implementing projects’ [2019-07-28KD–NCWG_Value_Proposition]. ‘Project funding’ for collaborative projects relating to Natural Capital was raised by Co-managers in some cases, by individual partners in others, and occasionally with the support of the CCI Fundraiser [ibid].

The aim of coordination was ‘to scale up the CCI Natural Capital portfolio of projects and create a large collaborative programme’ [2018-03-19KD–NC_Hub_manager_advert]. Decisions were formally made through an existing Natural Capital Working Group (WG) with representation from each CCI partner. Through a series of meetings organised by Co-managers and chaired by a member of CCI Council, the Working Group endeavoured ‘to develop and deliver a vision and ‘value proposition’ for CCI’s portfolio of activity’ in this area [2019-01-04KD–NCWG_ToR]. WG members were expected to attend meetings and contribute to the portfolio of work and development of a vision, but contributions were limited in practice and Co-managers found their time divided between hub management and project implementation. During one meeting a member stressed to the group that “people need to put time into this!” [2019-03-13FN–NCWG_meeting]. In the end, co-managers, ‘played a significant role in implementation of most of the projects’, which limited the time they spent on fundraising [2019-07-28WG–NCWG_Value_Proposition_draft].

Funding for collaborative process

The grant from the A. G. Leventis Foundation (plus the EDO extension) could be considered collaborative ‘process funding’ (see Figure 20) because it paid for Co-managers’ time to provide coordination for the Hub. Coordination was deemed by those with experience in the ELP and Natural Capital Hub to be crucial to drive collaborative programmes forward [2018-07-12FN–marine_meeting]. Among other responsibilities, Co-managers were expected to develop ‘major collaborative proposals to funding bodies and philanthropic foundations, to continue the activity of the CCI Natural Capital Hub beyond this initial period’ [2018-03-19KD–Hub_Manager_advert].
Figure 20. Types of funding for collaboration at programme level – The different types of funding (grey arrows) for the various elements of the Natural Capital Hub, a bottom-up collaborative programme. Funds are needed for the coordination required to strategically align projects and to develop a ‘Big Idea’ (in the form of a Value Proposition) to drive the collaboration towards the possibility of transformational change.
The Value Position the Hub produced described the group’s focus on ‘making all the values of biodiversity matter’, in markets, the wider economy and beyond economics and detailed existing Natural Capital projects under each of these areas. It also identified three options for the future implementation of the Hub: (1) ‘laissez faire’, where there would be no active coordination and WG meetings would be held to simply share information and ideas; (2) ‘coordinating Hub’, where coordinators would continue at least on a part-time basis and would work with the CCI Fundraiser to identify longer-term finances; and (3) ‘driving Hub’, which was not elaborated, but was understood to imply collectively driving one ‘big idea’ forward. The Value Proposition listed the total employment cost for one full time Hub Manager to be £65,000/annum [2019-07-28WG–NCWG_Value_Position_draft]. Based on this amount, coordination of the Hub by two Co-managers, each working 80% of the time over 18 months, would cost £156,000 in total.

Throughout my observations, the Natural Capital Working Group struggled to identify a specific, unified vision for the Hub, or hone in on a ‘Big Idea’ they could pursue together. At the end of December, 2019, the CCI Council, “was unable to secure a unanimous view” on the Value Proposition that had been put forward and the Natural Capital Hub was prevented from fundraising or developing any more detailed plans [2019-11-25KD–Natural_Capital_Hub–discussion_with_CCI_Council_Group]. This blocked them from attempting to raise what I have labelled ‘Big Idea finding’ in Figure 20. The Co-managers then had no choice but to return to the roles they previously held with CCI partners, and the Natural Capital work reverted to a ‘Laissez faire’ approach without active coordination when ‘process funding’ ran out.

The experience of these three CCI Programs shows that funding tends to be deployed or raised through collaborative projects, even at a programme-level. Both the ELP and CCI Collaborative Fund were initiated with substantial funding. As regranting-style programmes they enable conservationists, and the organisations they work for, to work collaboratively while earning project funding. The Natural Capital Hub came from the opposite direction, gradually raising funding through discrete collaborative projects. Coordination of the Hub for 18 months was made possible through a grant of ‘process funding’, however the group was not able to produce an adequate Value Proposition or fundable ‘Big Idea’ in the eyes of the CCI Council during this time. In the next section I will consider funding at the level of the entire collaboration.

7.3.3 Collaboration level

At the level of CCI as an entire interorganisational collaboration, the CCI Memorandum of Understanding states that partners will contribute, ‘an appropriate share of the necessary effort and resources needed for CCI to achieve its potential’, as determined by the Steering Committee [2014KD–CCI_MoU]. Partners also commit to playing ‘a role in aiding the development of CCI by identifying, either reactively or proactively, potential opportunities for CCI funding’ [ibid]. As previously described, CCI has raised substantial funding as a collaboration. In total, it has “secured c. £100 million of new funding to
support CCI collaborations, posts, capital projects, scholarships and activities” from a long list of sources [2019KD–Council_Annex_achievements]. About 15% of this total has gone into funding the Executive Director’s Office, a team that supports and facilitates CCI programmes and activities [2018-11-20FN–001-04_MPhil_lecture].

In addition to the programme funding described in the previous section, funding from the MAVA Foundation and other sources enabled co-location of CCI partners into the purpose-built David Attenborough Building. In 2017 the CCI Council decided to use a $10 million donation from Arcadia to endow the Executive Director’s Office (EDO) into the future. According to the Executive Director, the endowment will ‘provide the financial security to enable CCI to focus on scaling up its collaborations and engaging others, especially in business, governments and civil society, in the conservation of nature” [2020-11-09KD–CCI_News_2017-11-26, CCI Website]. This funding could be described ‘process funding’ for the collaboration.

During the CCI Strategy Development Process, people across the CCI community were asked for their views about the future of the collaboration. Many called for CCI to be ‘bolder’ going forward. During the CCI Council Retreat this feedback was interpreted to represent a desire for a “shift in gear [to] do something bigger”, which would require additional capacity from partners and the EDO [2019-09-25FN–CCI_Council_Retreat]. This led to a discussion about alternative funding strategies and ways of working together. The Executive Director then proposed that, “if every partner was prepared to say that a proportion of their budget was put aside for CCI Collaboration... [say] 3% of time/money... it would be fantastically hard to achieve, but some simple formula that showed a level of commitment could be an exciting way to shift the possibility” [ibid, paraphrased]. One Council member was immediately supportive of the idea, but others were more sceptical, explaining that this would require significant “stress-testing” and fundamental changes to how their organisations currently operate. One Council member emphasised that with few of their staff directly involved with CCI, this type of contribution, “would be counter-cultural” [ibid]. Another explained that his organisation, “could only do that if money were found from somewhere to allow that to happen – if we have £100M that would make a massive difference to collaborative activity and such an arrangement could be written in” [ibid, paraphrased]. The conversation then swiftly reverted to emphasising the importance of identifying a few big ideas to attract money. In the fundraising section below I will elaborate about this funding ‘chicken-and-egg’ situation that arose in nearly every collaboration I observed during my research.

7.4 Collaborative fundraising

One of the key incentives for CCI partners to collaborate was that by working together they can potentially leverage additional funding for their organisations and for conservation more broadly. Participants expressed ambitions that ‘collectively [CCI] could go for a much bigger pot of funding’ [2019-11-28RD–LP_Summary_Report], could “access major funding opportunities”, and could enable partners to be more financially efficient in a sector that has been criticised for its inefficiency [2019-09-04LP–
Strategy_Café]. It was also recognised that donors like collaboration for these reasons and that collaboration is itself therefore “a good selling point for fundraising” [ibid]. CCI’s Memorandum of Understanding states that ‘partners will... endeavour to play a role in aiding the development of CCI by identifying, either reactively or proactively, potential opportunities for CCI funding or collaboration through the course of interactions with their own funders, clients, collaborators and other stakeholders’ [2014KD–CCI_MoU]; yet because funding for conservation is scarce, participants regularly described that they felt in direct competition.

Fundraising was recognised as the most sensitive topic to collaboratively broach within CCI. As one participant put it, “the collaboration is a good idea until you get to fundraising and then nobody wants to share because you’re all competing for the same funds” [2019-01-24TR–072-04_interview]. One member of CCI Council confessed that “it’s one of the hardest things for people to collaborate over... always has been in my experience” [2018-02-02TR–Council_meeting_feedback]. Competition exists not only between CCI partners, but also between CCI and its partners. The latter came through during discussions about CCI’s external profile and it was evident that some partners do not want the collaboration to detract from their own fundraising efforts [2019-09-02FN–Strategy_Champion_meeting]. Others called for increased efforts to market what CCI can offer together, for example collaborative knowledge products [2019-07-25LP–Strategy_Café].

Challenges of collaborative fundraising

Beyond the issue of competition there were other challenges relating to collaborative fundraising that were identified through the analysis of data. At both collaboration- (i.e. all of CCI) and programme-levels (i.e. Natural Capital Hub), there were expectations that fundraising was the responsibility of collaborative coordinators. One member of the Executive Director’s Office (EDO) told me that its endowment was likely to lead people to think, “well it’s somebody else’s responsibility to make all this stuff work”, and they provided an example where this had clearly been the case [2018-11-21TR–001-04_interview]:

...somebody in the group said, ‘well if you can’t raise more money for the Collaborative Fund next year, you know there’s a massive reputational risk to CCI on this!’ And I said, ‘yes, I know that, I think I’d like to say if we can’t raise the money’. And he kind of said, ‘oh yes, of course’ – but actually nobody else has lifted a finger to raise money for the Collaborative Fund.

Another challenge that surfaced in various ways was the difference among collaborators in the scale of their fundraising ambitions, and particularly how to set more ambitious targets. An earlier CCI Council Retreat covered a session about ‘Funding the vision’ to consider, ‘the scale of funding CCI wants to seek... and how to go about doing this’ [2017KD–Council_Retreat_summary_and_actions]. During a separate discussion, members of the EDO appeared keen to consider how the strengths of CCI could be harnessed to grow the initial £100M raised into £1Billion over the next ten years, but worried this scale of
ambition would be seen as a threat to partners [2019-09-20–Strategy_Champions_meeting]. Various participants called for an increase in the scale of fundraising ambition during the Listening Phase of the Strategy Development Process, and during the Council Strategy Session members of Council acknowledged a need to be more “transparent about funding issues so that its not an elephant in the room” and to “do something to tell people what scale we could be thinking” [2019-03-25FN–Council Strategy_Session, paraphrased]. This question about appropriate scale of fundraising ambition was also observed during Working Group meetings for the Natural Capital Hub and the Arts, Science and Conservation Programme.

Due to the speed of change within conservation, it was suggested during a CCI Council session that a 3-5 Year Plan was an appropriate, “short-term practical way to go for funding, since everything is changing all the time – long-term is pointless” [2019-03-25FN–Council_Strategy_Session].

7.4.1 Funding chicken and egg dilemma

Two contrasting approaches to fundraising were observed during researched collaborative activities at CCI and the interplay between them often tangibly led to tension. During one meeting a participant explicitly referred to a ‘chicken-and-egg scenario’ to describe the uncertainty around which should come first – the funding, or the collaborative idea [2019-02-04FN–NCWG_meeting].

Developing collaborative idea first, then fundraise for it

In some cases collaborators expected they would first develop collaborative goals, and then use these to shape their case for financial support. While this may seem a logical progression, in practice I observed the process of developing collaborative goals to be difficult and time consuming, especially when this was expected to occur before collaborative funds were raised.

The development of the CCI Strategy 2012-2020 and Five Year Plan 2015-2020 were seen by some as “strengths to attract money” [2019-03-25FN–Council_Strategy_Session]. All of the CCI collaborative Programmes that were developed from the bottom up (i.e. without substantial initial funding) were observed during the stage of developing programmatic strategies and negotiating collaborative aims that could then be used for fundraising purposes. During a meeting of the Migrants Working Group, a participant suggested the “need to agree the scope of what we want to cover and then the next step is to say what it costs” [2019-03-08FN–Migrants_WG, paraphrased]. During a meeting of the Arts, Science and Conservation Working Group, participants emphasised the importance of developing an agreed strategy to “bring donors behind” [2019-07-16FN–ASCWG_meeting]. There was no initial funding to bring people together in both of these cases and Working Group meeting were therefore infrequent and progress was slow.

The Natural Capital Hub did receive funding to employ two Co-managers to coordinate CCI collaboration in this area (as described in Sections 5.4.2 and 7.3.2). During one of these meetings the CCI
Fundraiser commented, “whatever it is that the Working Group determines that CCI can most productively deliver [in this area], this then shapes the case for financial support” [2019-02-04FN–NCWG_meeting, paraphrased]. However, despite the initial investment into coordination, development of collaborative aims remained a challenge and the Value Proposition that was produced did not receive unanimous support from the CCI Council (see Section 5.4.2).

Identifying funding or ‘fundable’ criteria first, then develop collaborative ideas

The contrasting approach to fundraising that was observed was to first identify or secure funding for collaborative work, and then develop collaborative aims and activities according to the requirements of that funding. This was the situation for the Endangered Landscape Programme and the CCI Collaborative Fund which were both initiated with substantial grants (see Section 7.3.2). The CCI Collaborative Fund was designed to foster collaboration between partner organisations and conservation approaches, however the specific criteria used to select awardees were not made public because it was assumed that if they were shared applications would be developed to match them as closely as possible [2018-11-21TR–001-04_interview].

In other cases, even when a specific grant or funding source had not been identified or secured, participants’ perceptions and assumptions about fundability impacted the ideas they considered for the collaborations they were involved with. Planned activities and strategies that logically contribute towards the achievement of known and measurable impact were generally perceived to be more fundable. For example, a Council member perceived that “existing donors won’t donate to the Collaborative Fund because they don’t know what it will be spent on, so a CCI Strategy that is clear will help [for fundraising]” [2019-09-25RD–Council_Retreat_Idenk_notes]. As shown in Section 5.3.1 about goal-oriented approaches to change, fundability was believed to influence the CCI Council’s increased attention to ‘the what’ (thematic foci) versus ‘the how’ (collaborative processes) during deliberations about the next CCI Strategy. Fundraising for collaborative processes (‘the how’) and the ongoing development of a collaborative ‘ecosystem’ that can flexibly respond as needs arise was perceived to be more challenging than fundraising for specific topics that are easier to describe and measure [2019-04-10FN–EDO_meeting_planning_session].

During one meeting the CCI Fundraiser expressed “worry about the fundraising tail wagging the dog” and explicitly drew attention to the, “tension between wanting funding and creating an agenda that we think is fundable” [2019-03-25FN–Council_Strategy_Session]. Even in cases where collaborators commit to developing collaborative ideas before they fundraise, perceptions about the fundability of ideas can implicitly limit what is considered.

Some participants shared the view that the direction of the funding relationship needs to be reversed – rather than funders determining what conservation work gets funded and how it is conducted, conservation collaborations could advise conservation funders about priorities and how they need to work to effectively tackle complex issues. During the Listening Phase a few participants called for ‘creative
funding models – the ability to say to funders collectively that this is the way we need to be funded’
[2019-09-03_LP–Soiree_data].

7.5 Summary of funding findings

The findings presented in this chapter related to the funding of collaboration in conservation. They covered the different sources of conservation funding and explored concepts of ‘funder power’ and ‘flexibility’. An exploration of funding at the levels of collaborative projects, programmes and entire interorganisational collaborations revealed the importance of process funding and showed that expectations for quantified measurement of collaboration and for what is considered to be ‘fundable’ can limit collaborative ambitions and flexibility to respond to change.

In the next chapter, the findings from the three findings chapters will be considered alongside the literature reviewed in Chapters 2 and 3 to develop the contributions of this thesis.
Chapter 8 – Discussion

8.1 Introduction to Chapter 8

This thesis explores ways to enable collaboration in conservation. In this discussion the findings presented within Chapters 5, 6 and 7 are considered in light of the literature reviewed in Chapters 2 and 3 to identify where they align with or diverge from the extant literature and where they add something new. The chapter is structured to address each of the research questions (RQs) in turn.

Section 8.2 begins by addressing RQ1 – how can conservation collaborators operating within complex systems be enabled in practice? This research question is sub-divided into two parts. First, Section 8.2.1 explores – how can collaborators work together to achieve change in complex systems? Consideration of findings across the three themes leads to an in-depth consideration of the merits of: clarifying change; acknowledging the complexity of interorganisational collaboration; managing diversity for complexity; considering whether and how collaborations can respond to change; and working more effectively across many forms of difference.

Section 8.2.2 then explores – how can the field of conservation itself be changed to further enable effective collaboration to achieve change in complex systems? This sub-section takes a broader perspective to consider how the culture and structure of the entire field of conservation could be changed. The concept of inclusivity (Shore, Randel, et al., 2011) is used to explore which perspectives and approaches dominated over others in research settings and a framework by Gray and Purdy (2018) is utilised to argue that consciousness raising and contention are needed in conservation to enable collaboration. Finally, fundamental changes to the ways that conservation collaboration is funded are suggested in order to accommodate complexity.

Section 8.3 then addresses RQ2 – how can the TCA be extended through RO-AR on collaboration in conservation such that it can be recognised as valuable within this field? A paradox framing from the TCA (Vangen, 2016) is used in this section through a combination of empiricism and rationalism to conceptualise a change paradox which highlights the simultaneous need for pragmatic and idealistic
change in addressing societal conservation issues. This leads to further conceptualisation of a management tension relating to the overtness of different ambitions for change in collaboration. Using the approach described by Huxham and Beech (2003), this management tension considers “alternate (i.e. mutually exclusive) pieces of good practice advice” (ibid, p.81), including what was observed through Research-Oriented Action Research (RO-AR) at one extreme, and an approach recommended within the literature at the other. The resulting management tension can serve as a ‘handle for reflective practice’ (Huxham & Beech, 2003; Vangen & Huxham, 2012), and support the consideration of intermediate positions between these extremes.

8.2 How can conservation collaborators operating within complex systems be enabled in practice? (RQ1)

Addressing this research question initially involved investigating how collaborators can work together to achieve change in complex systems (Section 8.2.1), but this led to a further consideration of how the field of conservation itself can be changed to enable effective collaboration (Section 8.2.2); as shown in Figure 21 below.

![Figure 21. The components of RQ1](image)

**8.2.1 How can collaborators work together to achieve change in complex systems? (RQ1a)**

This section explores various suggestions for conservation collaborators aiming to achieve change in complex systems. The importance of clarifying the different dimensions of change is emphasised. Research findings are then used to show that interorganisational collaborations are more complex than they have been portrayed within the conservation literature, and that the diversity that is deemed beneficial in addressing complex issues requires active management in order to derive synergy. Finally, the mixed methods approach that was used in this research revealed interconnections between different attributes of difference (e.g. philosophical position and seniority, etc.).
Clarifying change

Literature about change is abundant, but it is inconsistently communicated. The change findings presented in Chapter 5 also showed that the concept of change was differently perceived and variously understood by participants which contributed to tensions, as elaborated in the next section. For example, the term ‘transformation’ was commonly used within both research settings, however, in CCI its meaning was often more closely aligned with what the literature would call ‘adaptation’ (see Section 3.3.2). The eight dimensions of change presented by Maes and van Hootegem (2011) were found to be useful to clarify change within the reviewed literature, but also to identify inconsistencies within the findings relating to change (Chapter 5). Although these dimensions of change were developed to describe attributes of organisational change, they were found to be relevant for change findings from the studied conservation interorganisational collaborations. The dimensions of: scope (the degree of change, from adaptation to transformation), stride (the number of stages to realise change, from incremental small adjustments to revolutionary massive changes), control (the extent to which agents can choose the outcomes of change, from emergent to planned) and goal (the end state of change, from open to strictly defined) were found to be particularly important to clarify change relating to interorganisational collaboration in conservation, as explored below.

A closer look at the ‘types of change’ presented within change findings (Section 5.2) shows that these relate to a combination of Maes and van Hootegem’s dimensions of scope and stride. Findings about ‘change within a system’ were associated with ‘pragmatism’ and ‘evolution’; according to the dimensions of change, these relate to ‘adaptation’ (scope) and ‘incremental’ change (stride). Findings about ‘change of a system’ were associated with ‘idealism’ and ‘revolution’; according to the dimensions of change, these both relate to ‘transformation’ (scope). The term ‘revolutionary’ is used by Maes and van Hootegem (2011) not in relation to the state of the change, but its stride to mean ‘massive changes at once’ (p.211). Consideration of findings about ‘how change can be achieved’ (Section 5.3) showed that these simultaneously relate to Maes and van Hootegem’s dimensions of control and goal. ‘Goal-oriented’ approaches were ‘planned’ (control) in advance and often oriented towards strict (goal) predefined outcomes; whereas ‘principles-based’ approaches were more emergent (control) and oriented towards open (goal), flexible goals that centred instead around agreed principles. Independent consideration of these dimensions would enable collaborators to explore the implications of each. For example ‘revolutionary’ change in the sense of occurring all at once was not considered by the collaborations that were studied, nor were planned, open approaches. Consideration of the dimensions of change (especially scope, stride, control and goal) by collaborative practitioners could help them to consistently clarify the different possibilities and fully consider the types of change they could strive to achieve together. Further research into the broader applicability of Maes and van Hootegem’s (2011) dimensions of change within different collaborative contexts would be useful to determine whether their utility extends beyond the conservation context.
**Acknowledging the complexity and cost of interorganisational collaboration**

It is commonly recognised that the socio-ecological systems and the contexts involved in conservation work are inherently complex. Conservation issues are commonly referred to as ‘wicked’ within the literature (e.g. Curtin, 2014; Game, Meijaard, et al., 2014) and the CCI Strategy 2012-2020 described how the collaboration brings ‘organisations together to tackle complex and challenging issues with innovative approaches’ (CCI, n.d.: 3). Yet the complexity of interorganisational collaborations themselves was not commonly acknowledged within the conservation literature, nor was it carefully considered within researched contexts.

The conservation literature does not adequately recognise the complexity and cost of interorganisational collaborations that strive for change in the world (see Section 3.3). Findings revealed that the complexity inherent in researched interorganisational collaborations was generally underappreciated and that the introduction of insights from the TCA, which acknowledge and accommodate the complexity of collaboration, were useful in practice within both research settings. Within the TCA collaboration is recognised as “a seriously resource-consuming activity” and while Huxham and Vangen (2005) advise, “don’t do it unless you have to” (p.13), the conservation literature commonly proposes collaboration as a solution to complex conservation issues with insufficient regard of the associated costs (see Section 2.3.1). The numerous costs of collaboration include: money, time, expertise, and equipment (Imperial, 2005), but also, the “loss of managerial autonomy, cooptation of actors and goals, financial instability, difficulty in evaluating organizational results, and the opportunity costs from the time and resources devoted to collaborative activities” (Jang & Feiock, 2007: 178), especially while collaborations are being established (Hopkins, Chamberlain, et al., 2021).

The TCA presents practice-based theory that recognises the complexity of interorganisational collaboration under a variety of themes (see Section 3.2). The conceptualisation of collaboration as inherently paradoxical and the source of inevitable tensions was both an accurate reflection of the collaborations studied, but also a useful basis for reflection and discussion. Collaboration is often portrayed simplistically within the conservation literature (e.g. Kark, Tulloch, et al., 2015 propose a 10-step framework for addressing collaborative conservation issues across jurisdictional, political and national boundaries). Conversely, the results of this research, which were derived from the experience of conservation collaboration, are consistent with the TCA in showing how collaboration is incredibly complex, unpredictable, challenging to measure, and often time consuming, frustrating and resource intensive (Huxham & Vangen, 2005). In cases where collaboration is needed, partners should be aware and expectant of the paradoxes and tensions that are inherently part of interorganisational collaboration and be prepared to invest the additional time, energy and resources required to achieve collaborative advantage. The complexity of such collaborative arrangements also make it either challenging (Guerrero, Bodin, et al., 2015) or inappropriate to quantify and evaluate their achievements (e.g. success according to whom and on what basis?; Huxham & Vangen, 2005), yet the field of conservation expects this to be possible in order to justify investment into collaboration (Evely, Fazey, et al., 2010; Koontz & Thomas,
2006; Scott, 2015). These expectations need to be recalibrated to incorporate less readily quantified social factors, in-depth understanding from multiple perspectives and an appreciation of the multifaceted nature of collaborative goals (Vangen and Huxham, 2012).

Insights from the TCA were found to be useful in practice to acknowledge the complexity of collaborative situations during research-oriented action research. For example, ongoing discussions with the Project Owner about tensions experienced within the BioRev project enabled reflection about their management and consideration of options for dealing with future challenges. Within CCI, I shared a summary of *The Tangled Web* (Vangen & Huxham, 2012) with the Executive Director and was invited to deliver two presentations – one about different types of collaborative goals, and another about the inevitability of tension in collaboration – during the EDO Team Strategy Session that I also facilitated. This led to a discussion about changing the mentality from searching for solutions to managing “perpetual resolutions” [2019-04-24FN–EDO_Team_Strategy_Session]. I also worked with the Co-managers of the Natural Capital Hub to identify tensions that surfaced during Working Group meetings and discuss how they could most effectively be managed. In these ways, the integration of ideas about tension and collaborative goals from the TCA was useful in collaborative practice within the researched contexts, and insights from the TCA could be more widely utilised within conservation to help increase awareness about the complexity of interorganisational collaboration.

Finally, this research emphasises the importance of considering the nature of the contexts collaborations are working within and the problems they are addressing. Insights from complexity theory are useful to distinguish between simple, complicated, complex or chaotic contexts, and this distinction has crucial implications for how change can be approached (Kurtz & Snowden, 2003; Snowden & Boone, 2007). In cases where contexts or problems are simple or complicated it is entirely appropriate to use approaches that are more linear and predetermined as these can be most efficient and effective under predictable conditions. However, conservation often involves complexity given that the broader context of global conservation and interlinked socio-ecological systems, as well as interorganisational collaborations themselves, are highly complex, unpredictable and dynamic. It is unrealistic to expect strict, short-term, pre-determined collaborative initiatives to deliver transformational changes under conditions of complexity.

**Managing diversity for complexity and innovation**

This research aligns with calls in the literature for diverse collaboration to address complexity (see Section 3.4.1), however it also highlights the ways in which collaboration across multiple forms of difference is itself a complex and challenging endeavour. It is important to emphasise that not all conservation issues require diverse collaboration or even collaboration. But in instances where complexity is prominent and innovation and adaptation are required, diversity is understood (Dentoni, Bitzer, et al., 2018; Huxham & Hibbert, 2008; Kuenkel, Kühn, et al., 2021; Waddock, 2013), and was found (see Section 6.2), to be beneficial.
Diverse collaboration is deemed necessary within the literature for addressing wicked societal problems such as sustainability and global conservation (Dentoni, Bitzer, et al., 2018; Huxham & Hibbert, 2008; Kuenkel, Kühn, et al., 2021; Waddock, 2013). Page (2017) draws particular attention to the importance of cognitive diversity to address multi-dimensional tasks that cannot be subdivided into simpler issues. Findings presented in Section 6.2.1 about the assumptions made by participants about diversity concur with Page’s conclusions that although identity diversity contributes to cognitive diversity, individuals do not represent an entire identity category, and it is cognitive diversity that is most beneficial for addressing complexity. In some cases, as Page suggests, it may be possible to target and include relevant forms of cognitive diversity for a particular collaborative task. However, within the researched collaborations, goals were not always clearly defined or agreed. This aligns with the goals paradox and Vangen and Huxham’s (2012) conceptualisation of collaborative goals as “an entangled, dynamic, and ambiguously hierarchical web of variously perceived, higher- and lower-level goals” (p.731). In practice, collaborative membership was additionally found to depend on factors such as funding requirements and previous interactions. Page’s suggestion to initially classify the type of task is a useful one, and it aligns with the suggestion in the previous sub-section to consider the nature of the collaborative context and problem to determine whether it is simple, complicated, complex or chaotic, but it may be challenging to do so in practice when collaborative goals are unclear and membership is limited.

The results of this research align with calls within the TCA for active management of collaboration in order to realise the synergistic collaborative advantage that partners hope to achieve when they come together (Huxham and Vangen, 2005). This research revealed that the convening of diverse partners alone is not enough to deliver change through collaboration. Within CCI, the endowment of EDO positions demonstrated recognition of the important role they play in managing the CCI collaboration, however the funding available for collaborative processes could still be argued to be limited (see Section 7.3.2). Funding for the coordination of the Natural Capital Hub over the course of 15 months enabled the development of a collaborative value proposition but still proved insufficient over this period to manage partners and productively synergise across their differences to sustain the collaborative programme. And in the BioRev project, careful consideration, management and investment were required to enable the diverse group of participants to coproduce an innovative research and action agenda within the project’s limited confines. There is a need for greater recognition of the importance of active management of interorganisational collaboration, particularly when diverse. Substantial sustained resources are needed to manage diverse collaborations.

Diverse participation was identified in findings as one of numerous conditions that enable the process of innovation, alongside: time, space, freedom, flexibility, funding, ability to take risks and appropriate decision-making processes (see Table 11). ‘Innovation’ tended to be used to describe the hopeful emergence of novel solutions through diverse collaboration, however analysis revealed an underappreciation of its association with risk. In order to derive synergy and innovation from diverse groups, participants need to have the time, space and flexibility to interact and explore together. These conditions were intentionally enabled in the BioRev Initiative, allowing a self-selecting group to coproduce...
innovative outputs from the short term collaborative project. In CCI, time, space, flexibility and funding are scarcely available, particularly for partners that are funded primarily through projects, and cultural expectations for evidence-based certainty restricted risk-taking, exploration and innovation.

**Responding to change as a collaboration**

In addition to striving to achieve change, I observed the need for collaborations to respond to many unforeseen changes during the research period. Findings considered the degree to which collaborations were flexible (or rigid) with respect to their process, content and deliverables and found that this was impacted by: the level of the collaborative activity (i.e. project, programme or entire sustained interorganisational collaboration), the nature of collaborative aims (e.g. to test a hypothesis, shift policy or change behaviour), disciplinary background, personal preference and cultural expectations (see Section 5.4).

At the level of collaborative programmes and entire interorganisational collaborations, aims were found to be broader in nature which afforded some room for flexibility, and there was an intention to be “agile and responsive to emerging conservation issues” [2020-09-09KD–Draft_of_CCI_Strategy]. The adaptive management and adaptive governance literature calls for continuous learning (Folke, Hahn, et al., 2005: 447), ‘adaptive expertise’ (Armitage, Alexander, et al., 2015) and flexible and collaborative decision-making at broader institutional levels (Armitage, Plummer, et al., 2009; Wyborn, 2015c); however, complex collaborative structures and the size of collaborative partners made adaptability challenging in practice. Collaborative decision-making processes required adequate time which prevented ‘rapid reactions to emerging issues in a unified voice’ [2017KD–CCI_Influence_Agenda_Framework]. These findings align with the ‘stability-flexibility tension’ identified by Provan and Kenis (2008) and the observation that collaborations like CCI that are structured with a network administrative organisation (the EDO) “favor stability” (p.245).

Additionally, organisational partners seeking to impact policy through evidence-based informing perceived the need to be ‘impartial’ (see Section 6.3.1) and this limited CCI’s ability to have a public position or collective response to societal issues (such as climate change) that arose during the research period. Collaborations should consider whether it is possible for them to be flexible and adaptive to change given their level of collaborative activity, and the size and means of influence of their partners. It may be unrealistic to expect a collaboration such as CCI to be agile and responsive to change given its structure and the size and nature of its partners. Alternatively, the BioRev Initiative, as a collaborative project of individuals, was far more flexible and able to adapt to changing circumstances; however as a discrete project its impact may not be sustained over the long-term.
Working more effectively across many forms of difference

Conservation, as a mission-driven field and applied science, inherently involves working across many forms of individual and organisational difference. As a field, conservation is more contested and diverse than many people who identify as conservationists realise (Sandbrook, Fisher, et al., 2019). Section 2.2.1 about the context of conservation illustrated that there is not one unified and agreed conception of what conservation is, and it is therefore important to note that this discussion draws on findings derived from the two researched conservation settings, and does not necessarily speak for the entire field.

Within the researched settings, individuals were found to differ in many ways including: the conservation approaches they use, their disciplinary backgrounds, philosophical positions, career stages, values, gender and geographies (see Sections 6.3); and organisations differed in terms of their means of influence, type and funding (see Section 6.4). Collaboration across these various forms of difference was deemed important for conducting conservation better (Section 5.2.1) and fundamentally differently (Section 5.2.2). In-depth analysis of data collected during RO-AR revealed a number of challenges that participants faced when collaborating across individual and organisational differences, as well as potential ways to enable collaboration across these differences (see Table 14). Many of the challenges identified relate to a lack of understanding between different groups, cultures or perspectives. In general, the suggestions presented in Table 14 (see Section 6.5) for ways to enable collaboration relate mostly to ‘soft’ skills and social interaction; for example the importance of co-location, clusters of participation and awareness raising. As Curşeu and Schruier (2017) highlight, synergy can only be generated through effective interaction, and conservationists could draw more on the extensive literature on approaches to improve communication (Heath & Isbell, 2021), dialogue (Heath & Isbell, 2021; Jeffrey, 2003), consensus making (Haug, 2015) and ground-rules for interaction (Hall & Watson, 1970) within diverse collaborations.

Much of the literature about diversity in (conservation) collaboration (see Section 3.4) focuses on a single or few forms of difference. The findings of this research have clearly shown that the studied conservation collaborations involved simultaneously working across many forms of difference, and that these differences interact and intersect. Calls by Gibbs (2009) for holistic conceptualisations of culture that capture its dynamic and multi-dimensional nature are supported by these findings and the conservation literature needs to expand in this direction.

Some of the forms of difference explored in Chapter 6 – Diversity Findings are well studied and reported within the conservation literature (e.g. interdisciplinarity and transdisciplinarity); however others have not been explored. Findings emphasise the importance of, and challenges associated with, collaborating across certain differences that are not easily discerned (i.e. not visible and rarely openly discussed) such as: philosophical perspectives, different sources of organisational funding and different ambitions for change.

Additionally, the interconnections between different attributes of difference can be difficult or even impossible to observe, but were found to have important implications for researched collaborations. The use of surveys in combination with other methods made it possible for this research to explore the
interplay between collaborative actors and contexts, and to reveal relationships between differences in a way that would not have been possible otherwise (see Section 4.2). Analysis of survey data in combination with qualitative observations revealed, for example, that female respondents tended to be younger and more relativist in their ontological perspectives (see Section 6.3.5), and respondents with experience of qualitative research approaches tended to be less senior and more relativist in their ontological perspectives within CCI (see Section 6.3.3). These findings have important implications given that members of the CCI Council are predominantly male and all very senior, and as a result decision-making for the collaboration is less likely to include relativist perspectives or qualitative expertise.

8.2.2 How can the field of conservation itself be changed to further enable effective collaboration to achieve change in complex systems? (RQ1b)

The results of this research led to a realisation that change is needed in the field of conservation (as observed within the researched contexts) in order to enable more emergent collaboration that can address complexity and realise synergy from diversity. Firstly, this requires changes to conservation ‘culture’ – the “habitual ways of being and acting” within the field of conservation (Vangen & Winchester, 2014: 687). Lack of inclusivity currently limits the realisation of synergy across disciplines, organisations, approaches, and other forms of difference when some perspectives are heard and valued more than others. In order for conservationists to work effectively in collaboration towards change within complex systems, there is also a need to find ways to embrace uncertainty – since such systems cannot be controlled or predicted – and to reconceptualise ‘failure’ as an essential component of learning processes. Secondly, this requires changes to conservation institutions. The current funding of conservation, which occurs largely through distinct projects and grants (Adams, Hodge, et al., 2016; Curtin, 2014; Guerrero, McAllister, et al., 2013), prioritises the achievement of short-term, measurable and pre-determined impacts over emergent objectives oriented towards agreed principles; and this is discussed in detail below. Narrow expectations or requirements for quantified evaluation of collaborative outcomes further restrict the ways that conservation collaborations are able to work together.

Change from within or from outside conservation

The BioRev Initiative explored whether and how the field of conservation could be fundamentally changed, whereas change within CCI was generally oriented towards increased effectiveness. If CCI can be considered to represent or align with the conservation mainstream, it is logical that fundamental transformation to something completely different or to something that challenges the current system is likely to be considered threatening and uncomfortable within this context.

It is important to recognise that these examples of collaboration take place at different levels and that this impacts the feasibility of different types of change and how they can be approached. As a
discrete collaborative project, BioRev was able to flexibly deploy the funding it received over a finite period to convene and explore diverse perspectives and ultimately produce an innovative research and action agenda for biodiversity. It is yet to be seen what impact this may have over the long-term. Alternatively, as a sustained interorganisational collaboration, CCI involves long-term relationships between ten organisational partners that are all working within the confines of the current conservation, economic and in some cases academic systems. Although the collaboration has achieved a number of impressive outcomes by working in collaboration across organisations, approaches and disciplines, it is not perceived to have fundamentally transformed the field of conservation.

The BioRev Initiative was perceived to be able to challenge the status quo of conservation and innovatively consider alternatives because it took place ‘outside’ the conservation mainstream. Although participants of the BioRev Symposium were found to have a diversity of skills and experience, many did not consider themselves conservationists, and results showed that multiple participants perceived ‘mainstream conservationists’ of different types to be underrepresented (see Box 5, Section 5.2.2). This may have enabled voices that are typically marginalised within conservation, or those considered to lie outside the realm of conservation, to be heard and included. However, there were also concerns about how the outputs of the project would be perceived by the conservation mainstream, and whether and how they could actually influence change in conservation. The hope, as expressed by one of the participants, was “to create a movement so that it has a momentum of its own” [2019-05-30FN–Boston_Biodiversity_Talks, paraphrased]. The project did inspire a variety of publications, but it was always a short-term project and it is unclear whether one could argue it has generated a sustained momentum.

Results therefore showed that there are both benefits and challenges to approaching change collaboratively from within the mainstream system and from outside it. Additional research is needed to further explore the extent to which mainstream conservation organisations and sustained interorganisational collaborations can contribute to change of the field of conservation itself, or whether this would be more effectively orchestrated by groups of individuals (within or outside mainstream conservation), non-conservationists, and/or revolutionary or disruptive projects (as opposed to sustained collaborations).

**Improve inclusivity and acknowledge power asymmetries in conservation**

The concept of inclusivity was found to be relevant and useful in relation to diversity findings. As defined by Shore et al. (2011), inclusivity simultaneously enables *uniqueness*, “the need to maintain a distinctive and differentiated sense of self”, and *belonging*, “the need to form and maintain strong, stable interpersonal relationships” (p.1246), such that actors feel they are accepted and can contribute in their own way (see Section 3.4.1).

Diversity findings (see Sections 6.3 and 6.4) showed that certain perspectives and approaches dominated over others in research settings, particularly within CCI. Conservationists who are social
scientists, have relativist philosophical perspectives or who use qualitative approaches and knowledge were more likely to feel ‘assimilated’ through an expectation to conform to dominant conservation perspectives (i.e. belonging without uniqueness; ibid). Comments such as “… there are non-scientists hiding all over the place” [2018-07-13TR-033-05_interview] clearly demonstrated that certain groups did not feel that they could be unique in ways that differed from the dominant majority.

This suggests that power asymmetries exist among individuals in conservation. Drawing on Pierre Bourdieu’s conception of social capital, certain conservation actors (e.g. quantitative biological scientists) are better able to accrue benefits “by virtue of participation in groups and on the deliberate construction of sociability for the purpose of creating this resource” (Portes, 1998: 3). Those with social capital are able to exert power and reap benefits in the form of advantageous network position, institutional affiliations and even direct access to economic resources (ibid).

Under the theme of ‘using power’, the TCA describes how ‘micro-level power’ that arises during everyday interactions between individuals can influence “the purpose of a collaboration and the choice of issues that the members attend to.” (Huxham & Vangen, 2005: 179). Power asymmetries are common yet understudied in the context of interorganisational collaboration (Huxham & Beech, 2008; Huxham & Vangen, 2005). As with other collaborative issues highlighted through the TCA, the key is to explore how collaborations can best manage such circumstances in practice. According to Brisbois and de Loë, (2015):

While a number of authors recognize the importance of ensuring inclusive, equitable representation... addressing barriers to participation in collaborative processes also requires addressing deeper issues that broadly prevent marginalized parties from having a real voice in society. (p.785)

Within researched conservation settings, ‘assimilated’ perspectives struggled to have a voice. This impacts the trajectory and dynamics of collaborations and potentially limits the potential for synergy from their diversity. It is recommended in the literature that societal power-related issues should be explicitly acknowledged and then addressed “at the collaborative group scale” (Brisbois & de Loë, 2015: 787). Additionally, conservation collaborators are advised to: be attentive to diverse partners and power dynamics, seek opportunities for those with power to share it, identify core shared values and attend to “pre-existing distrust” (Dietsch, Wald, et al., 2021: 7). This suggests that open acknowledgement of the power asymmetries identified through this research is an important first step towards actively managing more inclusive collaborative processes within conservation contexts.

In their conceptualisation of leadership in collaboration, Vangen and Huxham (2003b) consider that in order to lead effectively in practice, managers must facilitate the group to work together while pragmatically pushing it forward. Supportive facilitation is shown to involve “embracing the ‘right’ kind of members... empowering members to enable participation... involving and supporting all members... [and] mobilizing members to make things happen” (p.66). Findings from this research suggest that collaborative managers should particularly focus on empowering and involving those with voices that are being assimilated in conservation.
The pathway to collaborative conservation

In the final chapter of their book *Collaborating for our future: Multistakeholder partnerships for solving complex problems*, Gray and Purdy (2018) distinguish four possible configurations within a field (such as conservation) on the grounds of the degree to which purposes are shared within the field (i.e. how institutionalised the field is) and the extent of power differences within the field (see Figure 22). They also describe how institutional changes from within and from outside the field, which they call ‘pathways’, can shift its configuration. They argue that ‘quiescent’ fields appear to have a shared purpose but also have substantial power differences that need to be addressed through ‘consciousness raising’ (Pathway 1, Figure 22), where oppressed groups, “overcome the culture of silence and muster enough power to change the structure of domination within the field” (ibid; p.192). From there, the field becomes ‘volatile’ in that purposes are no longer shared and power differences remain. Through processes of ‘contention’ that challenge systemic power structures (Pathway 2, Figure 22) those who have been less powerful are able to establish a legitimate voice and power differences are gradually minimised. It is at this stage when a field is ‘fragmented’, Gray and Purdy argue, that collaboration can be most effective.

![Figure 22. Pathways of change within a field — The four field configurations, and four pathways of change between them (reproduced directly from: Gray & Purdy, 2018: 192)](image)

Using Gray and Purdy’s (2018) framework to consider the findings of this research, the field of conservation (as studied through the two research settings) could legitimately be described as ‘quiescent’ due to the aforementioned power differences, and therefore in need consciousness raising and contention pathways in order to enable more effective collaboration. These pathways are described as follows (ibid):
**Consciousness raising** is a signification process that enables oppressed peoples to come to understand their oppression and take steps to reframe their own identities. This pathway may involve the most difficult shift because it necessitates that the oppressed members of a field overcome the culture of silence and muster enough power to change the structures of domination within the field... (p.192-3)

[Contention]... enables suppressed resentments to emerge... but not without potentially explosive conflict because this pathway threatens existing structures of signification, legitimation and domination that serve elite interests... Contention introduces conflict into a volatile field, in this case through mobilizing human resources to engage in protest and exert coercive pressure on elites. (p.194)

Using an inclusivity lens, this research shows that in order for conservation collaborations to realise collaborative advantage from their diversity, there is first a need to ensure that the involved voices and perspectives can be heard. Consideration of research findings in light of Gray and Purdy’s (2018) work suggests that: conservation practice as an approach, the social sciences, relativist philosophical perspectives and qualitative approaches and knowledge may currently be ‘assimilated’ by the more dominant approaches and perspectives within the conservation mainstream, and that processes of consciousness raising and contention are needed to improve inclusivity before conservation collaborations can make the most from their diversity.

**Fundamental change to conservation funding to accommodate complexity**

Conservation funding needs to fundamentally change in order to enable collaboration that can address complexity. At present, conservation (within researched contexts) is ‘projectified’ and primarily funded through short-term projects that must demonstrate quantitative evidence of pre-determined impacts. The detrimental ramifications of funding conservation in this way are underexplored (Munck af Rosenschöld & Wolf, 2017; Sjöblom & Godenhjelm, 2009), and this section of the discussion considers why there is a need for a fundamental shift in how the field of conservation is funded and how it needs to change.

The scarcity of conservation funding described in the literature (see Section 2.2.4) was discernible within research settings, and data were collected before the impacts of the global pandemic were felt, which are expected to make the situation worse. People and organisations are trying to do an incredible amount with the limited funding they have. Literature suggests that conservation organisations may be incentivised to collaborate in order to survive within insecure funding environments (AbouAssi et al., 2016) or to access funding that requires collaboration (Sowa, 2009), however results from practice show that the funding that is available to conservation collaborations is either insufficient or fails to cover the actual costs of collaborative processes. A contradiction was perceived in practice between the need/expectation for collaboration to resolve societal conservation issues (that no actor could address on their own), and the failure to adequately fund such collaboration. The failure to adequately fund
collaboration could be due to a lack of understanding about what it costs, or because collaboration is not considered a funding priority, or both.

Findings support observations made by Witesman and Heiss (2017) that the costs associated with non-profit collaborations are systematically underestimated. There is a need for greater awareness among conservationists and the funders of conservation of the costs involved in sustaining and managing collaborative programmes and interorganisational collaborations. Given these costs, it is important that the need for collaboration is carefully considered, and reserved for instances where there is genuine need and realistic potential to derive collaborative advantage together.

Because conservation funding is currently oriented towards the delivery of measurable project impacts, findings revealed that many conservationists perceive collaboration to be superfluous or additional to core conservation work that is already underfunded. Financial incentives need to change so that conservationists can legitimately and effectively work through collaboration, when warranted; otherwise collaboration will continue to be considered a ‘side-of-desk’ activity, and it is unlikely to be effective without adequate investment.

Results about funding collaboration at programme level (Section 7.3.2) and the level of entire sustained interorganisational collaboration (Section 7.3.3) support recommendations made by Hopkins et al. (2021) that funding should “reward long-term investment in collaborative practice” and support existing relationships where possible (p.97). Because funding is scarce in conservation, it is common for actors to come together at short notice to bid for collaborative funding, whereas groups that have been working together from the ‘bottom-up’ over longer periods can struggle to secure the funding they need to support collaborative processes. Collaborations at different levels and within both research settings managed to raise significant funding for collaborative processes (e.g. for coordination of the Natural Capital Hub, for BioRev project processes, for the refurbishment of the David Attenborough Building and for the establishment of the ELP Programme), however this funding either proved to be insufficient (e.g. Natural Capital Hub) or came with restrictions that limited the ways collaboration could be conducted (e.g. determination of research agenda as the BioRev deliverable, need for quantified evidence of pre-determined impact, or expectation for ‘transformational change’). There is a substantial need for long-term investment in collaborative process in conservation. Scarcity of such funding was found to limit the availability of time and flexibility for exchange, interaction and the building of understanding across differences. These are not activities that can easily be charged to discrete project budgets or quantified or tracked, but they remain critically important for collaborations aspiring to derive advantage from their diversity.

As found in the literature, conservationists within researched contexts remained focussed on raising funds that are urgently needed for their work, rather than finding ways to generate an order of magnitude more funding for conservation or address significant power imbalances between funders and conservationists (Section 2.2.4). Overall, participants did not tend to openly discuss or question the power held by funders, and I observed many instances where funding requirements shaped the nature of conservation work, including collaborations. There were calls during the listening phase of the CCI Strategy
Development Process for CCI to collaboratively influence the nature of conservation funding, but this has not, to my knowledge, been taken up. There is a need within conservation literature and in practice for more critique of the power imbalances between funders and conservationists, and future research could explore whether and how conservationists and funders could work together towards shared ambitions for conservation.

The literature suggests that complex contexts require experimental management that embraces uncertainty and involves leaders “who set the stage, step back a bit, allow patterns to emerge, and determine which ones are desirable” (Snowden & Boone, 2007: 5). The results of this research show that current funding in conservation does not allow for this. The observed ‘projectification’ and focus on narrowly defined evidence incentivise quite the opposite – short-term, discrete actions with pre-defined outcomes. The general trend described in the literature towards evidence-based practices (Freeling & Connell, 2020), and philanthropic pressure to use theories of change (Ferris, 2016) also aligned with findings. These funding conditions restrict the ability of collaborations to use process-based approaches or to work emergently.

Bottom-up, more emergent collaborations such as the Natural Capital Hub, ‘the how’ or ecosystem within CCI and the BioRev project, can be the hardest collaborative initiatives to fund because conservation funders expect to know upfront specifically what it is they are funding, and how this will be evidenced. Findings show that diversity and flexibility are important for emergent and innovative collaborative processes, however these are not currently incentivised. In order to address complexity, conservation funding needs to fundamentally shift from supporting the achievement of predetermined collaborative impacts to supporting adaptive and emergent collaborative processes.

8.3 How can the TCA be extended through RO-AR on collaboration in conservation such that it can be recognised as valuable within this field? (RQ2)

The TCA points to the paradoxical nature of collaboration (Vangen, 2016) and shows how a paradox framing can be used to conceptualise insights about governing (Vangen, Hayes, et al., 2015), leading (Huxham & Vangen, 2000b; Vangen & Huxham, 2003b) and managing collaboration (Huxham & Vangen, 2005; see Section 3.2.1). In this section my research demonstrates how a paradox framing can also be helpful within the context of conservation, and uses the findings from this context to expand theory through the identification of a change paradox and conceptualisation of a management tension related to managing different ambitions for change within a collaboration.

Change needed in the world

The conservation literature presents copious evidence of the various ways that nature is being degraded or lost at a global scale (see Section 2.2.2), and makes compelling arguments for the need for
change at and across different scales (Westley, Olsson, et al., 2011). Some references also call for change to the field of conservation itself in order to improve and maintain good relations with nature (Dick, Rous, et al., 2017; Kareiva & Marvier, 2012). Transformational change is recognised as needed, but also as inevitable and unpredictable (e.g. Marquet, Naeem, et al., 2019; Wyborn, van Kerkhoff, et al., 2016). Interorganisational collaboration offers the possibility of joining forces to push for desired change that is understood to be badly needed, since the level of change required cannot be achieved by any single actor on their own, and necessitates working across organisations, disciplines, approaches, scales, and jurisdictions (see Section 2.3.1).

Participants within both research settings acknowledged the need for change within their visions, missions, aims and objectives; however, the individuals and organisations involved had fundamentally different perspectives about what types of change were needed and how change could be approached. These differences were perceived to stem from different understandings about ‘change’ (see below) and different values held by individuals (see Section 6.3.5), including their orientation with regards to pragmatism and idealism (see Sections 5.2.1 and 5.2.2). Individual and organisational perceptions about ‘fundability’ were also observed to impact decisions about what type of change were needed and how to achieve them (see Section 7.4.1). For example, because funders often require measurement of impact, participants tended to assume that broad or open-ended collaborative aims would be less fundable as they are inevitably more difficult to quantify. Conservation, as discussed before, is a ‘wicked’ issue and the inherent complexity results in vastly different perceptions and understanding about the nature of change required.

Different types of change to address societal meta-problems in conservation – the change paradox

A paradox is a “persistent contradiction between interdependent elements” (Schad, Lewis, et al., 2016: 6), and a tension “results from the presence of contradictions and the attempts to resolve such contradictions” (Das & Teng, 2000: 84; see Section 3.2.1). Vangen (2016) explores how a “paradox lens may inform the development of theoretical conceptualizations through a focus on detecting and naming paradoxes, identifying and expressing tensions, and developing reflexive conceptual constructs” (p.4). The TCA identifies collaborations as inherently paradoxical in nature (Vangen and Huxham, 2013) and conceptualises more specifically a culture paradox (Vangen & Winchester, 2014) and a goals paradox (Vangen & Huxham, 2012) with associated management tensions (see Section 3.2.1). Working within the context of conservation, this research additionally identifies the presence of a change paradox.

I conceptualised the change paradox through consideration of research findings in combination with insights from the TCA and relevant change literature (see Figure 23). It depicts two contradictory forms of change that are simultaneously needed when addressing societal meta-problems in conservation. At one extreme, pragmatic change is needed to keep the current conservation system functioning (Sharpe, Hodgson, et al., 2016), but this may not address the root causes of experienced
problems. At the other extreme, idealistic change is needed to address the root of problems, but the means of doing so may lie outside what is currently considered possible, and may be limited by the confines of existing systems. This presents a paradox where contradictory forms of change, that each have advantageous and disadvantageous elements, are simultaneously needed and lead to tensions within collaborations that seek to address societal conservation meta-problems in practice.
Figure 23. The change paradox – the simultaneous need for pragmatic (first order or First Horizon) change, and idealistic (higher order or Third Horizon) change, which was found to lead to different tensions during the practice of collaboration; where ‘+’ indicates advantageous elements, and ‘-’ indicates disadvantageous elements. Illustrative quotes are included (inspiration from Figures 5 and 6 Vangen & Huxham, 2012: 24–25). Existing related conceptual ideas including ‘orders of change’ (Bartunek and Moch, 1987) and the ‘three horizons’ (Sharpe et al., 2016) are incorporated from the literature.
Within all of the collaborations studied during this research, detectable tensions (empiricism) arose relating to differences in participants’ ambitions for change. Findings showed that in each collaboration, some participants were squarely focussed on achieving measurable, tangible impact within the confines of what they understood to be possible, which I refer to as ‘pragmatism’ (see Section 5.2.1); some set their ambitions on changing what was currently possible in order to achieve what they believed was needed, which I refer to as ‘idealism’ (see Section 5.2.2); and the views of others were positioned between these extremes or were a combination of the two. An inherent paradox between extreme positions on change was intuited (rationalism) through an in-depth analysis of data relating to observed tensions in combination with a consideration of relevant change literature, as described below (see Figure 24). Focussed collaborations that operate within simple or complicated contexts (i.e. not ‘wicked’; Snowden and Boone, 2007) may not involve a juxtaposition of these contradictory forms of change. However, ‘supraorganisational collaborations’, that aim to solve “‘metaproblems’... that is, multi-layered problems cutting across entire societies” (Pasquero, 1991: 38), operate at a broad scale within complex contexts and are therefore believed to simultaneously require both pragmatic and idealistic forms of change.

![Figure 24. Conceptualising the change paradox](image)

**Figure 24. Conceptualising the change paradox** – A process that involved a combination of empiricism (data collected through observation) and rationalism (inference based on analysis of data and consideration of relevant literature). Items in grey are conceptual, the thick grey arrow shows potential causality, and narrow arrows represent research activities.

Relevant insights from organisation development and systems theory literature (introduced in Section 3.3.2) were drawn on during the conceptualisation of the change paradox. Bartunek and Moch (1987) identify what they call ‘orders of change’, where first order change refers to “tacit reinforcement of present understandings”, and higher order change (a combination of their second and third order change)
refers to ‘conscious modification’ of paradigms and potentially an awareness about how to change them (p.486, see Section 3.3.2). These orders of change complement the distinction made between pragmatic and idealistic change.

The Three Horizons framework, developed by Sharpe and colleagues (Sharpe, 2013; Sharpe, Hodgson, et al., 2016), presents another useful characterisation of change that is compatible with research findings. The Three Horizons framework (see Figure 25), is made up of three coloured lines, “stretching into the future from the present”, which each represent a, “pattern in the way things are done in a particular area of interest” (Sharpe, Hodgson, et al., 2016: 4). The first horizon (H1) represents the current, everyday pattern of ‘business as usual’. Incremental change can take place within this horizon to reinforce and reproduce familiar patterns, but eventually it becomes ‘unfit’ under emerging conditions. The third horizon (H3) represents the emerging successor of the first horizon which is “growing on the fringes of the present system, and developing new ways of meeting the emerging conditions and possibilities” (p.5). The second horizon (H2) represents the disruptive and innovative transitional activities that are attempted in response to changing conditions to bridge the first and third horizons. Some innovations (H2+), “help extend the H1 systems and facilitate the emergence of H3 systems”; some innovations (H2-), “will be absorbed back into the H1 systems and contribute only to marginal or incremental change”; while many other innovations will fail altogether (p.5). Importantly, each horizon, to a greater or lesser extent, “is present at all times”, and essential elements of H1 remain even after H3 has taken over (ibid, p.5). This supports my representation of this phenomenon as a paradox between persistent, interdependent elements; there is simultaneously a need for incremental change to keep ‘business as usual’ functioning, as well as idealistic innovation towards fundamental change to resolve the root of problems currently faced.

![Figure 25. The Three Horizons framework – a conceptual representation of the prevalence (the extent of dominance) of three patterns and how they change over time, where Horizon 1 (H1) represents the current declining pattern of ‘business as usual’, Horizon 3 (H3) represents emerging future pattern, and Horizon 2 (H2) represents the innovative transactional activities that either get integrated back into H1 (H2–), or push towards the emergence of H3 (H2+) (figure reproduced directly from: Sharpe, Hodgson, et al., 2016: 5).](image)

Managing different ambitions for change within a collaboration
Detecting and naming the change paradox (in the previous sub-section) is the first step towards using it as a theoretical conceptualisation in collaborative practice (Vangen, 2016). The next step draws from the tensions observed to further conceptualise a *management tension* relating to the overtness of different ambitions for change within a supraorganisational collaboration (Huxham and Beech, 2003).

Change was a central consideration for the researched conservation collaborations within both CCI and BioRev. Despite the importance of this theme, participants of these collaborations did not openly discuss the types of change they aimed to achieve together or the approaches they intended to use. Findings showed that discussion about change were either not prioritised or actively avoided, and revealed that different ideas about change were perceived by managers to be contentious and potentially insurmountable. However, avoiding the issue altogether also proved problematic in practice for collaborations.

In the Natural Capital Hub, participants’ drastically different ambitions for change concerning the global economic system led to difficulties in narrowing down goals for the collaboration and co-managers did not feel it was something that the group should openly discuss (see Figure 13, Section 5.2.2). I observed in meetings that some participants who were more pragmatic wanted the collaboration to “deliver” something tangible (e.g. partnering with a multinational corporation to internalise costs to biodiversity) rather than getting caught up in an “intellectual debate”; while other participants who were more idealistic in their outlook felt this intellectual conversation was central and that tangible proposals would not actually address problems of importance [2019-03-13FN–NCWG_meeting]. This was believed to contribute toward the group’s inability to “coalesce around” one core big idea and the Value Proposition that was produced attempted to cover a bit of everything and ultimately failed to get the approval of the CCI Council.

During the CCI Strategy Development process, a tension was observed between the CCI Council who are responsible for decision-making and governance of the collaboration, and members of the wider CCI community who called for the collaboration to be “bolder” and more ambitious. Members of the CCI Council, who are senior representatives from each of the partner organisations, were observed during meetings to be very ambitious but ultimately directed by the pragmatic responsibilities of keeping their organisations and the collaboration going, while severely limited by the scarcity of time and resources. Many participants across CCI voiced idealistic ambitions for the collaboration when consulted during the listening phase, including calls for it to use its “power to change how funding works in conservation”, and “develop and promote joint statements on key issues” [2019-11-28 RD – LP Summary Report]. In this instance, differences in power and responsibilities compounded with resource limitations to impact collaborative ambitions for change, and what decisions were made.

Tensions between pragmatic and idealistic ambitions for change were observed throughout the BioRev Initiative and these were explicitly acknowledged during discussions I had with members of the organising team. In this instance differences between funders’ missions and their expectations (for a research agenda on the one hand, and wider societal change on the other; see Section 7.3.1) reinforced differences between individuals’ ambitions for what the collaborative project could achieve. The project
aimed to innovate, but it remained unclear to some participants how working outside the conservation mainstream to reconceptualise biodiversity could help to actually transform the field of conservation. While not all participants were satisfied with the process and outcomes of the project, tensions were ultimately constructively managed and utilised to co-produce a Research and Action Agenda which represented a combination of the two (Wyborn et al., 2020).

These examples demonstrate how tensions relating to different ambitions for change impacted the determination of collaborative goals. In general, the themes of change and goals were found to be deeply intertwined in interorganisational collaboration in conservation. Using the characteristics of good practice tensions outlined by Huxham and Beech (2003), I develop a management tension that expresses “alternate (i.e. mutually exclusive) pieces of good practice advice” (p.81) about managing different ambitions for change in collaboration, and the degree to which these are openly discussed (see Figure 26). At one extreme, as observed in practice during this research, collaborations may be unaware of the different ambitions for change held by collaborative participants, or they may choose to avoid discussing these differences openly. Collaborative managers of the Natural Capital Hub and the BioRev Initiative, for example, were observed to avoid conversations about change at the level of the entire collaboration. Unawareness or avoidance may prevent the surfacing of differences that have the potential to disrupt the collaboration or lead to collaborative inertia, however unsurfaced differences may also contribute to tensions. The TCA warns that while open discussion can help a collaboration to achieve “clarity of purpose” during the process of negotiating collaborative purpose, it can also ‘unearth’ irreconcilable differences (Huxham and Vangen, 2005: 55).

At the alternate extreme, collaborative partners could acknowledge differences in ambitions for change and choose to openly discuss these. Although not observed in practice during the course of this research, this ‘good practice advice’ was conceptualised from the ‘framework for dialogue among different actors’ developed by Sharpe et al. (2016). Sharpe outlines how the Three Horizons framework (described above) can be used in practice to facilitate “conversation with diverse stakeholders to assist sense-making and strategic action” (2016: 4). Through the experience of this process, participants can gain an appreciation of the relationship between the present and the future. The approach involves five steps: 1) examining present concerns; 2) exploring future aspirations; 3) exploring inspirational practice in the present; 4) considering innovations in play; and 5) drawing attentions to essential features to maintain (ibid, p.5-6). This tool could potentially be used to support collaborative partners (either individuals or organisations) with different mindsets to have a constructive dialogue about change, and to build a better understandings about other perspectives on change. Diversity findings (see Table 13) showed that it would be beneficial for participants to build understanding across a number of differences, including conservation approaches, disciplines, philosophical positions and organisations. Recognising and understanding more about different ambitions for change could also potentially be useful.
Figure 26. The overtness of different ambitions for change management tension. (structure inspired by: Vangen & Winchester, 2014)
The approach is purported to help participants to appreciate that each horizon has important roles to play, and that these are not fixed mindsets but flexible perspectives. The mindset of the first horizon is characterised as *managerial*, “which keeps things going in familiar ways”; the second horizon has an *entrepreneurial* orientation, “that seizes an opportunity”; and the third horizon has a *visionary* outlook, “that holds an imagined future in mind and steers towards it” (ibid, p.7). When discussing complex issues, participants tend to predominantly bring one of these mindsets, and view the others antagonistically. The approach allows participants to see the value of each role and, “by shifting to this inclusive view, representatives of all three horizons can discover more possibilities for acting with shared purpose than they had probably imagined” (Sharpe, 2013: 56).

Two ‘intermediate positions’ are proposed between these extreme “possible courses of action” (Huxham & Beech, 2003: 81). The first of these, ‘raising awareness about change’ could be suitable if collaborative participants are unaware of the different types and approaches of change. Awareness could be raised without directly discussing partners’ perspectives on change through, for example, dissemination of Maes and van Hootegem’s (2011) dimensions of change (see Section 8.2.1 above). It is important to strike a careful balance in terms of what is openly discussed in collaboration, however fostering awareness and understanding about differences could potentially help to navigate them. Awareness about differences may also help managers to observe instances where inclusivity is lacking and extra effort is needed to ensure that all partners can participate and be heard (see Section 8.2.2 above). The second intermediate position, which was observed in CCI, is to develop a Theory of Change (ToC) for the collaboration. With a ToC you ‘start at the end – with your [envisaged] impact – and work backwards to identify a chain of outcomes that are connected together and lead from your activities all the way to impact (and vice versa)” [2019KD–CCI_ToC_consultation_doc]. While this process can increase awareness about the change process and enable the tracking of process, it does not necessarily facilitate comparison between different types of change or ambitions for impact. This process may not be conducive to emergence when it is not clear from the outset what the intended impact should be. van Tulder and Keen (2018) propose a framework and process that could be considered to “construct ToCs that are sensitive and adaptive to the level of complexity that they are facing” (p.316), and literature on developmental evaluation offers valuable insights to support innovation and change in complex systems (Patton, 2011).

Bringing the *change paradox* and the *overtness of different ambitions for change management tension* to the attention of managers of (conservation) collaborations as ‘handles for reflective practice’ (Huxham & Beech, 2003; Vangen & Huxham, 2012) can help them to thoroughly consider change and the degree to which it should be openly discussed within their collaboration. These conceptual tools, consistent with the TCA, highlight that the paradoxical nature of collaborations that aim to address complex societal issues means there is never a single ‘right way’ but instead a constant need to manage the tensions that inevitably arise (Huxham & Beech, 2003; Huxham & Vangen, 2005). Additionally, managers may be “empowered simply by understanding that the problems they are experiencing are inevitable” (Huxham & Vangen, 2005: 79).
8.4 Summary of discussion

This discussion has taken the findings presented in the previous three chapters and used relevant additional references to help progress theoretical conceptualisation and practical insights to address the research questions initially framed in Section 1.3 of the Introduction.

The final chapter will summarise the key points developed in this discussion to clarify the contributions of the thesis.
Chapter 9 – Conclusion

9.1 Introduction to Chapter 9

From the very beginning this study straddled the boundaries between research and practice and aimed to make both theoretical and practical contributions (see Figure 27). In this final chapter I summarise the practical contributions the thesis makes for collaborators who are navigating complex conservation challenges (Section 9.2). I then outline how the thesis extends collaborative theory through its exploration of collaboration in the context of conservation (Section 9.3). Together these insights make novel contributions to the extension of both theoretical and practical knowledge and begin to address gaps in the literature identified in Chapters 2 and 3.

This conclusion also includes recommendations for future research (Section 9.4) and it closes with a brief reflection about how my research approach directly relates to the study's findings (Section 9.5).

9.2 Enabling conservation collaborators operating within complex systems

This thesis contributes valuable insights into how conservation collaborators operating within complex systems can be enabled in practice at two different levels. These insights contribute 'actionable knowledge' (Argyris, 2005) derived from researched collaborative experiences but presented in a style that reflects their general relevance within the context of conservation (Eden & Huxham, 2006).

First, the thesis identifies seven ways that collaborators can work together to achieve change in complex systems (RQ1a), as detailed in Section 9.2.1. These insights are of direct relevance and use to conservation collaborators. Secondly, the research identifies four ways that the field of conservation can itself be changed to enable more effective collaboration (RQ1b), as shown in Section 9.2.2. These higher-
level changes require a sustained and coordinated effort, but they are critically important to enable collaborations to effectively address the complex challenges faced in conservation.
the thesis makes two types of contributions. It offers insights to help enable collaborations addressing complex conservation issues (RQ1a and b) and extends collaborative theory (RQ2). The ‘*’ represents the direct inclusion of TCA concepts in practice with collaborations.
9.2.1 Enabling collaborators to achieve change

Drawing on the Discussion presented in Chapter 8 and the earlier presentation of findings and review of relevant literature, this section contributes seven key insights for conservation collaborators.

Collaborators can work together to achieve change in complex systems by:

1. **Acknowledging the complexity and cost of interorganisational collaboration** – The complexity of interorganisational collaboration is underappreciated in conservation practice and literature. The incorporation of insights from the TCA within collaborative conservation settings can, and did, help to increase awareness of the inherent complexities of interorganisational collaboration. There is a need for greater awareness and more realistic expectations among conservationists and the funders of conservation regarding the time, effort and other resources needed to sustain and manage collaboration, especially at programme and interorganisational collaboration levels.

2. **Considering the nature of their collaborative context** – Collaborators should consider whether the conservation problem they seek to address or the context within which they operate can be considered simple, complicated, complex or chaotic as this distinction fundamentally impacts how change can be approached. Linear, pre-determined approaches to change are not appropriate within complex contexts that are dynamic and unpredictable.

3. **Working more effectively across multiple forms of difference** – Conservation inherently involves working across a variety of differences. The ability to do so effectively is restricted when collaborators lack an understanding of the different groups, cultures or perspectives they are collaborating with. Time, space, flexibility and respect are needed to enable diverse groups to interact and explore together to derive synergy from their differences. These elements are often difficult to measure and fund but they are incredibly important to enable diverse collaborations.

4. **Managing diversity for complexity and innovation** – Diverse collaboration can be beneficial when addressing complexity and when innovation or adaptation is required. Convening diversity is not enough on its own – the importance and cost of actively managing diversity within interorganisational collaborations needs to be recognised. The conceptualisations presented in Section 9.3 below can support the management of diverse ambitions for change within supraorganisational collaborations, and the TCA offers other valuable insights about managing diversity towards collaborative advantage (Vangen, 2017; Vangen & Winchester, 2014).

5. **Clarifying understandings of change** – Change is inconsistently understood and communicated in both conservation literature and practice. Maes and van Hootegem (2011) offer a comprehensive and
multi-faceted characterisation of eight dimensions of change that is useful for understanding change within the context of interorganisational conservation collaboration. Increased awareness of these dimensions could offer clarity and help to prevent avoidable mis-understandings, thereby helping to enable the management of change-related decisions.

6. **Recalibrating expectations for the evaluation of collaborative achievements** – When a collaborative context is complex, there is a need to transition from the common focus on quantified evaluation of pre-determined collaborative impacts towards the incorporation of social factors, integration and in-depth understanding of multiple perspectives and consideration of multifaceted collaborative goals.

7. **Considering whether and how the collaboration can respond to change** – Collaborations vary in the extent to which they are flexible (or conversely rigid) in their processes, content focus and deliverables. A collaboration’s ability to be flexible and responsive when circumstances change unexpectedly, depends on its level of collaborative activity (i.e. is it a project, programme or sustained interorganisational collaboration), size, funding and the means of influence of its partners. These factors should be considered so that collaborators’ expectations for adaptability are aligned and realistic.

9.2.2 **Enabling collaboration through change to conservation**

The process of analysis revealed that some of the most important factors found to restrict the effectiveness of interorganisational collaboration in conservation were contextual, lying beyond the realm of collaborative interactions. The philosophical grounding (Section 4.2) and mixed-methods approach (Section 4.4) of this research enabled it to additionally contribute the following four insights about how the field of conservation itself could be changed to further enable interorganisational collaboration.

**The field of conservation can be changed to enable collaboration by:**

1. **Fundamentally changing conservation funding so it can accommodate complexity** – The funding of conservation remains highly ‘projectified’ and oriented toward the delivery of pre-determined outcomes. There is a need for longer-term and more flexible funding to support collaborative processes under conditions of complexity. This requires the funding of collaborative time and flexibility to enable collaborators to capitalise on their differences and work emergently. It also requires finding alternative approaches to report and measure emergent collaborative processes. There is a need to critique and potentially dismantle the power imbalance between conservationists and conservation funders and to find ways for them to work together towards shared ambitions.
2. **Improving inclusivity to enable collaboration** – Social science approaches, relativist philosophical perspectives and qualitative approaches and knowledge were found to be ‘assimilated’ by the more dominant approaches and perspectives of the conservation mainstream. Consciousness raising and contention (Gray & Purdy, 2018) of these positions within the field of conservation could potentially enable more beneficial collaboration. Collaborative managers should focus on empowering and involving those with assimilated voices. Conservation could also draw more on extant literature about approaches to improve communication, dialogue, consensus making and ground-rules for interaction within diverse collaborations.

3. **Learning to embrace uncertainty and risk** – Uncertainty is inextricably linked with complexity and collaborations operating within complex contexts should recognise this. There is also a need in conservation to reconceptualise ‘failure’ as an essential part of learning within complex systems.

4. **Considering if and how changes to the field can occur through collaboration** – The ability of a collaboration to affect change to the field of conservation is likely impacted by the level of that collaboration (i.e. project, programme or sustained interorganisational collaboration) and its positionality in relation to the mainstream of the field. A collaboration between mainstream conservation partners may struggle to shift the ‘status quo’ it works within, while short-term collaborative projects lying outside the mainstream may struggle to affect and maintain change.

This section has outlined the contributions the thesis makes towards the enablement of conservation collaborations operating within complex systems. The study additionally contributes theoretical conceptualisations that are framed in a way that they can support collaborators to reflect about the decisions they make in practice, as explored in the next section.

### 9.3 Extending theory on the management of collaboration

Analysis of the multiple forms of data collected during this research, followed by a deep consideration of the TCA and other relevant literature, gradually enabled theoretical conceptualisation of key findings. This genuinely interdisciplinary research effort took place within the field of conservation, a context not yet considered during the ongoing development of the TCA. The RO-AR approach, which was comparable to that used in the development of the TCA, led to the identification of change as a central theme for interorganisational collaborations within the context of conservation.

The thesis makes a novel theoretical contribution via the detection and conceptualisation of the change paradox through a combination of empiricism and rationalism. The change paradox describes the persistent underlying contradiction between pragmatic ambitions for change – where collaborators wish to do the best they can within the confines of the current rules and systems; and idealistic ambitions for change – where collaborators wish to address the root causes of problems which may require
fundamentally changing current rules and systems (see Figure 28). The paradox exists at the level of supraorganisational collaboration where both pragmatic and idealistic ambitions for change are needed to address societal conservation issues.

**Figure 28. The change paradox revisited – A novel theoretical conceptualisation of the persistent underlying contradiction between pragmatic and idealistic ambitions for change within supraorganisational collaborations; where ‘+’ indicates advantageous elements, and ‘-’ indicates disadvantageous elements** (inspiration from Figures 5 and 6; Vangen & Huxham, 2012: 24–25).

In addition to this, the overtness of different ambitions for change management tension contributes a novel conceptual tool that conservation collaborators can utilise to support reflection about the best approach to managing different ambitions for change within their unique collaboration. It was conceptualised through the combined consideration of research findings and relevant literature (see Figure 29).

**Figure 29. The overtness of different ambitions for change management tension revisited.**

The transdisciplinary nature of this research means the development of these conceptual tools through a RO-AR approach (Eden & Huxham, 2006) makes them useful in conservation practice as ‘handles for reflective practice’ (Vangen, 2016; Vangen & Huxham, 2014). They are useful theoretically and to support collaborators in the field of conservation to consider: the paradoxical nature of change, the types of change they can strive for collaboratively, and the degree to which they should overtly discuss their different ambitions for change.
9.4 Recommendations for future research

In Section 2.3 I identified a need for additional conservation literature on collaborative process and insights into how conservation collaboration can most effectively be implemented in practice. Sections 9.2 and 9.3 above highlight how this thesis makes novel contributions to knowledge in this area, but there is a need for much more research to help further enable collaborations to effectively address the complex challenges of global conservation.

This is as much about the approach of future research in this area as it is about the specific topics of study. Much of the existing research on conservation collaborations has involved quantified social network analysis that often fails to capture the complexity of the social dynamics involved in interorganisational collaboration (see Section 2.3.3). Social science research approaches have contributed important insights, but participatory and action research approaches remain extremely rare in conservation, and these approaches are needed to produce practical knowledge to inform decision-making in interorganisational collaboration. Action research can additionally help to bridge the ‘research-implementation gap’ in the field of conservation (Lauber, Stedman, Decker, & Knuth, 2011).

I believe that one of the reasons why participatory and action research approaches remain so uncommon in conservation is that, as shown by the results of this study (see Section 6.3), quantitative evidence is perceived by many in conservation to be more valid than ‘anecdotal’ lived experience. This needs to change. Additional action research into the processes used by highly diverse conservation collaborations, particularly those navigating multiple differences simultaneously, would be valuable. In particular, the overtness of different ambitions for change management tension could be further developed through action research with collaborations that are open to discussing their differing ambitions for change, as those observed in this research did not.

Because conservation is a mission-driven field that draws on a broad variety of different disciplines, interdisciplinary research, such as the present study, can make important further contributions. Funding unexpectedly became a key theme of this research and additional interdisciplinary research specifically designed to explore the funding of conservation collaboration is warranted. Such research could explore ways that conservationists and funders could work together in practice towards their shared ambitions for conservation.

Future research into alternative approaches for evaluating and reporting emergent collaboration could help to provide alternatives to the strict expectations for evidence of quantified impact, and help to enable collaboration that is more flexible and responsive. Literature about emergent philanthropy contains useful suggestion that could be explored further in practice within conservation contexts.

Finally, further exploration into the extent to which mainstream conservation organisations and sustained interorganisational collaborations can contribute to change of the field of conservation would be interesting; or whether such change would be more effectively orchestrated by groups of individuals (within or outside mainstream conservation), non-conservationists, and/or revolutionary or disruptive projects (as opposed to sustained collaborations).
9.5 Reflections on my research approach

I have learned as much about working emergently under conditions of complexity through the experience of doing this research as I have from the results. The research began with a broad concept and willing participants within a complex and dynamic setting and from there it evolved unpredictably to this point through flexibility, reflexivity, hard work and luck. In hindsight, the emergent research journey itself is a powerful proof-of-concept of many of the study’s findings.

The RO-AR approach demonstrated the utility of an open-ended, principles-based approach (see Box 7) within a complex context where the practical needs of participants were prioritised. It involved keeping my mind open to practical and conceptual opportunities as they arose, and letting go of possibilities that were not materialising. The pathway was not straight. The RO-AR approach involved constantly adapting and taking a ‘leap of faith’ (Vangen, 2019: 136) that sticking to the principles of my approach would eventually lead to the emergence of a novel and useful contribution (see Box 7). The journey required patience and bravery and involved risk – it was not until the final stages of the process that this story unfolded. Through this experience I learned how to relinquish control and embrace uncertainty; skills I value deeply as I enter the next stage of my career.

As someone conducting action research for and on conservation (Sandbrook, Adams, et al., 2013) I often felt like a foreigner choosing to do things differently. Participants were remarkably open to my involvement in their collaborative work (on the whole), but were puzzled by my approach, especially in the beginning. My insistence that everyone’s unique perspective and lived experience were valued and central to my research was hard for those used to ‘objective’ scientific approaches to accept. Eventually, when the results I was feeding back to participants resonated with their experience and were deemed useful, the details of my approach seemed less of an issue. An orientation towards participants needs in practice coupled with ongoing opportunities to feedback helped to ensure the relevance of results; while rigor was achieved through analysis that centered on naturally occurring data and triangulation with other forms of data (Vangen, 2019). The approach also helped to connect research and practice within a field with a well-documented ‘divide’ between the two (Lauber, Stedman, Decker, & Knuth, 2011).

Collaboration is often over-simplistically proposed as a solution to problems, but in reality it is a complex process that is unique every time. I sincerely hope this thesis does justice to the collaborative experiences I shared with participants, and that its contributions can be of use. I have been invited to present my results to various audiences within the research settings and have been told by members of the CCI EDO, CCI Council and the BioRev Secretariat that my results will be heard and utilised where possible. This in itself is an important affirmation of the validity of the research (see Section 4.3.6).

I believe that more pragmatic research of this kind could help conservationists to bridge the gap between research and practice, integrate with other disciplines, and learn through their experience to embrace uncertainty as we tackle immensely complex issues to do what we can to help nature to thrive.
Box 7. The principles guiding my research approach

Although these were not formalised at the outset of the study, I came to realise as I wrote my thesis that the decisions I made along the way had been guided and honed by broad principles, largely derived from the RO-AR approach (Eden and Huxham, 2006) and the TCA (Vangen and Huxham, 2005). These principles allowed the research to make a unique and robust contribution to knowledge.

Guiding principles:

– Orienting research around the practical needs of participants – not pre-determining specific objectives
– Working ethically and respectfully with participants who are recognised as capable, knowledgeable and experts of their own experience
– Recognising that my understanding of participants’ perspectives will always be partial and that despite my best efforts many perspectives will not be represented
– Acknowledging that collaborative practice is complex and as such: interconnections between issues matter, findings are context-dependent and theoretical abstractions should not be prescriptive
– Recognising that as an active participant in this research I have a responsibility to be reflexive in my interpretation and analysis, and that my own lived experience is a valid and valuable part of the study
– Having a commitment to developing ‘actionable knowledge’ through the use of an approach (RO-AR) that enables theoretical contributions to be useful in practice
References Cited


Bromham, L., Dinnage, R., & Hua, X. 2016. Interdisciplinary research has consistently lower funding


Marzano, M. 2007. Informed consent, deception, and research freedom in qualitative research: A Cross-


Moreno-Serna, J., Sánchez-Chaparro, T., Mazorra, J., Arzhamenti, A., Stott, L., et al. 2020. Transformational collaboration for the SDGs: The alianza shire’s work to provide energy access in refugee camps and


research: lessons learned from research on deliberate practices for transformation. *Current Opinion in Environmental Sustainability*, 20(October): 86–92.


and ecological sciences for natural resource decision making: challenges and opportunities.  


UNFCCC. 2021. *Conference of the Parties serving as the meeting of the Parties to the Paris Agreement: Nationally determined contributions under the Agreement*. Glasgow.


Vangen, S., & Huxham, C. 2003a. Nurturing collaborative relations: Building trust in interorganizational...


Vidal, J. 2019, September 18. We’re losing species at shocking rates - so why is conservation failing? *The Guardian*.


Appendix A – Study communications

A.1 Information poster

Transdisciplinary collaboration in conservation

Collaboration between organisations can be challenging, especially when it involves different sectors and disciplines. This research project will explore innovative approaches to enabling transdisciplinary collaboration within CCI.

It will involve trying out ways to address collaborative challenges in practice, and researching the process and its results (ie. ‘action research’).

The project aims to help CCI address collaborative challenges while contributing to collaborative theory.

How can you get involved?

This is a participatory project that I am co-designing with the CCI Council. It will take place from May 2018 until October 2020. It is a study about collaborative action and will involve ethnographic observation of CCI and its activities to collect naturally occurring data.

The project will also involve: interviews, focus group discussions, feedback sessions (open to everyone in CCI), a Working Group with a committed group of people across CCI institutions and online surveys. It’s completely up to you whether you take part in these activities and you can change your mind at any time.

None of the information you provide will be shared in any way that is attributable to you personally, including in conversation. All information will be kept confidential. Anonymised results will be used in my thesis, for academic papers and in presentations.

I hope you will consider getting involved in this innovative project! Your participation will contribute towards the development of CCI and theory that could help other transdisciplinary collaborations. I will be giving an introductory presentation in the DAB (date tbc) and presenting results periodically throughout the project. Please come along and share your thoughts.

You can find more information on the CCI Intranet or by getting in touch. If you have concerns of any kind please speak to me or one of my supervisors.

Contact details

Lindsey Elliott  
PhD student,  
Open University  
Business School  
E: lindsey.elliott@open.ac.uk  
T: +44(0)7403 822992

Professor Siv Vangen  
Associate Dean, Research and Scholarship, Professor of Collaborative Leadership  
E: siv.vangen@open.ac.uk  
T: +44(0)1908 653059

Dr Karen Potter  
Research Fellow  
(Collaborative Governance)  
OU Business School  
E: karen.potter@open.ac.uk  
T: +44(0)1908 6594609

Delivering the [CCI] strategy requires institutions, and the people who work in them, to cross traditional boundaries between research, policy and practice, between disciplines and between cultures. It involves taking risks, exploring new ways of working and embracing new ideas.  

(CCI Strategy 2012-2020)
Transdisciplinary collaboration in conservation

You are being invited to take part in an exciting research project that will explore collaboration within CCI. This information sheet briefly describes the project and explains what will be involved if you decide to take part.

Innovative approaches in practice
Collaboration between organisations can be challenging, especially when it involves different sectors and disciplines. This research project will explore innovative approaches to enabling transdisciplinary collaboration within CCI. It will involve trying out ways to address collaborative challenges in practice, and researching the process and its results (i.e. ‘action research’).

The project aims to help CCI address collaborative challenges while contributing to collaborative theory.

Who is conducting the project?
My name is Lindsey Elliott.

I am a PhD student in the Department of Public Leadership and Social Enterprise at the Open University Business School.

What will participation involve?
This is a participatory project that I am co-designing with the CCI Council. It is a study about collaborative action and will involve ethnographic observation of CCI and its activities to collect naturally occurring data.

The project will be emergent, evolving as it goes along. My ability to observe CCI activities will be based on developing trust within the initiative and will be continually negotiated over the course of the project. If you have concerns of any kind please get in touch.

Other forms of participation, for which I will obtain individual consent, include:
- Interviews – with a variety of individuals within CCI
- Focus group discussions – with specific groups or institutions to discuss particular issues
- Feedback sessions – I will periodically present findings during the project and actively welcome any feedback you have
- Working group – regular meetings with a small committed group of individuals across CCI Institutions
- Online surveys – if appropriate

Do you need to take part?
It’s completely up to you whether or not you take part in interviews, focus groups, feedback sessions, surveys or the working group.

If you agree to take part, you are free to change your mind at any time without giving me a reason.

What will happen to any information you provide?
All information I have about you and anything you have said will be kept confidential. Transcripts of interviews and discussions will be produced either by me or by a professional transcription company within a month and you are welcome to review them. Any details that could be used to identify you or anyone you mention will be omitted from transcripts. Your name and contact details will be securely kept separately from data. Any extracts from what you say that are quoted in written work will be entirely anonymous.

All data will be stored securely. Digital recordings will be destroyed after completion of the project. Other data from the study will be retained by me in a secure location. Once the study is completed, anonymised transcripts will be deposited in the UK Data Archive, where they will remain available for 5 years.

What will be done with the results?
Anonymised results will be used in my PhD thesis, for academic papers for publication and in presentations. Co-authorship will be considered when appropriate given the participatory nature of the project. I will periodically present findings from the research to CCI throughout and following the research period (from May, 2018 to Oct, 2020). I would be happy to send you a summary of the results.

What are the possible benefits of taking part?
This study is designed to help CCI to address collaborative challenges that the Council has identified as important. Your participation will contribute towards the development of CCI and theory that could help other transdisciplinary collaborations.

Are there any risks?
This research could lead to change within CCI. There is no known risk to individuals who take part in this study.

The research is funded by the Open University Business School.

Contact details
If you have any questions about the project, please don’t hesitate to ask me.

Lindsey Elliott
PHD student, Open University
E: lindsey.elliott@open.ac.uk
T: +44(0)7403 829992

If you wish to contact one of my supervisors about this research or make a complaint please contact:

Professor Siv Vangen
Associate Dean, Research and Scholarship, Professor of Collaborative Leadership, Open University
E: skv.vangen@open.ac.uk
T: +44(0)1908 653059

Dr. Karen Potter
Research Fellow (Collaborative Governance), Open University
E: karen.potter@open.ac.uk
T: +44(0)1908 659459

Thank you for considering taking part and taking the time to read this information.
A.3 Study information sheet – BioRev

Study of the social dynamics of Biodiversity Revisited

Biodiversity Revisited is convening interdisciplinary experts in an intensive collaborative process to critically evaluate current research, policy and action – and to think creatively about the future of the science and policy that underpin biodiversity conservation.

This study will investigate the social dynamics of Biodiversity Revisited. It will form a distinct case study within my Doctoral research about enabling collaboration in conservation (see accompanying project information sheet for more information).

The objectives of this study are:
- To chart shifts in the conceptualisation of the problem and potential solutions to the ‘biodiversity crisis’
- To investigate the impacts of the Biodiversity Revisited process, and
- To generate recommendations for the design and implementation of convening processes that bring together diverse perspectives to deliberate on critical conservation challenges.

How can you get involved?

In order to study the social dynamics of Biodiversity Revisited I will be conducting ethnographic observation of the different elements of the project, including Steering Committee meetings and the convening event. Other forms of participation, for which I will obtain individual consent, include online surveys and in-depth interviews.

None of the information you provide will be shared in any way that is attributable to you personally, including in conversation. All information will be kept confidential and anonymised results will be used in reports, academic papers, presentations and in my PhD thesis. If you have any questions or concerns please get in touch.

I hope you will consider getting involved in this research! Your participation will contribute towards the development of both practical and theoretical insights about collaboration and convening processes in the field of conservation.

Contact details

Lindsey Elliott
PhD student, Open University Business School
E: lindsey.elliott@open.ac.uk

Dr Carina Wyborn
Research Advisor, Luc Hoffmann Institute
E: cwyborn@wwfint.org

Study approved by the University of Montana Institutional Review Board IRB #112-19 ‘Study of the Social Dynamics of Biodiversity Revisited’
Appendix B – Survey questions

B.1 Enabling collaboration in CCI Survey

Introduction

The Cambridge Conservation Initiative (CCI) is an ambitious collaboration between 10 partner institutions and the individuals that work in them. It crosses “traditional boundaries between research, policy and practice, between disciplines and between cultures” and “involves taking risks, exploring new ways of working and embracing new ideas” (CCI Strategy 2012-2020).

This survey forms part of a research project that aims to find ways to enable collaboration within CCI (more details here or contact Lindsey Elliott: lindsey.elliott@open.ac.uk). The survey is designed to help us all learn more about collaboration within CCI by reaching as many individual perspectives as possible. Your views are unique and important!

The survey also aims to initiate collaborative action. Your response will help to shape collaborative activities within CCI. Please ensure that you include your email address on the last page if you would like to be put in touch with other consenting respondents who have complementary skills, knowledge and expertise, receive updates about the research and its findings or join the CCI Fika Group (details included at the end).

Your time is precious. Many of the questions in this survey include opportunities to add description. These details are valuable but if you do not have the time you can stick to the core questions. In total the survey should take between 10-15 minutes to complete.

Your participation in the survey is voluntary and you can quit the survey at any time. All data and results will remain fully anonymous, unless you consent to being contacted for specific purposes. Results from this survey will be presented and used within CCI.

Are you happy to proceed with the survey?

- Yes
- No

Information about you

This first section includes 12 questions about yourself.

1. What is your current organisation? (please tick all that apply if you are involved with more than one)

- BirdLife International
- BTO
- CCF organisation - please specify CCF organisation:
- CCI Services
- CCI Team (Executive Director's Office)
- FFI
- IUCN
- RSPB
- TBA
2. For how many years have you worked for your current organisation(s)?

3. Have you previously worked for, interned with or conducted postgraduate study at any CCI organisation(s) other than your current organisation(s)? Please specify department(s) if this includes the University.
   - Yes - please specify which organisation(s):
   - No

4. What is your gender?
   - Female
   - Male
   - Other - please specify:
   - I'd rather not say

5. What is your age?

6. What is your nationality?

7. What level is your current job? Please use equivalents if these do not match the exact designations within your organisation.
   - Assistant Officer/Administrator
8. In which of the following conservation approaches do you have skills, knowledge or experience? (please tick all that apply)

- [ ] Delivering practical action on the ground
- [ ] Policy knowledge and advice
- [ ] Research and analysis
- [ ] Capacity development
- [ ] Data and information management
- [ ] Teaching
- [ ] Other - please specify:

9. In which of the following disciplines do you have skills, knowledge or experience? (please tick all that apply)

- [ ] Physical sciences - please specify:
- [ ] Arts and humanities - please specify:
- [ ] Biological sciences - please specify:
- [ ] Technology - please specify:
- [ ] Social sciences - please specify:
- [ ] Other - please specify:

10. In which of the following research approaches do you have skills, knowledge or experience?
Hover over options to see definitions. (please tick all that apply)

- [ ] Qualitative research
- [ ] Quantitative research
- [ ] Interdisciplinarity
- [ ] Transdisciplinarity
- [ ] Generalism
- [ ] Specialism
- [ ] Other - please specify:
11. Which of the following philosophies or worldviews do you associate with? Hover over options to see definitions. (please tick all that apply)

- Realism
- Relativism
- Humans as part of nature
- Humans as separate from nature
- Other - please specify:

12. Are there any other types of skill, knowledge or experience that you strongly associate with that haven't already been mentioned? (optional)

Collaboration experience

This second section includes 6 questions about your collaboration experience.

13. In your own opinion:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much experience do you have working in collaboration? (where 0=no experience and 10=extremely experienced)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How collaborative do you consider yourself to be as a person? (where 0=not at all collaborative and 10=extremely collaborative)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How collaborative do you consider your current organisations to be? (where 0=not at all collaborative and 10=extremely collaborative)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. In your own opinion:

<table>
<thead>
<tr>
<th>How well do you understand the purpose of CCI?</th>
<th>Not well at all</th>
<th>Slightly well</th>
<th>Moderately well</th>
<th>Very well</th>
<th>Extremely well</th>
</tr>
</thead>
<tbody>
<tr>
<td>How well do you understand how CCI functions?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How well do you generally understand the other CCI partners?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How connected do you feel with people across CCI?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. Which CCI partner organisation would you say you know the least about?

- BirdLife International
- BTO
- CCF
- FFI
- IUCN
- RSPB
- TBA
- TRAFFIC
- UNEP-WCMC
- University of Cambridge
- Prefer not to say

16. What types of collaboration have you been involved with? Please describe in each case if you have the time to provide details.

- Formal – please describe:
- Informal – please describe:
- Top-down – please describe:
- Bottom-up – please describe:
- Between organisations – please describe:
- Between approaches (e.g., practice, policy, research, capacity development) – please describe:
- Between disciplines – please describe:
- Between countries/regions – please describe:
- Between sectors (e.g., conservation, international development, art, etc.) – please describe:
17. Can you briefly describe how one of the collaborations you have been involved with formed? (optional)


18. Can you briefly describe a case where a potential collaboration didn’t get off the ground OR didn’t succeed and why? (optional)


Collaboration preferences and action

This third and final section includes 10 questions about your collaboration preferences and actions.

19. Who do you prefer to collaborate with? Please tick all that apply and include details IF you have time to do so.

☐ People who are similar to me - similar in which ways:

☐ People who are different from me - different in which ways:

☐ Both people who are similar to and different from me - please describe:

☐ Organisations that are similar to mine - similar in which ways:

☐ Organisations that are different from mine - different in which ways:

☐ Both organisations that are similar to and different from mine - please describe:

☐ None - I don’t like collaborating

☐ I don’t know

20. What proportion (%) of your work time would you estimate that you spend working in collaboration?
21. If you could, how would you change the amount you work in collaboration?

<table>
<thead>
<tr>
<th>Much lower</th>
<th>Moderately lower</th>
<th>Slightly lower</th>
<th>About the same</th>
<th>Slightly higher</th>
<th>Moderately higher</th>
<th>Much higher</th>
</tr>
</thead>
</table>

22. Can you describe any ways in which this desired change in the amount you collaborate (Q.21) could actually take place? (optional)


23. Please describe any issues or topics that you would be interested to collaborate with others on. (optional)

(If you would like to be put in touch with other consenting respondents who are interested to collaborate on similar issues or topics please ensure you tick the third box under Future Contact and Participation below)


24. What skills, knowledge and/or expertise can you offer? (optional)

(If you would like to be put in touch with other consenting respondents who have complementary skills, knowledge and/or expertise please ensure you tick the third box under Future Contact and Participation below)


25. What skills, knowledge and/or expertise do you need from others (ie. not available within your own team or organisation)? (optional)

(If you would like to be put in touch with other consenting respondents who have complementary skills, knowledge and/or expertise please ensure you tick the third box under Future Contact and Participation below)


26. What would you change about CCI if you could? Please describe the one thing you would most like to change. (optional)


257
Future contact and participation - please read through the following options and tick ALL of the options that apply:

- I would like to get updates about the research findings and activities.
- I am open to being contacted by the researcher to discuss my collaboration experience and preferences at a time that is convenient for me.
- I am interested to be put in touch with other (consenting) respondents who have complementary skills, knowledge and/or experience (i.e., who have listed that they can offer skills/knowledge/experience that I have said I need from others, and vice versa).
- I am interested to join the CCI Fika Group (see description below).

CCI Fika Group (description) -
Based loosely on the Swedish culture of regularly making the time to have a quality conversation with colleagues with coffee and cake (more here), the CCI Fika Group will help to informally connect people within CCI and increase understanding between different groups. Every 2 months on the last Friday of the month – The Fika Friday – you will be randomly connected with another CCI Fika Group member. It is then up to the two of you to arrange a meeting within the next few weeks either in person or via Skype. Meetings should not last much longer than 20 minutes and should ideally involve a drink and snack, but it is really up to you how you want to set this up. You could talk about a current problem you might be facing, something you have learnt recently and would like to share or simply have a nice chat. You are free to join or leave the group at any time by contacting Lindsey.

If you have ticked ANY of these options for Future Contact and Participation please enter your email address below. This will only be seen by the researcher and will only used for the purpose(s) you have stated.


Thank you...
B.2 Biodiversity Revisited – Pre-event Survey

Introduction

**Biodiversity Revisited - Pre-event Survey**

Biodiversity Revisited is a collaborative process that seeks to raise new awareness and thinking about biodiversity, from concept through measurement to implementation, as well as looking critically at the narratives, science and systems that underpin it. This survey aims to explore the diversity of values, preferences and perspectives held by everyone involved in Biodiversity Revisited. A follow-up survey will be circulated following the Biodiversity Revisited Symposium and we hope that you will consider participating in both to help us explore the impacts of the initiative.

My name is Lindsey Elliott and I am a PhD student at the Open University Business School where I am studying practical ways to enable collaboration in conservation. My research explores collaboration within different contexts, including this Study of the Social Dynamics of Biodiversity Revisited (please visit these sites for more details about the study and my research).

This survey is made up of three parts and it ends with information about future contact and participation. In total the survey should take about 20 minutes to complete. Your progress will be saved at the end of each page and you can return to the same link to complete the survey if needed. Your data will be stored securely on a password protected device and will remain strictly confidential (i.e., answers will only be seen by me). Anonymised results will be used in Biodiversity Revisited, in my thesis, and for academic papers and presentations.

The survey is voluntary and you can stop at any time. The study has been reviewed and approved by the University of Montana Institutional Review Board (IRB ref: #112-19). If you have
any questions about this survey, or the PhD research please contact me (lindsey.elliott@open.ac.uk) or my lead supervisor Professor Siv Vangen (siv.vangen@open.ac.uk). If you have any questions about how this survey is part of the Study and the broader Biodiversity Revisited Initiative, please contact Carina Wyborn (cwyborn@wwfint.org).

Would you like to proceed with the survey?
(scroll down to the arrow at the bottom to continue)

☐ Yes
☐ No

Section 1

Section 1: Questions related to Biodiversity Revisited

1. How do you feel about the term 'biodiversity’?

☐ Like it a great deal
☐ Like it a little
☐ Neither like nor dislike it
☐ Dislike it a little
☐ Dislike it a great deal

2. Do you feel that the concept of 'biodiversity' needs to be revisited? (i.e. that there is a need to take a fresh look at 'biodiversity' and how it could be conceived differently)

☐ Yes
☐ No
☐ Unsure
3. Why do/don't you think the concept of 'biodiversity' needs to be revisited?


4. From your perspective, what could be done differently to more effectively address the 'biodiversity crisis' - the rapid and accelerating extinction of species and degradation of ecosystems?


5. What do you hope to get out of your involvement with Biodiversity Revisited? (please tick all that apply)

- Networking opportunities
- New perspective(s) (i.e. ability to see things from a different point of view)
- New approach(es) (i.e. ability to do or address things in a different way)
- New ideas
- New research agenda
- Momentum towards change - please specify: 
- Other - please specify: 


261
6. In what way(s) are/will you be involved with Biodiversity Revisited? (please tick all that apply)

☐ Secretariat member
☐ Steering committee member
☐ Advisory Council member
☐ Early career essay competition entrant
☐ Contributing author (provocative piece, literature summary, website thought piece, etc.)
☐ Symposium participant
☐ Other - please specify: __________________________

7. How could Biodiversity Revisited most meaningfully contribute to the post-2020 global biodiversity framework?

(Where post-2020 global biodiversity framework refers to, ‘the development of an ambitious post-2020 strategy that would contribute to the achievement of the [Sustainable Development Goals], and support the Rio Conventions as well as other biodiversity-related conventions’)

Section 2

Section 2: Questions about your values and preferences
8. Please state to what extent you agree/disagree with each of the following statements [1]. We would like to hear your views about ‘conservation’ and the role of ‘research’ irrespective of whether you consider yourself to be a conservationist or a researcher.

This question forms the bulk of the survey. Please complete the page to save your progress.

[1] The statements within this section are taken from the Future of Conservation Survey (Sandbrook et al, 2019) and the Conservation Research Preferences Survey (Montana et al, 2019), which is why they specifically refer to 'biodiversity' and 'conservation'.

<table>
<thead>
<tr>
<th>Statement</th>
<th>STRONGLY DISAGREE</th>
<th>DISAGREE</th>
<th>SOMewhat DISAGREE</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advancing the well-being of all people should be a goal of conservation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Reality is constructed in the minds of individual humans at given times and places.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conservation must benefit poor people because to do so is an ethical imperative.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>All research is ultimately subjective.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Strict protected areas are required to achieve most conservation goals.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Giving a voice to those affected by conservation actions improves conservation outcomes.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conservation actions should primarily be informed by evidence from biological science.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Economic arguments for conservation are risky because they can lead to unintended negative conservation outcomes.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>To achieve conservation goals human population growth must be reduced.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Maintaining ecosystem processes should be a goal of conservation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Statement</td>
<td>STRONGLY DISAGREE</td>
<td>DISAGREE</td>
<td>SOMEWHAT DISAGREE</td>
<td>I agree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>---------</td>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>The best way for conservation to contribute to human well-being is by promoting economic growth.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I see nature as clearly distinct from society.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conservation goals should be based on science.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would refuse to work on conservation research involving collaborators that I disagree with.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conservation goals should be based on ethical values.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The reality that I observe is unique to me.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>It makes sense to research natural and social systems as independent entities.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I find the details of specific research sites more interesting than general trends.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conservation should seek to do no harm to poor people.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I am more interested in broad scale processes than I am in what happens in particular cases.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conservation should work with not against capitalism.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Synthesis research provides important insights for conservation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conservation will only be a durable success if it has the support of corporations.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conserving nature for nature's sake should be a goal of conservation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Maintaining biological diversity should be a goal of conservation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Giving a voice to those affected by conservation actions is an ethical imperative.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The inefficiencies of collaborative research often outweigh its benefits.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
I am willing to work with stakeholders that I disagree with in order to achieve conservation outcomes.

When communities manage their own resources their efforts are more effective than top down approaches.

Working with corporations is not just pragmatic; they can be a positive force for conservation.

The demands and expectations of stakeholders can compromise the integrity of research.

Nature begins where society ends.

Section 2.1

Phew... well done, that's the bulk of the survey completed! It will be less intense from here, thanks for sticking with it...

9. Please state to what extent you can relate to each of the following statements: (please tick one option per row)

I accept that my beliefs and attitudes may be wrong

I reconsider my opinions when presented with new evidence
I like finding out new information that differs from what I already think is true

I recognize the value in opinions that are different from my own

I question my own opinions, positions, and viewpoints because they could be wrong

In the face of conflicting evidence, I am open to changing my opinions

Section 3

Section 3: Questions about yourself

10. Which of the following describe(s) your educational background? (please tick all that apply)

☐ Biological sciences (e.g. zoology, plant sciences)
☐ Non-biological sciences (e.g. chemistry, math, engineering)
☐ Social sciences (e.g. economics, human geography, political science)
☐ Arts and humanities (e.g. literature, history, philosophy, languages)
☐ Other - please specify: ________________

11. Which of the following do you have a working knowledge of? (please tick all that apply)
Qualitative work - based on information that cannot be easily measured, such as people’s opinions and feelings, rather than on information that can be shown in numbers

Quantitative work - related to information that can be shown in numbers and amounts

Interdisciplinarity - the integration of knowledge and methods from different disciplines, by an individual or group of people, using a synthesis of approaches

Transdisciplinarity - combining interdisciplinarity with a participatory approach - involving different types of actors (eg. local communities, politicians, businesses...) in the process to reach a common goal

Generalism - having a broad range of skills and knowledge

Specialism - focusing study or work on a particular area of knowledge to become an expert in that area

Other - please specify: 

12. What is/are your country(s) of nationality?

13. Where have you done most of your work? Please write up to three countries:

14. In which of the following sectors have you worked? (please tick all that apply)

- Academia / educational institution
- Not for profit / non-governmental organisation
- Private sector
- Government
- Intergovernmental organisation

Other - please specify: 

267
15. Which of the following categories best describes the seniority of your current role?

- Very junior position
- Fairly junior position
- Neither senior nor junior position
- Fairly senior position
- Very senior position
- Not applicable

16. What is your age?

[Input field]

17. What is your gender?

- Female
- Male
- Other
- I'd rather not say

Future contact and participation

Future contact and participation

All of the information that you have provided will remain strictly confidential. An anonymised analysis of the results from this survey may be presented at the Biodiversity Revisited Symposium to feed into the discussion.

This Study will also involve a follow-up survey after the Symposium. If you are able to complete both surveys, the data you provide on the baseline and follow-up surveys will be connected via the distribution of unique
links to the surveys (ie. data is not associated to any personal information, unless you choose to share it below).

If you would be willing to share your name, this would help Lindsey Elliott to carry out targeted observation at the Symposium. She will be the only person to see this, and all other data collected.

What is your name? (optional)

If you are interested to receive summarised results and further information about the Study, please provide your email address. Your address will not be used for any other purpose.

What is your email address? (optional)

Powered by Qualtrics
Appendix C – Survey results

All statistical tests were run to explore relationships between variables. Only significant results are shown in results tables.

C.1 Enabling collaboration in CCI survey results

Spearman’s Rho test results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Ques</th>
<th>Q1 - collab exp.</th>
<th>Q2 - socially connected</th>
<th>Q3 - collab as person</th>
<th>Q4 - collab as org</th>
<th>Q5 - socially connected</th>
<th>Q6 - prop. work time collab</th>
<th>Q7 - change time collab</th>
<th>Q8 - considered philosophy</th>
<th>Q9 - ontology score</th>
<th>Q10 - philosophy</th>
<th>Q11 - years with org.</th>
<th>Q12 - seniority level</th>
<th>Q13 - humidity score</th>
<th>Q14 - age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Data distribution</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>slight skew</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
</tr>
<tr>
<td>Q1 - amt collab exp.</td>
<td></td>
<td></td>
<td><strong>S</strong></td>
<td><strong>S</strong></td>
<td>S**</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = .291</td>
<td>Rs = .316</td>
<td>Rs = .313</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td>N = 96</td>
<td>N = 96</td>
<td>N = 96</td>
</tr>
<tr>
<td>p = .004</td>
<td>p = .002</td>
<td>p = .002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2 - rate collab exp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = .316</td>
<td>Rs = .313</td>
<td>Rs = .291</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td>N = 96</td>
<td>N = 96</td>
<td></td>
</tr>
<tr>
<td>p = .002</td>
<td>p = .002</td>
<td>p = .004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3 - how collab - person</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = .219</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .032</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4 - how collab - org.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = .222</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .030</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q5 - how socially connected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = .238</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q6 - prop. work time collab</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = -.619</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7 - how change collab time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = -.329</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8 - considered philosophy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = .322</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q9 - ontology score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = .253</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10 - year worked for org.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rs = .244</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N = 96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .016</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q11 - seniority level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q12 - intellectual humility score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q13 - age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Mann Whitney U test results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Q1 - collab exp.</th>
<th>Q2 - describe collab.</th>
<th>Q3 - collab as person</th>
<th>Q4 - collab as org</th>
<th>Q5 - socially connected</th>
<th>Q6 - prop time collab</th>
<th>Q7 - change time collab</th>
<th>Q8 - considered philosophy</th>
<th>Q9 - ontology score</th>
<th>Q10 - years with org</th>
<th>Q11 - seniority level</th>
<th>Q12 - humility score</th>
<th>Q13 - age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Data distribution</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>Skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>not skewed</td>
<td>Skewed</td>
<td>not skewed</td>
</tr>
<tr>
<td>Conservation approaches</td>
<td>Ques</td>
<td>Practice</td>
<td>Q12-1</td>
<td>Research</td>
<td>Q12-2</td>
<td><strong>(↑)</strong></td>
<td>U = 708.5</td>
<td>N = 96</td>
<td>P = .001</td>
<td>Ques</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data and analysis</td>
<td>Q12-3</td>
<td><strong>(↑)</strong></td>
<td>U = 802.5</td>
<td>N = 96</td>
<td>P = .026</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy</td>
<td>Q12-4</td>
<td><em>(↑)</em>*</td>
<td>U = 809.5</td>
<td>N = 96</td>
<td>P = .026</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity development</td>
<td>Q12-5</td>
<td><strong>(↑)</strong></td>
<td>U = 832.5</td>
<td>N = 96</td>
<td>P = .000</td>
<td><strong>(↑)</strong></td>
<td>U = 770.5</td>
<td>N = 96</td>
<td>P = .004</td>
<td><strong>(↑)</strong></td>
<td>U = 759.0</td>
<td>N = 96</td>
<td>P = .004</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td>Q12-6</td>
<td><em>(↑)</em>*</td>
<td>U = 834.5</td>
<td>N = 96</td>
<td>P = .000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disciplines</td>
<td>Ques</td>
<td>Physical sciences</td>
<td>Q13-1</td>
<td>Biological sciences</td>
<td>Q13-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social sciences</td>
<td>Q13-3</td>
<td></td>
<td><em>(↑)</em>*</td>
<td>U = 789.0</td>
<td>N = 96</td>
<td>P = .020</td>
<td><strong>(↑)</strong></td>
<td>U = 711.5</td>
<td>N = 96</td>
<td>P = .004</td>
<td><strong>(↑)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arts and humanities</td>
<td>Q13-4</td>
<td></td>
<td><strong>(↑)</strong></td>
<td>U = 795.0</td>
<td>N = 96</td>
<td>P = .000</td>
<td><strong>(↑)</strong></td>
<td>U = 822.5</td>
<td>N = 96</td>
<td>P = .000</td>
<td><strong>(↑)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applied sciences</td>
<td>Q13-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research approaches</td>
<td>Ques</td>
<td>Qualitative</td>
<td>Q14-1</td>
<td>Quantitative</td>
<td>Q14-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interdisciplinarity</td>
<td>Q14-3</td>
<td></td>
<td><strong>(↑)</strong></td>
<td>U = 718.5</td>
<td>N = 96</td>
<td>P = .002</td>
<td><strong>(↑)</strong></td>
<td>U = 795.5</td>
<td>N = 96</td>
<td>P = .016</td>
<td><strong>(↑)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transdisciplinarity</td>
<td>Q14-4</td>
<td></td>
<td><em>(↑)</em>*</td>
<td>U = 704.0</td>
<td>N = 96</td>
<td>P = .041</td>
<td><strong>(↑)</strong></td>
<td>U = 653.5</td>
<td>N = 96</td>
<td>P = .017</td>
<td><strong>(↑)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Generalist</td>
<td>Q14-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specialist</td>
<td>Q14-6</td>
<td></td>
<td><strong>(↑)</strong></td>
<td>U = 802.5</td>
<td>N = 96</td>
<td>P = .029</td>
<td><strong>(↑)</strong></td>
<td>U = 765.5</td>
<td>N = 96</td>
<td>P = .027</td>
<td><strong>(↑)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gender</td>
<td>Ques</td>
<td>Female</td>
<td>Q24</td>
<td><strong>(↑)</strong></td>
<td>U = 783.5</td>
<td>N = 95</td>
<td>P = .009</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

272
C.2 Biodiversity Revisited survey results

Spearman’s Rho test results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Data type</th>
<th>Data distribution</th>
<th>Rs</th>
<th>n</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>how feel about 'biodiv.' - Q1</td>
<td>O</td>
<td>no skew</td>
<td>.323</td>
<td>50</td>
<td>.022</td>
</tr>
<tr>
<td>sense of reality - Q8a</td>
<td>I</td>
<td>**</td>
<td>497</td>
<td>50</td>
<td>.000</td>
</tr>
<tr>
<td>propensity for collab. - Q8b</td>
<td>* (I)</td>
<td></td>
<td>.422</td>
<td>50</td>
<td>.002</td>
</tr>
<tr>
<td>nature/society connec. - Q8c</td>
<td>** (+)</td>
<td></td>
<td>.375</td>
<td>50</td>
<td>.007</td>
</tr>
<tr>
<td>scale of problem - Q8d</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>people-centered conserv. - F1</td>
<td>I</td>
<td>**</td>
<td>753</td>
<td>46</td>
<td>.000</td>
</tr>
<tr>
<td>science-led ecocentrism - F2</td>
<td>I</td>
<td>**</td>
<td>753</td>
<td>46</td>
<td>.000</td>
</tr>
<tr>
<td>conservation &amp; capitalism - F3</td>
<td>I</td>
<td>**</td>
<td>753</td>
<td>46</td>
<td>.000</td>
</tr>
<tr>
<td>intellectual humility score - Q9</td>
<td>I</td>
<td>**</td>
<td>753</td>
<td>46</td>
<td>.000</td>
</tr>
<tr>
<td>level of seniority - Q15</td>
<td>O</td>
<td>**</td>
<td>753</td>
<td>46</td>
<td>.000</td>
</tr>
<tr>
<td>age - Q16</td>
<td></td>
<td>**</td>
<td>753</td>
<td>46</td>
<td>.000</td>
</tr>
</tbody>
</table>
## Mann Whitney U test results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Ques</th>
<th>Q1 - how feel about 'biodiv.'</th>
<th>Q8a - sense of reality</th>
<th>Q8b - propensity for collab.</th>
<th>Q8c - nature/society connection</th>
<th>Q8d - scale of problem</th>
<th>F1 - people-centered conserv.</th>
<th>F2 - science-led ecocentrism</th>
<th>F3 - conservation &amp; capitalism</th>
<th>Q9 - intellectual humility score</th>
<th>Q15 - level of seniority</th>
<th>Q16 - age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>Data distribution</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>Skewed</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>BioRev Involvement</td>
<td>Ques</td>
<td>Networking opportunities</td>
<td>New perspectives</td>
<td>New approaches</td>
<td>New ideas</td>
<td>New research agenda</td>
<td>Momentum towards change</td>
<td>Role(s)</td>
<td>Ques</td>
<td>Secretariat member Q6-1</td>
<td>Steering Committee member Q6-2</td>
<td>Advisory Council member Q6-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q5-1</td>
<td>Q5-2</td>
<td>Q5-3</td>
<td>Q5-4</td>
<td>Q5-5</td>
<td>Q5-6</td>
<td>Q6-1</td>
<td>Q6-2</td>
<td>Q6-3</td>
<td>Q6-4</td>
<td>Q6-5</td>
</tr>
<tr>
<td>Questions</td>
<td>Ques</td>
<td>Q1 - how feel about 'biodiv.'</td>
<td>Q8a - sense of reality</td>
<td>Q8b - propensity for collab.</td>
<td>Q8c - nature/society connection</td>
<td>Q8d - scale of problem</td>
<td>F1 - people-oriented conserv.</td>
<td>F2 - science led ecocentrism</td>
<td>F3 - conservation &amp; capitalism</td>
<td>F9 - intellectual humility score</td>
<td>Q15 - level of seniority</td>
<td>Q16 - age</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>-------------------------------</td>
<td>------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Data type</td>
<td>O</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>O</td>
<td>I</td>
</tr>
<tr>
<td>Data distribution</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>skewed</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
</tr>
<tr>
<td>Educational background</td>
<td>Ques</td>
<td>Biological sciences</td>
<td><strong>higher</strong></td>
<td>U = 152.0</td>
<td>N = 50</td>
<td>P = .003</td>
<td><strong>lower</strong></td>
<td>U = 131.0</td>
<td>N = 47</td>
<td>P = .010</td>
<td><strong>lower</strong></td>
<td>U = 148.5</td>
</tr>
<tr>
<td>Non-biological sciences</td>
<td>Ques</td>
<td>Social sciences</td>
<td><strong>lower</strong></td>
<td>U = 131.0</td>
<td>N = 47</td>
<td>P = .010</td>
<td><strong>lower</strong></td>
<td>U = 148.5</td>
<td>N = 48</td>
<td>P = 0.021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and humanities</td>
<td>Ques</td>
<td><strong>higher</strong></td>
<td>U = 107.5</td>
<td>N = 50</td>
<td>P = .050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approaches</td>
<td>Ques</td>
<td>Qualitative work</td>
<td><strong>lower</strong></td>
<td>U = 68.0</td>
<td>N = 49</td>
<td>P = 0.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantitative work</td>
<td>Ques</td>
<td><strong>lower</strong></td>
<td>U = 144.0</td>
<td>N = 50</td>
<td>P = .018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdisciplinarity</td>
<td>Ques</td>
<td><strong>more</strong></td>
<td>likely</td>
<td>U = 186.0</td>
<td>N = 50</td>
<td>P = 0.029</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transdisciplinarity</td>
<td>Ques</td>
<td><strong>more</strong></td>
<td>likely</td>
<td>U = 186.0</td>
<td>N = 50</td>
<td>P = 0.029</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalism</td>
<td>Ques</td>
<td><strong>more</strong></td>
<td>likely</td>
<td>U = 186.0</td>
<td>N = 50</td>
<td>P = 0.029</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialism</td>
<td>Ques</td>
<td><strong>higher</strong></td>
<td>U = 127.5</td>
<td>N = 50</td>
<td>P = 0.012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions</td>
<td>Ques</td>
<td>Q1 - how feel about “biodiv.”</td>
<td>Q8a - sense of reality</td>
<td>Q8b - propensity for collab.</td>
<td>Q8c - nature/society connection</td>
<td>Q8d - scale of problem</td>
<td>F1 - people-centered conserv.</td>
<td>F2 - science-led ecocentrism</td>
<td>F3 - conservation &amp; capitalism</td>
<td>Q9 - intellectual humility score</td>
<td>Q15 - level of seniority</td>
<td>Q16 - age</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>-------------------------------</td>
<td>------------------------</td>
<td>-----------------------------</td>
<td>---------------------------------</td>
<td>------------------------</td>
<td>---------------------------</td>
<td>-----------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Data type</td>
<td></td>
<td>O</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>O</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>Data distribution</td>
<td></td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>Skewed</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>no skew</td>
<td>O</td>
<td>I</td>
</tr>
<tr>
<td>Sectors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Academia/education institute</td>
<td>Q14-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not for profit/NGO</td>
<td>Q14-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Private sector</td>
<td>Q14-3</td>
<td>*</td>
<td>higher</td>
<td>U = 169.5</td>
<td>N = 50</td>
<td>P = 0.048</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government</td>
<td>Q14-4</td>
<td>*</td>
<td>higher</td>
<td>U = 197.0</td>
<td>N = 50</td>
<td>P = 0.041</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intergovernmental organisa</td>
<td>Q14-5</td>
<td>**</td>
<td>higher</td>
<td>U = 114.0</td>
<td>N = 50</td>
<td>P = 0.010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Q17</td>
<td>**</td>
<td>lower</td>
<td>U = 140.0</td>
<td>N = 47</td>
<td>P = 0.003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>**</td>
<td>lower</td>
<td>U = 144.5</td>
<td>N = 48</td>
<td>P = 0.003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C.3 Conservation research preference results

The distribution of respondents’ ‘sense of reality’ scores, where -3 represents an extreme relativist worldview and +3 represents an extreme realist worldview.
The distribution of scores for the ‘propensity for collaboration’ dimension, where -3 represents an ‘autonomous idealist’ and +3 represents a ‘pragmatic collaborator’.

The distribution of scores for the ‘beliefs about the connections between nature and society’ dimension, where -3 represents complete separation of nature and society, and +3 represents complete hybridity of nature and society.
The distribution of scores for the 'scale of problem' dimension, where -3 represents a strong local specifics perspective, and +3 represents a strong general trends perspective.