

CONTENTS:

<i>What Is This Guide About?</i>	4
<i>An Introduction to Adaptive Management</i>	10
<i>Sources for This Guide</i>	18
<i>Steps in the Process of Adaptive Management</i>	32
<i>Principles for the Practice of Adaptive Management</i>	64
<i>Where Do We Go From Here?</i>	88

For the Summary of the Framework for Adaptive Management Presented in This Guide, please see page 13

ADAPTIVE MANAGEMENT:

A Tool for Conservation Practitioners

PERHAPS YOU ARE A MEMBER of a project team that is responsible for managing a biosphere reserve or national park. Maybe you work for a non-governmental conservation organization that is doing community-based conservation in an area rich in natural resources. Perhaps you are a research scientist or graduate student trying to figure out the best way to conserve an ecosystem in a particular area. Or maybe you work for a government agency responsible for managing natural resources in a certain state or country.

These roles are typical of conservation practitioners — people who work on projects that are designed to achieve goals related to biodiversity conservation and the sustainable management of natural resources. If you are like most

other conservation practitioners, your work requires a wide range of skills including managing staff, dealing with boards, funders, and bosses, communicating with stakeholders, and understanding the biology and culture of the places in which you work. But perhaps more importantly, your job requires understanding and managing information in ways that maximize your conservation results.

Like many other conservation practitioners, you have probably asked the following questions as you have managed your project:

- How can we best understand the conditions at the site where we are working?
- What goals should we be trying to accomplish?



- What actions should we take to efficiently achieve our goals?
- How do we measure our success and the extent to which our actions contributed to change?
- What can we do to work more effectively in the future?
- How can we capture what we have learned so that we don't make the same mistakes again?
- How can we share our findings with other practitioners?

If you have ever asked yourself questions like these, then you have begun the process of adaptive management.

WHAT IS THIS GUIDE ABOUT?

THE FIELD OF BIODIVERSITY CONSERVATION

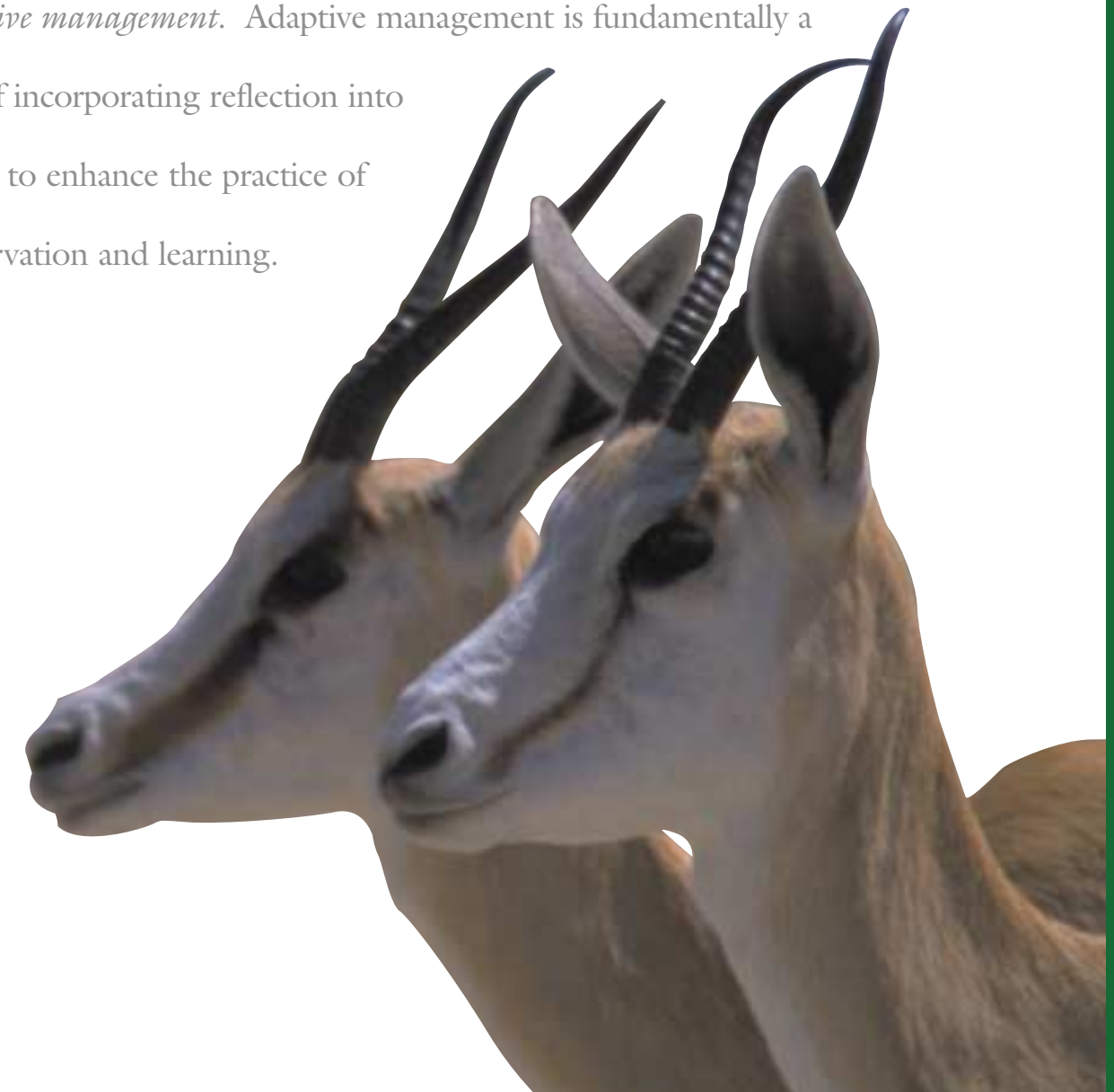
is at an important point in its evolution. Over the past few decades, we have discovered why conservation is important to maintain life on Earth. We have identified many of the species and ecosystems that are at greatest risk of going extinct. And we have begun to develop tools and techniques that can help counter the growing threats to biodiversity.

At the same time, as the field matures, the conservation community is also facing a number of new and more difficult challenges. Perhaps foremost amongst these is the recognition that despite decades of hard work, hundreds of projects, thousands of trained professionals, and millions of dollars, we have not yet substantially slowed the destruction of forests, grasslands, and aquatic ecosystems. It is clear that business as usual is not a viable option and that newer, more powerful approaches must be tried.

Conservation practitioners are facing increasing pressure from donors, governments, local stakeholders, and society as a whole to demonstrate clear and tangible results. To this end, they are trying to develop workable monitoring and evaluation systems. Conservation practitioners are also challenged by limited financial and human resources to become more effective

in using different tools and techniques in their work. As a result, they have begun examining what works, what doesn't, and why. And finally, conservation practitioners are being asked to capture what they have learned and pass it on to other practitioners so that we can avoid making the same mistakes over and over again and can begin generating new knowledge. They have thus begun to try to create learning projects and learning organizations.

Monitoring and evaluation, testing what works and what doesn't, and creating learning organizations are all components of an approach called *adaptive management*. Adaptive management is fundamentally a way of incorporating reflection into action to enhance the practice of conservation and learning.



Objectives of This Guide

The term “adaptive management” has been used primarily in academic circles since the 1970s, but until recently, has had little relevance for conservation practitioners. In recent times, the term has become a confusing buzzword that means many things to many people — as one person told us, “Adaptive management is merely an excuse to change your mind.” We believe that this perceived lack of relevance and confusion occur largely because adaptive management has not been clearly defined or explained in operational terms. Our interest in writing this guide has grown out of a desire to help bring some conceptual clarity to the concept of adaptive management and to determine ways in which it can be harnessed and used more effectively by conservation practitioners. To achieve these aims, we began with seven objectives:

1. **Clearly define what adaptive management is — and what it isn't.**
2. **Describe the conditions that warrant using an adaptive management approach.**
3. **Review the conceptual roots of adaptive management and demonstrate how they are relevant to conservation projects.**
4. **Learn how some field projects are currently doing certain aspects of adaptive management.**
5. **Outline the steps involved in doing adaptive management in conservation projects.**
6. **Determine principles for doing effective adaptive management in conservation projects.**
7. **Suggest future directions to further refine our understanding of adaptive management and its application to conservation projects.**

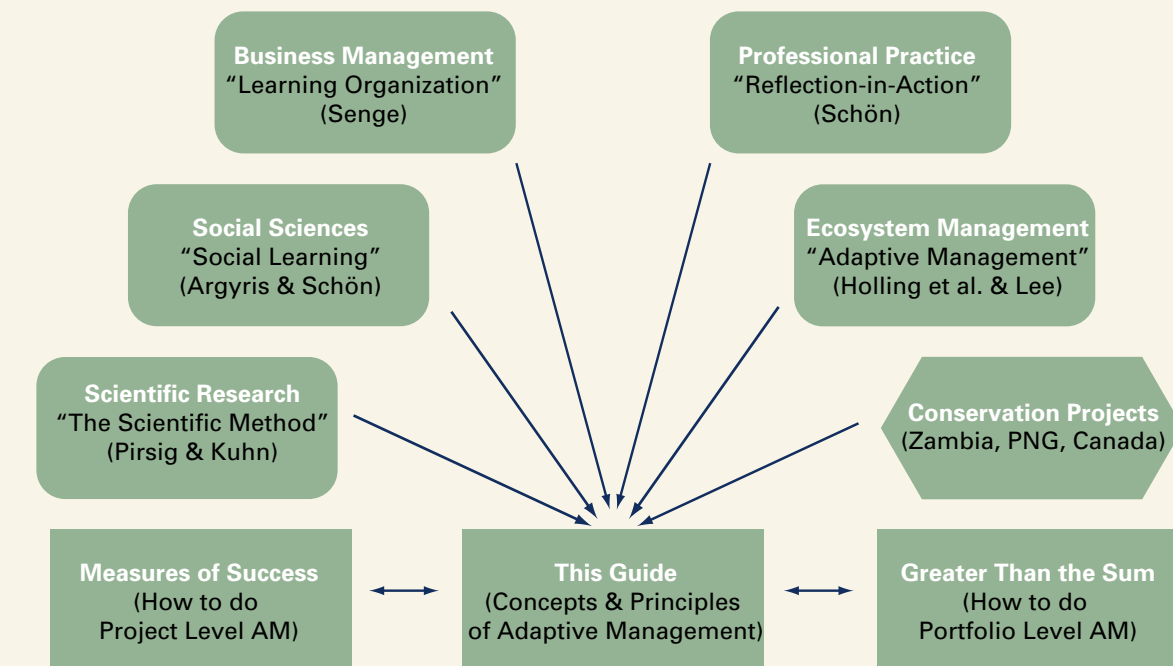
What Did We Do?

Adaptive management is rooted in many different disciplines, but has not yet been widely used in conservation projects. To address many of the conceptual issues in our objectives, we had to rely heavily on research, analysis, and publications from other fields. Furthermore, to address many of the practical and applied issues in our objectives, we had to locate conservation projects that were practicing some aspects of adaptive management. We also drew on our own experiences in applying adaptive management to projects and portfolios. As shown in Figure 1, this guide synthesizes ideas from a literature review of other fields that have used similar theoretical



concepts, experiences from conservation projects that have applied at least some of these concepts, and processes from two other publications that we have written. Our research for this guide was divided into three parts:

FIGURE 1.
The Position of This Guide Relative to Existing Works



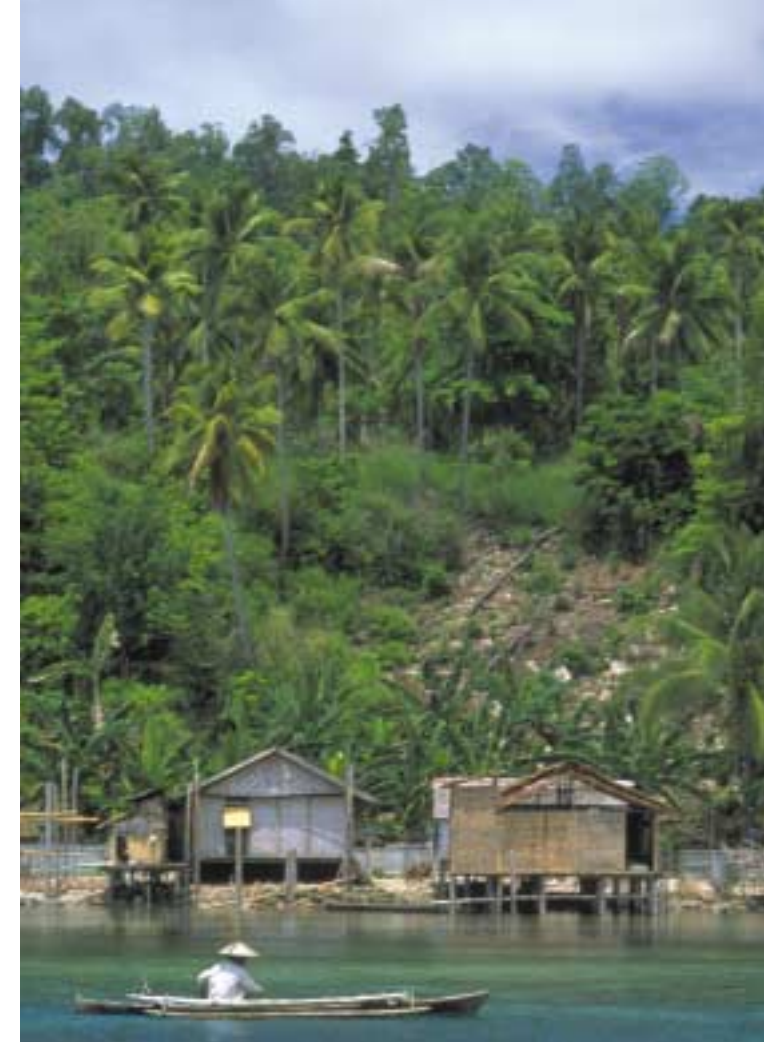
Reviewing the literature. We canvassed a broad spectrum of fields that have either used adaptive management, or have developed parallel concepts. These fields include science and philosophy, social science, business management, professional practice, and ecosystem management. After reading broadly in each field, we selected one or two sources that we believed best summarized the field. These sources are described in the following section. From this literature review, we developed a draft framework that includes a definition of adaptive management, the conditions that warrant an adaptive management approach, and the steps and principles involved in doing effective adaptive management of conservation projects.

Conducting site visits and key informant interviews. Using this draft framework, we developed a topic guide that we could use to interview key informants in conservation projects from around the world. After a careful search, we selected three projects that we believed clearly demonstrated some of the characteristics of adaptive management that we identified during the literature review. These projects, which are described in the following section, include the ADMAD Project in Zambia, the Crater Mountain Project in Papua New Guinea, and the British Columbia Forest Service’s Adaptive Management Initiative in Canada. We visited these sites in 1999 and 2000 and interviewed key informants using our topic guide. Most conversations were tape recorded so that we could use transcripts for our analysis.



Developing “how-to” guidebooks. While we were doing the literature review and site-based research, we also developed two “how-to” guidebooks designed to help conservation practitioners apply adaptive management principles to their work. *Measures of Success* is about using adaptive management at a project level.¹ It forms the basis for the steps discussed in the third section of this guide. *Greater Than the Sum of Their Parts* is about using adaptive management across multiple projects in a portfolio.² It forms the basis for the steps discussed in the last section of this guide.

Based on the results of these three activities, we developed the final framework described in this guide.



Some Things to Keep in Mind

As you read through this publication, please keep in mind the following points:

Our work is descriptive and synthetic. To come up with the principles we include in this publication, we did not use a random sample of projects or a systematic experimental design. Instead, we were much more opportunistic and used the insights and experience of other fields and examples of conservation projects that exhibit some characteristics of adaptive management. We wrote this publication in an attempt to capture and synthesize relevant state-of-the-art thinking on and application of adaptive management.

This is not a “how-to” guide. This publication does not explain in detail the process for doing adaptive management. As you read this publication, we hope you will think about your own experiences and how you might apply the steps and principles we present. If you are interested in learning more about adaptive

management as an idea, you can then go on to read the original sources that we used as well as the other sources listed in the references section. If you are interested in trying an adaptive management approach with your project, we recommend taking a look at *Measures of Success*, which describes in greater detail the steps involved in designing, managing, and monitoring conservation projects. If you are interested in trying an adaptive management approach with a portfolio of projects, we suggest consulting *Greater Than the Sum of Their Parts*, which describes similar steps at a program level.

This is an intermediate step. We did not write this guide to be the last word on adaptive management and its application to conservation projects. Instead, we expressly set out to provide an intermediate step that clarifies the current state of knowledge as to what adaptive management is and how conservation practitioners might better apply it to their work. We hope that this guide serves as a catalyst that will lead to an improved understanding over time of how to use adaptive management to more efficiently reach conservation goals and build learning organizations.