Rearticulating Nature: Ecosystem Services in British Columbia and the UN Convention on Biological Diversity

by

Daniel Suarez

A thesis submitted in conformity with the requirements for the degree of Master of Arts in Geography and Collaborative Program in Environmental Studies

Department of Geography and Program in Planning and Centre for Environment
University of Toronto

© Copyright by Daniel Suarez 2011
Abstract

This thesis applies mixed ethnographic methods at field sites in British Columbia and the United Nations to explore the spread and uptake of the “ecosystem services” idea in different institutions of environmental governance. I explore intensifying efforts by ecosystem services proponents to rearticulate the living environment in various ways and with various objectives around the concept. As the idea manifests in a wide array of different policies and practices, I attempt to characterize a process of ‘discursive refraction,’ and argue ecosystem services represents a kind of chimera, appearing differently to the disparate practitioners interpreting, responding to, and beginning to use it. Consequently, the idea takes on diverse forms and functions in those institutional settings where it appears. I conclude that the discourse of ecosystem services remains a locus of ongoing contestation, which significantly complicates the relationship between what its proponents intend for it, and its ideological, institutional, and ecological consequences.
Acknowledgments

I would like to thank my committee members who contributed in unique and valuable ways to the development of this thesis: Scott Prudham, for his patient supervision, and for setting the bar and coaching me as I learned my new discipline; Ken MacDonald, for inviting me to tag along with him to Japan and introducing me to his exciting field of research; and Alana Boland, for her encouragement and commentary.

I would also like to thank all of my CEE collaborators for a stimulating and rewarding year of learning and research. While too numerous to name, I am also grateful to all my friends and colleagues who helped me think through the questions pursued by this thesis over these past two years. In particular, for useful discussion and comments at earlier stages of this thesis, I would like to express my gratitude to Jessica Dempsey, Danny Oleksiuk, Megan Raschig, Hilary Cunningham, Doug MacDonald, Victor Lorenz, Elizabeth Lord, Maywa Montenegro, my dad, Raul, and brother, Dave. I would also like to acknowledge the Social Sciences and Humanities Research Council, the Centre for Environment, and Department of Geography and Program in Planning, for their generous financial support.

Last, but not least, I would like to express my appreciation to all of the practitioners who went out on a limb and agreed to participate in this study – thanks for letting me borrow your time, experiences, and perspectives. I hope I am giving them back in a way that you find meaningful and valuable.
# Table of Contents

Acknowledgments .......................................................................................................................... iii  
Table of Contents ........................................................................................................................... iv  
List of Figures ................................................................................................................................. v  
List of Appendices .......................................................................................................................... vi  
Chapter 1 Rearticulating Ecosystems ............................................................................................. 1  
  1 Introduction ................................................................................................................................ 1  
  1.1 Structure and Methods ...................................................................................................... 11  
  1.2 Conclusion ........................................................................................................................ 23  
Chapter 2 The Way Forward for Conservation ............................................................................. 25  
  2 Ecosystem Services in the Literature ....................................................................................... 25  
  2.1 An Instrumental Biodiversity ............................................................................................ 27  
  2.2 Information to Knowledge ................................................................................................ 36  
  2.3 Typology ........................................................................................................................... 39  
  2.4 Selling Out Nature? ........................................................................................................... 50  
  2.4.1 Ecosystem Services and Biodiversity ................................................................... 50  
  2.4.2 Ecosystem Services and Neoliberalism ................................................................ 55  
Chapter 3 Economics Is Mere Weaponry ..................................................................................... 61  
  3 UN Convention on Biological Diversity .................................................................................. 61  
  3.1 It Flows for Thee ............................................................................................................... 63  
  3.2 Biodiversity Fail ................................................................................................................ 74  
  3.3 Putting Ecosystems to Work ............................................................................................. 76  
  3.4 More than Just Sticks of Carbon ....................................................................................... 80  
  3.5 You Cannot Manage What You Do Not Measure ............................................................ 84  
Chapter 4 Valuing the Forest for the Trees ................................................................................... 88  
  4 British Columbia ...................................................................................................................... 88  
  4.1 Imagined Forests ............................................................................................................... 91  
  4.2 Early Days ......................................................................................................................... 95  
  4.3 The Master’s Tools .......................................................................................................... 98  
  4.4 A Foot in the Door .......................................................................................................... 104  
  4.5 Industrial Conservation ................................................................................................... 115  
  4.6 Pandora’s Box ................................................................................................................. 120  
Chapter 5 In Bunk Beds with the Devil ...................................................................................... 127  
  5 Conclusion.............................................................................................................................. 127  
References Cited ......................................................................................................................... 136  
Appendices .................................................................................................................................. 145
List of Figures

Figure 1 - National delegations during the final plenary. Photo by Pete Brosius ......................... 15

Figure 2 - From Fisher et al. (2008) .............................................................................................. 31

Figure 3 - From Daily et al. (2009) ............................................................................................... 41

Figure 4 - Setting the stage: the formal plenary hall of the UN CBD CoP-10 in Nagoya, shortly before the opening ceremony. Photo by Pete Brosius .............................................................................. 61

Figure 5 - Pavan Sukhdev speaking at yet another panel discussion on TEEB. This wedding table format was common in side events. Photo by Pete Brosius. ............................................................. 64

Figure 6 - "Ecosystems provide the equivalent of thirty three trillion dollars in goods and services every year. Yes, that's correct: thirty three trillion!" Giselle Bundchen, UNEP Goodwill Ambassador ........................................................................................................................................ 74
List of Appendices

Table 1 - Appendix I: CEE research team, arranged alphabetically (* indicates PI) ................. 145
Chapter 1
Rearticulating Ecosystems

1 Introduction

In 1997, a team of researchers estimated the total economic value of the “services” provided by the world’s ecosystems at US$33 trillion: almost double the gross global product at the time (Costanza et al. 1997). While this quantity’s startling enormity and dollar prefix were intended to rationalize the protection of these ecosystems, heated debate persists over what this gesture does and what it actually implies. What does it mean to value nature in this way? As I will explain, this question has cast a long shadow over discussions concerning the science, justification, and future of environmental conservation as “an organized political project” (MacDonald 2010a). This thesis explores intensifying efforts by “ecosystem services” proponents to rearticulate living nature, in various ways and with various objectives, around a metaphor representing ecosystems as stocks of natural capital providing flows of goods and services to humans.¹ As I will argue, the concept possesses a kind of slippery versatility that lends itself to many uses, or conversely, depending on whom you ask, many misuses as well.

This thesis applies mixed ethnographic methods at field sites in British Columbia and within the United Nations to explore the spread and uptake of the “ecosystem services” idea in different institutions of environmental governance. I attempt to characterize how a variety of different practitioners, from green accountants and carbon entrepreneurs, to academic biologists, activists of varying stripes, and governmental and intergovernmental bureaucrats, are working to realize the latent potential they perceive in the concept. Through analysis of what I take to be revealing moments at these two sites, contextualized with others drawn from the literature, I argue that the idea of ecosystem services has fragmented in meaning and purpose. I argue that as ecosystem services discourse enters different institutional settings – each one comprising disparate sets of interests and visions for what ecosystem services represents – those institutions repurpose and reshape the idea as they begin to actualize ecosystem services in a wide array of different policies and practices.

¹ I refer to this notion as “ecosystem services” throughout this thesis.
In conducting this research, I found diverse interests seizing onto different facets of the concept, forming somewhat distinct conversations with particular sets of interlocutors and concerns. Yet, these different interests remain tethered together through ecosystem services discourse, tugging at one another as they vie to mould its ultimate discursive and material expression, whether that entails ecosystem services as new environmental commodity, as compelling argument for protecting biodiversity, as decision-making framework for parsing trade-offs, or as one of a variety of specific policy instruments. Depending on whose hands the concept passed through, I found ecosystem services taking on diverse forms and functions, which I identify in this thesis. This continuing ideological tug-of-war over what ecosystem services means and what it is supposed to do between the different interests congregating around its discourse reveals the concept as a locus of contestation, whose ultimate configuration, I suggest, remains contingent on ongoing political struggles diffused through a constellation of networked institutions.

Since the 1990s, ecosystem services researchers from a range of disciplines have developed what has become an increasingly sophisticated conceptual framework and accompanying set of methodologies for systematizing, and often quantifying, the benefits derived from ecosystem functioning using the language of economics. At their most basic level, ecosystem services themselves are usually defined as “the benefits people obtain from ecosystems” (MEA 2005), for example, in the form of drinking water from a forested watershed, flood mitigation from an intact wetland, increased agricultural productivity from proximity to natural pollinators, or recreation enjoyed in a park or wilderness. The Millennium Ecosystem Assessment (MEA), published by the United Nations Environment Programme (UNEP) in 2005, and a foundational text in ecosystem services discourse, separated the world’s ecosystem services into four categories: (i) provisioning services such as food, fresh water, and wood fibre, (ii) regulating services such as climate, flood, and disease attenuation, (iii), supporting services such as nutrient cycling, primary productivity, and soil formation, and (iv) cultural services such as aesthetic, spiritual, educational, or recreational fulfilment (MEA 2005).
Together, these categories (or some variation of them\(^2\)) express a conception reimagining, operationalizing, and often pricing living nature in terms of the array of “services” it provides for the benefit of particular people. Here, and in the chapters that follow, I explore intensifying efforts by proponents of this conception to manoeuvre it, in some confined settings already somewhat successfully, into the dominant paradigm undergirding the project of environmental conservation and, more ambitiously, an ostensibly new approach to environmental governance.

In this thesis, I attempt to characterize a process of ‘discursive refraction’ as practitioners pass ecosystem services through the institutional ‘prism’ of the environmental policy process. By examining the spread and uptake of this idea as it entered my two research sites, I try to develop an account of what ecosystem services discourse actually becomes when run through the political and institutional gauntlets it confronts, and what it is made to do. Where visible, do the concept’s manifestations resemble what its originators had initially conceived? This thesis presents a tension between the different aspirations the authors and proponents of ecosystem services project onto the concept, and the respective forms and functions in which I observed it beginning to manifest. I present ecosystem services as a sprawling, kaleidoscopic discourse, whose trajectories remain fluid and subject to ongoing political struggle.

This thesis investigates the research question of how different communities of environmental practitioners are actually interpreting and using ecosystem services concepts in their work. Through what means, with what objectives, and in what forms have specific actors begun to actualize ecosystem services in practices and policies? This basic question offers a fertile starting point for pursuing the three main research objectives of this project. First, I try to respond to the deceptively simple problem of what ecosystem services ‘is,’ a puzzle whose ambiguity I found not only surprisingly challenging, but, I argue, also key to understanding its multifarious significance and implications. Second, I hope to facilitate mutual reflection amongst and between the diverse constituencies, including both proponents and critics of ecosystem services, increasingly finding themselves participating in its already highly

---

\(^2\) Fisher et al (2008) note that “This definition is general by design, and while it provides a context for discussion it falls short as an operational definition.” They refer specifically to its insufficiency in terms of accounting, landscape management, and valuation practices. Thus, while this definition is frequently cited and provides a useful heuristic, the precise definition can vary depending on its specific function.
variegated discourse. Finally, I aim to begin probing the much pricklier questions that emerge from this exploration, namely, why and toward what ends ecosystem services is being promoted by a broad assortment of actors as a potential “silver bullet” for “tackling economic, social, and environmental problems” (Landell-Mills & Porras 2002, i). While I gesture at some conclusions in this regard about what ecosystem services entails, I converge more on further questions which I revisit at the conclusion to this thesis.

Over the last decade, the strategic opportunities opened by ecosystem services concepts and approaches have come to represent, for many, “the way forward for conservation” (Armsworth et al. 2007; emphasis added) in the international conservation community. As Norgaard (2010, 1219) observes, “Over a period of 15 years, an eye-opening metaphor intended to awaken society to think more deeply about the importance of nature and its destruction […] transformed into the model for environmental policy and management in developing countries and for the globe as a whole.” Claire Kremen (2005, 477), for example, one of a number of high-profile academics in ecosystem services scholarship, urges ecologists to “mount a massive awareness campaign to convince society of the importance of ecosystem services and to demand the resources for their study – nothing less than our human future is at stake.” As I will discuss, these sorts of efforts have already borne fruit, and ecosystem services now increasingly pervade environmental policy documents and discussions. As Ruhl & Salzman (2007, 161) explain:

In less than a decade, ecosystem services have gone mainstream, whether as “environmental services,” “ecological services,” or simply “investing in nature.” Virtually anywhere one looks, whether at political initiatives and research projects or market creation and NGO activities, interest in ecosystem services is on the rise around the globe, and still rising.

Earlier this year, for instance, the UN General Assembly formally called for the establishment of an Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES), a body analogous to the role of the already established IPCC. In 2008, the US Department of Agriculture announced the creation of an Office of Ecosystem Services and Markets, dedicated, predictably enough, to “catalyz[ing] the development of markets in ecosystem services” (USDA 2008). In Canada, earlier that same year, the provincially mandated British Columbia Forest Practices Board pointed to the need for “government and the private sector to integrate information on
ecosystem services […] into decision-making at every level and scale,” from public policy decisions and land-use planning, right down to forest stewardship, site-level choices, and enforcement (FPB 2008, 6). This recommendation followed a suggestion five years earlier by the federally mandated National Round Table on the Economy and Environment that “a key barrier to conservation […] is our failure to integrate the true costs and benefits of our uses and dependence on nature into decision-making at all levels” (NRTEE 2003, 39).

And last year in Nagoya, Japan, I sat in the large press conference room of the 10th Conference of the Parties to the United Nations Convention on Biological Diversity, one of the largest regular gatherings of the international conservation community. Pavan Sukhdev, study leader of The Economics of Ecosystems and Biodiversity (TEEB), took the stage to present key findings from his team’s highly anticipated report, heralded as the “Stern Review”3 of biodiversity. He spoke forcefully, drawing heavily from ecosystem services concepts, arguing:

The economic invisibility of nature has for decades, and I would say for the last century, been the cause of the losses of ecosystems and biodiversity, and in terms of cost, therefore exacerbated the suffering of human beings, especially those at the bottom of the economic pyramid. […] We cannot treat this lightly and unfortunately the lack of an economic lens to reflect these realities means we have treated these matters lightly and they are not centre stage when it comes to policy discussions, nor centre stage when it comes to business discussions […]. The economic invisibility of nature must end.

While Sukhdev uses this visual metaphor to illustrate what he considers the concealed suffering of the poor, he perhaps unintentionally draws attention to some of its other more problematic connotations. For instance, in his article The Nature That Capital Can See, Morgan Robertson (2006) inflects this conceptualization of ecosystem services, arguing that the operational practices that constitute it render nature “visible” to the “one-eyed imperatives of capital,” deepening its commodification and “the hegemony of neoliberalism.” In his book Seeing Like a State, James Scott (1997) shows how ruling authorities used ordered, simplifying utilitarian

---

3 The Stern Review (2006) was a highly publicized and influential study commissioned by the government of the United Kingdom examining the relative economic benefits and costs of climate change under varying policy scenarios. It concluded, “sustained long-term action can achieve [stabilization] at costs that are low in comparison to the risks of inaction” (Ibid., vii).
models (somewhat resembling that of ecosystem services) to render the complex realities of their subjects “legible” and thus amenable to attempts at governing them. Scott shows how these schemes often resulted in failure, sometimes catastrophic ones, rooted in mismatches between these idealized models and the messy social realities of their subjects (and their unruly and ‘illegible’ localized knowledges) over which those models were superimposed.

Sukhdev’s remarks, and crucially, the thinking underlying them, reverberated throughout the side events tracked by the team of ethnographers with whom I attended that conference. The deployment of “natural capital” and “ecosystem services” concepts was ubiquitous, and, as I will discuss, indicative of both the rapid pace and broadening extent of its penetration, albeit unevenly, amongst this key network of practitioners. As Armsworth et al. (2007, 1383) argue, “Already, ecosystem service advocates are finding allies and enjoying traction in places where ethical arguments for biodiversity conservation are given short shrift,” and they now “embed concerns about the environment and biodiversity in the heart of broader policy debates.” Here, at this hub of international biodiversity policy-making and governance, ecosystem services proponents had found yet another vehicle for “mainstreaming” the concept into the knowledge and institutions of the international conservation community. This increasing and apparently ambivalent “visibility” of nature to economics – how it is accomplished and for what purposes – is a theme that underpins much of this thesis.

Those pronouncements I highlight above (and the many other appeals I will discuss later) calling for a pivotal realignment of environmental conservation around ecosystem services can often be quite evocative, communicating a sense of movement, transformation, and institutional change. This sense of upheaval is shared by both proponents and detractors of ecosystem services, and lamentations critical of the concept’s many possible repercussions are, similarly, not difficult to find. But the task of connecting these calls to action with an empirical account of their actual ‘effectiveness’ in changing institutional forms and observable practices remains. The basic approach of this thesis is to investigate through what mechanisms (i.e. the specific social practices) and to what extent (i.e. how widely, how deeply, and in what forms) these concepts and the pleas to take them seriously have actually penetrated environmental policy-making and practice within two specific contexts.
The two main research sites presented in this thesis represent two distinct yet connected ‘nodes’ at different scales of global environmental governance: (1) participant observation at the United Nations Convention on Biological Diversity, where I attended the 10th Conference of the Parties to that agreement as part of a ‘Collaborative Event Ethnography’; and (2) exploratory ethnographic research in British Columbia, consisting of a series of formal semi-structured interviews with environmental practitioners distributed across four key institutional settings with a stake in forest policy, management, and conservation in the province. Discussion of these two sites comprises Chapters III and IV, respectively. Chapter II serves to flesh out in more detail the theoretical framework guiding my analysis, to unpack some of the main strands of ecosystem services scholarship itself, and to engage a broader set of conversations in the academic literature around ecosystem services and what they represent.

This thesis is exploratory in scope and therefore necessarily incomplete. Given the multiplicity of ecosystem services’ origins, the social and technological networks over which it holds sway, its meanings, and especially its ramifications, depicting its trajectory in a complete or comprehensive manner far exceeds this project and its two research sites. Rather, what I provide are a series of what I take to be revealing moments to which I was privy – contextualized with others from the literature – that begin to characterize that sprawling breadth.

This research proceeds with an understanding of ecosystem services “as a cultural product […] deriving from a system of beliefs and values, symbolically expressed within particular knowledge systems that relate to particular patterns of behaviour and practice, all of which are contested” (MacDonald 2004, 8). Within this conceptual framework, this research aims to contribute to broader efforts attempting to “explore and explain the cultural processes that produce and regulate environmental knowledge and consequent conservation practice in a plurality of social, political, and economic contexts, including social formations that typically escape analysis such as government departments and conservation NGOs” (Ibid., 7). While the scope of this project has grown, my preoccupation remains fixed on the spread and uptake of ecosystem services across these and other institutional settings in environmental politics and governance.

My conceptualization of institutions derives from North’s (1990, 3) definition of them as “the rules of the game in society or, more formally, […] the humanly devised constraints that shape
human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic.” Corbera et al. (2007, 367) perhaps provide a more operational definition “in the context of environmental change,” where institutions are “the systems of rules, decision-making procedures, and programmes that articulate or give rise to social practices in relation to the environment, assign roles to participants, and guide interactions among individuals and organizations.” Less abstractly, but consistent with these definitions, those institutional settings I engage with in this thesis led me to contexts ranging from university biology departments, to timber harvesting companies, to governmental and intergovernmental agencies. Each setting suggests distinct sets of rules (both formal and informal), norms, values, obligations, and articulated interests over which ecosystem services may exert influence.

In this way, ecosystem services proponents intend for the discourse to rearticulate not only imagined notions of nature, but also the institutional configurations of these social contexts of environmental governance. While I examine the varied exploits of practitioners attempting to reify ecosystem services within somewhat specific contexts, it is important to note that these efforts take place within and through more extensive political-economic processes and a wider web of institutionally configured power relations. I encountered a variety of practitioners at both my field sites who contextualized the role of ecosystem services in terms of broader ideological and institutional realignments, which they felt necessitated ecosystem services as a response. I highlight my observations of these sorts of explanations throughout the following chapters. As I revisit in the conclusion to this thesis, their comments reveal a conceptualization of ecosystem services as a project of accommodation, ostensibly neutralizing perceived contradictions between the prevailing logics of environmental conservation, economic development, scientific rationality, and public policy formation. Moreover, ecosystem services seems to offer them not only a way to reconcile these tensions, but also the means of stitching these threads together into a coherent, singular narrative for making sense of nature.

In attempting to track and describe the pathways through which ecosystem services has penetrated these layers of environmental politics and governance, this study maintains a close, sustained focus on the experiences and perspectives of environmental practitioners – those in a position to do something about or with the concept – as the primary means of gaining insight into these developments. As a concept, ecosystem services is and can do nothing by itself; it relies upon, and is animated and made to do things in the world by acting human agents.
Through presentation and analysis of documentary, interview, and participant observation data, I attempt to draw attention to how a variety of actors, located at different nodes and scales of environmental politics and policy-making, actually interpret, engage with, and use ecosystem services. I investigate how different positionalities conceptualize, often quite divergently, the opportunities, barriers, and risks posed by emerging ecosystem services discourse, identifying both areas of receptivity and resistance.

Ultimately, this thesis represents my attempt at pursuing the idea of ecosystem services into my field sites, where I found it traversing, shaping, and being shaped by the diverse institutional settings through which it must pass in order to become either policy or practice. I try to observe the appearance of ecosystem services in these contexts, but also its permutations and the resulting tensions. The interests, institutions, and ideologies constituting each site differ markedly, and so the ‘refraction’ of the concept as it moves through them, the ways in which it is translated and performed, also varies considerably. I argue that these contrasts facilitate comparative analysis and help to generate a broader picture of the pathways through which the concept circulates, helping to draw into view from where it circulates, and to where it circulates. As implied by remarks I highlighted earlier, the legitimacy and utility of these concepts was already established among many of the groups present in Nagoya, and ecosystem services took centre stage (as I will show later, literally) across many of the dialogues performed there with a promotional, even triumphant tone. In my regional example of British Columbia, on the other hand, my interviews with practitioners suggested that while some segments of the environmental community had bought into this line of reasoning and the perceived opportunities it opened for them, parts of that community at the same time remained largely unmoved. Even among those practitioners who were already actively wielding ecosystem services approaches in their work, I often found ambivalent or conflicted assessments of the broader directions and implications ecosystem services seemed to foreshadow.

Thus, I try to describe this differentiated uptake in the diverse institutional contexts I examine, and an account of the disparate forms in which the broad idea of ecosystem services materializes (or not) in specific social practices ranging from public policy formation, the strategies of activists, to business planning. But further than simply providing such an account, I also hope to facilitate reflection, particularly amongst (and between) those that participated in and contributed to this project, around the broader implications of the discursive shifts that they are
collectively actuating. While often the intended uses of ecosystem services can be straightforwardly discerned from the literature, linking the ways in which these intentions coincide with and diverge from the realized manifestations of the concept remains a pricklier and more challenging prospect. It is this latter problem in particular, that is, the tension between intention and consequence, which this thesis strives to help unravel.

My approach draws much inspiration from the work of David Takacs, specifically research he conducted for his book *The Idea of Biodiversity*. Here, he follows the invention and popularization of the term *biodiversity*, which, “through biologists’ promotion, has emerged as one of the key elements in the discourse on global environmental change” (Takacs 1996, 101). His treatment of the personalities, identities, and the normative and strategic sensibilities motivating biologists to manoeuvre that term to public prominence, shows how ideas about nature “can act as forces of nature. They can have tangible ecological repercussions. They can reshape how we view, how we value, and thus how we treat nature. The battle to sway human value judgments, human constructs of nature, may be decisive in the war over biodiversity” *(Ibid.,* 105). While this cultural constructedness of nature is perhaps unavoidable and thus not a new phenomenon, Takacs suggests, “it may be new that with biodiversity, biologists are deliberately acting to shape our social construction of nature” *(Ibid.)*.

Takacs’ narrative details the concerted attempt by biologists to engineer not only neologisms, but shifts in entire worldviews toward their own priorities, concerns, and ideologies. His account presents clear parallels (yet also important distinctions) with the unfolding of ecosystem services discourse, which I sketch out in this thesis. As with Takacs’ approach, I direct focused attention to ecosystem services researchers themselves: often biologists, and in one instance one of the same individuals interviewed by Takacs, but importantly, other types of experts and practitioners too. Takacs highlighted the role of biologists as political actors who, “[r]ealizing that ideas don’t change – they are *changed* – […] proselytized on behalf of nature via their vigorous promotion of the concept of biodiversity and its attendant values” *(Ibid.,* 103). There are strong continuities between that story and this one, as well as some disconnects. Individuals from this institutional setting in particular – that of the scientific academy – appear throughout this thesis as central protagonists in the story of how and why ecosystem services discourse unfolded in the way it did. Thus, the story I have put together is partly written about them, but also partly to them.
1.1 Structure and Methods

The next chapter of this thesis (Chapter II) discusses some key threads within ecosystem services discourse, and those conversations external to it from disciplines assessing its implications. I use the term “discourse” to describe ecosystem services in a manner similar to Dryzek (2005, 9), who defines a discourse as:

>a shared way of apprehending the world. Embedded in language, it enables those who subscribe to it to interpret bits of information and put them together into coherent stories or accounts. Discourses construct meanings and relationships, helping to define common sense and legitimate knowledge. Each discourse rests on assumptions, judgments, and contentions that provide the basic terms for analysis, debates, agreements, and disagreements.

Although I did not conduct a formal discourse analysis, this chapter, as with the others, identifies, highlights, and discusses salient threads and tensions within ecosystem services discourse and to some extent other discourses with which it intersects. In this chapter I elaborate on this identity of ecosystem services as a “discourse.” I attend to continuities and disjunctures between this and other established environmental discourses, the hegemonic character of ‘ecosystem services discourse,’ and the ways in which, as Dryzek (Ibid.) notes, “Discourses are bound up with political power” and “can themselves embody power in the way they condition the perceptions and values of those subject to them” as it becomes institutionalized and transforms from information into knowledge.

As Dryzek (2005, 5) notes, “contests over meaning are ubiquitous, and the way we think about basic concepts concerning the environment can change quite dramatically over time. The consequences for politics and policies are major.” Through the literature, and in later chapters through direct engagements with practitioners, I discuss how ecosystem services proponents are together setting in motion, but are simultaneously also forced to navigate, a series of ideological realignments, institutional reconfigurations, and a shifting discursive landscape whose contours structure the range of strategic opportunities and constraints confronting those reaching for their goals within it. As Maarten Hajer (1995, 13-14) explains, “environmental conflict has changed. It has become discursive.” He argues:
It is much more a struggle between various unconventional political coalitions, each made up of such actors as scientists, politicians, activists, or organizations representing such actors […]. These so-called discourse coalitions somehow develop and sustain a particular discourse, a particular way of talking and thinking about environmental politics. […] These coalitions are unconventional in the sense that actors have not necessarily met, let alone that they follow a carefully laid out and agreed upon strategy. What unites these coalitions and what gives them their political power is the fact that its actors group around specific story-lines that they employ whilst engaging in environmental politics. It can be shown that although these actors might share a specific set of story-lines, they might nevertheless interpret the meaning of these story-lines differently and might each have their own particular interests (Ibid., 12-13).

In this chapter I draw on Hajer’s notion of “discourse coalitions” as I interpret both the power of ecosystem services and the lingering tensions concealed by that power. This chapter identifies some of the key voices and texts that have become characteristic of if not dominant in the development of ecosystem services thought and scholarship. I review the lineage of the concept, and its development and elaboration by economists, ecologists, and others, drawing attention to the disciplines that together pioneered and were instrumental to popularizing this way of thinking, and their stated rationales for doing so. I attend to the ways in which they approach ecosystem services, and how, when visible, they variably perceive its strengths, weaknesses, and future utility. I review the perspectives, as suggested in the literature, and corroborated empirically in later chapters, of both proponents of ecosystem services approaches (itself a heterogeneous grouping), as well those critical of different elements of those approaches.

Through analysis of key texts, I introduce a typology of ecosystem services according to their intended political function from the point of view of the actors deploying it. I argue that ecosystem services, as it is mobilized in service to different agendas, takes on surprisingly diverse forms, from rhetorical devices or tools of persuasion, to decision-making inputs for rational cost-benefit analyses, to a range of specific policy instruments and market-based mechanisms. Thus, I hope to provide some account of what ecosystem services ‘is’ – a surprisingly challenging (but I hope also fruitful) exercise, given the different forms, meanings, and uses it can take. But more than simply identifying these diverse forms and functions, I
highlight the tensions between these respective visions of what ecosystem services represents and what it is supposed to do, as expressed by different proponents and critics of the discourse.

Chapter III examines the deployment of the twin concepts of ‘natural capital’ and ‘ecosystem services’ as they were put to work at the United Nations Convention on Biological Diversity (CBD). I focus specifically on the 10th Conference of the Parties (CoP-10) held in Nagoya, Japan, which I attended with a “Collaborative Event Ethnography” (CEE) research group in October 2010. This chapter is the direct result of an invitation by Dr. Ken MacDonald to join this research group, and my methodological and theoretical framing largely follows that already established for the project. The group, comprised of 17 social scientists, mostly anthropologists and geographers, pooled collective research effort under the shared objective of “analyzing the dynamic role of individuals and groups, situated in networks, in shaping the ideological orientation of environmental governance institutions like the CBD” (Campbell et al. 2010). The CEE approach views meetings like CoP-10 as:

a node in a network related to global environmental governance […] as sites or moments of negotiations and decision making in on-going, broader policy-making processes, where we can examine how ideas about conservation emerge, gain traction, and are contested, debated and traded-off. By attending such events as a group of researchers, we gain insights into the processes at stake in determining what conservation is, who participates in such processes, and with what consequences (Ibid.).

The CEE approach combines “rapid or time constrained ethnographic assessment (Low et al. 2005) with institutional or organizational ethnography (Goldman 2004; Mosse 2004),” in order to “capture engagements between scientific experts, decision-makers, and private sector and NGO actors in the context of a time-condensed meeting” (Brosius & Campbell 2010). The CEE approach arose partly out of a recognition that, amongst social scientists, “there has been a surprising lack of ethnographic attention to ‘the meeting’ as a field site” (Ibid.). This “failure of ethnographers to attend to these sites” raises a number of problems for understanding global environmental governance, including an under-emphasis in regime theory of “how the process of negotiation or interaction expresses a specific cultural-political history and shapes the outcome of conventions, agreements, or organisational mandates” (MacDonald 2010a).
Given the scale of these types of meetings and thus the difficulty for any individual researcher working in isolation to observe them, let alone assess and analyze their significance, a CEE framework takes on a “multi-sited ethnographic approach, wherein researchers followed people, things, metaphors, or conflicts across sites” (Brosius & Campbell 2010). This approach entailed coordinating collective research effort across multiple sites at the meeting, in order to generate a more comprehensive overview of what was occurring as events unfolded. The design of this approach drew inspiration from:

watching how other actors – particularly conservation organizations and national delegations – work at meetings. They send large, organised teams to these events, divide up schedules, and convene daily to compare notes. In so doing, they are able to gain a broader perspective on the meeting, and thus strategise to influence debates and outcomes more effectively. Though we did not have an agenda in the sense that advocacy organizations do, our approach to research […] was to mimic this strategy for coordination, collaboration, and comparison in order to gain the sort of broad perspective that can only come from a collective effort (Ibid.).

This approach was deployed even more systematically in Nagoya, and out of that strategy emerged one of its principal strengths: the interactions that it facilitated amongst the research team, including the sharing of observations, impressions and interpretations, and a voluminous amount of participant observation data (i.e. 500+ hours, gathered by 17 social scientists).

However, more than simply sharing observations, we conducted joint analyses and collaboratively generated new insights through regular meetings, correspondence, and discussion taking place before, during, and after the event itself. In particular, these efforts have manifested in (ongoing) collaborative writing groups built around themes and topics that appear in this thesis.

The UN CBD emerged from the 1992 Rio Earth Summit, formally entering into force in 1993 as a legally binding convention. With 191 signatory countries (or “parties”), it has become one of the world’s foremost environmental conventions, and one of the largest regular gatherings of the international conservation community. The CBD “establishes the standard institutional elements of a modern environmental treaty: a governing body (the Conference of the Parties); a secretariat; a scientific advisory body; a clearing-house mechanism and a financial mechanism”
The CoPs themselves take place every two years, each time rotating to a different host country. In 2010, the Presidency of the CBD passed from Germany to Japan, whose government chose to locate the event in the city of Nagoya.

Figure 1 - National delegations during the final plenary. Photo by Pete Brosius.

The main functions of the CoPs include reviewing progress on the implementation of the convention, generating and shaping programs of work, identifying emerging priorities relevant to the CBD’s jurisdiction, and, importantly, guiding the Global Environment Facility (GEF), the organization responsible for managing and disbursing the financial resources of the CBD and other UN environmental conventions. These functions shape the structure and organization of the meetings themselves, which are administered by the CBD secretariat, based in Montreal. The CoPs are comprised of formal plenary sessions where decisions are adopted, the large working groups where country representatives publicly announce and debate the positions of their respective governments as they draft decisions for review in the final plenary, and smaller contact groups and so-called “Friends of the Chair” meetings where more contentious issues are negotiated amongst smaller groups of countries. The CEE proceeds with an understanding that
the CBD has become an important vehicle through which conservation organizations, by aligning their work with CoP priorities, secure organizational legitimacy in the sphere of global environmental management, maintain access to project-based funding, and translate that legitimacy and material support into a mandate to generate their programs of work (Campbell et al. 2010).

These dynamics came into focus through the observed behaviour of a variety of actors, largely through presentations, performed dialogues and negotiation, and some formal and informal interviews. These actors ranged from representatives of the so-called ‘big three’ conservation organizations (World Wildlife Fund, Conservation International, and The Nature Conservancy), major multinational corporations (i.e. Danone, Rio Tinto, Mars Inc., Volkswagen, etc.), governmental and intergovernmental organizations, to indigenous and local community groups. In total, the event attracted over 18,000 registered attendees from these and other backgrounds.

While as a group we managed to distribute research effort across all of the different facets of the event described above, my attention was focused heavily on the many “side events” running in parallel with these deliberative processes. These events are usually hosted by ENGOs and intergovernmental agencies (such as the CBD secretariat itself), but also by national governments, ILCs, scientific institutions, transnational organizations, and private sector actors such as individual companies or industry associations. Typically, side events entail presentations, seminars, and discussions by panellists representing different groups attempting to influence the decisions of the CoP, to advance a particular initiative, approach, or project, or simply to articulate a set of concerns, disseminate information, or provide commentary on the meeting. These side events can often be quite well attended, not only by observers of the CoP but by members of national delegations as well.

Side events have grown increasingly prominent at the CoPs of both the CBD and UNFCCC. In Nagoya, the CBD Secretariat was unable to accommodate all of the many requests from prospective side event organizers that year. Hjerpe and Linner (2010, 179) found that CoP participants perceive side events as serving useful functions to the negotiating process by providing a “venue for an increasingly shared vision or a forum for clarifying differences in goals and principles.” They also suggest the role of side events in building legitimacy for the
process itself and raising awareness of the issues at stake through media coverage and the reporting obligations of most CoP participants.

MacDonald (2010a) suggests, “By being present at the site, analysts are able to record the process of knowledge being translated and to observe how it gains traction in relation to particular interests. They witness meaning as it is being made, challenged, transformed, and translated.” I situate this chapter within that analytical framework, and, in this case, the knowledge targeted is that of ecosystem services. I will comment briefly on the methodological contrast between this approach and context, and the research I conducted in British Columbia. In BC, I conducted one-on-one semi-structured interviews with key informants, speaking anonymously and usually in private. The responses I elicited there differ markedly from data collected in Nagoya for the CEE, which consists primarily of participant observation of public events, presentations, dialogues, debates, and negotiations in the presence of specific and often large audiences.

The distinction I draw attention to here relates to the performative (MacDonald 2010a) and dramaturgical (Goffman 1959) dimensions of these events. My observations of those engaging in different forms of dialogue in Nagoya occurred against an omnipresent social backdrop amongst a listening community. MacDonald (2010a) points out that although these events occur spatially and temporally only for a moment – apparently complicating notions of the traditional ethnographic ‘field site’ – meetings nonetheless form a kind of “rhizomatic structure of transnational space.” In other words, these events assemble a sort of community, and represent only the tip of an iceberg of

associations, common interests, long-term objectives, long-term agendas, and statutes – these events take on a temporal and spatial durability that is obscured by the physical space of the encounter. They extend and repeat across time and space, bringing the same and different actors together at regular intervals, and their temporal durability creates the ability to strategise and plan for the event in ways that bring specific actors and interests together, introduce new actors to the assemblage […] and structure their encounters (Ibid.)

Thus, the distinction I raise is partly a reflection of divergent methodological approaches, but also of the disparate nature of the phenomenon being observed in either case. Conversations
with practitioners in British Columbia – while often quite fruitful to understanding the experiences, motivations, and attitudes of key informants in relation to ecosystem services – almost entirely lacked the forms of sociality visible at the CoP. In Nagoya, on the other hand, I was able to observe a community undergoing what appeared to be a periodic social and cultural ritual. I refer not only to the rules of comportment and the obviously ceremonial features of the meeting, but to their ritual function as symbolic social dramas, strengthening social ties and producing and reproducing the values of participating social actors – those social practices whereby participants attempted to express, define, and assert a common purpose and identity. These dynamics became repeatedly clear in verbalized prefacing statements and performed dialogues rearticulating shared aims and values. These dynamics also surfaced in discussions concerning how to properly engage with ‘the unconverted,’ and in how these actors ‘outside’ of conservation were (and ought to be) conceptualized by those ‘inside’ that community.

As I mentioned earlier, many of the events in which ecosystem services appeared conveyed a nearly promotional quality. However, as I will discuss in this chapter, that framing was at the same time performed within a broader sense of anxiety and urgency. Many speakers would comment on what they perceived as a shared sense of purpose and solidarity, and express what appeared to be a sense of belonging. Panellists would describe the wider settings from which they were visiting – the Environment Minister as part of government; the CSR or environment officer as part of a corporation; the conservation organization versus everybody else – and they would often portray those institutional environments as ideologically inhospitable, demoralizing, and even emotionally draining. At the CoP, conservation practitioners temporarily found themselves in a perhaps uniquely nurturing atmosphere amongst (mostly) like-minded individuals. I observed them reaffirming and supporting one another, recognizing they would soon return to confront their “home” contexts, where they seemed to expect they would be antagonized or ignored. Hjerpe and Linner (2010) allude delicately but unambiguously to this solidarity-building and socially-defining dimension of CoP side events. Over the two weeks of the conference, I saw panellists, discussants, and observers engage, nudge, and debate one another, and, in the process, constitute a shared vision of what their community is and what it ought to be. I observed ecosystem services inserted into this dynamic in interesting ways, which I highlight in several examples in this chapter.
My analysis of these observations, drawing on the typology developed in Chapter II, characterizes the event as an important site through which ecosystem services discourse propagates and finds pathways to circulate and take hold. Thus, Chapter III engages primarily with ecosystem services proponents and their strategies for transmitting, building legitimacy, and establishing the institutional conditions for ecosystem services to flourish, spread, and become “mainstreamed” among particular networks of actors. I make special effort here to draw attention to this last point, that is, for and to whom these pitches are intended. I argue that the positioning apparent from ecosystem services proponents at this venue, and particularly the accommodating posture adopted by them in relation to certain types of actors, can provide informative glimpses into how they conceive of the project of organized conservation and the environmental policy process more generally. I use a number of these instances where this dynamic was especially conspicuous as illustration of how proponents had conceptualized the obstacles confronting them within those arenas and how they thought those barriers might be transcended. The solution often hinged, to a lesser or greater extent, on ecosystem services.

Ultimately, within this framing, I suggest that the ecosystem services conceptual framework at CoP-10 contributed to the “the negotiation of a new organizational order; one that not only sought to legitimate the presence of new conservation innovations and actors […] but also served to translate otherwise weak, unstable and provisional ties between individual actors into far more durable institutional elements of the organisation” (MacDonald 2010a). I suggest that these findings illustrate not only the political identity of the discourse, but also its identity as a project of political accommodation intended to neutralize perceived contradictions between competing logics. I should preface this chapter with the major caveat that my examination is, at this stage, necessarily exploratory, given my own lack of first-hand longitudinal experience with these events.

Chapter IV follows the spread and uptake of ecosystem services into British Columbia. I draw on a series of formal semi-structured interviews (n = 35) with practitioners from four key institutional settings each with distinct, though not necessarily mutually exclusive, perspectives and interests in ecosystem services. These informants were typically professionals in positions directly relevant to ecosystem services applications, selected from: the (a) academic community, (b) policy community, (c) business community, and (d) environmental advocacy community, as they relate to forest policy, management, and conservation in the province.
The network of institutions comprising British Columbia’s forest policy, management, and conservation community presents an enticing case study for several reasons. The first and most prominently visible reason are the province’s extensive coniferous forests, whose exploitation provides not only a substantial proportion of the province’s economy, but also the source of a qualitatively and quantitatively vast array of ecosystem services that may potentially be incorporated into any or all of the ‘functional’ uses of ecosystem services (i.e. rhetorical, decision-making, and policy approaches) which I outline in Chapter II.

As Bruce Braun (2002, 17) shows us, “nature is an ideological battleground” in British Columbia’s forests, and they have come to possess potent symbolic and political significance. Contests between different imaginings of what forests ‘are’ and how they ought to be conceived animated struggles over how those forests would be governed, and, Braun argues, “it is increasingly clear social nature is a product of myriad cultural discourses and practices” (Ibid., 154). In this chapter, I explore where and in what forms ecosystem services has managed to insert itself into this “social nature” and the discursive crucible these forests represent.

Second, the province harbours a vibrant and diverse “issue network” (McFarland 2004) of environmental groups, forestry companies, governmental agencies, and other political actors across which the full range of possible interpretations, responses, and uses of ecosystem services becomes more readily apparent, illustrating in sharper relief potential contrasts. That these groups and the individuals forming them have shared an often dramatic and at times turbulent history of conflict, rapprochement, and negotiation over recent decades (and prior) only compounds the potential richness of this context with respect to the questions I raise. As I will discuss, the environmental and forest policy landscape remains in some important respects in flux, with ecosystem services, and the service of biological carbon sequestration in particular, appearing as a hinge through which policy change was occurring and being contested. Thus, a final reason compelling us to direct attention to British Columbia are those individuals and groups from both public and private sectors that are working, right now, to develop projects and policy instruments heavily informed by ecosystem services concepts, ranging from market based mechanisms for forest carbon storage to net-zero-loss habitat offsetting schemes.

The empirical research used in this chapter consists of 35 formal semi-structured interviews with professionals distributed across four key institutional settings in forest politics and
governance in the province, which I conducted in the summer of 2010. I identified these institutional settings using a conceptual model of the policy process borrowed from ‘neo-pluralist’ theories of public policy formation, which acknowledge the interconnected and complex roles played by bureaucratic actors (Jackson & Jackson 2006), as well as producers (Lindblom 1984), and the countervailing power of advocacy coalitions (Sabatier & Weible 2007) in issue networks (Heclo 1978; McFarland 2004).

I used a stratified purposeful sampling regime (as discussed by Baxter & Eyles 1997) to identify a first set of informants, with whom I initiated snowball sampling. My formal interviews with key informants can be divided into four groups: 11 interviews with environmental advocates, usually from different groups, typically their forest specialist or their overall chief officer; 7 interviews with informants currently working in business settings; 14 interviews with civil servants working at varying levels and in different capacities within BC’s ‘dirt ministries’; and 3 interviews with academics (though I interviewed many more academics informally). Early on in my fieldwork, I realized that the distinctions between these settings, although useful in describing an informant’s current responsibilities, were often quite porous, and many of the practitioners I spoke with appeared to have moved across settings, in some cases all four, over their careers. For example, many of the practitioners I spoke to had worked in the forestry industry before occupying their current position. Moreover, the distinction between environmental groups, consultancies, and business settings was occasionally unclear. For example, one group I spoke with, although registered as a non-profit organization, charged fees for consulting services and held active forest tenures. As I will discuss later, this ambiguity was perceived as consequential by a number of the ecosystem services practitioners I spoke to.

I conducted interviews in Vancouver, Victoria, and occasionally over the phone. These interviews varied in length, ranging from around thirty minutes to two hours, with most lasting

4 While there are at least eight or nine different ministries with responsibilities pertaining to land-use policy and planning (i.e. the “dirt ministries” as they are locally known), I focused my attention primarily to the Ministry of Environment and Ministry of Forests and Range. After I had conducted my research, BC Premier Gordon Campbell implemented a major reorganization of these ministries, creating a new Ministry of Natural Resource Operations with responsibilities taken from each of them. He has since been replaced as Premier, and it is unclear whether this major reorganization will remain in that configuration.
around one hour. I used a hybrid funnel and pyramid structure as noted by Dunn (2005, 86-87), where I would “start with simple-to-answer, non-threatening questions, then move to more abstract and reflective aspects, before gradually progressing towards sensitive issues.” In practice, and consistent with the exploratory nature of this project, most of my interviews were quite fluid, and my questions were improvised within pre-planned thematic and topical areas.

All my informants agreed to speak with me under the condition of anonymity. In retrospect, this design choice was probably ill-conceived for this project. I was able to secure access to some key individuals with very specific and often quite important responsibilities in the province with respect to environmental and forest governance. My discussion of their experiences with ecosystem services is therefore necessarily (and unfortunately) vague and deliberately constrained in order to obscure their identities.

My interactions with individuals from those institutional settings I engaged in the province suggest the penetration of ecosystem services thinking into the attitudes and practices of the environmental community was not only incomplete but highly differentiated. I discuss how this variegated actualization of the concept, as embodied in social practices, complicates the notion of ecosystems services as representing a step (or lurch) toward the completion of a singular ideological project. In British Columbia, while some of these tendencies were certainly visible and apparently at play, ecosystem services bumped up against a diverse spectrum of established ideological affinities, agendas, and perspectives, each of which saw in ecosystem services something different. Thus, I argue that the ecosystem services concept presents a sort of chimera, becoming to those perceiving it and desiring of it certain things, a different thing. It takes on a variety of forms and visages, appearing differently to the biologist, to the entrepreneur, to the ministry bureaucrat, to the environmental activist. At the very least, I encountered widely divergent conceptions of how ecosystem services ought to be used (if at all) and will conclude this chapter with a call to reflect on this fundamental tension between intention and consequence.

As I mentioned, given the scope of this thesis, there were many questions and themes which I had to leave unattended. Yet, some missed opportunities are more problematic than others. I realized as I progressed through my field work that this chapter’s lack of direct engagement with the perspectives of First Nations practitioners presented a major gap to understanding the
significance of ecosystem services in the province. Many of my informants suggested that First Nations represented an important set of actors to consider, not only as stakeholders in how ecosystem services would unfold in the province, but because they might have a determining influence in its trajectory. I have also realized that the symbolism of not seeking out their input directly alongside those other institutional settings I examine is particularly regrettable. Unfortunately, by the time this became clear, I had saturated the interview schedule of my field work and the timeline of this project. While I do highlight their role in several places in this chapter, at this stage, I can only acknowledge this oversight for what it is, regretfully, and emphasize the importance of this institutional setting in relation to the questions pursued by this chapter and this thesis.

1.2 Conclusion

The conclusion to this thesis reiterates my main findings and argument, namely, that I found ecosystem services beginning to manifest and gain traction among some key networks of environmental practitioners, but that they often held divergent notions of what ecosystem services meant and what it was supposed to do. I make two main arguments that extend from this observation. First, I argue that ecosystem services represents a sort of *chimera* – that it assumes different forms and functions dependent on the institutions it enters and the ways in which different interests prefer to see it and imagine it. Second, I argue that this malleability of the concept results in tensions between the intents of those participating in its discourse and the divergent manifestations and trajectories the concept seems to facilitate.

As Dempsey and Robertson (2011, 6) observe, “Across the world, then, supranational entities, governments, NGOs, regional administrations, scientists, policymakers, and resource managers are learning to think about nature-society relations in the form of services, often priced, and occasionally commodified.” Given the magnitude and plurality of the potential implications (both positive and negative) ascribed to the framework of ecosystem services, there remains a need to untangle the concepts, techniques, and strategic visions that together form the framework of ecosystem services, and to begin connecting them with their emerging institutional and ecological consequences. If the “enormous scope, both for human welfare and conservation of biodiversity” (Kremen & Ostfeld 2005) regularly ascribed to this discourse is to be actually realized, then its repercussions – how such a shift would shape, for example, the
character of environmental advocacy and organized conservation, the politics configuring existing and emerging institutions of governance, and the attitudes of public and private decision makers – should be not only acknowledged but foregrounded. Before embarking on such an enterprise, we should consider the breadth and contested meaning of the implications, and reconcile the intended use of these concepts as expressed by their proponents and originators with their actual interpretation and uptake in those institutional settings at which those concepts are consciously aimed. This thesis attempts to make a modest contribution to such a consideration.

Thus, this thesis pursues what ecosystem services becomes when run through the political and institutional gauntlets it confronts, and what it is made to do. By trying to tease apart the social practices constituting ecosystem services, I attempt to understand “how such an abstract set of concepts and ideas can come to have real political effects” (Hajer 1995, 39). It is people after all, who are the fulcrum through which ideas are transformed into consequences, and it is on this level – the idiosyncratic and messy social reality of people holding values, inhabiting places, and embedded in institutions – that this study confronts ecosystem services. Just as Takacs (1996, 106) saw in biodiversity “a rare opportunity to watch the conscious creation and dissemination of a new paradigm of our conceptions of nature, to examine how and why biologists have concocted and promoted the word,” I argue we may also observe in ‘ecosystem services’ a continuity of these dynamics and a unique chance to study them.

But biologists are only one of ecosystem services’ constituencies, and as I conclude later, the neologism has fragmented in its practical meaning, its applications, and its very purpose, and has become a locus of contestation between different interests vying to shape its ultimate discursive and material expression. These divergent conceptions of what ecosystem services are and what they are supposed to do across different communities of environmental practitioners suggest a fluid strategic landscape – as new opportunities open and others close along its shifting terrain – whose ultimate configuration and outcome remains uncertain. Still, despite this apparent state of flux, and despite the ambiguity which characterizes the discourse of ecosystem services, it is through these ambiguities, contestations, and contrasting viewpoints, that we are thereby also presented with a unique opportunity to appreciate their significance, and the theoretical and practical implications that they pose.
Chapter 2
The Way Forward for Conservation

“Whether it’s Gretchen, or Bob, or any of that of that group, they kind of raised the level of discussion on ecosystem services, no question of that. That Nature paper gets trotted out a ton. I don’t even have to say it. ‘That Nature paper.’ It raised the game. It put the concept of ecosystem services into the mainstream of the minority, I’ll call it. And what’s now happening is it’s going from that minority of people, to a larger broader audience. People have been playing around with the concept. And they’re testing it. They’ve been trying it. There’s stronger evidence and arguments for it. There’s mechanisms like REDD+ that are beginning to emerge. There’s lots of things happening on it. And it stood the test of time, it wasn’t one of these, ‘oh, how could you possibly put a value on God,’ you know, these sorts of semantic debates that go on. It stood the test of those sorts of things and it stuck around, and it’s sort of saying look – this isn’t going anywhere.”

- an environmental practitioner based in British Columbia

2 Ecosystem Services in the Literature

James Salzman met Gretchen Daily, an ecologist from Stanford University, in 1996 while at a conference in Japan. Daily, who would go on to become one of the leading architects and proponents of the ecosystem services concept, gave him an early draft of her landmark book, *Nature’s Services*. Salzman, himself a law professor at Duke University, remembers his reply:

“This is terrific. You’re really onto something, but there is a problem. There is nothing here about institutions. And if you want to take this idea and make it happen, then you have to figure out how the legal aspects work, what the institutions are going to look like.” And Gretchen, being Gretchen, said, “You are so right. Why don’t you do that?” In short order, she and Paul Ehrlich helped me get an EPA STAR Grant and I spent a year at Stanford. Working with a bunch of law professors around the country we came out with a special issue of the *Stanford Law Journal*. We looked at every major environmental law, asked whether ecosystem services were currently protected and, if not, whether these laws could be used to protect ecosystem services. This was the first comprehensive legal analysis of ecosystem services (Salzman 2011, 598).
Daily, her colleagues, and the growing community of researchers attracted to the ecosystem services concept, ultimately did proceed to “take this idea and make it happen.” They brought their message to “international treaties, national legislation, government reports, academic textbooks, popular environmental books,” to “scientific organizations, grass-roots conservation groups, state-funded and commercial media, and so on” (Ridder 2008, 781). Salzman’s anecdote begins to illustrate, among other things, the process of strategic fine-tuning – here through targeted research, enrolment of new actors, and mobilization of financial resources – that came to characterize that project. It is on these efforts over the last fifteen years that this chapter focuses.

A decade and a half after his initial encounter with Daily, Salzman (2011, 600) looks back on what ecosystem services discourse – an undertaking to which he himself was recruited – had managed to accomplish, and ponders its implications. “While there are lots of reasons to be excited about the potential of an ecosystem services approach,” he notes, “some caution is in order. It’s fair to ask, just what is the emperor wearing? Is the emperor standing out there in splendid garb or is there some Velcro and rayon we cannot see? I think it is a bit of both – promise and hype.” This kind of guarded optimism is characteristic of a more general ambiguity and ambivalence about what ecosystem services represents, what it should be for, and what it can and cannot do, which I hope to begin highlighting in this chapter and throughout this thesis. For instance, Martin Sharman, an ecologist at the EU Directorate General for Research, sees ecosystem services in somewhat different terms:

Trying to bring humans to a sense of what nature is worth to humans is not itself an evil thing […] and success in that effort might allow us to find an acceptable transition to allow us to negotiate the coming century with dignity. Nature matters to our survival. Yes. The poison of the concept consists in its easy casting aside of morality, ethics, and emotions. Its implicit rejection of connectedness, of accompaniment. Its blindness to the case of being a part of something larger than yourself or the stunningly improbable good fortune that we enjoy on this blue planet of living things. Its absolute denial of the sense of belonging. Its barren affirmation, in the end, that all is meaningless and that you are absolutely, and hopelessly, and endlessly alone (Sharman 2010, 10).
In order to start unpacking these strikingly different registers of ecosystem services discourse and its rising influence, I begin first by drawing attention to its origins.

2.1 An Instrumental Biodiversity

The term “ecosystem services,” leaving aside the much deeper antiquity of the basic idea underlying it,\(^5\) predates its current popularity by some decades at least (see, for instance, Ehrlich & Mooney 1983; Westman 1977; Krutilla & Fisher 1975). Dempsey and Robertson (2011, 4) suggest the concept was “rooted in the development of ecological economics as a heterodox branch of economics in the 1970s,” where it disrupted neoclassical theories by pointing out “meaningful limits to growth” and problems of substitutability based on physical and ecological principles. Tallis et al. (2008, 9457) note, however, that “there is nothing new in this message: people depend on nature, and people too often damage nature, thereby endangering their own health and well-being.” This simple statement is characteristic of how many early ecosystem services proponents expressed their motivations as they engineered the rise to prominence of the concept. Its “novel contribution,” they explain, is its “championing of a new scientific focus, a focus on understanding how nature produces a wide array of ecosystem services, quantifying the rate and value of the delivery of these services, and modeling the connections between ecosystem services, human welfare, and economic systems” (Ibid.).

This exercise of trying to pin down what is ‘new’ about ecosystem services draws into sharp and immediate focus its fundamentally political nature. What perhaps most distinguishes current interest in the concept from previous iterations is not just its technical sophistication, as indicated above, but its elaboration in specific respects in service to overtly didactic (i.e. political) functions and projects: its purpose, perhaps in contrast to the ecological science from which it draws, is explicitly to facilitate particular types of actions. The now burgeoning ecosystem services literature regularly invokes this essential theme, that is, how the political space afforded by this emerging science – rendering in clear, sobering terms (at least, economic ones) the consequences of biodiversity loss – finally delivers to conservationists the power to mobilize sympathy and thereby action from society in support of biodiversity conservation.

\(^5\) Daily et al. (2009, 22) note, “[a]n appreciation of ecosystems as valuable capital assets traces back to Plato, or even earlier.”
Ruhl and Salzman (2007, 158) suggest that “If we look to fix a date for the birth of ecosystem services as a big “new” idea, it would be 1997 and three influential publications.” This section discusses the significance of these texts. While their purpose and scope vary, they have in common their status as heavily cited and foundational texts in ecosystem services discourse, and I observed all three being invoked by practitioners at both my field sites. I draw attention to them in order to illustrate not only their defining contribution to ecosystem services scholarship, but also the kinds of motivations precipitating them.

We are provided an informative anecdote in the preface to the first of these texts, *Nature’s Services: Societal Dependence on Natural Ecosystems* (Daily 1997). This text, which I introduced earlier, was a volume edited by Gretchen Daily, a Stanford ecology professor and one of ecosystem services’ most prominent scholars and advocates. She reminisces, “after dinner one night, under the Arizona desert sky, at an annual meeting of the Pew Fellows in Conservation and the Environment” (*Ibid.*, xv):

> A small group gathered informally to lament the near total lack of public appreciation of societal dependence upon natural ecosystems. This ignorance […] represents a major hindrance to the formulation and implementation of policy designed to safeguard earth’s life support systems. […] lack of understanding of the character and value of natural ecosystems traces ultimately to a failure of the scientific community to generate, synthesize, and effectively convey the necessary information to the public. A collective strategy to address this problem emerged from the group’s discussion, the first phase of which consisted of producing a rigorous, detailed synthesis of our current understanding of a suite of ecosystem services and a preliminary assessment of their economic value (*Ibid.*).

The aspirations Daily expresses here for ecosystem services are characteristic of early scholarship in this area. This passage also hints at the somewhat confined network of experts involved in formulating and packaging the concept in these formative years and the largely academic context (which is not to say this project was disinterested) that the theoretical framework took root and from where it propagated. Perhaps most interestingly, the passage reveals the perceived causes and appropriate solution to deepening environmental crises. Note the three steps made by this passage: (1) that the scientific community had failed to engender in
society an appreciation for the importance of ecosystems, (2) that the resulting lack of ecological understanding was worsening (if not a chief cause of) environmental crises, and therefore, (3) that the solution was to communicate their knowledge of nature’s value in more palatable, operational, and, hence, economic terms: those of ecosystem services. This simple three-point message (i.e. failure, crisis, solution) summarizes, surprisingly neatly, the basic rationale for “mainstreaming” ecosystem services as it reappeared and was reiterated in the years after the publication of *Nature’s Services*.

Through its contributors, among them ecologists, economists, and conservation biologists, the volume that culminated from the discussion Daily describes provided an “interdisciplinary, synthetic overview of the nature and value of ecosystem services” (*Ibid.*, xviii) and presented one of the first comprehensive, thoroughly researched, and accessibly communicated descriptions of the various environmental benefits furnished by ecosystems to society. The volume laid out the conceptual framework through which ecosystem services discourse took shape and flourished, establishing the contours that are by now familiar in ecosystem services scholarship. While it covered a range of different ecological systems, its signal contribution was the overall framework it offered for characterizing the reliance of society on their functioning.

However, as Daily’s focus on “public understanding” makes clear, what *Nature’s Services* also offered were rhetorical tools for framing and making such a case persuasive. Natural capital and ecosystem services here present themselves as the means of translating and communicating ecological knowledge, producing an appreciation for the environment, and thereby facilitating action for nature: they provide rhetorical ammunition in service to the kind of public relations campaign later proposed by Claire Kremen (2005). As Fisher and Turner (2008, 1168) observe, “Nature’s Services really put ecosystem services on the map, and the field has been growing exponentially since then.” A number of informants in British Columbia referred to Daily (or “Gretchen”) in their conversations with me when asked how they first heard about ecosystem services, and quotes from *Nature’s Services* adorned both PowerPoint presentations and briefing documents distributed in Nagoya at CBD CoP-10 (I later found out that she also attended the meeting). Daily herself remains an outspoken and engaged proponent of ecosystem services in her writing and in her capacity as founder and Director of the Natural Capital Project, a joint venture of universities and conservation organizations which combines research, applied conservation projects, and, importantly, engagement with “leaders in key institutions” across
“public, private, and non-profit sectors” (Natural Capital Project 2011). There, she helps “integrate ecosystem services into everyday decision-making around the world” (Daily et al. 2009, 21).

I have also already mentioned the second text: The Value of the World’s Ecosystem Services and Natural Capital, a paper written by a group of researchers led by Robert Constanza and published in the prestigious journal Nature, also in 1997. As noted, the paper attempted to estimate the total monetary value of global ecosystem services, ultimately arriving at US$33 trillion per year. While their methodological approach was, by the admission of its authors, somewhat crude, the number they posited as a rough starting point quickly became a potent symbol in the rise of ecosystem services discourse. Before discussing its effects, it is worthwhile to reflect first on its intent. The paper was quite open about the kind of conversation it hoped to facilitate, and its remarks on valuation in particular are worth noting:

The issue of valuation is inseparable from the choices and decisions we have to make about ecological systems. Some argue that valuation of ecosystems is either impossible or unwise, that we cannot place a value on such ‘intangibles’ as human life, environmental aesthetics, or long-term ecological benefits. But, in fact, we do so every day. When we set construction standards for highways, bridges and the like, we value human life (acknowledged or not) because spending more money on construction would save lives. Another frequent argument is that we should protect ecosystems for purely moral or aesthetic reasons, and we do not need valuations of ecosystems for this purpose. But there are equally compelling moral arguments that may be in direct conflict with the moral argument to protect ecosystems; for example, the moral argument that no one should go hungry. […] So, although ecosystem valuation is certainly difficult and fraught with uncertainties, one choice we do not have is whether or not to do it. […] as long as we are forced to make choices, we are going through the process of valuation (Costanza et al. 1997, 255).

The focus here is on choice. Although Nature’s Services shared methodological overlaps in its various contributors’ chapters with the approaches employed here, the motivations articulated in this text diverge noticeably from those apparent in Daily’s (1997) remarks. Here, ecosystem services, and ecosystem service valuation in particular, are represented as a means of improving
rational decision making, clarifying (in reassuringly quantitative terms) difficult trade-offs between different formulated options. Its role as a rhetorical device intended to win arguments appears incidental, and is not explicitly mentioned, which is striking given the candidness of other justifications provided for the exercise and for ecosystem services’ overall utility. I attend to this distinction and its significance in more detail later. For now, it suffices to say that regardless of the apparent absence of this intent, the paper became “great sound-bite material for the general public” (Ruhl & Salzman 2007, 160), and greatly amplified the message delivered by *Nature’s Services*, which preceded it by only a few months. When I asked each of my informants in British Columbia how and when they had initially come across the concept of ecosystem services, this paper was by far the most common answer across all institutional settings. As I will discuss, the paper provoked considerable and often vociferous debate for methodological as well as political reasons, and has by now been cited over 4,500 times.

Staying, for a moment, on the subject of dramatically large numbers and their important role in this story, I should draw attention to a few that help express the scale and rapid growth of the ecosystem services literature itself. Fisher et al. (2008, 2050) note, “In the peer-reviewed literature, a keyword search for ecosystem services revealed over 1,165 papers, of which more than 60% of them have appeared since 2003.” This is over just a five year period, and their estimate excluded the considerable volume of writing on ecosystem services from the grey literature. Searle and Cox (2009, 2) found that “the number of publications focused on ecosystem services across academic fields has grown 1,108 percent, from 255 publications in 1997, to 3,080 in 2007.” Evidently, the expansion of ecosystem services discourse – using the proxy of publication volume, at least – has been “rising exponentially” (Fisher et al. 2009;
Figure 2). The dramatic story these metrics seem to tell somewhat mirrors the vast sum of money posited by Costanza et al.’s (1997) paper. As Ruhl & Salzman (2007) imply, this number’s amenability to quotation, how easily and immediately it could be passed along and understood, was both vital to and constitutive of the transmission and uptake of the ecosystem services concept during this period. As I noted earlier, the language through which biodiversity was here represented, the language of numbers, and especially that of large numbers with dollar prefixes, rendered it, once translated into ecosystem services, ‘legible’ to certain sets of eyes (Scott 1997), catapulting the idea into prominence, while also revealing the kinds of sensibilities from which and to which it circulated. I will return later to subsequent interventions Robert Costanza made in the literature, and, in particular – ten years after he released his now well-worn number – how he reconciled this somewhat narrow, prescribed vision for ecosystem services valuation with the later reception and wider use of it.

The third text, Economic Returns from the Biosphere, by economists Chichilnisky and Heal (1998), was a short two-page article published in Nature the following year. The article told the story of one of the more prominent ecosystem services policy instruments, namely, the “payments for ecosystem services” (PES) model, to demonstrate the promise of the concept – this time as mechanism rather than as rhetorical tool or decision-making input. While the particulars of PES schemes can often vary, PES typically entails compensating landholders (by the state or by some other ecosystem services beneficiary) to become environmental stewards, who would then forego ecologically high-impact land-use practices and maintain the supply of ecosystem services flowing from that land. The article illustrated the potential of this approach using the example of New York City’s Catskills mountains, where managers secured a cheaper source of water by investing in “landscape management practices in the upper watershed rather than building a pre-treatment plant” (Ruhl & Salzman 1997, 160). The city saved billions of dollars in the process, while also restoring the ecological integrity of the watershed. Following its publication, this example developed into the example for a time, a punchy and easily transmitted “creation myth, certainly the best-known and oft-repeated case, for the merits and commercial promise of paying for ecosystem services” (Ibid.).

Once again, it is worthwhile to reflect on the intent and message embedded in this text, which are expressed somewhat openly by its authors. They begin with the familiar premise, “The environment’s services are, without a doubt, valuable. The air we breathe, the water we drink,
The food we eat are all available only because of services provided by the environment” (Chichilnisky & Heal 1998, 629). To the authors, this suggested the question, “How can we transform these values into income while conserving resources?” and the following solution:

‘securitize’ (sell shares in the return from) ‘natural capital’ and environmental goods and services, and enrol market forces in their conservation. This means assigning to corporations – possibly by public-private corporate partnerships – the obligation to manage and conserve natural capital in exchange for the right to the benefits from selling the services provided. […] Privatizing natural capital and ecosystem services is a vital step, as it enlists self-interest and the profit motive in the cause of the environment (Ibid).

More than simply attaching dollar signs to dramatically large figures, this text concerned itself with how those values could and ought to be captured. This text departed from the two others I have discussed in that those texts “suggested that environmental services have great value, without indicating how this value can be realized” (Chichilnisky & Heal 1998, 629). This article did not provide an appealing argument for conservation, nor did it provide a new way for improving rational decision-making processes; rather, it provided an example of the successful economic operationalization of ecosystem functioning, expressed in terms of ecosystem services, and the financial opportunity this represented. The text demonstrated how nature could (and, they argued, should) be made at increasingly greater scales to pay its way. While the Catskills case study is the chief element of this article that really traveled, its framing is illustrative. It couched that example as one of an emerging and potentially vast set of financial opportunities. The central message of the piece is repeatedly made clear, that “the returns to this investment in conservation are incalculably large” (Ibid. 630). Throughout the article, their imagination wanders from ecotourism, to bio-prospecting, to forest carbon trading: the opportunities abound, and the Catskills were only the beginning. Here, ecosystem services are represented as the “framework [that] would harness private capital and market forces in service of environmental conservation” (Ibid.).
The central ‘lesson’ embedded in this text can, of course, be traced far earlier than to the rise of ecosystem services. This particular convergence of environmental discourse with market rationalism is hardly unprecedented (Dryzek 2005), and this text is better interpreted as characteristic of rather than a significant causal driver behind the increasing imbrication of economics into biodiversity conservation discourse. Indeed, the basic theoretical framework of ecosystem services seems more or less consistent with those of prevailing economic theory. As Salzman (2011, 608) observes, “the rhetoric, talking about natural capital in the same terms as financial capital, works really well. You can actually transfer quite a bit of thinking from one field to the other. Asset management, streams of services, managing for multiple services, portfolio management, makes sense for both financial and natural capital.” Thus, when considering for whom ecosystem services represents a potential ‘paradigm shift,’ it is important to note that ecosystem services does not appear to speak in especially disruptive terms to this audience. In contrast, the inclusion of these concepts into the “epistemic communities” (Speth & Haas 2006) sharing biodiversity conservation discourse has in the past provoked considerable debate and resistance (MacDonald 2010a). And so, it is here, rather than with economists, that I suspect ecosystem services represents a much more significant institutional and ideological realignment. I revisit this question later in this and subsequent chapters.

Between these three texts, we may begin to discern the methodological, conceptual, and rhetorical planks that would come to characterize ecosystem services research and scholarship over the following decade and a half. In Daily (1997), we observe a statement of purpose as well as the articulation of the conceptual and methodological tools for achieving it. Ecosystem services appears here as a rhetorical toolkit for sharpening arguments advocating environmental protection and conservation, and for facilitating ideological conversion around those values. In Costanza et al. (1997) we observe the amplification of that rhetorical power when packaged using the imagery of incomprehensibly large piles of money, but also the kind of technocratic decision-making processes to which ecosystem service values are often intended. Here, ecosystem services appears as a quantitative input meant to tip the cost-benefit scales that are...

---

That “we should either bring environmental goods into actual markets through an extension of tradable property rights to environmental goods, or alternatively we should construct shadow prices for environmental goods by ascertaining what individuals would pay for them were there a market” (O’Neill 2007, 27)
(ideally) supposed to comprise rational public policy formation. It provides a decision-making tool for analyzing and optimizing trade-offs in terms of human welfare. And finally, in Chichilnisky and Heal (1998), we observe a pithy test case exhibiting the promise of implementing an ecosystem services approach, and the attendant financial opportunities. In this text, ecosystem services appears as the requisite hinge – providing the technical and conceptual tools – through which ecosystems could be included in markets and similar institutional arrangements.

Together, these three texts were not only constitutive of the rise to prominence of ecosystem services, but also illustrative of some of the distinct threads comprising and continuing to jostle within that discourse. Referring to these texts, Ruhl and Salzman (2007, 160), point out:

much had already been published on the operation and value of ecosystem services, and ecosystem service payment schemes were already operating in many parts of the globe, but the concurrent release and media response to these publications both raised the profile of ecosystem services and, more importantly, began to generate interest among quite diverse audiences – from academics and policy wonks to companies and environmental groups. Each group saw the potential of an ecosystem services approach to further their own interests, whether it was a new stream of income for conservation or a money-making opportunity.

These three texts were important to popularizing the idea, but they are also useful (to this thesis) in exemplifying some of the different directions the idea would go as it moved beyond the largely academic conversation in which it originated. Across each of these texts, the function that ecosystem services was supposed to fulfil varied. Understanding how those intents linked up with particular audiences is key, and much of this thesis is spent trying to describe these connections and the tensions between them. These different functions of ecosystem services attract different interests, which, while sharing the discourse with one another, can (and often do) view each other’s agendas with some apprehension or even hostility. Before broadening out this discussion to those connections and tensions, I will comment on the important role of the Millennium Ecosystem Assessment (MEA) in the rise of ecosystem services.
2.2 Information to Knowledge

If the three texts I have just discussed put ecosystem services “on the map” (Fisher & Turner 2008, 1168) then the MEA consolidated its borders, ensuring its durability and establishing it as a lasting idea demanding serious attention from those “diverse audiences” Ruhl and Salzman (2007, 160) allude to. The MEA was formally called for in 2000 by the UN Secretary General (then Kofi Annan) and was “carried out between 2001 to 2005 to assess the consequences of ecosystem change for human well-being, and to establish the scientific basis for actions needed to enhance the conservation and sustainable use of ecosystems and their contributions to human well-being” (MEA 2005, v).

The undertaking itself was modeled after the Intergovernmental Panel on Climate Change (IPCC) and was coordinated by the United Nations Environment Programme (UNEP). It mobilized over 1,300 experts from 95 countries and was governed by “a multistakeholder board that included representatives of international institutions, governments, business, NGOs, and indigenous peoples” (Ibid., ii). Note the speed with which this ambitious effort took shape after the initial popularization of ecosystem services only several years before: the MEA took an emphatically ecosystem services-oriented perspective, adopting as its main focus “the linkages between ecosystems and human well-being and, in particular, ecosystem services” (Ibid., v).

The reports stemming from this effort attempted to systematize and assess trends in a broad range of ecosystem services, presenting information on past changes and projecting future changes to those ecosystem services and the implications to human well-being. Given those changes, it presented a variety of evocatively-titled scenarios\(^7\) of possible responses by different actors across different scales. The reports also posited the now widely used definition and categorization for ecosystem services which I introduced earlier.

The MEA is important to the story of ecosystem services’ rise for a number of reasons. Although the initiative, by its own admission, did not pioneer much new theoretical ground, what it did do was announce the entrenchment of ecosystem services both as a topic of legitimate scientific inquiry and increasingly as an idea with serious relevance outside of the

\(^7\) Titles such as “Order from Strength,” “Adapting Mosaic,” “Technogarden,” and “Global Orchestration,” each depicting different visions of the world’s future.
academy. Redford and Adams (2009, 785) suggest that among policy audiences, the MEA “began a rapid shift in the concept of ecosystem services from an academic backwater to the mainstream,” transforming it into “the central metaphor within which to express humanity’s need for the rest of living nature.” By now, it has become a reference text for ecosystem services generally, and its definitions and approach set a consistent conceptual baseline across the different domains where ecosystem services applications have been gaining traction. Like the three texts I discussed which preceded it, it is now widely cited, not only in the academic literature, but also in the grey literature. More recent articles published in the ecosystem services literature tend to almost ceremonially invoke the MEA in their introductory remarks to orient discussion. As I will note in the next two chapters, it was not only mentioned, but appeared to have had significant influence across my field sites in British Columbia and, predictably enough, especially in Nagoya at CBD CoP-10. It also illustrates, given the short timeframe I have so far covered, the rapid pace at which ecosystem services discourse was both deepening its hold within the academic community and beginning to enrol new audiences.

Finally, in the MEA we may again observe a reiteration of this identity of ecosystem services as not only a scientific but a social and a political project. Interestingly, in contrast to the IPCC, “The MA did not aim to generate new or primary knowledge, but instead sought to add value to existing information by collating, evaluating, summarizing, and communicating it in a useful form” (MEA 2005, v). Dwelling in that interstitial discursive space of the ‘science-policy interface,’ the didactic nature of ecosystem services becomes clearly visible, and the MEA’s use of the phrase “adding value” here is perhaps unintentionally meaningful. Ecosystem services does not necessarily present new information per se, but rather instils in that accumulation of information a kind of motivating force that facilitates particular kinds of actions or “uses.” The MEA framed its recommendations squarely at policy-makers and other key decision-makers from those institutional settings it targets. This ‘applied’ identity of ecosystem services surfaces throughout the text, often under the phrase “policy relevance.”

As Haajer (1995, 17; 20) notes, “the dynamics of environmental politics cannot be understood without taking apart the discursive practices that guide our perception of reality […] discursive strategies matter. Today’s environmental issues are discursively created.” Similarly, Barnett and Finnemore (2004) conceptualize the influence and power wielded by international organizations and the bureaucracies and initiatives that comprise them (for instance, UNEP and the MEA) as
deriving largely from their ability to make rules, “the explicit or implicit norms, regulations, and expectations that define and order the social world and the behaviour of actors in it” (Barnett & Finnemore 2004, 18). These organizations are able to exercise power

not so much because they possess material and informational resources but, more fundamentally, because they use their authority to orient action and create social reality. IOs [international organizations] do more than just manipulate information: they analyze and interpret it, investing information with meaning that orients and prompts action, thereby transforming information into knowledge (Ibid., 7).

This characterization applies to what the MEA and the subsequent efforts it inspired began to accomplish. I will revisit this dynamic more directly and in more depth in Chapter III. For now, I will simply highlight the significance of the UN system as one of the clearest examples of the idea of ecosystem services penetrating an institutional setting and manifesting as social practice. Through the bureaucratic ‘rule-making’ capacity of UNEP, ecosystem services began to “create new categories of actors, form new interests for actors, define new shared international tasks, and disseminate new models of social organization around the globe” (Ibid., 3). The MEA not only announced the rising influence of ecosystem services, it embodied it. The MEA both reflected and consolidated ecosystem services’ rise to prominence, and served to institutionalize ecosystem services in the collaborative relationships, funding mechanisms, organizational commitments, and other social practices the MEA’s thousand-plus team of international experts had to mobilize simply to get it done. In this way, the form in which ecosystem services materializes here is much more than just a summary report of information. It even seems to appear here as more than a discourse, as described by Dryzek (2005, 20):

The impact of a discourse can often be felt in the policies of governments or intergovernmental bodies, and in institutional structure. […] Beyond affecting institutions, discourses can become embodied institutions. When this happens, discourses constitute the informal understandings that provide the context of social interaction on par with formal institutional rules.

Ecosystem services here appears to have become an institution itself, or at least institutionalized, contributing not only to shared understandings about the world, but to more durable institutional forms in the world. The MEA provided a template on which later efforts, such as The
Economics of Ecosystems and Biodiversity (TEEB) and the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES), could continue to build, not just conceptually but organizationally. And embedded within the organizational (re)wiring of this and the subsequent exercises the MEA inspired, was the familiar logic and thinking of ecosystem services. However, as I will explain, that logic and thinking can, from different vantage points, become quite heterogeneous. I will now attempt to systematize the different currents running through some of the texts I have just described, and develop a typology of what ecosystem services ‘is,’ based on the various functions it is intended to fulfil.

### 2.3 Typology

Now that I have sketched a rough depiction of the timeframe and tenor of ecosystem services’ rise to prominence, I will reiterate more explicitly what the framework presented to its proponents. There are a number of perceived advantages to this way of conceptualizing the interface between nature and society, some of which feature in the texts just described. I group these rationales into three main categories, each denoting somewhat different functions: ecosystem services as (a) a rhetorical tool for winning arguments and justifying the need for environmental protection and conservation, (b) a decision-making input clarifying and optimizing tradeoffs between the costs and benefits of different formulated options, and (c) a structuring framework for developing a range of policy instruments, such as payments or markets in ecosystem services. At this stage, this characterization will be, out of necessity, somewhat schematic, and I will attempt to animate this typology with specific examples from my field research in later chapters.

First, ecosystem services promised better arguments for conservation. For example, in an exchange in *Nature*, Walter Reid (2006, 749), Director of the MEA, argued that traditional rationales for conserving nature – the kinds which had characterized North American environmentalism for the latter part of the 20th century, relying heavily on notions of intrinsic value in nature and appeals to ethical, aesthetic and spiritual sensibilities – had been “manifestly insufficient as a response to the increasing threats to biodiversity.” Similarly, Turner and Daily (2008, 26) argue, “In the past, nature conservation and protected area policy was justified largely by a combination of separate scientific and ethical ‘intrinsic value’ arguments.” These “traditional arguments in support of ecosystem conservation alone are not sufficient,” they
suggest, because they “do not capture the utter dependence of human well-being on natural capital.”

This characterization of environmental advocacy, which will reappear in this thesis, here provided the foil to which an ecosystem services approach was contrasted and justified. His comments were responding to one of a growing number of critiques being levelled at ecosystem services, this one focusing on its potential to actually protect biodiversity. To this, Reid refers to the perceived inability of environmental advocates to reverse or significantly alter the course of accelerating rates of species extinction, habitat loss, and environmental degradation. To Reid and many other proponents of ecosystem services, this failure implied the necessity of a new way forward and, Mooney (2010, 34) observes, the perceived “necessity to think beyond conservation as we [scientists] normally think of it.”

The perception of this failure, together with a sense of impending ecological crisis, overhangs much of the academic writing on ecosystem services where it appears in the literature, and perhaps most clearly in commentary from ecologists and biologists. This acknowledgment often pivots into an indictment of the scientific community, and a reiteration of the need for researchers to appropriately translate and effectively communicate their knowledge to key audiences, much as Daily (1997) described in the passage I quoted earlier. “Given the lack of substantive progress” in halting the loss of biodiversity, Mooney (2010, 34) observes, “A new sense of urgency is penetrating this community.” For example, Armsworth et al. (2007, 1383) argue, “Nature for nature’s sake resonates only with the already converted. Business interests, farmers, and the billion humans living in rural poverty remain unwilling or unable to move.” Thus, they conclude, “As a community, conservation biologists must refocus research efforts to deliver the science to support ecosystem-service conservation” (Ibid.). Similarly, Luck et al. (2009, 179) argue, “conservation is not as prominent in political agendas […] because most conservation strategies fail to incorporate the flow of benefits from ecosystem services to people.”

According to this rationale, ecosystem services provides an urgently needed means of broadening support for conservation, and catalyzes ideological change by arming its messengers with a more accessible, more easily translated, more appealing, and ‘universal’ rationale and rhetorical toolkit for justifying biodiversity. Thus, ecosystem services may be used to engineer
“a conscious process of cultural evolution” (Daily et al. 2009, 26), premised on the notion that “If human dependence on nature becomes widely recognized, society will demand greater environmental stewardship” (Armsworth et al. 2007, 1384). Editorial interventions by ecosystem services proponents in the literature made this point variously explicit and implicit. As I will discuss in the next chapter, the performance of this argument became somewhat commonplace in Nagoya at the CBD CoP-10.

The second main advantage invoked to justify ecosystem services is that it simply enhances rational decision-making processes. The National Research Council, for example, asserted rather directly that “reliable information about the benefits of improvements in ecosystem services or the costs of ecosystem degradation will lead to improved environmental decision-making” (NRC 2004, 6). A frequent position taken by proponents in the ecosystem services literature and related commentary emphasizes that it provides a widely recognizable, easily commensurable, and reassuringly quantitative unit of value (often but not necessarily monetary) to make ecosystem functions legible within the technical language of law and policy (Ruhl & Salzman 2007). According to this line of reasoning, in the absence of valuation, “Decision-makers and governments implicitly assign ecosystem processes a value of zero and, not surprisingly, then select actions that reap rewards according to the values everyone already understands” (Tallis & Kareiva 2005, 756). By adapting environmental values into the ‘operational’ language of economics, and so it is thought, thereby law and policy, previously neglected features of the environment become more easily visible to policy-makers and
decision-makers, facilitating a closer approximation of the ‘true’ costs and benefits of environmental decisions. The BC FPB (2008, 4), for example, suggests that “economic valuation of ecosystem services allows ‘apples and apples’ comparisons of the economic costs and benefits of industrial and commercial development, including impacts on the environment.”

As Costanza et al. (1997) insist, choices are made explicit and decisions enhanced through a clearer understanding of the trade-offs involved when assessing different options. This function of ecosystem services is perhaps best illustrated by the software system “InVEST” (Integrated Valuation of Ecosystem Services and Tradeoffs) developed by Gretchen Daily’s Natural Capital Project. Using GIS to spatially portray the delivery of ecosystem services over a given landscape, the decision-making tool is intended to inform “managers and policy makers about the impacts of alternative resource management choices in the economy, human well-being, and the environment” (Daily et al. 2009, 22; Figure 3). This kind of systematized and, above all, rational framework is, at least within ecosystem services’ endogenous literature, commonly mentioned as one of the key contributions of the ecosystem services approach.

While this rationale for ecosystem services does somewhat resemble the previous one – which was that the concept helps improve arguments for environmental conservation – the implicit concerns, strategy, and sensibility here differ subtly but importantly. First of all, those seeking rhetorical tools from ecosystem services often employ them toward an agenda which takes the value of biodiversity as a given, or which assume ecosystem services research will vindicate the value they already place on it. For example, McCauley (2006, 28) advises, “When we employ the aid of ecosystem services to help pay the bills of conservation, we must make it abundantly clear that our overall mission is to protect nature, not to make it turn a profit.” The second rationale, however, views ecosystem services more as an instrument for optimizing human welfare, which currently suffers because benefits from nature are (perhaps lamentably) underweighted. As the NRC (2004, 5) acknowledges, “Fundamentally, these debates about the value of ecosystems derive from two points of view. The first is that the values of ecosystems and the services are non-anthropocentric and that non-human species have moral interests or rights unto themselves. The other, which includes the economic approach to valuation, is that all values are anthropocentric.” In other words, these perspectives can and often do diverge on the question of anthropocentric ethics, or the issue of instrumental versus intrinsic value in biodiversity.
Secondly, the specific audiences targeted by these two perspectives, and perhaps more interestingly, how they conceptualize their respective audiences, also differ. The former perspective adopts a wider focus on the attitudes of the public and society at large, and at least acknowledges the political and ideological nature of the environmental and conservation issues it seeks to address. Gretchen Daily, whose advocacy encompasses all three rationales, speaks to this register of ecosystem services when she acknowledges the project as a “a conscious process of cultural evolution,” where, through a diverse combination of “monetary rewards, legal sanctions, guilt, approval by peers,” ecosystem services proponents “can foster these values” (Daily et al. 2009, 26) amongst society. The latter perspective takes a narrower, more schematic, almost anti-political outlook on its more elite audience – ‘The Decision Maker’ – and uses a conceptualization borrowed from (or at least consistent with) economic theory, viewing organizations or even individuals themselves as employing a kind of rational optimizing calculus, maximizing benefits and minimizing costs, and allowing incentives and disincentives to govern their actions. Both perspectives, but particularly this latter one, also maintain a posture of scientific impartiality. Here, the main barrier to good decisions is a lack of information, providing this information is the key to encouraging good decisions, and it is the special job of experts and scientists to provide that information.

Before discussing the third vision for ecosystem services, that of markets and market-like institutional arrangements, I should pause to reflect on this awkward positioning of ecosystem services proponents and how this relates to the culture of ecologists and biologists, whose role in the development of ecosystem services discourse has been so crucial. I refer here to the tension between their dual role as scientists and advocates, a role which participation in ecosystem services discourse – which I argued earlier is an inherently political project – uneasily yet unavoidably places them. As Robertson (2006, 381; 382) points out, scientists caught in this position “must perform this task with reference to ecosystem science, but cannot do so standing within that science. […] [L]egal and capital logics require information about ecosystem services that scientists cannot provide in an uncontroversial way.” On this issue, Takacs’ (1996) research on the promotion of the concept of biodiversity is especially instructive, and he speaks directly to how biologists navigated that tension. He discusses the debates over this dilemma as they occurred within conservation biology journals at the time, and it would appear the problem has
persisted and continued to preoccupy them. For instance, in an editorial addressing this issue in *Conservation Biology*, Lackey (2007, 12) argued:

> We scientists in conservation biology, ecology, natural resources, environmental science, and similar disciplines are collectively slipping into a morass that risks marginalizing the contribution of science to public policy [...] Scientists are uniquely qualified to participate in public policy deliberations and they should, but advocating for their policy preferences is not appropriate.

I argue that this notion of “the scientist,” and the fraught political and institutional landscape through which she must navigate, represents an important dimension to consider when trying to understand why and how ecosystem services took root in the way that it did. The project of environmental conservation, to which ecosystem services scholarship contributes, appears to seriously test Lackey’s prescription for maintaining a clear “boundary between scientific or technical issues and value judgments” (*Ibid.* 16), the supposed line dividing impartial scientific veracity from conflicts of interest and compromised science. Conservation biology, in particular, as a mission-oriented “crisis-discipline” (Soule 1985) seems to consider itself both a descriptive and a normative project, straddling that boundary quite conspicuously. I argue that ecosystem services presents to politically engaged scientists an attractive means of defusing and neutralizing this tension.

Takacs points out that “The work of scientists traditionally depends – or has long been advertised as depending – on objectivity and value-neutrality. The scientist is not supposed to invest himself in his study organism, his methodology, the implications of his work. As the scientist detachedly discovers facts about the natural world, he gains cognitive authority, ideological clout” (Takacs 1996, 166). Using that authority, biologists thus end up making recommendations and policy prescriptions “based on their self-representations as neutral proponents (itself an oxymoron) of biodiversity facts and values” (*Ibid.*, 118). Here, also, the capacity of ecosystem services proponents as political agents to effectively promote the conceptual, methodological, and political shifts wrapped up in the term depends not only on their technical and scientific expertise, but also on their perceived *legitimacy* as technical and scientific experts. To reconcile this tension, Takacs argues, they engage in “boundary work,” the process through which scientists “continuously negotiate and redefine the borders of science
according to context-specific needs” (Ibid., 114). They attempt to “redraw normative boundaries
to include more space for biodiversity’s importance” and in the process expand “the boundaries
of what it means to be a biologist” (Ibid., 103). “To fulfill their mission,” Takacs explains, “they
attempt to expand the space where scientists may reasonably speak and act” (Ibid., 115).

It is here that the story of ecosystem services diverges somewhat from the account of
biodiversity offered by Takacs. He depicts a kind of wondrous, literary, almost spiritual
exuberance motivating the biologists with whom he engages and infusing the term ‘biodiversity’
itself, which they sought to promote. He explains how biodiversity biologists would:

use their cognitive authority to promote more than just facts. They promote a
conservation mind-set that carries with it, not only policy prescriptions, but moral and
ideological prescriptions as well. They want us to reconceive our ideas of nature by
discovering the concept of biodiversity, to return to nature so that it may work its
persuasive, transformative wiles on us, as it has on them, and in so doing, change our
feelings, morals, and values regarding the natural world (Ibid., 155).

Thus, biologists “engage listeners’ hearts before their minds” (Ibid., 129). It is on this point that
the project of ‘ecosystem services’ diverges quite strikingly from that of ‘biodiversity,’ in that
ecosystem services deliberately inverts this formula, maintaining a nearly laser-beam focus on
its listeners’ minds (or rather, its listeners’ wallets). As should be clear from the somewhat
sterile label itself, the term ecosystem services hardly inspires an abundant sense of majesty or
reverence. Yet at the same time, it is not devoid of “moral and ideological prescriptions.” I
argue that the first rationale I posited earlier represents a continuity of the sensibilities guiding
the movement Takacs describes, whereas the emphasis of the second rationale, infused with
economic language and assumptions, constitutes something else. One of the advantages to
biologists of going in this latter direction is that it seems to partly defuse some of the risks and
plain uneasiness of advocating too openly as a practicing scientist. As Takacs explains,

from informal conversations with professional ecologists, I sense discomfort with the
vulgarization of ecology. They feel it somehow blunts the rigor or smirches the purity of
their science. Conservation biologists on the other hand, vigorously promote the
popularization of biodiversity, which represents their complex view of a chaotic,
interconnected, and aesthetically and even spiritually infused world (Ibid., 144).
Ridder (2008, 781) observes that arguments based on ecosystem services are “grounded in science and compatible with impersonal, economic assessments of value in a way that aesthetic and moral arguments are not.” Ecosystem services – with its systematic, quantitative, logical framework – seems to conform more closely to that old-school caricature of “Science!” as neutral arbiter of impartial knowledge. It allows the scientist subscribing to such a notion (or those merely subject to others who do) to participate in what they may consider urgent policy deliberations without having to appeal to those aesthetic, ethical, and value-laden positions they may perceive as both (1) diminishing their own authority and legitimacy, and (2) ineffective. So, again, ecosystem services thus provides not only a source of information, but also a technical, anti-political, and, for some key audiences, a uniquely persuasive language through which conservation may be rearticulated such that it can effect political change, while simultaneously maintaining the trappings of impartiality which subtend much of the scientists’ institutionalized role and traditional values. It allows them “to remain ‘above the fray,’” out of the politics she prefers to deem ‘extrascientific’” (Takacs 1996, 114). Like Takacs, I also consider these institutional norms, the roles both explicitly and implicitly ascribed to and expected from scientists, to be of material consequence to what they do. In this case, these norms contributed to an outcome which we now call ‘ecosystem services,’ that permitted its researchers and some of its core champions – biologists, scientists, and technical experts – to occupy that precarious political space of the “neutral proponent.”

The third and final rationale for ecosystem services I identify focuses on the institutional arrangements that it makes possible, rather than its role in constructing persuasive arguments or providing a tool for analyzing trade-offs. With respect to the literature, this dimension of ecosystem services has attracted considerable attention both within and outside of academic ecosystem services scholarship. That attention is broad in scope, engaging interests ranging from private sector environmental managers involved in project-level implementation of ecosystem services approaches (Hanson et al. 2008), policy-makers attempting to design ecosystem services governance regimes at various scales (Kok et al. 2010), to activists and scholars assessing the social and political implications of what appears in many respects to be the marketization or commodification of nature (McAfee & Shapiro 2010; Robertson 2006; Castree 2007).
While this aspect of ecosystem services provokes a wide variety of contrasting perspectives, they at least agree in basic terms on what they are talking about. Here, the function of ecosystem services is to constitute actual projects, policies, markets, protocols, and *mechanisms*: ecosystem services is a framework around which particular institutional arrangements can be constructed, configured, and made operational. Again, while the interests and normative evaluations brought to bear on these institutional arrangements may diverge, sometimes drastically, they are all essentially talking about ecosystem services in a manner consistent with one another and different from the previous two functions. Whereas the two previous rationales for ecosystem services I mentioned focus on its potential as a concept aimed at changing social practices in different ways, here it *is* particular social practices. Thus, an ecosystem services proponent with this conceptualization in mind does not seek simply to recognize or demonstrate the worth of ecosystem services, but rather pursues a particular social and institutional configuration through which that worth may be realized: he is for *for* carbon trading, or *for* habitat banking, or *for* public payments for watershed management.

Searle and Cox (2009, 16) observe that the payments for ecosystem services (PES) model remains the “principal mechanism for changing behaviour, even with policy-driven programs.” Wunder et al. (2008, 834) note the appearance of PES “increasingly often in both developed and developing countries. Numerous PES and PES-like initiatives are being implemented at a wide variety of scales ranging from small watersheds to entire nations.” These schemes can be broadened to include “not only PES, but also payments arising from cap and trade regulations, mitigation banks, taxation and usage fees, and markets,” as well as “commodity markets in ecosystem services” (Searle & Cox 2009, 16). My discussion here will focus primarily on these schemes, all of which I file under the heading PES.⁸ Forest Trends and The Katoomba Group have both emerged as influential ENGOs and “thought leaders” (Salzman 2011, 599) in ecosystem services and particularly international PES discourse. Their publications (here in collaboration with UNEP) systematize known ecosystem service payment schemes into three categories: (1) *public payment schemes* (i.e. government programs in Mexico, Costa Rica, Brazil, and elsewhere, compensating landholders for ecosystem services provisioning); (2)

---

⁸ In some contexts, rather than broadening out PES to include that array of mechanisms, the separate term MES, for “markets in ecosystem services” is used.
regulation-driven open trading in formal markets (i.e. the ‘carbon market’ under the Kyoto Protocol, where certificates derived from, for example, forestry activities that sequester carbon, can be traded); and (3) self-organized private deals (i.e. where beneficiaries of ecosystem services contract directly with providers, for instance, in the voluntary carbon offset market) (Forest Trends et al. 2008).

In some contexts, the term ecosystem services has become almost synonymous with PES. However, I argue the distinction I draw between this ‘use’ of ecosystem services versus the others I identified – namely, its use as (a) a rhetorical tool in political arenas and (b) an input to trade-off analysis in formal decision-making – is important insofar as these distinct visions for what ecosystem services are supposed to do map very differently onto the array of interests lining up behind them. For instance, some interests, most obviously profit-seeking firms, might perceive opportunity in nascent carbon markets. From this perspective, the rhetorical and decision-making uses of ecosystem services may have only tangential relevance. Environmental advocacy groups, on the other hand, may seize on the kinds of arguments ecosystem services provides them when attempting to justify and build legitimacy for biodiversity conservation initiatives. They may, however, also harbour deep misgivings about ecosystem services’ institutionalization in carbon markets or about assigning prices, even shadow prices, to threatened or endangered species. And of course, as I discussed earlier, the academic biologists, ecologists, and other scientists who midwifed the concept into the mainstream may have a complicated relationship with all three. They may focus on the potential of the concept to inform trade-off analysis and thus enhance rational decision-making, as they variously attempt to sidestep or stride into the “extrascientific” political minefield supposedly awaiting them beyond that narrow, prescribed conceptualization.

As Goble (2007, 429) points out, “the translation of ecosystem function into services and then into dollars involves two value-laden transformations: from a biological function into a claim that something has value to humans and then to a monetization of that value.” At each step along this escalating hierarchy, we find different actors with different agendas. This tension between these three distinct functions and the different interests lining up behind each of them represents a central theme of this thesis. Hajer (1995) observes how environmental discourses can upon close examination reveal themselves as “fragmented and contradictory. Environmental discourse is an astonishing collection of claims and concerns brought together by a great variety
of actors. Yet somehow we distil seemingly coherent problems out of this jamboree of claims and concerns.” Ecosystem services discourse, rather than representing a coherent whole, takes on and becomes diverse forms depending on the contexts through which it circulates and takes hold. Each of these forms, in turn, implies specific and often divergent political, discursive, and ecological consequences.

Robert Costanza (2006, 749), for example, writing in a letter to Nature titled Ecosystems without Commodifying Them, argued, “valuation is one piece of helpful information in the complex task of sustainably managing our natural assets. Valuing ecosystem services is not identical to commodifying them for trade in private markets.” In his letter, while he is enthusiastic about the prospects for rationales (a) and especially (b), he remains somewhat ambivalent toward the prospects and at least some of the implications of rationale (c). Dempsey and Robertson (2011, 15) point out that “Costanza’s attempt to price the entire earth […] simply makes visible the different roles that economic analysis play in the policy and market worlds.” He joins many other ecosystem services proponents who adopt a more “nuanced position, that markets were not an essential component of ES policy deployment” (Ibid., 27). However, his foundational contribution to ecosystem services discourse facilitated not only the prescribed purpose he envisioned for it (as clarifying trade-offs and enhancing rational decision-making), but a spectrum of other purposes as well, many of which, in the end, may diverge from his initial intent.

These three functions of ecosystem services can often represent three distinct, somewhat independent conversations involving different sets of interlocutors. Yet, within the discourse of ecosystem services, their respective projects do intersect, rub elbows, and collide. I try to highlight those instances where I observed this occurring, and where these different strategic visions, tethered together by the term ‘ecosystem services,’ tug at one another as they variously coincide and diverge. I attempt to illustrate how these contrasting perspectives animate visible disparities in how ecosystem services materializes in different practices and institutional settings in the following chapters. Before moving this discussion to these dynamics as I encountered them at my two research sites, I will attempt to characterize some of the major critiques of ecosystem services that have emerged and the rationales underlying them.
2.4 Selling Out Nature?

Critiques of ecosystem services have emerged from a variety of perspectives, each raising varying combinations of methodological, strategic, political, and conceptual issues. The next sections explore two main sets of concerns: (a) ecosystem services and biodiversity conservation, and (b) the political-economic implications of ecosystem services. I first turn my attention to those chiefly interested in biodiversity conservation. These concerns sometimes originate endogenously from those institutional settings shared by the ecosystem services research community itself. These critiques question the strategic and conceptual tenability of ecosystem services in actually protecting and conserving biodiversity. Next, I present concerns arising from the discourse on “neoliberal natures” amongst geographers and other social theorists, whose interests here somewhat transcend those of simply biodiversity conservation. This literature situates ecosystem services as part of the broader project of “neoliberalism,” the “complex assemblage of ideological commitments, discursive representations, and institutional practices” configured around the perhaps unrealistic but nevertheless consequential pursuit of “a market increasingly wide in its geographic scope, comprehensive as the governing mechanism for allocating all goods and services, and central as a metaphor for organizing and evaluating institutional performance” (McCarthy & Prudham 2004, 276). From such a perspective, ecosystem services appears as another attempt in “the deeply problematic commodification of everything” (Ibid.).

2.4.1 Ecosystem Services and Biodiversity

The editorial interventions I noted earlier by ecosystem services luminaries Reid (2006) and Costanza (2006) were both provoked by an article published in Nature by Douglas McCauley, another Stanford University ecologist. In a short article titled Selling Out Nature, he argued:

If we mean to make significant and long-lasting gains in conservation, we must strongly assert the primacy of ethics and aesthetics in conservation. We must act quickly to redirect much of the effort now being devoted to the commodification of nature back towards instilling love for nature in more people […] We will make more progress in the long run by appealing to people’s hearts rather than to their wallets. If we oversell the message that ecosystems are important because they provide services, we will have effectively sold out on nature (McCauley 2006, 27-28).
As I mentioned earlier, this prescription for environmental advocacy often stands in as a foil for arguments by ecosystem services proponents attempting to demonstrate exactly why ecosystem services is so important: those ethically-based arguments, Reid (2006) had concluded, were “manifestly insufficient” to the problem at hand. Yet, these types of criticisms persist in the ecosystem services literature amongst practitioners sharing the goal of biodiversity conservation.

McCauley makes four main points, to which I will add more, including concerns later enumerated by Redford and Adams (2009). First, McCauley (2006, 27) refers to the basic mismatch between species richness and ecosystem services provisioning. He cautions that “the logic of ecosystem-service-based conservation rests on the implicit assumption that the biosphere is benevolent […] This reasoning ignores basic ecology. […] There are myriad examples of what might be labelled ecosystem disservices.” He continues, “Market-based conservation strategies, as currently articulated, offer little guidance on how we are to protect the chunks of nature that conflict with our interests or preserve the perhaps far more numerous pieces of nature that neither help nor harm us” (Ibid.). Redford and Adams (2009, 786) reiterate this concern, noting “there is a widespread but erroneous assumption that ecosystem services are necessarily benign,” pointing out that “Only certain things in nature are […] regarded as services.” As I noted, these critiques are rooted in a concern for biodiversity conservation as its primary goal. It questions the framework’s tenability as a rationale for conservation, given that research assessing the linkages between biodiversity and actual ecosystem functions remains so ambiguous (Srivastava & Vellend 2005; Schwartz et al. 2000), and given that “win-win scenarios – in which conservation and economic growth are clearly coupled” are far less ubiquitous than initially anticipated and are “often difficult to identify” and “slow to materialize” (Chan et al. 2007, 60).

The kind of economic and technical mindset implicit in this framework – recasting ecosystem functioning as a sort of engineering problem – also unnerves some ecologists, who worry that ecosystem services is more a linguistic construct than a biological one, and that it oversimplifies ecosystems into black boxes onto which algorithmic production functions can be straightforwardly modeled. Of course, as Srivastava and Vellend (2005) point out, such a conceptualization runs the risk of concealing, or worse, mischaracterizing, what ecologists understand as dynamic, multi-layered ecological complexity, as well as both large and largely
unknown uncertainties and non-linearities in their structuring over time. Sharman (2010, 4), for example, argues that biologically, “The metaphor of capital, when applied to the living world, is dangerously misleading.” Likewise, Goble (2007, 438; 440) points out, “Economics and ecology embody strikingly different understandings of nature. […] As is often the case, win-win scenarios are broadly appealing but often involve self-deception. Although the relationship between ecosystem services and biodiversity is biologically attenuated, the concept has always owed more to rhetoric than biology.” A number of my informants in British Columbia made this point to me, occasionally quite emphatically. A further point is that BEF research makes little meaningful distinction between native and non-native species, as “functional redundancy may be achieved” either way (Schwartz et al. 2000, 304). Redford and Adams (2009, 786) also catch this problem, observing that “ecosystem services need not be provided by native species,” and that “Many introduced species will do the job as well, or perhaps better.”

If only a handful of functionally “useful” species are necessary to sustain ecosystem services provisioning, then conserving “redundant” species becomes far less important to decision-makers relying on an ecosystem services framework for parsing the value of biodiversity. By emphasizing instrumentalist utilitarian rationales for conservation so strongly, critics worry that advocates have inadvertantly placed a bet that the actual science will be unable to substantiate. “Environmental policy based on the optimization of ecosystem-service values,” they caution, “will not necessarily lead to the conservation of biodiversity” (Ibid.). This incongruence between ecosystem services provisioning and biological diversity itself (i.e. species richness) poses a dilemma in pragmatic and philosophical terms to environmental advocates. Goble (2007, 440) cautions, “if biodiversity is or should be valued for reasons that go beyond utility […] then the concept of ecosystem services is […] potentially dangerously misleading.” According to this line of reasoning, such a rationale risks transforming swaths of the living environment into surplus and therefore expendable biodiversity.

The next two points McCauley makes relate to the precariousness of justifications for conservation when made dependent on the exigencies of the market. First, he notes that “although most conservationists would argue that nature should be conserved in perpetuity, the strength and direction of the market forces that are now being called upon to motivate nature conservation are anything but perpetual” (McCauley 2006, 27). He points to one frequently cited example of the success of ecosystem services – a study by Rickett et al. (2004) which
demonstrated that pollinating bees from nearby tropical forests contributed $60,000 to a coffee plantation in Costa Rica – noting that it presents a far more ambiguous picture than initially suggested. Coffee prices collapsed after that study was conducted, leading the coffee-planting community featuring in that example to switch to growing pineapples (where pollinators are irrelevant) thus driving the “price” of these nearby tropical forests from an ecosystem services provisioning standpoint down to zero. To this point, McCauley adds another, that “conservation based on ecosystem services commits the folly of betting against human ingenuity” (Ibid., 28). Here, he cautions that assuming a fixed value for an ecosystem service based on its replacement cost, when technological innovation may eventually result in increasingly cheap substitutes, may further undermine the coherence and strength of an exclusively ecosystem services based system of valuation.

McCauley speaks more forcefully to the conceptual problems he perceives in these developments, but considerable attention (constructively critical and sometimes just critical) within and from outside of ecosystem services scholarship has also been directed to the methodological issues that continue to both interest and frustrate ecosystem services proponents (Dempsey & Robertson 2011). While “These problems are recognized in the literature” (Redford & Adams 2009, 786), they are generally interpreted as non-malignant and amenable to remedy through further research and methodological refinement. Redford and Adams (2009, 786) suggest, however, that “there is a real danger that such caveats will be lost in the rush to frame conservation in the language of ecosystem services.”

One of the more problematic and persistent of these “caveats” relates to methodologies for valuation. For example, given the framework’s dependence on established economic valuation techniques, some critics worry the conceptual framework may delegitimize or exclude difficult-to-quantify non-market values, such as aesthetic, cultural, or spiritual connections to living things and places, perhaps spanning multiple lifetimes. The challenge of how to incorporate the value of “cultural ecosystem services” is further compounded by profound difficulties with “accurately” assessing and aggregating what are often highly divergent preferences (Daily et al. 2000, 395), especially given wide variations in resources available to different stakeholders presented with contingent valuation (or “willingness-to-pay/accept”) surveys, and given that some of these stakeholders do not even exist yet. This valuation problem is variously framed by critics as a moral and strategic issue, and often both. Sharman (2011, 9), for instance, notes, “it
is hard to imagine how we have come to despise nature so much that the best we can do is to ask people how much they are prepared to pay for someone else not to destroy it.”

Methodologies aside, McCauley (2006, 28) argues, finally, that “Nature has intrinsic value that makes it priceless, and this is reason enough to protect it.” He concludes, “to make ecosystem services the foundation of our conservation strategies is to imply – intentionally or otherwise – that nature is only worth conserving when it is, or can be made, profitable. The risk in advocating this position is that we might be taken at our word” (Ibid.). Similarly, Redford and Adams (2009, 785) caution, “in a world of relentless pursuit of economic logic, there is real risk that economic arguments about services valued by humans will overwrite and outweigh noneconomic justifications for conservation.” Many of these arguments somewhat parallel concerns arising from the “neoliberal natures” literature, which I will discuss in a moment, though here they take a perhaps more tactical outlook coupled with a particular non-anthropocentric ethic that is by no means a necessary component of critiques of neoliberalism.

Again, ecosystem services proponents appear aware of many of these concerns. Turner and Daily (2008, 34), for example, suggest that ecosystem services represent a “clear and powerful ethic – and increasingly, an economic rationale – for protecting people from unsafe drinking water, flooding and climate change. But how far can ecosystem services approaches be taken to protect biodiversity? This is a subject of considerable concern and attention among conservation scientists.” Armsworth et al. (2007, 1383) admit, “the conservation community remains deeply and sometimes very publicly (McCauley 2006) divided over how much emphasis ecosystem-service approaches should receive relative to those based solely on moral suasion. Put bluntly, will we achieve greater conservation success by protecting nature for its own sake or for our own sake?” Their response is worth noting: “We see an expanded role for ecosystem-service approaches in conservation not because these approaches are more valid in some way, but because they have not yet come close to reaching their conservation potential” (Ibid.).

Responses to this question in the literature, as well as those I encountered and elicited at my research sites, frequently articulated a sort of pragmatic, tactical overall outlook: ecosystem services is meant to complement rather than replace our non-market value systems. Thus, it enrols audiences not “already converted,” and “broadens and strengthens the foundation for conservation” (Ibid.). They intend these arguments to be deployed alongside other non-ecosystem services-based strategies: an ‘everything but the kitchen sink’ approach
commensurate with the urgency of the problem at hand. Even Redford and Adams (2009, 785-786) seem comfortable with such a tactic, accepting that “ecosystem services should be one of a set of tools used in pursuit of conservation. Multiple arguments for conservation are likely to be more resilient and persuasive than single ones.”

However, as implied by the critiques above, and as several of my informants explicitly told me, these different systems of value are not necessarily supplementary. My informants sometimes viewed them as deeply incompatible or even mutually corrosive. Thus, in the pursuit of “mainstreaming” ecosystem services in their preferred form, proponents may in effect be allowing it to displace other tools in their strategic arsenal, foreclosing opportunities at the same time that it opens others. One important observation interspersed throughout this discussion relates to the potential risks to proponents of environmental conservation – who often see in ecosystem services concepts the means to furthering that end – of having those concepts backfire in minor, major, or simply unexpected ways. The particulars of the science itself, the philosophical coherence of its arguments, and the strategic manipulation and deployment of economic lenses for parsing value, all appear to present potentially double-edged swords. As proponents endorse and continue to develop their preferred function of ecosystem services, they may, in effect, if perhaps inadvertently, promote more than they anticipate.

2.4.2 Ecosystem Services and Neoliberalism

In his book, *Markets, Deliberation, and Environment*, philosopher John O’Neill (2007) discusses a variety of conceptual problems which he argues persistently trouble market approaches to environmental governance and decision-making. He explains, with respect to environmental issues, what he interprets as the prickly relationship between non-market moral discourse and the market mechanisms that increasingly displace it as the means of governing our social lives. In a series of Reith Lectures in 2009, Michael Sandel articulated this concern in more general terms:

Some of the good things in life are corrupted or degraded if turned into commodities, so to decide when to use markets, it’s not enough to think about efficiency; we have also to decide how to value the goods in question. Health, education, national defense, criminal justice, environmental protection, and so on – these are moral and political questions, not merely economic ones. To decide them democratically, we have to debate case by case
the moral meaning of these goods and the proper way of valuing. This is the debate we didn’t have during the age of market triumphalism. As a result, without quite realising it, without ever deciding to do so, we drifted from having a market economy to being a market society (Sandel 2009, 10).

Ecosystem services, by reframing biodiversity loss as an economic rather than a political and moral problem, appears somewhat consistent with this pattern. While the acceptance and institutionalization of the ecosystem services concept may help to fulfil particular short-term objectives, Sandel cautions, “markets are not mere mechanisms. They embody certain norms. They presuppose, and also promote, certain ways of valuing the goods being exchanged. […] the market is an instrument but not an innocent instrument” (Sandel 2009, 7). By recasting and transmuting an increasing number of social problems into economic problems, Sandel worries that communities impoverish their capacity for moral discourse and thus their ability to both address those problems and to be properly moral. From this broader vantage point, viewing market mechanisms themselves as constituting peculiar sets of social norms eroding or crowding out other non-market social norms, O’Neill concludes, “protection of our environment is best served, not by bringing the environment into a surrogate version of the commercial world, but by its protection as a sphere outside the world of commodity exchange and its norms” altogether (O’Neill 2007, 45).

Dempsey and Robertson (2011, 1) position the emerging influence of ecosystem services within the “immense amount of scholarly activity around the increasing commodification of nature, and fieldwork in actually existing neoliberalisms in all their hybrid and impure variety.” In many ways, ecosystem services seems to fit exceedingly well within this theoretical framework: it appears emblematic of how the “proliferation of so-called ‘market-based mechanisms’ in environmental governance has deepened the commodification of particular biophysical processes and entities under the influence of a broad ‘neoliberalisation’ of nature” (Prudham 2009, 123). This interpretation maps particularly well onto the last function of ecosystem services I identified, namely, its embodiment in markets or market-like institutional arrangements (i.e. PES schemes).

In this interpretation, the diverse epistemic communities attracted by and mobilized in service to this discourse – communities ranging from environmental groups, individual firms and business
associations, governmental, intergovernmental, and transnational organizations, to various academic disciplines – together provide the requisite technical, institutional, and ideological components for a step-by-step “ecological commodification, marketization, and financialization which radically intensifies and deepens the penetration of nature by capital” (Smith 2007, 20). Thus, these communities provide to processes of accumulation increasing and unprecedented access to ecosystem functions that had previously remained, for tangled historical, technical, and political reasons, unsubordinated to its logic.

Morgan Robertson has dedicated special attention to MES schemes and notes how, “because of the increasingly close connection between scientific methods of ecosystem assessment and the creation of commodities in ecosystem services, scientific disputes over classification and measurement now figure prominently in the establishment and stabilization of new realms for the circulation of value” (Robertson 2006, 368). In his examination of the EPA’s wetland mitigation banking program, he observes how professional ecologists rendered nature “visible” to the “one-eyed imperatives of capital,” and how complex scientific debates over biological properties were thus “silenced so that ecological information can be intelligible to the logic of capital” (Ibid., 368-369).

MacDonald (2010b, 517-518) situates ecosystem services as part of the broader paradigm of ‘ecological modernization,’ which he describes as “a technocentric and interventionist variant of environmentalism that highlights the application of science, market forces, and managerial ingenuity through instruments such as tradable permit schemes and markets in what has come to be known as ecosystem services – the very term being a sign of the degree to which ‘nature’ has become an element in capitalist processes of ideological domination” and “new strategies of accumulation.” He argues that this broader paradigm represents “an attempt to produce a version of capitalism that can address its own contradictions” (Ibid.). Similarly, Hajer (1995, 3) explains how this “new way of conceiving environmental problems” simultaneously “recognizes the ecological crisis as evidence of a fundamental omission in the working of the institutions of modern society” yet also “that environmental problems can be solved in accordance to the working of the main institutional arrangements of society.” This interpretation corresponds with the characterization I introduced earlier identifying ecosystem services as a project of political accommodation to powerful interests perceived to be at odds with environmental conservation,
and a departure from attempts to resist to those interests. I revisit this reformist (rather than radical) tendency of ecosystem services further in later chapters.

This relationship between ecosystem services and commodification has increasingly become a lightning rod for critical interpretation of the concept. O’Neill (2007, 7) attempts to characterize the basic nature of these criticisms, where “the source of our environmental problems lies not in the failure to expand market norms to all spheres, but in that very process of expansion.” He elaborates:

> The source of environmental problems lies in part in the spread of markets both in real geographical terms across the globe and through the introduction of market mechanisms and norms into spheres of life that previously have been protected from markets. […] Attempting to cost all environmental goods in monetary terms becomes an instance of a larger expansion of market boundaries. The proper response is to resist that expansion, be this in the spirit of resistance to market society or more modestly to maintain the proper boundaries between spheres (Ibid., 22).

He identifies two ways in which this market expansion unfolds: (i) “items that are considered inappropriate for sale might become directly articles for sale on the market” and (ii) “relations, attitudes, forms of evaluation and the like typical of the market might be transferred to other spheres” (Ibid.). These two pathways of market expansion are consistent with my characterization of what ecosystem services ‘does,’ with functions (a) and (b) corresponding to the second way (ii) O’Neill describes, and function (c) corresponding to the first way (i). This distinction between these two pathways is especially helpful in interpreting the role of contributors to ecosystem services discourse (for instance, biologists, as described by Robertson 2006) who do not traditionally or necessarily conceive of themselves as engaged in those processes, yet are increasingly being enrolled in them.

Ultimately, O’Neill argues that the totalization of the market implies “withdrawing both from the constraints of ethical and social norms,” which, in the end, “would result in the destruction of the environment and the social dislocation of humans” (O’Neill 2007, 22). This basic dynamic leads many scholars working in this area to make the general point that “Whereas the marketization of nature in this way has been championed as a market-friendly amelioration of environmental destruction, it is also widely understood that its effects are not wholly positive”
(Smith 2007, 5). As Redford and Adams (2009, 786) caution, “There will be winners and losers in markets for ecosystem services. Where these are private, or privatised, ecosystem payment schemes will have welfare implications. […] As people annex ecosystems and adapt them to maximize revenue flows, collateral damage to biodiversity will be unnoticed or discounted.” For at least these reasons, scholarship from this area has aligned with “political activism [and] indicted neoliberalism as both a political and environmental debacle” (McCarthy & Prudham 2004, 275).

This characterization of ecosystem services – as both embodiment and leading edge of nature’s accelerating exposure to markets and market logic – turned out to be actually consistent with remarks made to me by several practitioners working in this area, and sometimes working toward this outcome as an explicit goal (which I discuss further in Chapter IV). However, I also found that these practitioners emphatically did not represent ecosystem services proponents as a whole. While some individuals and groups clearly do perceive and actively work to exploit the financial and other opportunities presented by institutionalizing ecosystem services through markets, these interests share ecosystem services discourse with a cacophony of other competing voices, ideological affinities, strategic agendas, and different visions for ecosystem services, many of which do not include or are even actively hostile to that purpose. Dempsey and Robertson thus caution (2011, 2): “As with many of the varied topics touched by late capitalism, critical evaluations of ES and neoliberal nature must avoid caricatured portrayals of neoliberalism in which armies of mainstream economists speak with one voice and capitalism rolls out coordinated state policy effecting a wholesale commodification of nature.”

This theoretical framework of “neoliberal nature” does much to recommend itself in interpreting aspects of what ecosystem services does and what it represents. The proliferation of PES schemes, for example, both in their extent and variety, makes this clear. In my field work in British Columbia and Nagoya, this dimension of ecosystem services also appeared visibly and seemed to preoccupy many practitioners I encountered. Yet, I argue ecosystem services encompasses a wider set of agendas beyond only this one, and to subordinate those agendas beneath that or any other singular ideological project would be to artificially constrain and even mischaracterize the sprawling breadth that I argue constitutes ecosystem services. As Dempsey and Robertson argue (2011, 29), “the concept of ecosystem services is a site of struggle between competing logics and agendas, including those promoting development and redistribution,
alternatives to capitalism, scientific accuracy and modeling, and conservation, alongside those seeking to find new sites for capital accumulation.” The findings of this thesis align emphatically with that conclusion, and I will attempt to substantiate this claim in more detail in the following chapters.
Figure 4 - Setting the stage: the formal plenary hall of the UN CBD CoP-10 in Nagoya, Japan, shortly before the opening ceremony. Photo by Pete Brosius.

3 UN Convention on Biological Diversity

Salzman (2011, 611) interprets the “unnatural alliances” forged by ecosystem services with some apprehension. “I may be sleeping with the devil,” he muses, “but we’re in bunk beds.” He acknowledges the politically fraught institutional realignments and commitments that ecosystem services seems to entail. While the previous two chapters attempt to set up and describe the contours of ecosystem services discourse as they occur in the literature, the next two chapters focus on how specific individuals and groups navigated and positioned themselves within this now crowded discursive space. This chapter uses data collected as part of a ‘Collaborative Event Ethnography’ (CEE) at the 10th Conference of the Parties (CoP) to the United Nations Convention on Biological Diversity (CBD) to investigate these dynamics. In Nagoya, I would,
on occasion, observe the sort of awkwardness that Salzman describes expressed openly. For example, after one panel discussion promoting The Economics of Ecosystems and Biodiversity (TEEB) – whose significance I will discuss in a moment – Anantha Duraiappah, Executive Director of IHDP, took the microphone and began to outline some of his concerns during the question and answer period. Echoing some of the critiques I mentioned in the previous chapter, he converged on the following point:

… The more fundamental issue is the space of economics and morality. And, especially with biodiversity, the question I think that we should ask ourselves is do we want to put everything in biodiversity and all the ecosystem services under the space of an economic sphere? Because the fact that once you put a value you turn into prices and then once you get into prices you get into a really downward spiral. So I’m just wondering whether there’s certain things that should be within the sphere of moral imperative rather than an economic imperative.

TEEB study leader Pavan Sukhdev, whom I mentioned in my introduction, and who also appears prominently throughout this chapter, responded at some length, arguing ultimately that “yes, of course, economics is mere weaponry. The direction in which you shoot is an ethical choice.” As I will discuss, his comments begin to capture a cross-cutting theme throughout my observations and those of the CEE. Most obviously, that theme was the pervasive intertwining of biodiversity discourse with “the missing link of economics” as UNEP spokesman Nick Nuttal phrased it. But more than simply characterizing the increasing overlap between these two spheres, Sukhdev here manages to capture the active nature of that process. Sukhdev describes what I have interpreted as the conscious wielding and concerted deployment of “economics,” usually in the form of ecosystem services discourse specifically, by actors (most prominently himself) working to rearticulate the ideological orientation, institutional forms, and thereby the material practices of biodiversity conservation. This campaign was often overtly stated by its proponents. Speaking at another event, Sukhdev addressed his team publicly:

I know that, like myself, you have had little sleep and little rest and I hope that what you see today is evidence to you that the effort was well spent, and that, yes, this is an idea whose time has come. And that yes, we can solve for the future. This is one world. It’s
ours to create. Let us create it and make it what we want, rather than wait for it to be dictated to us …

This chapter analyses instances at this meeting where the influence of ecosystem services became visible. I discuss how a network of far-flung conservation practitioners brought together from around the world for this event grappled with, used, and in some prominent cases, vigorously promoted ecosystem services ideas. MacDonald (2010a) elaborates on the significance of these events in constituting “a new organizational order […] directed through interaction among a set of common individuals who physically and ideologically migrate across the once well-defined boundaries separating governmental agencies, non-governmental organizations (NGOs) and the private sector.” By observing the ‘acting out’ of international environmental meetings, he argues, we can begin to discern some of the mechanisms underlying this renegotiation and reordering of environmental conservation as an “organized political project.”

Within this framing, I portray the event, itself an important “node in a network related to global environmental governance” (Campbell et al. 2010), as a clear example of the spread, penetration, and uptake of ecosystem services concepts. Moreover, as I suggested, the event became not merely a reflection, but often a purposeful instrument of that project. For two weeks last October, this conference became (among everything else that it was) a conspicuous vehicle for propagating and institutionalizing ecosystem services discourse. Thus, this chapter – notwithstanding the dissenting voice I identify above – focuses primarily on the exploits of ecosystem services proponents, who, in my observations, dramatically overshadowed their opposition in the time and space of the meeting.

3.1 It Flows for Thee

On the third day of the CoP, as my jet-lag began to fade, I sat in one of the large cavernous working group auditoriums at the Nagoya Congress Centre to observe the first of a series of side events discussing TEEB. Three years earlier in 2007, the Ministers of Environment from the G8+5 countries had convened in Potsdam, Germany, agreeing to “initiate the process of analysing the global economic benefit of biological diversity, the costs of the loss of biodiversity, and the failure to take protective measures versus the costs of effective conservation” (TEEB 2010, 3). That project became TEEB, which, following the example of the
MEA, assembled a diverse advisory board and mobilized over 500 expert contributors. Here, timed to coincide with the commencement of CoP-10, that project released its final report, synthesizing key findings from the overall effort. More than any other moment, this event signalled what came to be the emergent pattern around which my research questions came into focus at the CoP. In retrospect, it is unsurprising that such a moment also coincided with my first encounter – and there were many – with Pavan Sukhdev, former Head of UNEP’s Green Economy Initiative, former Deutche Bank executive, and TEEB study leader.

Figure 5 - Pavan Sukhdev speaking at yet another panel discussion on TEEB. This wedding table format was common in side events. Photo by Pete Brosius.

Outside in the lobby, staff from the CBD secretariat had arranged colour-coded stacks of the various TEEB sub-reports (for business, for policy-makers, for local and regional policy makers, and scientists) and this one – an attractive lime green. Following some introductory remarks by the other speakers, Sukhdev took the stage and, after apologizing for a bad throat, began two weeks of purposeful and intensive promotion of TEEB and the ecosystem services approach that it embodied:
I think I begin first with the approach of TEEB, which has been circumspect and careful. We firstly do not believe that TEEB is just a kind of cost-benefit based management solution for the whole Earth. Far from it. We believe that firstly there are many ways of recognizing value, and the kinds of values that are recognized. These [referring to his slides] are little symbols for ecosystem services …

He began walking his audience through a familiar diagram illustrating different ecosystem services – following the conceptual framework systematized in the MEA – starting with cultural services. “The one on the left hand side,” he continued, “for spiritual values that are in nature. The one just below that in terms of the inspiration that nature provides, in terms of culture, art, and design. The one just below that is of course recreational, mental, and physical health. So these things you can recognize and value without necessarily working out the economics of that.” Before continuing, I should acknowledge the somewhat textured illustration of his remarks that I provide. He and his fellow panellists serve as useful examples of the kinds of performed dialogues and discussions I witnessed repeatedly, every day, over the course of the conference, and whose observation comprises the majority of my data. I am not only referring to the format, however, but to its actual content – the forms of argument, the examples, the turns of phrase – these were reiterated, occasionally verbatim, over the remainder of this panel and in other side events by different actors. I will add, though, that this kind of presentation format does also represent an important mechanism and medium through which ecosystem services discourse is actually transmitted. When considering through what pathways ecosystem services travels, it is important to realize that this often entails, literally, a person, armed with a projector and .ppt file, speaking in front of a podium (as was the case here).

He continued, “So these are things you can recognize and value without necessarily working out the economics of that. But there are some things where it helps to demonstrate their value.” He proceeded to describe some provisioning and regulating ecosystem services together with some estimates of their monetary value. Then, an important segue:

So these are things that can be demonstrated and valued. Pollination services are estimated to be worth $150 billion per year. And so on. And finally, there are some aspects of value that cannot just be demonstrated, they can even be captured. The carbon markets […] that is the carbon sequestration of forests. To the left in the corner is
freshwater, again, a service which can be captured. There are payments for ecosystem services where water is paid for. So our approach in TEEB is to recognize value, to demonstrate value, and also to describe how we can capture value and not any one or the other.

Sukhdev had, in a few sentences, repeated to me and to the delegates, participants, and attendees that had gathered there, a variation of the three-function framework of ecosystem services that I had struggled to conceptualize earlier that year (see Chapter II). He had even managed to summarize it more succinctly as (a) recognizing value, (b) demonstrating value, and (c) capturing value, apparently appreciating the escalating order of these different functions with respect to markets, and their divergent political associations. As I discussed earlier, these are inherently ‘active’ registers, denoting handles (to continue Sukhdev’s “weaponry” metaphor) to be grasped by political actors meaning to effect something, in this instance, presumably conservation.

My point here is to draw attention to the comprehensive strategic level at which he was operating. He had, in a manner of speaking, taken a step back and assessed the expansive scope of what this framework entailed before proceeding with a planned communications strategy sensitive to that breadth. He pressed not on any one of its functions but all of them, tailoring his presentation broadly and prudently to appeal to (and not offend) all of TEEB’s diverse target audiences. This strategic view was also reflected in how he had decided to structure his presentation, which anticipated and attempted to neutralize those diverse and sometimes vocal criticisms I discussed in Chapter II. For example, within a few sentences of beginning his presentation, he began framing and then immediately defusing the concern that the ecosystem services framework disregards or displaces cultural or spiritual values: these values can be simply “recognized,” which is distinct from having to “demonstrate” or “capture” them. Sukhdev repeatedly demonstrated a shrewd awareness of his audiences, their concerns, and those critiques they would likely harbour. His remarks reveal what I interpreted as an effort to outmanoeuvre and overcome this varied opposition, even when it was not openly verbalized, which is to say, most of the time. He continued:

The solutions are there. We have shown them to you. We have described them to you. We have put them together. And we believe them to be both replicable and scalable. And
please note, once again, that these solutions fall into different operational spaces. They are not all markets. In fact, of the 120 solutions that I describe to you, they are actually all technically not market solutions. In other words, you can’t trade them ... buy or sell ecosystem services such as freshwater. It’s an agreement between upstream farmers and downstream city users, for example, but it can’t be bought by you or by me. So these are all non-market solutions in a technical word but they use market thinking. They are nevertheless economic solutions. And this is what’s important. [...] most of what nature provides to us is public goods and services. They belong to everyone and they belong to no one. But we have to recognize them. We have to demonstrate their value. And sometimes we have to capture them. Because if we do not, we lose these valuable services, and this is exactly what we are seeing happening in the world today. These are the reasons for change.

Here, ecosystem services is not synonymous merely with markets mechanisms, cost-benefit analyses, or rhetorical tools – it becomes, depending on the audience, all of these functions. More than any other individual at this conference, Sukhdev came to personify the role that ecosystem services played at the CoP. He grasped, deftly, and in a way that I did not find was common in the literature, all of the different dimensions and registers of ecosystem services, including their lingering concerns and debates, and incorporated that understanding into a comprehensive and intensive effort to, essentially, change everyone’s minds. But again, given the broad array of different audiences TEEB attends to as “end users,” whose minds those are and what a change of mind actually entails can vary, drastically, and so his ability to navigate this precarious discursive space persuasively, and, apparently quite successfully, speaks to the sophistication of his efforts.

Moreover, it is important to note that Sukhdev was not merely operating within this space, he was actively creating it. Michel Callon points out the “performative” dimensions of these endeavours, arguing “that both the natural and life sciences, along with the social sciences, contribute to the realities that they describe,” and so “Economics does not have to describe reality; its mission is to say what the economy is supposed to be and propose solutions and devices that make it that way” (Callon 2007, 315; 325). Thus, Mackenzie et al. suggest (2007, 2), we must understand that “economics is not just about “knowing” the world, accurately or not. It is also about producing it. It is not (only) about economics being “right” or “wrong” but
Sukhdev appeared to be producing the means by which the object being described could be transformed, drawing in disparate perspectives and logics – from business firms, to development agencies, to biologists, and many others – and bringing them into a shared understanding of why biodiversity was in trouble, which, in turn, presupposes the appropriate framework and the legitimate courses of action with which to proceed with its rescue.

Robertson (2006, 369) describes this kind of discursive work as a “contingent process of constructing a modernist crazy quilt of logics that, when sutured together, ostensibly provide panoptic knowledge.” I would suggest that Sukhdev, sewing furiously, represented one of that crazy-quilt’s chief tailors in the time and space of this event. Robertson notes, “In these forums, which mediate between systems with very different operational codes, the terms by which one system will play a role in another are negotiated through the constant work of actors whose job it is to make scientific and economic data mean something politically, or vice versa” (Ibid., 370).

Sukhdev came to be – while certainly not alone in this regard at the CoP – one of the more prominent of these actors working to stitch these disparate logics together. He himself was only one of a number of charismatic communicators that I observed at the CoP advocating the same approach and worldview, both suffused with ecosystem services thinking, and articulating them into coherent relation with one another. Still, while there were a variety of other prominent figures at work in the side events of CoP-10, Sukhdev was amongst the most prolific and apparently one of the most effective. I base this characterization of his influence not only on my own observations seeing him communicating with and at people (and this was after two weeks spent observing people full-time), but also on repeated comments made by other panellists, including at events where he was not even present, touting the power of his message and his personal oratory skill specifically. German MEP Jo Leinen, for instance, speaking at another event, stated that Sukhdev was by now “famous” amongst the European Parliament. Leinen explained how he had “opened their eyes” and had become their own “Mr. Stern for biodiversity.”

Sukhdev covered a range of topics and recommendations over the roughly twenty five minute presentation. He addressed the business community, biodiversity conservationists themselves,
and different scales of policy-making, converging on a point which I highlighted in my introduction, namely, the humanitarian crisis that biodiversity loss represented – a circumstance which, again, he argued ecosystem services helped draw into focus. He delivered this overarching message at several different events, including this one:

The problem is when you ask the question: *for whom do these benefits flow?* So if the forest is no longer there, who suffers if there are more floods? Oh, it’s the poor farmer whose crops get washed away. Who suffers if there’s a drought? Oh, guess what, it’s the poor farmer because he has nothing to live off. Who suffers if the fuel wood cannot be gathered from the forest? It’s the poor farmers wife because that’s what she uses to cook food. Who suffers if the goats and cows cannot go to into the forest for leaf litter to feed? Once again, the poor farmer, because that’s how he feeds his cows and goats. When we ask the question to whom do these benefits flow, most of the answers were, it is the rural poor. […] we then reworked our calculations, not asking what is ecosystem services divided by GDP, but what are the ecosystem services benefits to the poor communities, be it rural farmers, or be it forest dependent poor, divided by the GDP of the poor? Divided by *their* household incomes?”

We begin to see here the divergent agendas to which ecosystem services can be made to serve, and did, at the CoP. Here, it appears as a way of highlighting the importance of biodiversity in the livelihoods of vulnerable groups, showing how ecological degradation rationalizes the necessity and urgency of conservation initiatives on humanitarian grounds. Similarly, at another event, I heard TEEB communications manager Georgina Langdale refer to TEEB itself as “a social cause.” However, at the same time, ecosystem services catered prominently at the CoP to other agendas too, from those seeking to mobilize private financing for climate change mitigation projects to those seeking national legislation protecting endangered species. Thus, by reframing biodiversity conservation around what TEEB considers more palatable language to different sets of audiences, nature becomes not only visible but commonly understood in like terms provided by the master narrative of ecosystem services. Sukhdev’s response to Duriappah, culminating in his statement that “economics is mere weaponry,” is worth revisiting here:

TEEB recognizes that there are different layers of value recognition and value demonstration and value capture. Most value recognition, for example the spiritual
values and the ethical values, and the existential values of forests, and other biomes, are recognized and do not need to be economically demonstrated. There are other values which need and benefit from economic demonstration but they don’t need to be captured. And then there are other values which can be captured and they don’t need to be marketized. […] So we are by no means a cost-benefit-based stewardship model for the whole earth and anyone who tries to characterize us as that is doing themselves for a start a disservice.

Rather than allowing ecosystem services to get boxed into the second functional space of ecosystem services I identified in Chapter II, the “weaponry” Sukhdev asserts here seems to resemble a kind of discursive Swiss Army knife – suitable for all occasions. As I observed him in event after event it became clear that Sukhdev not only acknowledged but seemed to embrace the “performativity” of TEEB. For instance, sitting on another panel, he explicitly identified some of the “leverage points” through which TEEB could “penetrate” environmental governance, from regional planning, national legislation, and protected areas valuation, to eco-certification, and PES. At a separate event discussing ecosystem services valuation and accounting, he noted:

The project that you [World Bank] and UNEP and the others have embarked on may appear to be just a project. But I cannot overemphasize how significant it can be as a change maker. How significant it can be in terms of changing the lens with which policy making looks at its purpose.

Later, speaking on a separate panel with representatives from UNDP about the World Bank, he argued, this message “needs to be repeated ad nauseam. And don’t stop now. It’s time to get this message across. And I believe it is being heard at the World Bank and at the ADB [Asian Development Bank] and other development financing institutions, so don’t for a second think the job’s been done or that it’s over. Keep at it. This is the time to get the message across.” And, of course, as I pointed out earlier, he had implored his staff and supporters at yet another event to use what TEEB had delivered to “solve for the future,” to “create” the world, and “make it what we want.” These were by no means isolated observations. He seldom pretended to merely describe “The Economics of Ecosystems and Biodiversity.” Rather, his goal, which again remained largely un concealed, appeared to be to reorder Ecosystems and Biodiversity using
Economics. After he had finished speaking, the next panellist, Nicola Breier, the head of the international unit at Germany’s Ministry for Environment, addressed the audience. After acknowledging “it is never an easy task to follow Pavan,” she provided some of her own commentary:

We, the biodiversity community here, we all value biodiversity and ecosystem services. But we also all know that there, outside, there is a whole world who still needs a whole lot of convincing. […] we need arguments […] we know many people find it difficult to value something that has no price tag, and in order to put the figure on the economic importance of ecosystem services, and on the cost of the destruction of nature, we joined with the European Commission to launch the TEEB project. […] Even though the final TEEB report is released here in Nagoya, the TEEB project is not over, as Pavan said. The essential second phase of the work has only just started to bring TEEB to life, to bring its findings into practice. […] I invite you all to actively take part in the second phase of the TEEB project, and fill the messages of this report with real life.

As I mentioned, praising TEEB and Sukhdev personally became a somewhat regular occurrence, and the thinking embodied in these reports would go on to feature in many of the different discussions that I and the CEE team observed over the two week conference. Breier’s focus on outreach also became a recurring theme. Her underlying assumption, that those present were already committed to the project of conservation, was made variously explicit or left implicit at the side events I observed. What this shared understanding allowed was further and often revealing discussion that could extend from it. Here, for instance, Breier begins to reflect on how to engage with the ‘unconverted’ – literally the “outside” as she phrases it – who did not share in that understanding. As I mentioned earlier, I suggest that these moments provide informative glimpses into what appeared to be shared conceptualizations of how to appropriately engage with a hostile (or at least apathetic) set of actors external to their community. Interestingly, the appropriate response to this predicament is to place a “price tag” on nature in the form of ecosystem services. As I will note later, that engagement – as reflected in the enthusiastic acceptance of ecosystem services discourse – often entailed the adoption of an accommodating posture in relation to particular and powerful sets of actors in order to find common ground with them.
Karl Falkenberg, Director General for Environment at the European Commission spoke next, also acknowledging the difficulty of speaking after Sukhdev, and thanking him for his work. Again, ecosystem services discourse resonates throughout his remarks:

I think it’s very good that you do not simply come with the doomsday scenario. [...] I think the evidence for this is not simply intuitively there, but you have tried to put numbers to it, and I think that for all policy makers, this is a tremendous asset. [...] We can seize enormous opportunities of nature if we treat nature well [...]. What you have tried to do in your studies, and what I think we should all be very much aware of and focus on, is that nature is not a luxury. Nature is not the emblematic species. Nature is fungi, insects, and worms, is all these ecosystems that keep our air cleaner, our water drinkable, our soils fertile, etcetera. At the end of the day, it’s what allows life on this planet. And yet, in the past, too often we have seen economic interests overriding these environmental values, economic and environmental values, and I think you have very clearly identified the reasons for this. It has to do with accounting. [...] we really shouldn’t be surprised when even rational economic entities will continue to drive in the wrong direction.

There are many themes to unpack here: his attempt to redefine “nature” instrumentally, his characterization of ecosystem services as an alternative to pessimistic scolding, the relative importance of “numbers” over “intuition,” his conceptualization of “rational” decision-making, his conflation of “economic” and “environmental values,” and his reframing of the biodiversity crisis as an “accounting” error. I will again reiterate how ubiquitous each of these themes became over the course of the CoP. I should also note my surprise. A few months before flying to Japan, I had completed my field work in British Columbia, where, as I will discuss in Chapter IV, the spread and uptake of ecosystem services was, in contrast, comparatively limited. The dominance of ecosystem services at this event and throughout the conference was therefore somewhat startling. Its ubiquity also makes the task of selecting ‘moments’ where it became visible somewhat difficult. It was nearly omnipresent in the language of conservation organizations, the intergovernmental and even national agencies present, as well as amongst civil society groups and, predictably, business actors, and its appearance encompassed all of the intended functions I (and Sukhdev) had identified.
At one event I watched a television advertisement showing an elderly “mother nature” knocking on a man’s suburban door attempting to charge him for the ecosystem services she had been delivering to him for free. At another event I saw Brazilian lingerie model Giselle Bundchen appear on the presentation screen of the formal plenary hall to remind us of the value of biodiversity, which, in case we had not heard, was worth over $33 trillion. I walked past tables spilling over with documents featuring titles such as “A Guide to Proactive Investment in Natural Capital,” “Mainstreaming Ecosystem Services in International Policies,” “Business, Biodiversity, and Ecosystem Services: the Interdependence Story,” “Corporate Ecosystem Valuation: Building the Business Case,” “Banking on Biodiversity: a Natural Way Out of Poverty,” “Demystifying Materiality: Hardwiring Biodiversity and Ecosystem Services into Finance,” “Paying for Biodiversity: Enhancing the Cost-Effectiveness of Payments for Ecosystem Services,” and “Payments for Ecosystem Services: Some Nuts and Bolts.” And, of course, there were the ubiquitous colour-coded executive summaries of TEEB itself. At the airport, I checked in a bag filled entirely with such documents. I spent almost an entire two week period surrounded by individuals choosing to express their worldviews in the terms, language, and conceptual framework of ecosystem services. But even further, I found myself immersed in an atmosphere of intense enthusiasm over the dividends such a move could soon deliver (sometimes figuratively, sometimes literally).
Figure 6 - "Ecosystems provide the equivalent of thirty three trillion dollars in goods and services every year. Yes, that's correct: thirty three trillion!" Giselle Bundchen, UNEP Goodwill Ambassador

Thus, I posit the event just described as illustrative of a persistent theme that carried through much of the rest of the conference and my observations. It encapsulates the kind of enthusiasm for ecosystem services as it was expressed, and it begins to show how the concept began to insert itself into the thinking, established dialogues, and articulated interests of the international conservation community that had assembled there. The next sections identify some specific ways in which ecosystem services appeared to be tangling itself into biodiversity conservation dialogues.

3.2 Biodiversity Fail

As I discussed, side events in particular offer informative glimpses into a variety of ongoing discussions amongst conservation practitioners. While the topical areas of these side events were as diverse as the participants hosting them, observing their repeated performance revealed what appeared to be prevalent narratives shared by or at least mutually recognizable amongst the conservation community that assembled in Nagoya. In what became a recurring presentation structure, panellists would use these narratives – and these were often literally “meta-narratives,” or narratives of narratives, where conservation actors would react to stories of what
conservation has been in the past, what it is, and what it should strive to be – to frame his or her own remarks or argument. While MacDonald (2010a) discusses an assortment of dynamics driving the conservation community’s ongoing reconfiguration, the invocation of one framing device in particular, namely, the perceived failure of the conservation community to effectively advocate for its causes, became immediately⁹ and repeatedly apparent as a way of both explaining and justifying that reconfiguration.

The perceived shortcomings and failure of prevailing rationales for conservation which I noted in Chapter II cast a shadow over many of the discussions I observed, and this perception was often expressed openly. The very public failure of the CBD Parties to meet their agreed-upon 2010 “International Year of Biodiversity” targets in particular provided a kind of unsettling backdrop for the dialogues that proceeded it, which became premised on an acknowledgment of the conservation community’s shortcomings and limited effectiveness. For instance, Ian Thompson of the Canadian Forest Service, again, on the first day of the conference, attributed this failure – which he rendered in somewhat stark quantitative terms in relation to forests – to their “inappropriate valuation.”

These discussions communicated a dual sense of anxiety and urgency, and would segue into commentary explaining what to do about it. In these types of discussions, although varying in the specifics of what precisely that should entail, presenters would launch from an acknowledgment of that failure into an argument for how to proceed, and, in my observations, this usually meant either seizing onto an approach which drew on ecosystem services concepts in some capacity or even making ecosystem services itself an encompassing strategic and conceptual framework, much as Sukhdev advocated. By the end of the CoP, this structure, which I identified in Daily’s preface to *Nature’s Services*, had become almost formulaic: (a) ‘conservation-as-usual’ had failed to deliver, (b) this failure was occurring against a backdrop of ecological crisis (though sometimes this was left implicit, given the audience), and (c) drastic times called for drastic measures. Again, this last step often translated into ecosystem services in one or a variety of its forms. The convergence of this formula with the argument I paraphrased

⁹ The outgoing CoP President drew attention to their failure within the first several minutes of the opening ceremony
in the previous chapter (as expressed by ecosystem services researchers in the literature) is worth noting. Sukhdev himself stated that “there is actually no gap” between TEEB and the academic ecosystem services research community, and he highlighted the involvement of the same scientists who created the MEA specifically (such as Walter Reid, who sits on TEEB’s advisory board).

This presentation structure and framing legitimated an acceptance that biodiversity required new rhetoric, (i.e. arguments provided by ecosystem services), new allies (i.e. the regularly invoked caricature of the obstinate finance minister, corporate CFO, or the apathetic publics of the global North, who would presumably be responsive to it), and new resources (i.e. increased public funding, private investment, and so-called “innovative financing mechanisms”) compared to what had traditionally comprised the arsenal of conservation advocacy. That the CBD CoP-10 took place less than a year after the very highly anticipated and proportionately disappointing UNFCCC CoP-15 in Copenhagen compounded not only this sense of failure, but the urgency, desperation, and answer-seeking tenor of the conversations I observed that followed in its wake. I draw attention to this sense of failure primarily to illustrate the kind of ‘conversational conditions’ in which ecosystem services, as a nearly prototypical ‘new way forward,’ found itself as it seized the imaginations of the participants and panellists at the CoP. Given the many potential functions of ecosystem services I already identified – its broad-based appeal, the ‘legibility’ of its arguments to policy- and decision-makers, its financial opportunities, and so forth – ecosystem services appeared (or was made to appear) to demoralized conservationists searching for answers just the thing that they wanted it to be.

3.3 Putting Ecosystems to Work

Unsurprisingly, the protected area, as the main symbol and preferred instrument of the international biodiversity conservation community, appeared in various ways throughout CoP-10 in venues ranging from the highly visible debates between the Parties negotiating their next round of protected areas targets to a significant proportion of the side events observed by our research team. I suggest that the visible influence of ecosystem services on protected areas discourse exemplifies the kinds of work that ecosystem services can be (and was) made to do. In this context, ecosystem services became an important pivot through which ostensibly new arguments, renewed efforts, unenrolled audiences, and ultimately unaccessed resources, could
be mobilized in support of more and larger protected areas. Characteristically, Sukhdev begins to capture this dynamic in his remarks:

We talk about conservation as a good investment. If we work out what are the values that come out of conservation, protected areas provide many benefits which we have talked about: the ecosystem services. And the economic calculations suggest that these are good investments if you invest in protected areas. Today, we clearly don’t do enough, because the calculations that are for the spending that is required are more like 45 billion, whereas the actual spending is more like 6.5 to 10 billion.

There are several interconnected themes to unpack here. First, conservation once again appears as “a good investment” when recast in economic terms. As I will elaborate later, what that entails with respect to protected areas is a reframing of their purpose from an exclusionary space of biodiversity protection to a kind of services-generating asset whose contribution to economies is lamentably underappreciated. This framing immediately segues into an account of the conservation ‘funding shortfall’ – again, reframing the problem as a type of accounting error – and the finances that would be required to maintain that asset. Many other presenters made this same point, using the same rhetoric. Note also that Sukhdev hedges his remarks somewhat in terms of what type of protected areas he is discussing – not just exclusionary but community-based protected areas – as he attempts to navigate (and create, through an ecosystem services framework) a kind of middle ground between the more hardline biological diversity conservationists and the rights-based constituencies focusing on issues of development, poverty, and environmental justice. At a different side event, IUCN consultant Nigel Dudley elaborated more explicitly on this last theme:

we have to show that parks are not just about wildlife. They are about people, social and cultural values. Thus, in order to raise funds and awareness we have to develop an expanded message that will convince other sectors of society. […] most PAs have been set up to protect landscapes, recreational value, wildlife and biodiversity, but they also have value in terms of providing clean water, secure food supplies, disaster mitigation, health, weather, sacred sites, cultural values and homes for people. Biodiversity is not enough of a reason for people to stave off pressure and raise sufficient funds
He distances the protected area from its older exclusionary connotations, and weaves ecosystem services into it in a number of ways: as the means of attracting financing to it, as a means of enlisting new actors in support of it, and, ultimately, as its overall justification. These comments attempt to shift the meaning of the protected area. Of course, the protected area has been contested over the years, and this contestation has encompassed various ideas of what the protected area is and should be (Brockington et al. 2008). However, the frequency with which presenters felt they needed to argue this point implies this was a conception that they felt needed to be deliberately foregrounded, legitimated, and accepted to a much greater extent than they currently perceived it. At another event I attended, I observed an audience member stand up to make a similar remark during the question and answer period:

I know we’re in the PAs [protected areas] club, but I think we’ve got to stop talking about PAs. These are survival areas. And part of our language and part of our approach to civil society at large has been, these are our areas and we’re protecting them from you [...] whether you like it or not, that has been the attitude. It’s changing of course and we’ve seen many examples in the presentations. But there’s still far too much of the PA community that is protecting from, instead of protecting for, and that means I think that we have to change …

These comments are characteristic of the types of “meta-narratives” I mentioned earlier. Once again, he identifies what he perceives as an important impasse to conservation – the exclusionary ideal form of old school notions of the protected area – and suggests a didactic counter-narrative emphasizing human dependence on the services these “survival areas” deliver. As I noted earlier, these moments can reveal much about how the conservation community (i.e. the “club” referenced in the remarks above) perceives itself, how it conceptualizes the nature of the problem confronting it, and what the range of appropriate responses looks like. But, as I argued, I also suggest these moments are themselves not only reflective but constitutive of how these conceptualizations are shaped through the social activity of the meeting itself.

While the ubiquity of ecosystem services throughout these conversations was itself somewhat revealing, the apparently significant scale and extent of its imbrication into protected areas discourse would occasionally come into focus, sometimes dramatically, through presentations regarding projects or initiatives undertaken by particular organizations. In one such instance,
Russ Mittermeier, President of Conservation International (one of the ‘big-three’ conservation organizations), began to explore with his audience the vast potential in that overlapping strategic (and literal) space between carbon and biodiversity. After declaring TEEB the most important document written for conservation, and after revealing that economic valuation of ecosystem services was to become an emerging focus for CI itself, he began to discuss some figures relating to the organization’s protected areas targets. He presented findings from a technical paper which showed, according to CI’s models, that the protection of the ecosystem function of carbon storage alone would justify an increase in their protected area target by an additional 11%, resulting in a total of 25% of terrestrial surface area. Once other ecosystem services are accounted for, Mittermeier revealed that CI’s target could increase to a staggering 50% of terrestrial surface area.

This sampling of commentary and argument which we observed at CoP-10 again exemplifies the kind of work ecosystem services can be and was made to do. Here, ecosystem services played several roles: (a) enrolling what were previously perceived to be unsympathetic if not overtly adversarial actors to protected area expansion, (b) repackaging protected areas as receptacles to which new funding streams could be diverted, and (c) rearticulating the underlying rationale of protected areas themselves. At a side event on ecosystem services accounting, Andy Seidl, Head of IUCN’s Global Economics and Environment Programme begins to sketch out a peculiar vision of what such a rearticulation could entail:

This is actually another way to look at managing a landscape, in an agricultural sense, toward multiple values. Not only corn, not only wheat, but corn, wheat, water, carbon, wildlife, any of the potential services that are being created for the benefit of you and for the rest of mankind, or personkind, are in fact valued. So in this scenario, you look at the traditional conservationist’s approach on the left [referring to his slides], which is a protected area. In a protected area, you have very little productive use or none perhaps, so nothing to eat, nothing to sell – again, this is an archetype – and you may maximize or optimize all the other ecosystem services that are being created. However, most of those ecosystem services don’t have markets. So you may not be getting much compensation for all that value you’re creating. […] What we’re talking about here is about valuing ecosystem services. We might get […] an optimization across all the ecosystem services and some means to capture those ecosystem services, either through new markets, or
potentially through policy, that allows us to potentially get more income, or at least as much income, through a sustainable system, than through one that is based on a monocrop.

Using an agricultural metaphor, he provides a glimpse into a new kind of conservation area: a sort of ecosystem services ‘farm’ maximizing the delivery of a suite of ‘crops,’ one of which is “biodiversity.” This pivoting represents a striking departure, in discursive if not yet obviously material terms, from some of the prevailing conceptions I identified earlier of protected areas amongst established actors in the international biodiversity conservation community. What these examples share in common is a semantic broadening of how the protected should be defined. The collective effect of this repackaging of protected areas, whether inadvertently or consciously, was their rearticulation in terms of the ecosystem services they provide. Note also that he escalates the role of ecosystem services through protected areas from ‘recognizing’ and ‘demonstrating’ values, as other panellists had discussed, to explicitly ‘capturing’ them.

The means through which a protected area is justified and finds resources to operate thus switches discernibly. Within this re-rationalization, protected areas are almost being ‘put to work’: they are no longer just spaces in which biodiversity is safeguarded as a good in and of itself, but they are meant to generate material benefits (i.e. ecosystem services) at various scales to particular people. Now that protected areas are being expected to sequester carbon, filter water, prevent erosion and floods, and protect biodiversity – as protected areas begin to accommodate a wider range of “values” – those with a stake in the natures they produce have to contend with the strategic implications: a political arena through which these different values are negotiated, prioritized, traded off, and managed, that is also reproduced and reshaped in parallel. Here, ecosystem services transforms the protected area into a semi-automated living factory producing nature for the consumption of particular sets of people.

3.4 More than Just Sticks of Carbon

Another set of conversations in which ecosystem services appeared prominently were those revolving around climate change. While the sense of failure, crisis, and urgency I described earlier facilitated attempts to rearticulate and repurpose protected areas, this three-part presentation structure also framed justifications for realigning biodiversity conservation in relation to the agendas of climate change mitigation and adaptation. These presentations
highlighted the political space and potential revenue stream this association could open to conservationists and their objectives. Side events discussing REDD+, “an ecosystem service payment scheme unlike anything we’ve ever seen” as one consultant in British Columbia phrased it, were amongst the most prominent venues where these arguments were made. Here, ecosystem services – in this case, the ecosystem service of biological carbon sequestration – connected the discourses of climate change and biodiversity conservation along similar lines as those that I discussed in relation to protected areas, including the mobilization of resources and financing (i.e. through carbon markets or other project-based funding), and a reframing of the rationales and justifications of conservation initiatives themselves in order to align with other agendas (i.e. climate). Once again, using the needle-and-thread of ecosystem services, Sukhdev worked actively to stitch these agendas together:

An important part of the TEEB’s approach has been to draw the connection with economics and with climate change. And when we talk about a form of carbon capture and storage, which is done by the forests, this is not complicated, unlike mechanical and technical issues with industrial carbon capture and storage, which is expensive and has risk associated. Planting a tree is ancient technology. It has no risk attached to it and everyone can do this. […] there are significant economic benefits in reducing deforestation. Halving deforestation potentially means an added value of almost four trillion dollars.

In the previous chapter I discussed the concern that ecosystem services makes biodiversity “instrumental” and potentially very narrowly so. Sukhdev once again anticipated and worked to neutralize this criticism. He acknowledged at another event that “forests are not just sticks of carbon,” paraphrasing and voicing the concern that overemphasizing the delivery of a single service (i.e. REDD+ and carbon storage) might displace other ecosystem services and their values. Sukhdev notes, as I discussed in the previous chapter, that if biodiversity’s value becomes equated with its carbon value, it could risk transforming swaths of the living environment unhelpful to that purpose into surplus and therefore potentially ‘redundant’ biodiversity. According to this line of reasoning, by conflating biodiversity with the services it provides, the international conservation community may, in effect, rearticulate the ‘utility’ of biodiversity (whether in part or wholly) in terms of its embodied carbon – exactly what Sukhdev was cautioning against. Thus, in the process, conservationists could end up conserving
something quite unlike biodiversity, conventionally speaking (i.e. the plantation forest) as Redford and Adams (2009) pointed out.

I will draw attention to several side events where this tension became apparent at CoP-10. At one event advertised as exploring “co-benefits” between “carbon, biodiversity, and ecosystem services,” UNEP’s World Conservation Monitoring Centre (WCMC) showcased its “Carbon Calculator” mapping tool which estimated carbon storage as a function of protected area size, shape, and location. One presenter walked the audience through a short demonstration where they visually expanded and shifted the boundaries of an orange polygon, representing a hypothetical protected area, which showed how an increase in its spatial extent corresponds with increasing levels of biological carbon storage in above- and below-ground biomass. The presenters managed to generate a visible (and mutual) degree of excitement amongst parts of the audience. Here, the interests of biodiversity conservation – embodied in this modeling exercise as the protected area – appeared to benefit in direct relation to those of climate change mitigation – here embodied as biological carbon sequestration. While this event was emphatically not alone in its attempt to connect these two agendas, it was at least one of the more visually arresting examples of this coupling of carbon and biodiversity observed by our CEE team.

Its creators likely did not intend the tool to be an all-encompassing framework in which to base all conservation planning and decision-making. Yet, the conspicuous absence of all other variables, most noticeably human beings, in its simplified two-dimensional rendering, as they were literally occluded by that encroaching orange polygon was revealing, if somewhat disconcerting. This tension was only compounded by the silence of both presenters and audience on this issue: that these protected areas were devoid of human lives was left totally unremarked. Again, returning to Scott’s (1996) conception of ‘legibility,’ ecosystem services appeared to have dictated the terms by which nature was seen (i.e. carbon storage) and not seen (i.e. everything caught beneath that uniform plane of two-dimensional orange space).

This tension became visible not only at events discussing the calculation of ecosystems’ carbon fluxes, but especially at those discussing their valuation. A side event hosted by the World Business Council on Sustainable Development (WBCSD) in the CoP’s second week, for example, conveyed one way in which this tug-of-war between the twin priorities of species
richness and carbon storage appeared to be playing out, pulling ‘the purpose’ of biodiversity in potentially divergent directions. Nathalie Olsen of IUCN walked the audience through a conservation project in Madagascar, financed by Rio Tinto as part of an initiative to realize “net positive impact” through biodiversity offsets, in order to demonstrate the utility of ecosystem valuation in conservation decision-making.

What was especially interesting about this and other valuation exercises presented at the CoP were their quantification of the benefits and costs of intervention. While in this example their economic analysis suggested the “benefits dramatically outweighed the costs” of project implementation – communicating the customary win-win scenario that became familiar over the course of the conference – carbon values also appeared to overshadow, perhaps as “dramatically,” the other benefits as well. In contrast to biodiversity values, which were estimated using averaged global willingness-to-pay data, the value of biological carbon storage comprised over 80% of the total estimated benefit of the project (Figure). The value of biodiversity conservation had, according to her tables, bar graphs, and pie charts, become four-fifths carbon. Moreover, note the distribution of “benefits” – they were dispersed and accrued at the scale of the entire world. Once again, the value and thus the politics of this parcel of land appears to have shifted drastically, at least for this exercise, as its designers included every ‘stakeholder’ on Earth and their imputed aggregate demand for Madagascar’s ecosystem services.

One IUCN-hosted side event on “wet carbon” further exemplifies this intertwining of climate, both as rationalization and revenue generator, into the dialogues at the CoP, and was emblematic of the pace and broadening extent of this imbrication. Presenters shifted their gaze from the forests of REDD to coastal ecosystems such as wetlands, mangrove forests, marshlands, and algal communities. Specifically, they directed their attention to the potential of these ecosystems for creating carbon offsets destined for global environmental markets, which (although they did not yet exist) would be, we were told, analogous to mechanisms like REDD. The side event brought together private sector (Danone), non- (IUCN, Earthmind), and inter-governmental (Ramsar Secretariat) presenters, and advertised that they had “joined forces to mobilize carbon finance for wetland conservation.” Here, “wet carbon” featured as a “cost-effective, economic, scalable, and safe approach” to both climate change mitigation and biodiversity conservation. Presenters laid out a “road map,” by now familiar after REDD, for how to realize this vision.
Event chair Joshua Bishop, chief economist at IUCN and TEEB for Business author, pointed out that in contrast to forests, these ecosystems remained relatively undeveloped both methodologically and institutionally in their exposure to carbon offsetting as a policy instrument. Nevertheless, Francis Vorhies, Executive Director of Earthmind (and one of the principal proponents of a so-called ‘Green Development Mechanism’), envisioned “the start of the global market for wet carbon” in some pilot initiatives he noted, and particularly in a series of projects financed by Danone in partnership with Ramsar and IUCN in Senegal, India, and soon Indonesia. He shared an anecdote illustrating the beginnings of such a market. He traveled with representatives from Chevron, Shell, and Total to the Niger Delta, the location of one of the largest mangrove forests in the world, where they searched for carbon offset opportunities. There, Vorhies pitched to them the combination of intended co-benefits of wet carbon, citing the pilot work of Danone, and found what was in his assessment an entry point for significant private sector buy-in to what had been, just several years before, a scarcely developed idea. His anecdote – as with many of the others observed by our team conveying some variation of it – depended entirely on the intertwining of biodiversity with concerns over a changing climate. And, once again, ecosystem services represented the thread connecting them. Here, as in many other events, carbon had become a ‘hinge’ through which ecosystems could be rearticulated and repurposed, private sector engagement and investment could be secured, new global environmental markets could be established, and the meaning and pursuit of biodiversity conservation could be re-shaped on a broad level. His anecdote bears strong resemblance to those related to me by practitioners in British Columbia, which I will discuss in the next chapter.

3.5 You Cannot Manage What You Do Not Measure

Using a phrase which I observed repeated a number of times (and not only by himself), Sukhdev would sometimes remark, “You cannot manage what you do not measure.” By the end of the conference, the CEE research team realized that we had been collectively encountering the term independently and somewhat regularly at the different events we were attending. As I will elaborate in this section, this statement meaningfully conveys both the kind of work that proponents intend ecosystem services to do and the strategic logic underlying that approach.

In many of the examples described in this chapter, and in many more which I could not include, I observed the ecosystem services concept being consciously interpreted, tried out, and taken up
by different actors who, at the CoP, began to get a sense of its shape, its heft, and its usefulness. But it is also worth examining, in addition to the wielders of this “weaponry,” for whom this ecosystem services framing is largely intended. As I have discussed, the target audiences of this apparently self-conscious shift in language were often made explicit by presenters, ranging from the apathetic publics and electorates of the global north, to the reluctant CFO, to the caricature of the obstinate finance minister. These framings and conceptualizations help draw into focus how those conservationists seizing onto ecosystem services discourse thought about the problems they were confronting, and why, to them, ecosystem services appeared to be the suitable “weapon” to equip for the situation. This last section highlights conceptualizations of one the chief “end users” which ecosystem services was deliberately made to engage at the CoP – a character everybody referred to as ‘The Decision Maker.’ Whoever this person was, he or she seemed to weigh heavily on the minds of many presenters.

This pressing of perceived levers of power (which were assumed to respond to this type of language) was often cited within presentations as not only the reason why this language had proliferated so widely, but also, more normatively, as one the critical frontiers for furthering the aims of conservation as a whole. For instance, at one TEEB-related side event, Andreas Carlgren, the Swedish Minister for the Environment, took to a question asking whether his Finance Minister would be “happy” with “prices on turtles and coral reefs.” I observed this apparently daunting specter of ‘The Finance Minister,’ as a stock character (and an important variety of The Decision Maker) that needed to be persuaded, invoked a number of times in different side events. Carlgren responded that when attempting to secure funds for protected areas, for example, reframing these expenditures as “protecting values” rather than “as costs” was necessary to create a stronger negotiating position. This understanding led Andrew Mitchell, the Director of the Global Canopy Programme – a small ENGO also vigorously promoting ecosystem services ideas at the CoP – to conclude that that his organization had to focus its energy on leveraging “acupuncture points of change” in the form of these key individuals and heads of state. These sorts of presentations, which consciously tried to inhabit and decipher the thinking of these ‘unconverted’ Decision Makers, tended to converge around the perceived necessity of using ecosystem services as a means of entrenching nature’s visibility, legitimacy, and legibility in the mind of this phantasmal bureaucrat.
To this effect, among my own observations at the CoP, one of the clearest and most focused efforts by ecosystem services proponents revolved around ecosystem services accounting. Several days before World Bank President Robert Zoellick arrived personally to formally launch the World Bank’s “Global Partnership on Ecosystem Accounting,” I attended a side event discussing and promoting the initiative. The World Bank moderator, acknowledging the ubiquity of ecosystem services at the CoP, prefaced her presentation by remarking, “you may be wondering: what’s special about this initiative?” She explained:

This initiative is looking at the value of ecosystem services in a particular manner. That is, how do we fit this into the national income accounts? […] while we understand the importance of ecosystems within the environment community, we often find it difficult to convince others, particularly our colleague economists in Ministries of Finance, planning agencies, and other institutions. These institutions can have enormous impact on environmental policy. [They] determine budget allocations across different environmental ministries for example. They decide what the priorities are for infrastructure development. They can set different policies that can have enormous impacts on the environment, such as trade policy or energy policy. So it’s very important that we’re able to communicate this to them. And I’m sure you have probably had the experience that more conventional economists […] those who are concerned with other issues, or other sectors, don’t really take the ecosystems, or the environment, very seriously. So bringing ecosystem services into the national accounts is a way of meeting them on their own terms, expressing these values in a manner that they understand, and a manner in which they can use.

Here, by appearing on the Finance Minister’s ledgers next to highways, schools, and hospitals, biodiversity, as expressed in terms of its ecosystem services, becomes infrastructure itself. This particular initiative encapsulates much of the essence of what earlier proponents had designed ecosystem services to ‘do,’ but also provides a revealing glimpse into the imagined problem for which the tool was intended. Her detailed conceptualization of the policy process and the ideologically inhospitable environment it represents to conservationists reveals a finely tuned strategic sensibility, which perceives in The Decision Maker a keyhole to which ecosystem services had been shaped carefully to fit. This side event was particularly but not uniquely characteristic of a more pervasive tone extending throughout my observations of ecosystem
services at the CoP. The panel suggested that biodiversity advocates, at least, those gathered for this meeting, should be (and apparently were) increasingly prepared to meet The Decision Maker on his or her own playing field – in other words, “meeting them on their own terms” as the moderator had entreated. These experts, by way of ecosystem services, were essentially coaching environmental advocates no longer satisfied merely with playing environmental conscience or using quixotic campaigns built solely on principle on how to play to win.

Sukhdev, appearing as one of the panellists, spoke strongly in favour of the initiative. He stated, as I noted earlier in this chapter, that he could not “overemphasize how significant it can be as a change maker” and in “changing the lens with which policy making looks at its purpose.” He concluded that ecosystem services had to begin appearing on balance sheets because “it will be difficult to argue otherwise with Finance Ministers.” Once again, the daunting specter of the Finance Minister and how his spectral mind was imagined to operate appeared as a defining obstacle to conservation. And, as with all of the other presentations I saw Sukhdev provide, ecosystem services presented the way forward and the vehicle through which this enigmatic figure could be delivered. Jean Louis Weber from the European Environment Agency later elaborated on this message, reminding us that “If you want to address the Prime Minister or Minister of Finance, you must produce one number. You must update your accounts every single year, because it’s the way they work. They have budgets, they present their budgets to their parliament, and so you need to be in tune with the policy agenda.”

While this ecosystem services accounting initiative reveals some of the conceptual and discursive work ecosystem services was doing in rearticulating nature in terms literally “legible” to national legers, I suggest it also reveals perhaps as much about conservationists themselves as about The Decision Maker it targets. Conservationists, as illustrated throughout this chapter, used ecosystem services as a means of facilitating a discursive realignment. But the unmoving point around which this realignment was to take place was usually the elite decision-makers deciding not to see, not to care, and ultimately not to fund the conservation of nature. Thus, it appeared some conservationists had concluded, as stated clinically but explicitly in some of the comments above, that the project of conservation must adopt an accommodating posture in relation to where power resides – in other words, as the World Bank moderator stated, “meeting them on their own terms.” As we shall see in the next chapter, this dynamic appeared visibly and consequentially in British Columbia.
Chapter 4
Valuing the Forest for the Trees

“It really is one of the few languages that allow you operate in the economic sphere and make rational arguments to economists, to businesses, in a way that is compelling. It’s really powerful, and there’s really strong logic behind it. And it can be measured by environmental science. It can be measured through economic measure. It can be measured through community health measures [...]. I’m like, you want the argument put this way? Alright. I’ll explain ecosystem services in environmental science speak. Or you want it spoken in business talk? I’ll give it to you that way. Or you want it spoken in community wellbeing? I’ll speak to you in that way. Ecosystem services are accessible to all. I think they’re well suited to business which is really where I think the power lies, because business made the mess and they’re the ones to get us out of it. If we get out of it.”

- Vancouver-based environmental consultant

4 British Columbia

Late last summer, toward the end of my field work in British Columbia, I visited the offices of a company specializing in “the preservation of natural capital,” whose operations, I was told, already covered an area the size of three Irelands. I sat across from its founder to discuss ecosystem services and what it represented for the province. About halfway through our interview, I noticed a flowchart sketched out on his dry-erase board with some names of groups and organizations that had become familiar to me that summer, many of whom I had already spoken with. He noticed me noticing:

Him: There’s something written down. There’s an idea right there, with all the players we’re working on, with the Ministry of Forests, the Climate Action Secretariat, Aboriginal Affairs, Great Bear Rainforest Initiative, the twenty seven nations that they represent, Rainforest Solutions, which is ForestEthics, Greenpeace, Sierra Club, the whole series of companies like ourselves, the government people, all trying to get the methodologies complete [for forest carbon credits].

Me: What do the dotted lines mean?
**Him:** Those are direct, indirect links. I’m just trying to say there’s a huge mass, right? There’s a lot of work to pull all these people together.

**Me:** I kind of want to take a picture of that. That is phenomenal.

**Him:** It’s coming together. That is coming together. …

This was one of many revealing moments punctuating my field work in BC, which I present in this chapter. As I found out, he represented one of a small handful of self-identified ecosystem services practitioners working in the province and across Canada towards what they perceived to be an important and potentially quite lucrative set of emerging markets based around ecosystem services. Most of these practitioners, including the one sitting across from me that morning, had gravitated toward carbon, “the biggest game in town when it comes to valued ecosystem services” as one consultant and former WWF employee told me, and “the real elephant in the room” as another phrased it. What I found that summer was a small but seemingly determined collection of individuals – former foresters, academic ecologists, accountants, environmentalists of varying stripes, and many others, distributed amongst a variety of businesses, non-profit, governmental, and non-governmental groups – working consciously and methodically to mainstream and apply ecosystem services concepts in their respective domains.

The hand-drawn constellation of organizations hanging on the wall in front of me – in this case representing the stakeholders related to what I was told by several informants was going to be a large forest-derived carbon sale from the north coast’s Great Bear Rainforest (GBR) – is a product of the same kind of work I observed Pavan Sukhdev and others doing in Nagoya. Here, tied together through a series of solid and dotted lines (“direct” and “indirect” links), a diversity of institutional settings ranging from government ministries, to forest companies, to First Nations and environmental groups, had been brought together and made to intersect around ecosystem services. And this was only for one project.

Last April, *The Vancouver Sun* reported that BC apparently held “a bank of carbon credits already approved for sale that adds up to over $1 billion,” which “has essentially created a new export industry for the province” (Hamilton 2011). The article identified and summed the value of six carbon offset proposals “at the end of the pipeline.” As it turned out, most of these
projects, which had been pre-validated by the Pacific Carbon Trust (PCT), a provincial crown corporation set up in 2008 to oversee and deliver carbon offsets in preparation for the eventual establishment of a carbon trading system, happened to be forestry-related. The PCT admitted that, within the next few months, it planned to approve a total of 30 such projects that were currently in development.

The company I visited that summer morning had developed one of the first and largest of these projects. But, its CEO reminded me, “Carbon is the low hanging fruit. Water, other types of ecosystem services are coming online, as well as the concept of an ecosystem offset.” He explained, “I contextualize carbon from land based activities as just an ecosystem service. […] and I believe more will be available. […] we need to find ways to price ecosystem services and put a value on natural capital as it is.” He argued later, “The ecosystems market is 30 trillion dollars, 33, there’s different estimates. But it’s unvalued. Here’s what’s going to happen. It has to happen. We have to value ecosystem services or we’re dead. That’s it.”

Over the summer, my informants provided me with a range of rationales, sometimes similar to the one above, for why they were beginning to acknowledge, to endorse, or even to use ecosystem services in their work, whether in its ‘soft’ or ‘hard’ varieties.\(^{10}\) For one practitioner, this meant teaching engagements at one of the local universities and “spreading the gospel at kind of a community level, and that’s everything from politicians to technicians to mayors or whatever, but trying to get this thing out there at that kind of a level.” To another practitioner (and former forester) that meant “raising capital to acquire timber land that can beat the returns on timber” using ecosystem services and land-based carbon in particular. “We think it’s actually worth more as carbon than it is as timber,” he explained. “If I’m right about carbon, which I think I am, if carbon can beat timber, then that in itself is a game changing event.” To many environmental advocates and campaigners, ecosystem services had already become, as one activist phrased it, “like the air we breathe.”

Ecosystem services had also, to some extent, begun to penetrate the provincial government. As an Assistant Deputy Minister (ADM) from one of the province’s so-called ‘dirt ministries’ told

\(^{10}\) With respect to its level of market capture and the degree of commodification, i.e. what Sukhdev described as the hierarchy of recognizing, demonstrating, and then capturing values.
me, “I see a huge opportunity as a provincial government to develop a sustainability framework around the notion of ecological goods and services. There’s a few of us that have been playing with the concept over the last year.” As I found out, that included one Deputy Minister whom I spoke with later, who told me, “Within each sector, within each agency, within each value, there are different things happening.” He added, “So, it’s accelerating. […] I think you’re going to see a transformation in the next year or two, kind of, five years. A pretty significant transformation.” As I will explain in this chapter, I found ecosystem services being put to work in British Columbia spanning all of its different intended ‘functions,’ from rhetorical device, to decision-making aid, to policy instrument and environmental commodity, as it began to appear in each of the institutional settings I engaged in the province in unique ways.

This chapter follows the spread and uptake of ecosystem services into BC, and specifically across four key institutional settings each with a stake in forest policy, management, and conservation in the province. Those settings are (a) the academic community, (b) environmental advocacy groups, (c) forest-related businesses, such as forestry companies and newer ecosystem services-related firms, and (d) the bureaucracy of BC’s ‘dirt ministries.’ In this chapter, I explore to what extent and in what forms ecosystem services is beginning to appear in the province. Through presentation and analysis of interviews with professionals with roles relevant to ecosystem services applications selected from these four institutional settings, I attempt to highlight the divergent functions of ecosystem services, but also the political convergences and tensions between the practitioners lining up behind each of them.

4.1 Imagined Forests

I asked one practitioner to describe the ‘state of play’ as he saw it in terms of ecosystem services concepts materializing in British Columbia. Preferring to broaden out the conversation to Canada, he set the scene by describing how he conceptualized the national landscape:

I think Canada, as a large nation, is a huge store of natural capital. Recent studies have shown that the northern boreal forest, a kind of stunted forest with a huge sort of peat bog soil, it’s kind of like an inverted amazon, where the amazon has tiny soils but a gigantic above-ground carbon store. Canada’s northern boreal forest has equal or more carbon stored in it than the amazon. It’s amazing. No one knows this. But as an ecosystem service, it gives us a lot of thought about what we should be doing […]. So
that sort of muskeg, useless area, that no one knows what to do with, right? Which is a homeland for some First Nations, and mineral rights for diamond companies, these kinds of exploration companies, now becomes one of the important stores of natural capital for the whole world. So it gives us a new way of looking at things. […] Canada’s a good chunk of the world and a good testing ground.

Similarly, a recent report from the Canadian Index of Wellbeing lamented, “despite its fundamental importance to us as a species, and despite estimates that Canada’s natural resource wealth exceeds one trillion dollars, humans often take the environment for granted. We fail to appreciate the various and valuable ecosystem services provided by nature that sustain human wellbeing. To put it another way, the environment can be seen as an asset, or a form of natural capital, which in turn provides the basis for human wellbeing in other domains” (Morgan 2011, ii). Before proceeding with discussion of my findings, I will briefly clarify and comment on the scope of the research presented in this chapter. Specifically, I will explain this chapter’s focus on the social construction of BC’s forests as illustrated by the types of remarks highlighted above.

Of course, the physical ecology of the forest itself constrains the social interaction that can occur in and around them in some obvious ways. However, this chapter concerns itself with the broad variety of imagined forests my informants would express to me, and the ways in which they used ecosystem services to rearticulate and share them. In other words, rather than focusing directly on the complex ecological assemblage of biotic, physical, and chemical flows which I had learned constituted “the forest” as a science undergraduate, my research examines the types of discursive representations that my informants used to make sense of those assemblages, for instance, the ones I note above equating “Canada” and “the environment” with “natural capital” or as “one trillion dollars.” Bruce Braun (2002, 9) refers to this “inevitable intertwining of society and nature in any and all social and ecological projects,” as “social nature” (Ibid., 10). He argues:

The notion that nature is socially constructed, rather than a pure identity external to society, forces us to take responsibility for how this remaking of nature occurs, in whose interests, and with what consequences (for people, plants, and animals alike). […] The social construction of nature refers to the imbrication of society and nature. But the
phrase can also refer to the fact that our images and ideas of nature do not simply reflect pre-existing reality, but, in important ways, constitute this reality for us. In other words, nature’s “social construction” refers to an epistemological condition as well as an ontological one (Ibid. 13-14).

I try to situate my analysis of my informants’ conceptualizations of British Columbia’s forests within this theoretical framework. I believe it captures not only the tangle of assumptions and the discursive baggage any representation of nature carries with it, but also the kinds of active contestations I observed coursing through them in my field work. Similarly to how Takacs (1996, 105) observed biodiversity biologists “deliberately acting to shape our social construction of nature,” my informants, from environmental activists, to government bureaucrats, to university professors, to carbon entrepreneurs, all demonstrated an awareness, and often a shrewd one, of the discursive stakes that this “remaking of nature” presented. Robertson (2006, 382) observes that these constructs are “not imposed by nature or society, but rather are contingent features, emergent from the agency of the people that perform necessary negotiations between elements of the differentiated epistemological structure of modernity.” As Takacs observes his biologists realizing, ideas do not change, rather, they are changed.

In this way, my conversations often took on an intriguing and at times almost gossipy quality. My informants, drawn from these different institutional settings, would express to me not only how they themselves conceptualized BC’s forests, but how they thought other actors from contrasting institutional settings conceptualized those forests, how these different actors were trying to strategically reposition their respective conceptualizations in relation to each other, and how they thought those forests ought to be conceptualized in the end. As I will discuss, many informants perceived ecosystem services as a key pivot on which these conceptualizations could be rearticulated and thereby extended to others.

For instance, another former forester, who said he had spent his “career sitting on the other side of the table from the NGOs,” admitted: “I frankly don’t believe that the resources we have are best showcased and best managed as a sort of commodity-type forest. BC’s got a lot more to offer than that. So I’m interested in finding and working towards understanding how we can generate revenue to allow our forests to be more productive and more of what they really should
be, which is a diverse ecosystem that supplies a whole range of resources that society and the environment needs.” On the other end of that “table,” one environmental advocate said to me:

> When I think about the BC coast, how do people view it? People view it a number of different ways. They view it as a resource. They view it as a really really awesome pretty place that they’d like their parents to visit one day. And they also view it as a place where important things happen. Like, there’s an important salmon, critical whale habitat. Spirit bear habitat. Those are all important things. But that’s not the dominant psyche […]. I just think that in the regular populace, if they were to understand ecosystem services and how much ecosystems actually provide to people walking down the street, we would place more public importance on preserving it. […] I feel like we use a number of tools to try to capture the imagination of the public. And I can say that the place that we’ve been trying focus on is ecosystem services.

They, as with most of my other informants, understood that BC’s forests represent “social nature.” But they also expressed an appreciation for the contested conceptual and ideological terrain of these imagined forests, and their active social construction. As I attempt to show in this chapter, many of my informants seemed to perceive this discursive tug-of-war between these different conceptualizations as consequential to their work, and sometimes very much so.

Thus, this chapter explores in what ways and to what extent the different functions of ecosystem services have begun to exert influence across some key institutional settings and discourses of forest conservation, management, and policy in the province. Through my engagements with practitioners embedded in these institutions and participating in those discourses, I examine not so much how ecosystem services has already affected British Columbia’s forests (this has a fairly straightforward answer as I will explain), but rather how it has affected the multiplicity of unrealized, speculative, and imagined forests simultaneously occupying and jostling for that physical and discursive space. As I discuss in this chapter, the imagined forests facilitated by the three different functions of ecosystem services discourse quickly diverge from one another. Thus, in this chapter I pick up and develop a point which I introduced earlier, namely, that ecosystem services discourse represents a kind of chimera, assuming different forms and visages depending on the institutional settings through which it passes and the specific actors using it to conceptualize, express, and extend their imagined forest.
4.2 Early Days

In the previous chapter, I noted my surprise at the ubiquity of ecosystem services language amongst CoP-10 participants in Nagoya. That surprise was partly rooted in my experience conducting field work in British Columbia, which I had concluded two months prior. The contrast was striking. Shortly after arriving in Vancouver to begin this field work, I arranged an interview with one of the province’s foremost environmental and forest policy analysts, who held a professorship at one of the local universities. He expressed serious doubts about the ecosystem services concept in terms of its current uptake, future prospects, and its overall value to the province. To the extent that it did stimulate debate in the academic literature, he argued, “it doesn’t really matter if you do, there’s a lot of analysis out there. It’s not affecting policy.” I encountered this sort of statement, that ecosystem services had not yet manifested in government policies, frequently throughout my field work, even amongst enthusiasts of the idea.

While often diverging on whether the idea could begin to influence the governance of British Columbia’s forests, most of the interviews I conducted elicited some variation of this impression that ecosystem services had not yet materialized substantively in terms of forest policies or practices. In this regard, when considering the question of how much observable impact the ecosystem services concept has had on British Columbia’s physical forests, the answer became fairly clear early on: not much. This policy analyst explained his reasoning for why it had not and in his interpretation would not make a difference. “I have a relatively conservative and old-fashioned view on the relative importance of ideas versus interests in the determination of public policy,” he concluded. “It’s the interests that continue to dominate why policy gets made the way it does, not the ideas […] I’m sorry if I’m overly negative. I don’t see it as a particularly valuable concept […]. That’s because of my general theory of the way the world works. It’s about relative prices, not about ideas.” To him, the idea of ecosystem services was confronting major, and, in his assessment, insurmountable obstacles to changing forest policy and practices in the province.

Nevertheless, I kept on speaking to practitioners. Following the chain of referrals my informants provided, I interviewed my way further and further along the network of professionals with whom ecosystem services would need to gain traction in order to translate from idea to practice. I spoke with nearby academic ecosystem services researchers. I spoke with many of the
prominent environmental advocacy groups of the region. I spoke with a broad cross-section of practitioners from relevant provincial ministries, ranging from government ecologists and economists to ADMs and higher. As the summer continued, I started speaking to professionals who had begun developing and piloting some specific projects based on ecosystem services. By the time I flew back east, I realized I could not really contradict that analyst’s characterization of the concept’s limited effect on current policies. However, I did find ecosystem services doing at least two things.

First, it was gathering visible and increasing interest amongst the majority of the actors I spoke with. Although expressed differently across the institutional settings I examined, informants would articulate this interest in terms of specific opportunities where ecosystem services could, in their assessment, penetrate and influence forest governance and thus further their respective objectives. Many of the practitioners I interviewed perceived a variety of “entry points” where ecosystem services could be used to surpass those obstacles described to me by that policy analyst. This sort of enthusiasm is partly reflected in how many practitioners were actually interested in speaking with me, often at great length, about ecosystem services specifically, which I found surprising. I had assumed, at that point, that the concept remained mostly arcane or esoteric to most practitioners. However, with few exceptions, most of my informants were already literate and even well-versed in what the concept meant and what it represented to their work. Some informants also explained that, within each of their institutions, they had already begun to discuss the concept, and even more interestingly, to debate some of the questions I had asked them amongst themselves.

The second thing I found was a smaller subset of these practitioners, spread across the different institutional settings I explored, who had actually begun to take ecosystem services and make something out of it. The CEO whom I described earlier was one such individual but there were others, and not just private sector actors developing carbon offsets and other project-level activities. For example, as I noted above, specific actors within government were also working on particular initiatives heavily informed by ecosystem services concepts. I found out that different arms of the provincial government were, in addition to drafting a forest carbon offset protocol, also in the early stages of creating an environmental mitigation and offsetting policy, which they were in the process of rolling out over the next couple of years.
As I mentioned earlier, the network of self-described ecosystem services practitioners in the province appeared somewhat confined. Moreover, I noticed that their respective activities, initiatives, and projects, were not always widely known amongst the broader set of practitioners I spoke with that summer, and sometimes not even to each other. One of these private sector practitioners who was developing at least one major project in the province admitted, “It’s brand new right now. It’s very new. People don’t understand it. I’m one of the few people, or only people, talking like this in the country. You may see more. I don’t know.” Another practitioner working on a different project told me that, in his assessment, there were around ten people in the country like himself with the same level of expertise actively working to get the concept off the ground.

As suggested by some of these comments – and I suspect these were from two of the better-connected people I spoke with in relation to ecosystem services – I found that this network was somewhat obscure, even to many of those who counted themselves as part of it. I recall several informants trying to ask me what kinds of other projects I had heard about apart from their own. I suspect that this obscurity also partly explains why I was able to secure interviews with so many of them. In these early days of ecosystem services (both in terms of its marketization and its policy manifestations), comprehensive knowledge of what was going on, who was doing what, and what the overall state of play looked like, seemed to represent valued information. Overall, I observed that the network of individuals carving out this niche was still fairly thin, and that it appeared to run in part on the currency of personal relationships and the efforts of a relative handful of motivated individuals. As one carbon trader told me, “it’s a willing seller and a willing buyer just getting together, and it’s a handshake relationship.” He described one project he was developing which was nearly disrupted by the PCT, which found out about it after the terms of the agreement had already been negotiated and then tried to purchase the offsets for itself. As another carbon trader told me with respect to the retail carbon market: “it’s the wild west.”

Many practitioners admitted it was still “early days” for ecosystem services. As I will discuss in the following sections, although some practitioners were already using ecosystem services in different capacities and to varying extents, they understood these efforts as part of a longer and broader set of transformations that were still continuing to mature. Perhaps more interestingly, in our discussions, my informants also began to provide glimpses into how they conceptualized
the mechanisms underlying institutional change and, in turn, how they intended to leverage those mechanisms using ecosystem services to effect that change in their respective domains. In this way, this chapter speaks more directly to the kinds of speculative forests my informants would imagine with me during interviews, as they articulated to me what ecosystem services could, should, and would eventually do for them and to forests.

The imagined forests my informants would express can be mapped onto the specific forms and functions of ecosystem services they preferred (and, conversely, which they eschewed). While I depict these connections and tensions in more detail in the following sections, I found, roughly speaking, (1) that environmental advocates were partial towards especially the first, but also to some extent the second and even the third functional forms of ecosystem services, but that they also experienced varying degrees of apprehension with respect to all three; (2) that government practitioners tended to favour the second and third functional forms; (3) that private sector practitioners, predictably enough, were most interested in the third function; and (4) that academics, as in the literature, varied considerably in their assessments.

4.3 The Master’s Tools

I began my research in the province by speaking with environmental advocates. As the President of one of the “middle-road” ENGOs told me, “British Columbia has a very complicated environmental community […] our environmental community can’t organize itself out of a paper bag sometimes. It’s quite remarkable how distinct and different people’s philosophies are in the environmental community here. It takes a long time for that constituency to come together around an issue, but when it does – it’s brilliant.” I found that the province’s environmental groups had indeed begun to “come together” around ecosystem services, and that, as an institutional setting, they were receptive to what the concept seemed to offer them. I asked the forest campaigner of one of the more “radical” of the regional environmental groups (her description) to what extent ecosystem services had caught on: “I think everybody’s talking about it. I think it’s become in many ways the air we breathe. In some respects it’s become the air the environmentalist breathes for many years, but now you have a public understanding, and you even have a corporate understanding and a political understanding.”

Another campaigner from the local branch of a well-known international environmental organization suggested that “First and foremost it’s been academics, to be honest with you, that
have been trying to push the idea forward. [...] But what I’ve seen dominant is not fully environmental groups, but groups and consulting companies that have identified that their approach to change is using the ‘master’s tools’ in order to create change. How do you use the same market that is driving the destruction of the forest, and use those same market valuation tools in order to try to keep the forest standing?” Virtually all of the environmental advocacy groups I visited told me they already used ecosystem services to some extent in their campaigning, sometimes considerably. As another advocate explained to me, “in what context doesn’t it pop up? I’d say nearly in every campaign whether it is from private power to parks to endangered species, definitely climate change [...] part of the toolbox of every campaigner and every environmentalist, is the ecosystem service approach that has now become bread and butter. It’s become the ‘motherhood’ issue.”

I encountered this term, “motherhood issue,” in a few conversations with government practitioners and environmental advocates. Usually, it referred to the framing device inserted in the first few paragraphs of a public announcement or statement. On this level, environmental advocates told me they were already commonly deploying ecosystem services in its first functional capacity – as a rhetorical tool meant to persuade and cajole – as it provided “another way to convince people that we needed to protect areas” as one advocate and former TNC employee told me. The head of one of the region’s leading environmental law advocacy groups suggested that within the last four years, “everybody concluded that it was a sort of reasonably well understood concept, and commonly applied by the environmental community.” I asked him how the concept had come to flourish so quickly amongst BC’s environmental community, and he explained, “We watched some of the environmental organizations that had sufficient resources to tackle the issue [...], either affecting or finding the scientists who gained the expertise. So suddenly people who were characterized as the leading experts in Canada were legitimizing the notion. So it just, to a certain extent, it created a snowball effect. I think another thing that happened was we found ourselves in an era of right wing governments. So they talked business.” With respect to his first point, I found that some of these larger regional environmental groups had recently been recruiting ecosystem services scientists, and one had established a new branch and “a whole new program area in ecosystem services and outreach related to that” as another advocate observed.
This environmental lawyer admitted, as did many of the environmental advocates I spoke to, that his group was using ecosystem services “almost all the time now, when we talk about the value of nature to society, we talk about it in terms of ecosystem services.” Another advocate suggested that ecosystem services had asserted itself in their community “when professors in the universities came along and then crystalized it and verbalized it and put it into papers it gave life to what people had intuitively thought about nature.” Once this had been accomplished, she explained, it provided advocates a new way “to convince governments, particularly, that something has value. You have to show them it has economic value.” This characterization of ecosystem services is consistent with how most of the environmental advocates I spoke to imagined the concept, and why they were now increasingly relying on it in their campaigning. For example, one environmental advocate (and trained ecologist) explained:

The idea of ecosystem services as a term that describes a specific concept that you can use, I mean, it is a scientific concept, but really the way we use it is for communications purposes. For advocacy purposes. For conceptual purposes. […] Yeah, that’s very recent. And in the last three years, we’ve moved in this organization mostly because of my pressure. […] It’s very recent. And then in the last year, starting to hear that reports are going to come out that are going to compare the economic costs of damaging ecosystems to the economic costs of preserving them, such as we had previously with climate change. You know, that’s really what started to change everything.

I realized that this advocate was referring to TEEB. I noticed a number of my informants linking the international environmental community with the different institutional settings I engaged in the province. Some of these practitioners, including this one, had done conservation work internationally, sometimes with the ‘big three’ international conservation organizations, where ecosystem services appears to have established itself most emphatically (as I described in Chapter III). For instance, this practitioner, who credited herself with the realignment of her own organization around ecosystem services, had worked in Madagascar and the United States in earlier parts of her career. I spoke with other practitioners with similarly migratory backgrounds. These practitioners, with exposure to the epistemic communities of international biodiversity conservation, also demonstrated the most familiarity with the ecosystem services literature which I discussed in Chapter II, and tended to think of ecosystem services in those
terms. Often, these were the practitioners that appeared to be most actively attempting to transplant that discourse to British Columbia and Canada.

The environmental advocates I spoke to emphasized the important roles of academics and conservation groups in particular as “early adopters,” before highlighting the main targets at which these concepts were aimed: government actors, either indirectly by generating pressure with the public through campaigns, or directly through leveraging relationships with particular individuals. Interestingly, some informants also noted that the concept had implications for how they interacted with First Nations.

Another campaigner, who had been heavily invested in the negotiations and eventual agreement in the GBR, suggested the language was necessary for key movers in government to “explain internally […] why this makes sense. When you talk about ecosystem services you’re actually making a rational economic argument as to why it makes more financial sense to maintain ecosystem services […]. And I mean, that’s the biggest piece: in government. I mean, you can talk about the economic argument to the logging industry all you want, but if it doesn’t result in being able to cut down more trees, the logging industry is not going to be terribly interested. I mean, my experience has been that you can come up with the best policy ever but if you can’t sell it, if those guys in Victoria or Ottawa can’t sell it to their own colleagues, it can’t go anywhere. So the ecosystem services argument is for politicians themselves so they can sell it internally.” Most of the environmental advocates I spoke to were pessimistic that the sorts of arguments it enabled would be of any interest to forestry companies, beyond representing a possible threat of additional regulatory risk and thus increased operational costs. In general, the foresters and former foresters I spoke with in the province shared this impression as well. Ultimately, advocates tended to converge on the rhetorical function of ecosystem services and its capacity as “an important policy changing tool. It’s a tool for a change in policy, because industry is not going to change without policy change.”

Many of the environmentalists I spoke with suggested they were using ecosystem services arguments not necessarily because they wanted to but at least partly because they felt they had to. I noted this dynamic in previous chapters, and it is reflected in some of the remarks I quoted above. For instance, the head of one environmental group explained:
This is somewhat pessimistic. The arguments for preservation of forest, the timber forest land base, for habitat for species at risk, had ultimately been unsuccessful. I mean, as a result of the spotted owl court cases, we were able to stop some harvesting, but not on a scale significant enough to enable recovery. And the government seemed to be set in its ways, or at least was not going to divert from a path of assigning value to the forests only based on timber products. But because they were so business focused, we thought if we talked to you in your language about ecosystem services and the value that they provided to the taxpayer, maybe that will be shared common ground, and we’ll have mutually achievable goals.

Again, with respect to most of the environmental advocacy groups I spoke with, ecosystem services was already providing what they perceived to be useful arguments which they could use to persuade particular audiences, namely those within government, and create stronger negotiating positions when dealing with them. Thus, their approach was to render nature economically visible, as Sukhdev had recommended, such that it could be given its due consideration alongside the logic of cubic feet and stumpage. It is important to note that many environmental advocates I spoke to admitted that having to rely on economic arguments was in some ways disquieting and largely a matter of expediency – in order to secure conservation objectives, they felt they had to accommodate the governing vision of those in power. I will again elaborate on this ambivalence amongst environmentalists, and the risks and tensions they perceived in ecosystem services, later in this chapter.

While the advocate from the more “radical” of the high-profile environmental groups in the area perceived the concept as having already entrenched itself (i.e. “the air the environmentalist breathes”), another advocate from one of the more “moderate” groups, and a veteran of the struggles in Clayoquot Sound in the 1980s and 1990s, perceived fractures over the degree of acceptance of ecosystem services. Again, this kind of ambivalence was expressed in most of my interviews with environmentalists. She commented that, in addition to being aimed at the provincial government by environmental advocates, ecosystem services had begun to affect their relationship with First Nations in interesting ways. She observed:

By the time 2006 rolls around, an agreement was struck [in the GBR], a government-to-government agreement. Carbon credits were not on the table. But within two years, there
was this huge shift in the dialogue around climate and carbon storage and carbon sequestration and that’s when conversations about the potential to get some cash in to First Nations for conservation of forests for carbon storage really began to hit the ground. And the environmental groups were going, whoa whoa whoa, since we started this conversation carbon credits have become a sham. […] First Nations in the last few years, I’d say in the last three years in particular, are getting very serious, and have in the last two years decided they want to pursue carbon credits for forest conservation in the GBR.

She began to describe some of the fault lines straining the web of groups and relationships I saw drawn on that dry-erase board I described earlier. I noticed that this advocate’s dry-erase board was decorated somewhat differently, for example, with the terms “additionality” and “leakage” – two frequently cited problems with carbon offset schemes. She elaborated at some length on the tensions she had noted: “This is where you have to figure out, how do you actually engage First Nations who want to pursue this? And First Nations who are our partners. […] And you know my organization has a cautious approach to carbon offsets but not a ‘no carbon offsets’ policy. Greenpeace has a very strong anti-carbon offsets approach and Sierra Club has somewhere in the middle between Greenpeace and ForestEthics. And the First Nations are like, “give us carbon offsets!”

My informants, and not only the environmental advocates, noted wide variations in how the First Nations they had been interacting with were responding to ecosystem services, and they observed some controversy within some of these communities over how they would approach the opportunities and risks it presented. “It’s coming at people in different ways,” the head of one the environmental groups told me. “It’s coming at aboriginal rights and reconciliation. […] if there’s money to be gained from the quantification of environmental goods and services, they want to have a part of that action. So it’s definitely coming at that ministry and they’re trying to figure out what to do with it.” She added, “That’s what the carbon debate is all about with the First Nations right now. The Haida, they were the first ones, they basically got a commitment with the government that 50% of any carbon sale on the forest land base in Haida Gwaii would go to the Haida. That’s crown land. It’s operated on by a forest company. If there’s somebody organized to sell carbon there, then that would happen. So yeah, that will start to happen, for sure, certainly with First Nations rights and title.”
Many environmental advocates couched their use of ecosystem services as keeping pace with broader political, ideological, and institutional shifts, and specifically an increasingly market-focused culture which they felt they had to accommodate by using this language. The comments of many of the environmental advocates and practitioners I spoke to depicted ecosystem services discourse as a way of reconciling, or at least neutralizing, persistent contradictions between the projects of environmental conservation, economic development, scientific rationality, and the logic of public policy-making. As I will elaborate later, although most environmental advocates I spoke with acknowledged that they found ecosystem services to be a useful conceptual and rhetorical tool, they were, at the same time, often ambivalent and sometimes deeply conflicted about their participation in its discourse. In addition to concerns over the first function, which they were already deploying, they were particularly wary of some of the specific ecosystem services applications that had become known to them in the province, which often meant forest carbon offsets, and some of the other ‘entry points’ I mention in the following section.

4.4 A Foot in the Door

As I noted earlier, the general sense I elicited from most environmental advocates regarding the uptake of ecosystem services in government, was that its penetration had been marginal. They admitted that the advocacy community was enthusiastic about the concept and was already beginning to use it (though perhaps with some reservations), but they also noted that one of their chief reasons for adopting the idea was to more effectively engage with decision-makers in the provincial government. They acknowledged that getting their “foot in the door” with these decision-makers represented a significant challenge and that, given the starting point, the distance from idea, to policy, to practice, was substantial.

However, some advocates also observed that the government was not unaware of the concept; they suggested these practitioners simply had not found the ways, the motivation, or the capacity to implement it yet. For example, as one environmental advocate (the former TNC employee) told me, “Government is very aware of the concept and the ideas that are put forward. […] It’s definitely not explicitly being addressed, but, you know, it’s interesting times right now. The idea’s out there for sure in government. It’s just a matter of how you would apply that on the
ground. But you know most of the government biologists and ecologists we talk to are very aware of the concept, and they definitely agree for the most part.”

So, I traveled to Victoria to try to get a sense of the extent to which the idea had propagated and taken hold (or not) within the networked institutions (Doern 2002) of the provincial bureaucracy. I spoke at some length with one of the province’s research ecologists. He had been with government for nearly three decades, and provided commentary on the situation along the coast as he had observed it from the perspective of the province. He pointed out that he had observed discussions concerning ecosystem services beginning to take place over the last ten years, citing the specific examples of water and carbon. “In terms of carbon,” he explained, “there’s a lot of interest, especially it seems to me in coastal British Columbia, in the possibility of finding ways to make money by not logging stands, and getting paid for the carbon that the stands sequester, whether it’s large areas, or whether they’re talking about the restoration of riparian ecosystems.” He began to enumerate some of the groups that were beginning to act on this interest, many of whom appeared on the flowchart of organizations I mentioned earlier, including some prominent First Nations.

He was quick to point out, as did several other informants, that the overwhelming majority (i.e. 94%) of the land base of British Columbia was crown land, and that much of this land continued to be the subject of “unsettled aboriginal land claims.” He interpreted this ambiguity over ownership as significantly “complicating” the use of ecosystem services approaches in the province. In particular, he explained the obstacles to potentially redirecting or capturing the flows of given ecosystem services, and the kinds of incentive structure currently guiding policy-setters in government:

If somebody cuts down a stand of trees then the provincial government gets royalties from that, what’s called ‘stumpage’ in British Columbia. If somebody goes and picks a bunch of chantarelles or floral greens in that forest, the government gets nothing. And currently, if that forest sequesters carbon, the government gets nothing. So while if you took the value, if you were to say what is the clean water worth, and you added all those numbers on a willingness to pay evaluation or something like that, or the value of the drinking water, you might come up with a number that’s higher than what the province would get if they cut the trees down. In effect, that makes no difference at all to the
provincial government and to their finances. […] so the question for government as the primary landholder, for example, or for any private landholder in the province, it becomes, you can make money from cutting the trees down, or you can provide these services to everybody else for free if you don’t cut them down. So what do you want? Do you want a wad of cash or do you want nothing?

He explained how timber harvesting represented clear and institutionally recognized financial returns to the province, whereas ecosystem services did not. Here, he drew the important distinction between the often substantial economic benefits provided by intact ecosystems and ecological services broadly speaking – which many environmental advocates had already emphasized to me – and the particular interests with a stake in how those benefits are actually distributed: “for whom the benefits flow,” as Sukhdev had remarked. Some of the ecosystem services practitioners whom I spoke with later also acknowledged this problem. As one consultant explained:

I think it’s relevant to the broader scope of how ecosystem services are going to play out in the Canadian context and where they’re going to be viable and where they’re not. And so you get things like commodities, commodities like timber, where the timber prices fall, but there’s not secondary markets for all the other services. […] the classic line that gets thrown out in the conservation world is, ‘the day that you pay me more to keep that tree standing then it is worth to chop down is the day that I’ll start conserving forests.’ Like, that is quintessentially the attitude of the old school logging and forestry crowd. And they’re right. I don’t blame them for that attitude. The system pays people for stumpage. It’s literally – you’re valuing the stumps. And until we rework that mentality on things then I don’t see a hope in, a hope in heck, to be able to get these sorts of things in place.

I asked the provincial ecologist how he thought the province might begin to “rework” these incentive structures. He explained what he perceived as another major barrier, besides the one described above, which was that because most of the land in BC was public, most of the ecosystem services represented common resources: “Any of the ecosystem services are essentially free services that these forests provide to the people of British Columbia. So you can say, okay, your community derives its water from these provincial forests, and these people are
going to give us $500 a hectare to log the forest. Can you give us $600 not to log for your water supply? Right? […] you’re going to run into a huge wall of opposition.” Given the way current incentives are structured, he suggested that government decision-makers would not be responsive to ecosystem services concepts, even if quantified in monetary terms. They would need to be captured somehow. For each of the different functions of ecosystem services, from recognizing value, to demonstrating value, to capturing value, he anticipated major obstacles to its effective application. He proceeded to explain what happens when you do try to capture them:

Let’s say you say to a community, this is your community watershed. If the current plan is that it will be logged and the entire watershed is worth $10 million, so if you give us $12 million we won’t log it, what do you think the community response would be? Or if you say to the mushroom pickers, this is an area where you’ve been picking mushrooms for a number of decades and making seasonal money for free, now, if you want to continue picking mushrooms, you have to pay more than we could get if it was logged. So regardless of which ecosystem service you’re talking about, because they’re all provided for free now, if you want to try and monetize them, you would have to then go back and say to the people, okay, here’s something that you’ve been getting for free, forever, now we’re going to charge you a price for it. That okay?

Creating “secondary markets” in ecosystem services, he explained, would essentially enclose them, and this would be resisted by those using these commons. He also alluded to an intriguing aspect of avoided deforestation PES schemes more generally, which is that they are based on promises not to destroy something. They require a baseline scenario showing that, in the absence of offsetting, some activity threatens the object of protection – essentially, someone (in this case some hypothetical forest company) has to threaten to destroy something in order for somebody to receive money to protect it. In the situation he describes, the provincial government (as the landholder) would essentially be holding these forests for ransom, which, he predicted, would be resisted by those communities relying on them. Despite perceiving some opportunities to the concept, he had concluded, “I’m afraid there are some hurdles” which, in his assessment, seriously confounded the easy or straightforward translation of the idea into new land use practices. Chief among these hurdles was the fact that the province received substantial revenues from forestry. For this reason, as I will discuss later, many (but not all) of the
ecosystem services practitioners I interviewed in the province focused their attention on private rather than crown land. In the end, he told me, “I’m not sure researchers, policy or otherwise, are going to be able to overcome [them]. They represent some pretty fundamental societal changes.”

Although he was not altogether confident about the immediate prospects for the concept, the overall depth of the commentary he provided made it clear to me that the idea had at least made itself known within this institutional setting. But I began encountering other individuals within the provincial government who appeared to be working more purposefully toward instituting the idea. As one environmental advocate explained to me, “What I find with government is it’s really a particular individual that may be receptive, or is a champion for that kind of idea. I don’t see this idea at a sort of meta-level in government, where it’s a policy or idea that’s driving anything right now. It’s more individuals in government that understand the concept and are trying to incorporate it or push it or develop policy around it.”

In Victoria, my conversations with government practitioners began to corroborate this characterization of the manner in which ecosystem services was being made to appear. I encountered quite a few practitioners within these networked institutions, similar to the ecologist I note above, who were sympathetic to the idea of ecosystem services, as this advocate had observed. But, significantly, I also found some individuals, sometimes with key positions within the provincial government, who were learning to use ecosystem services ideas in their work, who were sometimes propagating the idea actively amongst their colleagues, and who were even beginning to institutionalize ecosystem services in specific practices and policies. Analogously to what Takacs (1996) had observed in his research, I found that particular actors in the provincial government had, likewise, recognized and were apparently acting on the understanding that ideas don’t change, but rather, they are changed through active effort.

Following the advice of one advocate, I visited BC Parks, the solitary toe-hold she had observed where ecosystem services had managed to penetrate into the provincial government. I spoke with a manager overseeing conservation policy, and found that ecosystem services was not only an accepted concept there but that it was apparently not isolated to that section of the MOE. She told me, “Certainly, it’s in the ministry now […]. I do feel like it’s a fairly new idea in the ministry, but it’s getting quite a bit of traction I think. People are pretty keen to explore how to
incorporate it into our work […] we’re in baby steps in learning how to apply it and figuring out where it would make sense to apply and where not.” Even more interestingly, she also told me that her agency had an “ecosystem services guru,” an in-house environmental economist, who was doing much of this research and disseminating that knowledge to her colleagues. She explained that this individual was “really interested in different ways of valuation and sort of broadening the traditional bottom line approach to how we can convince society […] that a tree is worth more than the timber it’s worth. So she’s pretty keen on it, and she’s had a workshop on it, and she can tell you.”

My conversation with that environmental economist was particularly noteworthy. I sat down with her and one of her colleagues, and when I asked whether the concept had gotten its foot in the door, she responded, “I hesitate to use the term ‘getting its foot in the door’ because I think its foot is in the door. It’s part of the basic approach that we’re trying to use here, right? It’s part of the basic thought process that our division has been trying to get the rest of the ministry to be using for the past number of years. […] To the extent that that has been happening over the past couple of years, I’d say it’s not just a case of getting its foot in the door, but moving further along with it.” She explained that her unit was responsible for providing “most of the economic advice in this ministry.” She acknowledged that, at present, “There’s very little in the way of economics expertise in the specific divisions of strategic policy,” and explained, “You’ve got lots of people with biology backgrounds, ecology backgrounds, things like that. And three economists. In a ministry of how many people, like 1200 or something like that?” She pointed out, with a weary chuckle, that the demand for her services and expertise was steadily rising within the ministry.

These two practitioners were quite focused on the ‘second’ operational function of ecosystem services I identified. They explained that their work was largely intended to “support decision-makers,” and we spoke at some length about the potential of the concept in enhancing cost-benefit analyses and informing decision-makers assessing environmental trade-offs. The colleague who participated in our conversation agreed that “I think that there has been an increasing demand. […] In terms of what is driving that demand? I think a part of it is increasing awareness on the part of policy makers within the Ministry about the opportunity to use economics in decision-making for achieving environmental protection, management, and conservation goals.” As I mentioned earlier and will discuss later in more detail, these remarks
are consistent with what many practitioners across other institutional settings also tried to explain, which was that a broad ideological shift in the province (and more widely) had facilitated the legitimacy of the language, concept, and associated practices constituting ecosystem services. As this colleague observed, “in the 10 years or so that I’ve been working in the ministry I’ve seen a change in the language and the philosophy around the policies that we create,” which now increasingly included concepts and tools drawn from economics. Interestingly, they also hinted that new policy instruments informed by ecosystem services concepts were being formulated, though these were being developed by other groups.

I should note that within several minutes of starting our interview they brought up TEEB. The environmental economist explained how the concept of ecosystem services, although perhaps representing new terminology (which she did not seem overly attached to in any case), was a fairly old concept. “But,” she observed, “there’s I think in the last few years been a lot more emphasis internationally on trying to help the world figure out how to do this well. And so we’ve taken a look at some of the work coming out of the United Nations Environment Programme and TEEB reports. Have you heard about that?” I told her I had. She explained that developments at the international level, the pioneering examples of other jurisdictions experimenting with these new economic policy instruments, and their articulation in reports such as TEEB, had helped facilitate the appetite they were now stirring within their ministry for this way of thinking. She explained, “the report for national and international policy makers … when you’ve got that kind of a document coming out that is basically saying if you incorporate environmental valuation into your decision-making process, you will have better informed decisions and sometimes you will make different decisions. And so around the world we’re saying, okay. We really have to be looking at this.” It appeared I had not only found another ‘entry point’ in the form of ecosystem services’ second function, but also an apparently significant institutional node in the form of this small group of embedded economists, connecting the international ecosystem services discourse with key actors in environmental governance in the province.

I also spoke with practitioners (both inside and outside of government) who perceived legal action as presenting another significant potential entry point for ecosystem services. I found this somewhat surprising, as many of the environmental advocates I spoke to had perceived, to their dismay, a tendency toward deregulation over the past decade. For example, one environmental
lawyer I spoke with suggested that shortly after the current government came to power, “what they did was significantly weaken, in forestry, the environmental protection laws,” which “largely removed many of the levers that we had through law to affect policy.” As a result, his organization had switched strategies to focus on species at risk legislation. Another environmental advocate noted, more disparagingly, that the government had from her perspective “deregulated almost all of its environmental laws. There’s very little that is illegal right now in British Columbia in terms of forestry legislation, in terms of environmental assessment. […] the policy is, you know, kind of ‘do whatever you want and let us know how well you did afterwards.’” Nevertheless, when I spoke with practitioners from the government’s Forest Practices Board (FPB), a provincially mandated but independently run “watch-dog” organization, they seemed to perceive opportunities for ecosystem services within the current legal framework.

As I had noted in Chapter I, the FPB published a bulletin in 2008 recommending that BC integrate ecosystem services into forest policies and practices “at every level and scale.” That bulletin pointed out that “the Supreme Court of Canada recently confirmed that ecosystem services have an economic value in law. The decision […] means the government can sue for compensation for the loss of ecosystem services when public land is damaged” (FPB 2008, 2). It was referring to a 2004 decision in British Columbia v. Canfor, where the provincial government tried to claim compensation for damage to public land (a fire in 1992 caused by Canfor). Interestingly, the province tried to claim not only lost revenues from stumpage fees, but also for lost ecosystem services. For technical reasons (the province did not attempt to demonstrate those losses adequately), the Crown awarded the former but not the latter claim, but acknowledged the validity of future claims of that kind, whether by the province, First Nations, or in public interest class actions. The Supreme Court acknowledged in the conclusion of their decision, “there is no reason to neglect the potential of the common law, if developed in a principled and incremental fashion, to assist in the realization of the fundamental value of environmental protection.” The economic invisibility of nature, it seemed, had concealed nature not only from policy-makers and markets but from recognition under current laws.

I spoke to one environmental lawyer whose organization had intervened in that decision and was prepared to leverage it once the appropriate case appeared that could test it. He told me that they had argued in 2004 that “the court had to take into consideration ecosystem services, and that
something that didn’t have a market value still had value, and that ecosystem services had to be
considered and calculated.” Crucially, he observed that “The supreme court has opened the door
[…]. So we’ve, you know, for the last six years, we’ve been sitting here and saying, when’s the
next Canfor case? When it comes, we’ll be there.” Another advocate emphasized the key role of
sympathetic judges, and how legal action that managed to persuade them (in this case, using the
rhetorical tools provided by ecosystem services) can have potentially momentous consequences.
“[If] a judge says no, you can’t ignore these ecosystem services,” she explained, “then that’s
law.” Interestingly, she observed that these sorts of decisions were partly determined by the
idiosyncrasies and particular ideological dispositions of this relative handful of key individuals.
She explained that their behavior was:

partly affected by the constraints of the legal system, but mostly they’re affected by the
social and political context those decision-makers find themselves in. Judges move
quickly outside of decisions that are solely to do with what the law says, and are
influenced by things like, do they generally have a sense that this is a bullshit idea or that
this idea is of course really valid? Or even, this idea is common knowledge and there’s
no way we cannot take it into account because it’s basic. If it gets to that point […] then
there starts being some possibility that judges will start making decisions that
incorporate the idea that ecosystem services should be considered. It’s like, the paradigm
shift will lead up to the point when the people who are in positions of power to make
decisions think of this as a normal thing to consider.

While she was speculating, other environmental lawyers (as I noted) had been working
strategically and purposefully toward this goal, and they told me it had already started to
happen. Thus, with some nudging, by them, they perceived that ecosystem services were poised
for much more widespread “legibility,” in other words, greater recognition, legitimacy, and
protection under the law.

Ecosystem services was also beginning to manifest in some specific policy instruments under
development which had apparently found, as the practitioner I noted earlier suggested,
“champions” within government to protect and support them. As I mentioned, I was able to
secure interviews with several high level bureaucrats, including a provincial deputy minister and
several ADMs, who admitted that there were steps being made in their institutions to develop
ecosystem services policies, and, in some cases, that they were also part of the impetus behind them. One of these senior bureaucrats revealed to me that an environmental mitigation and offsetting scheme was being developed within his ministry. He explained, “there’s a couple of pretty interesting drivers for this. First, I don’t know what the number is now, somewhere between a dozen and twenty corporations that have come to us over the last few years, saying ‘we’re going to be doing this kind of development, we understand that it’s going to have impacts on ecological values and we would be interested in contributing resources, i.e. money and people, into some kind of framework that allows us to mitigate or offset the impacts of our activity.’” He described a couple of examples, one involving the BC Utilities Commission building a transmission corridor through spotted owl habitat, and another involving some shrew and frog species which were being impacted by the construction of the Sea to Sky Highway for the 2010 Olympics. These and other examples suggested to him, “We needed a really robust policy framework […] across all sectors that we have here in the province,” and he set his staff to work.

Interestingly, he began to describe some of the sectors that would be affected, and the degree to which his ministry had been successful in securing their support. These efforts, he told me, were ongoing and proceeding rapidly. “We’re doing this very cautiously because this is new ground for us,” he explained. “There will be some anxiety on the part of some of the sectors, but the forest sector is already squarely there. After a couple decades of confrontation they certainly understand the notion of social license. But there’s a number of other sectors that are catching up very quickly. So I think the stage is set to advance this policy framework right now.” He also explained that “one of the tricky pieces in this is doing the valuation. So if you’re going to go disturb habitat, and you’re going to have a negative impact, then how do you value that? We’ve got a stable of economists here in this agency that are turning their mind to that question right now.”

I later spoke with one of the bureaucrats leading the design and implementation of this policy framework. She described the policy as “pivotal,” and one of a number of “transformational” projects being implemented by senior civil servants, which, I was told, were intended to respond to changing institutional circumstances characterized by less money and smaller agency sizes. Perhaps more interestingly, she noted that a sub-group in her team, the part with financial expertise, appeared to be tackling the initiative with particular enthusiasm, and had been
specifically involved in designing the financial mechanism for the program. She admitted, “A whole bunch of us who are biologists, who are ecologists, or whatever, we didn’t have a clue about the financial mechanisms piece. So I had to send it to the financial management people. I said here’s the problem. Here’s the situation. Here’s the challenge. Here’s the opportunity. What do you advise?” She explained, “They’ve worked out all the financial mechanisms and they all basically exist [legally]. There’s a few things we need to put together, but they are so excited about it, because they said this is a legacy piece. This is a legacy project and a really important policy.”

She explained that the demand for such a framework clearly existed and was motivating her agency to rise to the occasion. I was somewhat sceptical that their ministry had the capacity to implement and operate such as vast cross-sectoral scheme. A number of informants, including this one, had observed a dwindling of the staff, budget, and overall size of the ministry. As one consultant told me, the ministries had been “decimated and [have] lost some fabulous people […] it’s actually pretty scary times.” I realized that the ministry would not be responsible for actually operating the scheme. As this manager explained, “some of our staff have received checks from companies and had no idea what to do with them, and we’re taking checks of, you know, a couple hundred thousand dollars. They weren’t sure, how can we accept this, we can’t accept this into government, it’s got to go to a third party, what do we do?” She took special care to explain that none of the money was supposed to stay within government. I examined the discussion paper which they had circulated to stakeholders for consultation, where I found my answer: “Requiring environmental mitigation and offsetting usually spawns a ‘mitigation industry.’ By requiring those who adversely affect environmental resources to devise strategies for avoiding, reducing, or offsetting impacts, demand rises for qualified professionals.” It was these third-party practitioners that would execute the framework on the ground. “Environmental businesses typically benefit from such a system,” the paper noted. “If development proponents are required to purchase offsets, this creates a demand for mitigation credits.” The next section of this chapter discusses my interactions with that embryonic community of practitioners, which, I had noted earlier, anticipated exactly these sorts of frameworks “coming online.”

Thus, across the networked institutions (Doern 2002) of forest governance in the province, the idea of ecosystem services appeared to have established a variety of beachheads, from forest carbon offsetting, legal action, habitat offsetting, formal decision-making support tools, to
others domains, such as water governance. Moreover, as suggested by one of the advocates I mentioned earlier, it appeared the concept was being shepherded by specific and motivated “champions” within the ministries I examined.

4.5 Industrial Conservation

For many of the practitioners I spoke to, the most significant and highly visible entry point for ecosystem services into forest policy and practice in the province was through forest carbon. Toward the end of my field work, I began encountering self-identified ecosystem services professionals attracted to the opportunities opened by this emerging market. These practitioners had been involved in developing and retailing carbon offset projects, though, as I mentioned earlier, they perceived carbon as only the initial phase and a “test case” for a broader set of ecosystem services markets they anticipated coming online. I asked these practitioners where they fit within the larger context of BC’s pre-existing forest industry. Practitioners from all the institutional settings I examined, but particularly those working with ecosystem services applications, noted the significance of the decline of the forest industry in opening new opportunities and potentially a new regime of forest governance in the province.

One of these practitioners, himself a former forester, told me: “I think the industry in BC is in desperate straits. [...] they’re just going to do what they’ve been doing for the last 5 years, which is dying a slow death. But they don’t ever really die. They just struggle and struggle and struggle. There’s not a single forest company that’s ever returned their cost of capital.” He added, “I know the industry is very resistant to new ideas. I know that first hand. And in fact, they’re a bit of a problem.” Many of the ecosystem services practitioners I spoke with framed their work in similar terms. He elaborated, “Particularly here on the coast of BC, you start to think that the industry here has made its money out of big trees, which now have turned into little trees. And it doesn’t work. You can’t compete. And our industry, they’re crashing into the wall, dying by a thousand cuts, however you want to describe it. So the question becomes, how do you get by? [...] And I’m a business guy at the end of the day [...] carbon, we’ve been

---

11 I also found that senior civil servants were implementing significant changes relating to water governance in the province. These changes, I was told, were also being heavily informed by ecosystem services concepts. This initiative represented another of the “transformational” projects, alongside the environmental mitigation and offsetting policy. I did not speak to the specific individuals developing this policy, however.
talking about it for 20 years now, but only now it’s starting to become something monetizable, you’re starting to see the first pioneers coming through.” His business model involved supplanting the “conventional” forestry model and replacing it with a management approach optimizing ecosystem services, primarily carbon, as a means of generating revenue. Another of these practitioners, who was himself also a former forester, portrayed a similarly grim predicament facing forestry in the province:

Clearly, economically, we’re not on the right road. Investment in the forest industry has been declining for probably 30 years, and certainly has been nonexistent in the last 15 years. You don’t see new money coming into the forest industry in any great way. There has been a complete withdrawal, actually, as mills close and are not replaced, and as companies leave the province there are not a lot of new ones to step up and take their place.

His forestry experience was primarily in coastal British Columbia. In that context, he argued, “there’s absolutely no way it’ll survive under the current model. Old growth is what paid the bills, the higher quality older second growth we’ve been logging for the last 10 years still pays the bills but only just. But as we finish harvesting our close-to-town lower elevation easy access second growth, you have to move back into the hills and start cable yarding again with low-value high-volume second growth. It’s just gonna die, because you can’t go cable-yarding on forty to fifty dollar, maybe seventy dollar wood. It just doesn’t pay the bills.” As with the previous practitioner I quoted, he imagined a new industry using BC’s forests to produce an array of ecosystem services beyond wood fibre. He described projects he was developing with his organization based on a variety of timber and non-timber sources of revenue that could be derived from privately held forests. I spoke with practitioners from at least four or five of these projects in the province. Although these accounts from practitioners regarding their respective projects was informative, their conceptualization of what this emerging market and industry meant to BC’s forests, and perhaps more interestingly, how that industry would be constituted, merits closer attention.

In addition to how these practitioners conceptualized the diminishment of the forest industry and the kinds of opportunities they perceived emerging from that diminishment, their comments regarding who they predicted those “pioneers” would actually be – that is, which actors they felt
were best positioned to move into that opening space—were particularly interesting. The practitioners I spoke with, many of whom had worked in the forestry industry, were divided on the extent to which the forest industry was prepared or willing to adapt to the changes which they felt were inevitable. One practitioner, who told me he had once been asked to become chief forester (he declined), admitted, “Fundamentally they don’t want to change.” He explained that these changes are “going to happen,” and that, “if it’s going to happen it’s got to happen outside the forest sector. Absolutely. […] it’s not the forest sector that’s going to do it.” He argued that new laws and new business actors would be necessary for ecosystem services approaches to replace the current forestry model. Environmental advocates tended to express this same impression, if more vehemently.

Interestingly, when I asked him about the role of environmental advocates in “mainstreaming” ecosystem services in the province, he explained, “You can’t lump all the environmental organizations together. There’s a range. I put them into two buckets. One is what I call the campaigners […] whose main job is to campaign and campaign primarily for protected areas.” He listed the groups he placed in this category, many of which I had spoken to, who had apparently used “ecosystem services, whether carbon or others,” to “convince First Nations that this might be a revenue stream for them, and they have money from US foundations to assist in protected areas doing that […] so here are the ecosystem services, carbon, etcetera, that will compensate you, First Nations, for not cutting trees.” These groups, he suggested, had used the rhetoric of ecosystem services, but also the promise of revenue from it to secure the support of First Nations for conservation initiatives.

He continued, “Then there’s this other group of NGOs, what I call ‘people who have programs,’ World Wildlife Fund, Nature Conservancy of Canada, Land Trust, etc. etc.” He explained that the relationship of these groups with ecosystem services was much different, and in his assessment, much more significant. These groups, like the private sector practitioners, were, like the private sector practitioners, developing and piloting their own ecosystem services projects. “They can have a lot of influence,” he observed, but “the biggest problem I see when they do that, you probably won’t ever hear about it, because they’re to some degree fairly low profile as compared to the campaigners.”
As I progressed through my field work I became aware of a number of these projects, including one major and tightly controlled forest carbon project being developed by the Nature Conservancy of Canada (NCC). On June 8 2011, the NCC broke its silence and announced “the largest forest carbon project to date in North America,” an avoided deforestation project known as Darkwoods, a 55,000 hectare area in south eastern BC which the NCC had purchased in 2008 for $125 million. John Lounds, the President and CEO of NCC declared, “By harnessing the power of the carbon market, the Darkwoodods Carbon pilot project represents an innovative new avenue for helping to fund great conservation projects” (NCC 2011). According to their press release, “this sale of carbon is raising the bar for conservation in Canada and contributes in excess of $4 million for NCC’s conservation work.” The purported 700,000 tonnes of carbon offsets themselves were sold to the PCT (450,000 credits) to offset the emissions from provincial facilities and to Ecosystem Restoration Associates Inc. (250,000 credits), which would then be sold on the European voluntary carbon market.

As one of the ecosystem services entrepreneurs I spoke to explained, “Environmental advocacy groups are key. They’re the leading edge. They’re the catalysts that sort of get everyone moving. And I think that’s what they’re really good at. Providing information. Setting stages. Getting initial projects going. They’re fantastic in that area.” Although he perceived the role of environmental groups as facilitative and ultimately transitory with respect to ecosystem services market creation, some of the other private sector professionals I spoke with found the newly acquired roles of the conservation groups more significant and particularly interesting. “Some of the conservation groups I’ve worked with,” one observed, “of course, their reason for being is conservation, and they’re really into that. What I’m beginning to see there, which is quite interesting […] the perception amongst some conservation groups is that carbon offsets represent a means by which they can generate income and use that to make further purchases.” He explained that, in addition to the growing community of businesses and companies like his own, conservation groups themselves were likewise perceiving not just rhetorical possibilities but financial opportunities in ecosystem services. He elaborated on what this meant:

They might be able to make further purchases and further their agenda. So they might use revenue generated from offsets to do that. Now, that’s a very different philosophical and sort of policy initiative than what many of them have really adopted in the past which was the basis for existence before. Typically, conservation groups are always
poor, reliant on donations and the goodwill of individuals and some corporations. But they really weren’t in the business of marketing ecosystem goods and services. Some groups have really recognized that this might be a way that they can in a sense reinvent themselves. And certainly, going forward, it might give them the financial capital and the leverage to actually be able to make a difference. If they can make purchases, you know, if this works well for them, and if they’re flushed with capital, they can start to look at some major acquisitions.

Interestingly, he had observed that these developments had triggered “quite a controversy within some of these groups.” He knew, for example, that “at the board level there’s quite a debate about whether in fact they want to be doing this. There’s the perception that we’re not in the business of making a profit […] we’re in the business of saving the environment in a sense. You don’t do that by using the profit motive.” He noted that while this group was continuing to debate these issues, other groups had “very much embraced the approach. Some of the land trusts, for example, are just fully on board with this thing and they view this as being the way they need to become relevant.” Another private sector ecosystem services practitioner noted that, traditionally, they would have to:

raise money and buy something and then figure out how to manage it. There was no revenue from it. Now these conservancies can look at achieving the NGO mission, which is conservation, and make money at the same time. That’s a game changer. Now, some of them can’t comprehend that and they’re struggling with it, because they’re ENGOs. They don’t have business people in them. […] Now, there’s others, the Nature Conservancy of Canada is very good at seeing this. Right now, they see that if I can make money in conservation, it means I can do more conservation. I don’t know what will happen, but you can see a future in 10, 15 years, where timber companies and conservation companies are equals.

I had not expected to hear comments like this, let alone repeatedly from different informants. To my astonishment, one of the senior provincial bureaucrats I spoke to, the most senior in fact, revealed his own imagined forest, a place in which the forest industry was conspicuously absent, and ecosystem services had become the dominant focus:
A few years ago, I got a question, somebody said to me, “Tell me what you think forestry will be like 100 years from now.” And I go […] forests will be managed for their spiritual values, plain and simple. That will be the primary focus. They will be a place where people go and regenerate and recuperate and that is what they will be. And they will be recognized for that. […] we will not be cutting down trees to create products. We will maybe still be using forests for really high-end things, but I actually even doubt that. […] do I believe we’re on that kind of a trend? I absolutely believe we are on that kind of a trend […] within 20-30 years, to a place where forests and forest management will be something different. And it’ll be around water, fish, harmony, balance, those kinds of things. And that will be challenging in itself, but it will be much less about resource extraction.

Although the extent of the transformation implied by the different imagined forests I encountered was usually expressed in less dramatic terms than this, they all imagined a kind of ‘industrial conservation’ beginning to encroach upon and eventually replacing industrial forestry, only instead of wood fibre, these forests would produce a diversified “portfolio” of ecosystem services. As one of these practitioners pointed out to me, land trusts in the United States were “already a big time player in timber land, and that’s without carbon.” He pointed out that the TNC had already started to “buy out timber land off timber companies. So they’re doing it.” To him, such an eventuality was “not only plausible” in BC, but, in his assessment, inevitable.

4.6 Pandora’s Box

While many of my informants were enthusiastic about the strategic opportunities they perceived in ecosystem services, others were noticeably and sometimes deeply conflicted about what it meant to their work and to their forests. I spoke with a practitioner from one of the land trusts that had begun piloting an ecosystem services approach on its holdings. We discussed the role of ecosystem services in the province, and she wondered aloud, “What are the new handmaidens of conservation? To some extent, now they’re carbon and other ecosystem services.” Yet, she also expressed her ambivalence toward the whole exercise quite openly. When I asked her whether she perceived risks in pursuing ecosystem services in the ways she had been describing as it gained traction in the province and in her own work, she admitted, “Absolutely. Personally, I
don’t even like offsets. I think they’re a stupid idea. Ideally, in a perfect world, the value would be entrenched and it wouldn’t necessarily be entrenched in an offset model [...] In an ideal world, we all wander around with an ethic that these things are valuable, but my experience is that most of the world now is so disconnected from the natural world that they don’t even know it’s there, let alone that it has value. [...] At least if it has financial value it stops the worst. I don’t know. I see offsets as a very temporary tool.”

As I noted before in this and previous chapters, ecosystem services appears to fulfil a pragmatic drive amongst conservationists. It allows them to respond to and engage more effectively with what they perceive as a shifting strategic and ideological landscape that increasingly requires the language, tools, and mechanisms of economics and ecosystem services specifically to navigate. As one government practitioner observed, the environmental groups in the province “sort of went mainstream.” I pursued this tension in most of my interviews. Here, for example, I asked her whether she was engendering not so much a greater appreciation of nature but rather its commodification. Echoing many of the environmental advocates I interviewed, as well as a common pragmatic attitude I observed in the literature (which I noted in Chapter II), she explained:

Well, the reality is that right now, with nothing, we’re going down the tubes. So what have we got to lose to try something else? I mean, we’re at the 12th hour. If we don’t turn around what’s happening to the world’s forests we don’t have a chance. I’m kind of with the desperate crowd at Copenhagen. Let’s just do whatever the hell it takes to stop those forests from getting chopped down. If you can put some money in some guy’s pockets to feed his kids for not chopping it down, then let’s do it. If that money comes from some corporation that hasn’t quite met its cap on carbon and some of that money went to saving some forest, then at least that’s something, some flow of resources back to conservation.

This section and the conclusion to this chapter presents and reflects on this sort of ambivalence surrounding ecosystem services. Many of my informants, and particularly the environmental advocates, perceived in it a kind of strategic and ethical dilemma. As I mentioned, many of the advocates I spoke to admitted they were increasingly coming to rely on ecosystem services not so much because they wanted to, but because they felt they had to. As one consultant explained
to me, “it’s a struggle for me personally. Because I wouldn’t say I’m an advocate of this approach. I’m really looking at it in a pragmatic way, like, if this is a way to get better environmental policy then let’s get behind it.” One environmental advocate, a veteran of BC’s “War in the Woods,” described how she perceived different groups in the province grappling with it:

There are two camps. One is that anytime we monetize ecosystem services we do a disservice to the conservation of nature. Because then nothing will be conserved unless it can have a value, a dollar value put on it, and that’s sometimes very difficult to do without running into trouble, like trying to monetize water. So there’s a camp which feels very very nervous about monetizing ecosystem services and then there are folks who feel that the only way that we will actually get any kind of credible policies that match the scale of environmental crises, is if we monetize ecosystem services.

She explained that, “we can have lots of philosophical debates on our list-serves and blog posts and whatnot, but it only really matters when it hits the ground, when you’re actually in the board rooms, in the government offices, and First Nations tribal councils.” She began enumerating different ecosystem services that had benefited from an approach acknowledging them as such. To her, given the perceived urgency and severity of the crises she had spent her career working to ameliorate, these short-term gains that ecosystem services presented had to be taken. But she also acknowledged the risk to the environmental community of losing its ethical “compass” and allowing the “goalposts to shift too far away” over the longer term. She had concluded, “I do see a fork in the road. There’s a danger in the fork. It could lead you over a cliff eventually. But I see since the market has become more engaged that we’ve conserved more in terms of forest then we have in decades.” To her, while she acknowledged the compromises it might entail, ecosystem services presented a tool that environmentalists could no longer afford not to use. As another consultant explained:

that’s a debate I find myself in all the time with people. […] The whole issue of payment, and that we’re actually putting a price on nature, a lot of groups, environmental or otherwise, are concerned that that’s just further entrenching the notion of capitalism. And the notion of putting a price on nature may be, and probably is, entrenching capitalism further, and spreading it into areas of society where it wasn’t before […] I
mean, it would obviously be more cost effective and much better for society in the long run if everybody got a conscience, or if we had morality that was going to be the driver. But the reality is […] if we’re going to get very serious about protecting the natural capital we have left, I think we’re going to make some serious tradeoffs, and until we know really the full value of some of that natural capital in terms of ecosystem services, we’re not gonna be able to make those decisions.

Some of my informants seemed to really struggle with this issue, and they did not always reach the same affirmative conclusion. One retired FPB director I spoke with expressed serious concerns about how ecosystem services would unfold and be negotiated in practice, explaining that once you assign a “cash value” to an ecosystem service, “then the whole system will orient towards dealing with it in that way. It’s really a quite fundamental problem. And it’s fundamental to the whole industrial economy […] that we’ve actually locked ourselves into, that we must see everything as an exploitable, tradable, human-anthropocentric value.” He elaborated later that ecosystem services takes us down a failed path. An already known to be failed path, and that’s what worries me. I’ve used the same language in the past, of ecosystem services. You find yourself falling into it because that’s an antidote towards treating everything as if it’s free […] so ecosystem services is sort of a siren song in getting a little bit farther down the path. But it takes you down the same path we’re on […]. I think, fundamentally, the idea of ecosystem services turns complex ecosystems into exploitable components, and that’s folly. […] the utility is ephemeral and ultimately wrongheaded, and so, when people say, we’re all short term gain, let’s make some strides here, what they really do is aid and abet the very systems that are producing the problem in the first place. […] we can see where this is leading to, where what you have is a paradigm which is based upon tradable values, and constant economic expansion.

Curiously, one of the ecosystem services entrepreneurs I met also perceived some disadvantages to “commoditizing” nature, for example, through a regulatory market with standardized metrics for carbon accounting. He explained, “The downside to the regulatory markets is that they commoditize carbon. So a carbon is a carbon is a carbon, whether that comes from a landfill project or the most beautiful forest I’ve ever seen in my life, it’s the same. […] So for us, a lot
of the projects we develop are very charismatic, they have a lot of appeal visually, you know, trees are beautiful, everybody loves the pictures. There’s the potential to reach niche markets and make these value-added type projects.”

Another of the advocates I spoke to referred to ecosystem services as a “Pandora’s Box.” The allusion fairly captures a general sentiment I encountered across many of my interviews with environmentalists, namely, the fear that they were legitimizing and helping to entrench a paradigm that would ultimately undermine their agendas, and rearticulate the essence of their imagined forests into oblivion. As one advocate explained to me, “Understanding how ecosystem services work and what ecosystem services provide us as humans is really important. But using ecosystem services as an economic tool, for example, sequestering carbon and valuing that carbon on a carbon market, is a dangerous play.” She continued, “the idea of using ecosystem services concepts to place economic value on every part of the forest starts to leap you into a paradigm, moving you from ‘we need to protect the environment because they provide us with a suite of services’ to a place of ‘we can make more money if we protect the environment.’” She drew an emphatic line in the sand between the different functions of ecosystem services. “The risk is that if we can make more money by protecting the environment, it overwhelms the moral imperative […]. The risk is the economic argument will start to overtake the other one.” Another advocate told me, “In the world I would choose, we wouldn’t be valuing individual ecosystem services so much as using that concept to explain to the public that you don’t survive in a healthy happy way without ecosystems that function well.”

These are only a small sampling of similar comments from my interviews. As I mentioned earlier and in previous chapters, environmental advocates tended to view the first function of ecosystem services mostly favourably, but often had misgivings about its broader implications, and some of the market and policy manifestations that it facilitates. When I pressed informants on how they reconciled this conundrum, the general response (amongst those who perceived this dilemma at all) was, in a manner of speaking, to breathe a sigh of resignation, shrug their shoulders, and simply choose the lesser of two evils. They recognized a sort of tragedy, in the classical sense of the term, to their situation; they could only take the least immediately harrowing path available in the pursuit of their goal, compelling them inadvertently but inexorably forward into a dire future. For them, ecosystem services represented a transparent but irresistible trap.
This tension I introduced earlier in this thesis between intention and effect manifested perhaps most vividly when I spoke with one of the founders of ecological economics, who held a professorship at one of the local universities. He began our conversation by explaining how he had noticed that “probably 60% of the papers for several years” in his discipline appeared to be “written around the topic of pricing nature’s services,” which he described as “a very disturbing turn.” He explained the many problems he perceived in the approach, which included a combination of strategic, methodological, and conceptual issues, many of which I introduced in Chapter II. Although he expressed some apprehension with respect to the third function of ecosystem services (i.e. the institutional arrangements it enables) he was particularly concerned about its first two functions and what he considered the pernicious assumptions they contained and the implications they seemed to foreshadow.

He explained, “Ecologists are excited about it, because to them, the ability to put a price on ecosystems became a tool to show people that development was not costless. That is, there was an opportunity cost.” While he understood the reasoning for adopting such a tactic, he began to argue that pitting ecosystem services values against and in terms of the econometrics used by development interests was, in his assessment, a terrible idea. As a matter of strategy, he noted that as prices shift, the rationale becomes increasingly unreliable, much as McCauley (2006) argued. What was even worse, to him, was that “ecosystem services becomes a device by which they [conservationists] lose, and they lose big time, because they have now bought into somebody else’s valuation – an economic valuation.” He developed this point at some length:

What we find out is that once we’ve bought into the economic model, you have no fall-back position. So if I agree, and I’ve done the studies that show you based on contingent valuation that this area is worth (x) dollars, and you as a developer stand to earn 2(x) dollars, you’re still going to develop and society’s going to let you go for it […] So once you buy into the economic framework of valuation, you don’t have the right to say ‘ah, but what about the intangible, what about the spiritual, those values are infinite to the human soul, we shouldn’t develop this as a matter of principle.’ The developer looks back and says, ‘you’ve given up that. You’ve shown me the value, the price, the best price you can put on it.’
He remembered, somewhat horrified, one conference he attended, where the paper by Costanza et al. (1997) and the “stunning amount of cash” they described came up as a topic of discussion. “So at this meeting,” he explained, “an economist stood up and said, ‘well, all that says is if we can double the growth of the world’s economy, we’ve bought all of nature’s services. So let’s just get on with the job and grow the economy.’” By way of ecosystem services, he argued, “we’ve bought into the econometric approach. Or at least the economist’s framing. And therefore, if you’ve bought into that, you’ve kind of given up any philosophical, or moral, or ethical positions for valuing nature.” He said he understood why environmental advocates were moving in this direction, but he suspected the whole exercise was beyond redemption, concluding that ecosystem services was ultimately helping to build “a trap that will destroy us.”

What was ironic, and, I think, broadly revealing of the ambivalent trajectories of ecosystem services more generally, was that I was speaking with this professor largely because he was recommended by a number of the other ecosystem services practitioners I had already interviewed. For example, one provincial manager I spoke to who was now involved in the development of the environmental mitigation and offsetting policy I discussed earlier, could actually pinpoint the moment when “natural capital” and “ecosystem services” first entered her thinking: in 1986, when she was with Parks Canada, in Revelstoke, BC, at a workshop given by this professor. She remembers being taught by him how to think of nature in terms of “natural capital” and “ecosystem services,” and apparently it stuck, though apparently not in the way he had intended. I met a number of practitioners who explained that this specific professor had persuaded them, whether through his writing or his prolific speaking engagements, to reimagine and rearticulate nature along these lines. Although this provincial manager admitted that she was familiar with this professor’s recent thinking on the issue, as with most of my informants, she had taken the pragmatic approach of seeing “what we can gain from this approach, because the status quo is worse.”
Chapter 5
In Bunk Beds with the Devil

5 Conclusion

Returning for a moment to Salzman’s (2011, 608) reflections on ecosystem services fifteen years after he had been drawn into it, he admits, “It is hard for me to describe to you how stunning it is from today’s vantage that, quite literally, in 1996 I had never heard the term ‘ecosystem services.’ Gretchen, I, and others were talking about this thing and you would get a blank stare. Now you talk to people and they get it.” Indeed, as Turner and Daily (2008, 25) affirm, “Work at the interface of ecology and economics has inspired a major transformation in the way people think about the environment. Increasingly, ecosystems are seen as capital assets, with the potential to generate a stream of vital life-support services.” As I have discussed, from regional to international scales of environmental politics and governance, to the academic literature, “The concept of ecosystem services increasingly structures the way conservationists think, the ways they explain the importance of nature to often sceptical policy makers, and the ways they propose to promote its conservation” (Redford & Adams 2009, 785).

“Getting back to the emperor motif,” Salzman (2011, 608) continues, as he contemplates what ecosystem services represents, “there is ideological cross-dressing.” Referring to the perhaps awkward discursive space shared by those unlikely combinations of actors drawn into it, he observes that ecosystem services provides for unnatural alliances, but this may not be all good. A number of folks think we are basically sleeping with the devil. “If you start putting a price on nature, if you start justifying things because of their value, you’re not going to win. [...] you’re fighting a battle you’re going to lose.” The answer is that I may be sleeping with the devil, but we’re in bunk beds. Ecosystem services is one approach among many to promote conservation (Ibid., 611).

Like many of the practitioners I spoke to who were coming to endorse and even to use ecosystem services approaches, he falls back on the pragmatic outlook I described earlier: ecosystem services presents merely another arrow in the quiver of environmental advocates. Yet, he acknowledges here the political and strategic complexities of navigating this political
and discursive space, and the fraught institutional realignments and awkward ideological commitments that putting a dollar value on nature might entail.

While the scope of this thesis is exploratory, I will reiterate here two main conclusions I attempt to draw from this research. First, I suggest that ecosystem services is a chimera: it becomes a reflection of the specific activity of the disparate actors developing it, using it, and actualizing it in the respective forms that they imagine and desire it. Second, by virtue of this slippery versatility and the diverse forms and functions it can take, ecosystem services not only attracts a diversity of different interests to it, but also to each other, as it configures relationships between them, resulting in visible tensions. The respective objectives of these different actors, which I highlighted in Chapters II and IV especially, and their visions for what ecosystem services is and what it is meant to do, can diverge, sometimes drastically. As I have presented, ecosystem services has begun to circulate, gain traction, and manifest in divergent forms and functions among particular networks of environmental practitioners, as (a) a rhetorical tool for winning arguments and advocating the protection of nature, (b) a decision-making framework for analyzing trade-offs between different formulated options, and (c) a variety of policy instruments ranging from legal recognition to market-based mechanisms. I found each of these functions in the hands of different groups of practitioners, often with conflicting notions of what the concept was supposed to do for them and to forests, biodiversity, and sometimes all of nature.

The ecosystem services concept, since it left the academy, has been variably interpreted by the wide array of different interests gazing into it, appearing differently to biologists, to environmental activists, to entrepreneurs, to governmental and intergovernmental bureaucrats, and to an increasing number of other constituencies. These gazes entail sometimes starkly contrasting depictions – variously auspicious or ominous – of what ecosystem services represents and what it does. But rather than trying to determine which account most resembles reality, I prefer to focus on how, together, they are producing a social reality: that of ecosystem services itself. MacKenzie et al. (2007 6) highlight the manifold nature of this rearticulation facilitated by economic technologies such as ecosystem services:

Economics […] can relate to and act upon its objects in many ways: by observing them, by measuring them, by predicting them, by providing theories to explain them or
instruments to regulate them, by spreading some functional technique about them (or just some suggestive vocabulary to deal with them), by designing them in a laboratory, by investing in them, and so on. […] And, symmetrically, the “object” of economics […] can react to this science in many ways: by mimicking it, by using it for profit, by believing it (and possibly funding it!), by inadvertently operating it, but also by fighting it, by undermining its validity, and so on. Such interactions can change how resources are produced, organized, exchanged, and consumed.

They manage to capture here the variegated relationship I observed between ecosystem services discourse and the ‘nature’ that it is made simultaneously to describe and produce. They convey what I try to characterize in this thesis as the sprawling and unwieldy breadth of ecosystem services discourse and its kaleidoscopic engagements with the world.

I noted earlier that pursuing ecosystem services across multiple sites and scales of environmental governance yields several advantages to understanding what it is and what it does. By comparing the dominance of ecosystem services at the CBD CoP-10 to its more nascent and variegated uptake in British Columbia, I was afforded an opportunity not only to observe a wider diversity of the forms and function in which it manifests, but also the pathways through which it is made to propagate. In other words, I was able to discern more clearly from where it circulates and to where it circulates.

My two field sites represent two distinct yet connected notes of environmental governance. In Nagoya at the UN CBD CoP-10, I observed concerted efforts by various political actors attempting to alter the terms of some key dialogues within international biodiversity conservation discourse using the language and conceptual framework of ecosystem services. I witnessed ecosystem services proponents identifying and trying to leverage entry points through which ecosystem services could penetrate different layers of the policy process – for instance, by bending the ear of a fictive Decision Maker and incorporating ecosystem services into national income accounting. Through the publication and subsequent promotion of reports like TEEB (itself a carefully packaged embodiment of the basic logic underlying ecosystem services) and through the public performance of discussion and argumentation attempting to “mainstream” the concept, I observed some of the key actors and strategic sensibilities actuating ecosystem services discourse come into vivid focus.
In British Columbia, on the other hand, I peered into the environmental policy process of a bounded regional jurisdiction: a prominent target at which ecosystem services ideas and discourse are consciously aimed. By exploring the vibrant “issue network” of forest conservation, management, and policy in the province, I found ecosystem services shepherded into various institutions by specific actors, spread across different organizations and domains of work. Moreover, I noted that these ‘ecosystem services’ practitioners had sometimes developed their expertise internationally – they were often familiar with the broader discourse and literature around ecosystem services and its relationship to the international development and biodiversity conservation communities. I found that these practitioners were often, with respect to the ecosystem services conceptual framework itself, the more driven and focused of the actors I met who were working to transplant ecosystem services approaches into the province.

I found that, at least with respect to specific policy outcomes, ecosystem services still remained predominantly latent. However, I also argue that those intermediary social practices connecting ‘idea’ with ‘practice’ and ‘policy’ – an interstitial discursive space increasingly subject to the logic of ecosystem services in the specific contexts I examined – is not only of theoretical curiosity but of practical consequence as well. I observed different interests vying to mould the potential trajectories and nascent manifestations that ecosystem services facilitates toward their own preferred image through deliberate discursive practices. In Nagoya, in British Columbia, and in the endogenous ecosystem services scholarship, I observed a kind of strategic sharing as different actors attempted to extend their values to others, reframing mutual interests and thereby constructing both problems and their solutions through the language of ecosystem services.

As I discussed earlier, the confluence of social practices guiding the rise of ecosystem services can be understood “as cultural phenomena; as the result of historical cultural practices that reflect the accumulated beliefs and values of a dominant element (dominant in ideological rather than demographic sense) of society through time” (MacDonald 2004, 13). Although I focus on the exploits of particular actors working to reify ecosystem services in somewhat specific domains, it is important to note that this social (and political) action takes place within and through a web of institutionally configured power relations and wider cultural and political-economic processes. As MacDonald (Ibid., 12) points out, institutions themselves transform in their “functioning, goals, and capacities as they are drawn into more extensive economic,
political, and social contexts.” I observed deliberate efforts already underway geared toward this kind of institutional realignment at both my field sites.

Thus, while I suggest ecosystem services discourse remains riven with internal tensions – that it constitutes an arena encompassing ongoing political struggles over its very definition and instrumentality – this contestation is in important ways also structured by and diffused through broader organizational and institutional dynamics. I characterize the rise of ecosystem services (and the economic “visibility” of nature it facilitates) less as a result of the direct exercise of power or coercion by specific actors, and more as the collective outcome of broader, more diffuse, and cumulative institutional and ideological realignments, involving the coordinated negotiation and strategic yielding of consent to its discourse by a growing diversity of interests.

For many of the environmental practitioners I encountered at my field sites, and as expressed in the endogenous ecosystem services literature, the paradigm appears to represent (among other things) an expedient accommodation to interests perceived as apprehensive about or even adversarial to environmental conservation. As I elaborate in this thesis, by rendering nature economically “visible,” ecosystem services ostensibly neutralizes perceived contradictions between the project of environmental conservation and the prevailing logics of scientific rationality, public policy formation, and economic development. But perhaps more intriguingly, ecosystem services discourse appears not only to offer a way to reconcile these disparate logics, but the means of stitching them together into a shared, mutually legible, and singular narrative for making sense of nature.

Through the peculiarly communal “visibility” afforded by economics and ecosystem services discourse specifically, I observed practitioners construct intermediary “social natures,” whether as imagined forests up the north coast of BC, or as re-rationalized protected areas projected on screens in Nagoya. While these distinct understandings and agendas concerning what ecosystem services is and what it is meant to do continue to jostle with one another within the discourse, ecosystem services at the same time implies a potential convergence of these “social natures” within its conceptual framework.

Hajer (1995, 32) identifies what may appear as an emerging “ideological convergence” in the broader discourses of sustainable development and ecological modernization which he analyzes. He asks, “Is it not a great achievement that there is now an agreed vocabulary and set of
institutional procedures, that both social movements, experts, and governments seem to accept as the way forward?” But he also voices critics wary of what this convergence may entail, and cautions that these developments may, in the end, represent “a “proverbial wolf in sheep’s clothing […] a rhetorical ploy that tries to reconcile the irreconcilable (environment and development)” and “take the sting out of the tail of radical environmentalism” (Ibid., 33-34). I suggest that ecosystem services also embodies this risk.

For better or for worse, environmentalists find themselves speaking the same language as government bureaucrats, who find themselves speaking like intergovernmental ones, who find themselves speaking like private sector practitioners, who find themselves speaking in the terms provided by academic ecosystem services researchers. But between these different interests, between these different functions of ecosystem services, and between these different imagined forests and the rearticulated natures they imply, lurks the tension between intention and consequence, a tension which I found resonating throughout the conversations I observed and the comments I elicited, and which I try to highlight in this thesis. I attempt to characterize a cacophony of voices and interests, each with varying intents and ambitions for ecosystem services. However, the relationship between these aspirations and the actual outcome of their respective attempts to realize those aspirations is, at best, complicated. While a variety of players may seek to contribute to their vision of ecosystem services on their own terms – attempting to mould its discursive and material expression toward their own interests – the direction that their participation will actually tend may not rest entirely within their control. In other words, the specific inputs contributed to ecosystem services discourse may not yield the desired outputs of their authors.

As one consultant admitted with some exasperation, “in talking to some people, even within Environment Canada, people who are learning and reading about this all the time, they don’t disassociate the notion of ecosystem services and putting a price on nature, which in my mind are two very distinct things.” His comments seem to exemplify Hajer’s (1995, 39) observation that environmental discourses can be “extremely hard to control and can therefore have unintentional effects of all sorts.” His comments echoed those of many of the other voices I have highlighted, perceiving in ecosystem services the profound capacity for both use and misuse.
In this way, I remain uncertain about the ultimate direction in which ecosystem services inclines. Behind each function, I found distinct sets of interests trying to pull the meaning and purpose of ecosystem services toward their respective agendas. Complicating matters even further, the conceptual shifts and technical innovations facilitated by one set of interests, perhaps intended to advance their preferred function, regularly contribute to the advancement of other functions in service to other interests. As such, I argue the ultimate configuration of ecosystem services remains in flux, and that its outcome remains subject to political struggle and discursive work dispersed through a web of networked institutions.

What, then, does Costanza et al.’s (1997) thirty three trillion dollar gesture mean and what does it imply? Given the kaleidoscopic and continuing fluidity of the forms and functions ecosystem services assumes, and given ongoing contestation over those forms and functions, I leave this puzzle lingering as an open question, but more importantly, as a politically contingent one. I suggest the emerging science of ecosystem services poses peculiar risks at the same time that it unlocks new opportunities and potentials. As Sukhdev himself suggested, “Economics is only weaponry. The direction in which you shoot is an ethical choice.” As researchers continue to define what these conceptual tools mean and what they do, I would argue they have a particular responsibility to ensure they aim carefully, if at all, with a clear vision of what happens when they pull the trigger. The direction in which they shoot might be an ethical choice, but, carefully or not, it is not entirely determined by the location of their crosshairs, given its promiscuous shape-shifting quality. Yet I suggest ecosystem services still connotes possibilities. As Braun (2002, 269) notes of BC’s “intemperate rainforests”:

> New forest imaginaries are coming into play, new political alliances are being forged. The challenge for all involved – First Nations, environmentalists, the state, academics – will be to engage in the sort of active experimentation needed to build social natures on Canada’s west coast that take seriously the cultural politics of the forest […]. In this moment of danger is perhaps a moment of great hope.

As reflected in the exuberant diversity of those confronting and interpolating their interests into it, I suggest ecosystem services discourse remains more fluid than crystallized. It constitutes a shifting and perhaps unpredictable strategic landscape for conservationists attempting to
navigate it, as opportunities open and others close, with peaks that deter and valleys that attract, whose paths and destinations remain tantalizingly but perilously unmarked.

Assessing this shifting strategic landscape and the implications of this institutional reconfiguration, MacDonald (2010a) points out, “the organizational dimensions of conservation exist as coordinated agreement and action among a variety of actors that take shape within radically asymmetrical power relations.” These power relations, he suggests, help to explain a longer history of accommodation in relation to other political projects besides simply conservation; hence, institutional and organizational realignment amongst conservation actors per se “is not a new process” (Ibid.). Proceeding with such an understanding, MacDonald interprets contemporary shifts in what he calls ‘organized conservation,’ as “a reflection of the coordinating action of global capitalism, its affiliated transnational class, and the need to redefine conservation in ways that accommodate, rather than challenge, the dominant ideological and material interests that underlie these broad political projects” (Ibid.).

While meaningfully assessing the overall validity of this specific claim is beyond the scope of this thesis, I will posit that its basic insight – even if not yet fully realized or necessarily all-encompassing as a causal driver – should be taken seriously by those working in, contributing to, and using ecosystem services discourse, whether activist, scientist, administrator, or citizen. As MacDonald points out, the engagement of powerful interests (and the plurality of agendas they bring to the table) drastically complicates the tenability of straightforwardly participating in the endeavours in which those interests intervene. Some of my informants, and particularly the environmental advocates, seemed warily familiar with how this worked:

**Her:** My sense is that at least at this preliminary stage that they [industry interests] are fairly confident that as with ecosystem based management, and ecosystem level planning, and adaptive management, and all of these other scientific concepts, that there’ll be no problem with co-opting it for their use.

**Me:** So, even if it does penetrate policy circles, they’ll be able to walk in right along with it?

**Her:** It won’t penetrate with its scientific meaning intact, and with science-based implications intact. There’s no chance of that.
Me: So, it’s a game of telephone.

Her: Not exactly telephone. Because telephone is when it’s an accident.

Thus, while I identify a broad array of interests, agendas, and intended functions for ecosystem services, “much will depend on the hands through which the concepts and the policies pass” (Dempsey & Robertson 2011, 33) as those ideas are released by their originators and take their institutional journey. As increasing numbers of conservation-minded biologists and ecologists flock to ecosystem services discourse – as they continue to refine and elaborate on its technical, methodological, and theoretical sophistication – the output of their research lends itself to a spectrum of divergent purposes. Like a game of telephone, as the concept leaves their hands, it falls into others, which grasp at nature’s dollar sign in markedly different ways.
References Cited


Oxford: Oxford University Press.


Hamilton, G. (19 April 2011.) Carbon credits could be a billion dollar industry. *Vancouver Sun*. Available Online:


Robertson, M. (2006.) The nature that capital can see: science, state, and market in the commodification of ecosystem services. *Society and Space* 24, 367-387.


Appendices

Table 1 - Appendix I: CEE research team, arranged alphabetically (* indicates PI)

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bourque</td>
<td>Maggie</td>
</tr>
<tr>
<td>Brosious*</td>
<td>Pete</td>
</tr>
<tr>
<td>Campbell*</td>
<td>Lisa</td>
</tr>
<tr>
<td>Corson</td>
<td>Catherine</td>
</tr>
<tr>
<td>Dammert</td>
<td>Juan Luis</td>
</tr>
<tr>
<td>Dujovny</td>
<td>Eial</td>
</tr>
<tr>
<td>Gray*</td>
<td>Noella</td>
</tr>
<tr>
<td>Greenberg</td>
<td>Shannon</td>
</tr>
<tr>
<td>Gruby</td>
<td>Rebecca</td>
</tr>
<tr>
<td>Hagerman</td>
<td>Shannon</td>
</tr>
<tr>
<td>Hitchener</td>
<td>Sarah</td>
</tr>
<tr>
<td>MacDonald*</td>
<td>Ken</td>
</tr>
<tr>
<td>Maclin</td>
<td>Ted</td>
</tr>
<tr>
<td>Scott</td>
<td>Debbie</td>
</tr>
<tr>
<td>Suarez</td>
<td>Dan</td>
</tr>
<tr>
<td>Suiseeya</td>
<td>Kim</td>
</tr>
<tr>
<td>Witter</td>
<td>Rebecca</td>
</tr>
</tbody>
</table>