

Chapter 2

Pursuing Large Scale Conservation in the Common Interest: A Perspective

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ABSTRACT

Practitioners of large scale conservation are addressing problems that can be understood and successfully remedied only by being more holistic and taking into consideration larger spatial, temporal and complexity scales than in the past. This requires a realistic appreciation of the problems at hand, better theoretical grounding, and being appropriately skilled. Successful large scale conservation may involve adopting new formulas, symbols, and supporting doctrines for some people and organizations to move beyond the conventional, disciplinary, and institutional practices that currently dominate many efforts. To encourage this transition, this chapter uses and draws on a problem typology to examine interrelated technical, governance, and constitutive problems inherent in large scale conservation. It also offers a logically, comprehensive theory of human behavior and natural resources policy in which “humans seeking values through institutions use and affect resources, both natural and cultural.” This chapter is foundational to this volume. Both the typology and theory are used throughout the other chapters. At present, it appears that many people lack such a typology and theory. Among the practical implications of this typology and theory are that they require that the full suite of problems—ordinary, governance, and constitutive—must be appreciated and attended to in practical ways. The typology and theory provide an opportunity to advance conservation performance in the common interest.

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Key words: *Large scale conservation, problems, ordinary, governance, and constitutive problems, humans, values, institutions, resources, common interest*

INTRODUCTION

Large scale conservation efforts are a response to the growing awareness that many environmental problems can be understood and successfully remedied only by taking into consideration larger spatial, temporal, and social complexity scales than in the past. However, successful large scale conservation requires more than just “scaling up” previous formulas such as “scientific management” and established organizational arrangements. Problems must be addressed holistically and contextually, and attention must be given to social and decision processes inherent in the case at hand. For this to happen, practitioners require critical thinking, problem solving, observation, management, and technical skills (Chapter 9, this volume). It is clear that people—practitioners, scientists, decision makers—need a theory of social and decision processes and problems to aid them in asking and answering important questions about themselves and other people and to understand the system of which they are a part as they do their large scale work.

In this chapter we introduce some important concepts for understanding problems in large scale conservation and present a theory for making sense of the human dimension in natural resource management. This theory has been used in diverse contexts, and illuminates ways to enhance sustainability and human dignity. Most current large scale conservation efforts do not attend to these foundational elements. This chapter offers a typology of problems and a theory of natural resource management and policy that are used throughout this volume.

PROBLEM ORIENTATION AND A PROBLEM TYPOLOGY

Problems can only be effectively addressed if people orient to them realistically. As Clark (2008: 21) notes, “This seems obvious, but too often we misconstrue a problem, identify the wrong problem, see only part of a problem, or overlook it entirely.” Consequently, one of the major challenges facing practitioners of large scale conservation is articulating the most relevant problem definition. Practitioners must often navigate in the face of facile problem definitions that can be clearly stated and rigorously solved but, are irrelevant to the solution of real world problems. A problem definition may, for example, be highly relevant, but insoluble using old paradigms, professional skills, and institutions. Although it is common during the early phases of any decision making process to frame problems rather narrowly, typically in technical terms, and often based on special interests, large scale conservation problems are multifaceted, have wide-ranging effects, and do not lend themselves to narrow or technical definition. A narrow focus on problem solving rather than a contextually sensitive problem framing may lead a practitioner to uncritically accept a proposed solution without taking into account past trends and conditions, probable futures, or the value dynamics at play.

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Interventions designed to address technical problems (content or substantive concerns) but not value dynamics (process or procedural concerns) are likely to engender conflicts over whether a problem actually exists, what the best solution for the problem is, and what the best means of implementation are (Rocheport and Cobb 1990, Picard forthcoming, in press). We recommend adopting a problem oriented approach to large scale conservation that includes five tasks (Clark 2002). The tasks of problem orientation are goal clarification (identifying values sought), trend description (reviewing relevant history), condition analysis (identifying relevant scientific knowledge and data that might explain matters), trend projection, and alternative or solution analysis (including invention, evaluation, and selection of options). All five tasks should be initiated early in the decision making process and attended to on an ongoing basis throughout the life of the conservation effort.

Table 1 Examples of four problem types addressed by various large scale conservation approaches

Large Scale Conservation Approach	PROBLEM TYPE		
	Ordinary (technical)	Governance	Constitutive
Single & Multiple Use Management	Calculate maximum sustained yield	Distribute grazing rights among ranchers	Allocate authority to make decisions about land in the public domain
Ecosystem Management	Assess tradeoffs between species/ habitat conservation and extractive uses of resources	Develop Habitat Conservation Plans (HCPs)	Clarify treaty rights of tribes and first nations
Ecoregional Planning	Identify wildlife migration corridors	Implement legislation that protects corridors from fragmentation	Restructure traditional/permitted uses of resources by local communities
Trans-Boundary Management	Map cross-border habitats used by large herbivores and carnivores	Negotiate cross border/international natural resource management agreement	Balance valid and appropriate interests and create an arena for local and cross-border cooperation.

A comprehensive problem orientation often reveals three types of problems (Clark 2008)—technical (ordinary), governance (political), and constitutive (cultural). Practitioners of large scale conservation are often confronted with all three classes of problems (Table 1), although they may or may not recognize this fact. A tendency exists to misidentify the type of problem one is confronting and, consequently, pursue ineffective solutions (Box 1). Often these solutions are based on prepackaged disciplinary, bureaucratic, or institutional formulas.

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Box 1 Misidentification of problems in large scale conservation projects

Understanding Patterns of Human Interaction of Decision Making: An Initial Map of Podocarpus National Park, Ecuador (Cherney et al. 2009)

Rapid deforestation, poor water quality, rural poverty, and transportation difficulties are just some of the technical problems that participants are focused on in Podocarpus National Park. Underlying these problems, however, is the lack of arenas where people can discuss and balance their competing interests, or identify common interest goals. Moreover, the heavy focus on surveillance, planning, and promotion has resulted in a decision making process that restricts participation to experts and ignores the social context in which the park operates. The authors conclude that understanding the role of deliberative arenas and how to deliberately change the structure and function of those arenas can greatly improve the efficacy of problem solving.

The Promise and Peril of Large Scale Conservation: An Appraisal of the Selous Niassa Wildlife Corridor (Picard, forthcoming)

The Selous Niassa Wildlife Corridor (located on the Tanzanian-Mozambique border) is designed to address two major problems: an increase in wildlife poaching and habitat fragmentation. Picard argues that while these are worrisome trends, they are driven by three conditioning factors that have been overlooked by the current (biophysical) perception of the problem. These include: (1) the historical impact of socialism which profoundly reshaped the physical landscape, and continues to influence social and decision process trends in the Corridor today, (2) the rapid transition to a neoliberal free market economy which created a demand for cash crops and (3) the socio-cultural concept of wilderness which has deeply influenced participants' expectations and identities, including how problems are defined in the first place.

The American West's Longest Large Mammal Migration: Clarifying and Securing the Common Interest (Cherney and Clark 2009)

Participants in the 170 mile pronghorn antelope migration in western Wyoming articulate three distinct problem definitions. The ecological-scientific view advanced by scientists and environmentalists focuses on bottlenecks in the migration route that will cause the antelope to be extirpated locally. The local rights problem advanced by some local residents and property owners suggests that the concerns about the antelope are a guise for environmentalists to lock up public and private lands. The cultural-heritage view advanced by others emphasizes the cultural significance of the migration while rejecting the

need for government intervention. The authors argue that underneath each of these problem definitions are governance and constitutive challenges to securing a common interest solution. In particular, the highly fragmented patterns of authority and control and the parochial perspectives of many participants (including scientists), impede resolving the issue satisfactorily.

Technical problems

Technical problems are what most natural resource professionals deal with in their day-to-day work (e.g., what is the estimated population of osprey in the Connecticut River watershed?). Scientific inquiry is typically organized into discrete disciplines that assume the world can be understood by breaking it down into component parts. The methods associated with disciplinary scientific inquiry are well suited to providing answers to technical problems, especially problems with well defined spatial, temporal, and other contextual boundaries. However, focusing exclusively on technical problems restricts the range of considerations, participation, and limits debate to those who have similar language, training, and resources. In contrast, all the chapters in Parts II and III of this volume focus on the social and decision processes involved in large scale conservation and move well beyond only technical considerations.

Governance problems

Governance problems arise out of the need to make decisions about policy. They deal with both the arenas within which and the processes by which decisions are made. Some people have difficulty characterizing or thinking about governance problems, how to diagnosis them realistically, and how to correct them. Nevertheless, moving towards sustainability requires healthy governance processes (Cortner and Moote 1999). For example, Cherney et al. (chapter 4, this volume) found that fragmented decision arenas in the Connecticut River Watershed created a barrier to developing effective, more comprehensive common interest conservation management policy. A narrow, localized focus in this case restricted deliberation to local issues at the expense of a holistic vision that could have enhanced system wide cooperation and outcomes. The problem identified by Cherney et al. is illustrative of many governance problems that arise when numerous participants with diverse perspectives are spread out over a large spatial area. Participants may not share the same value outlooks, and may lack a practical theory about the social and decision processes of which they are part.

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For example, to find common ground in managing natural and cultural resources, Folke et al. (2005: 441) found that,

“Adaptive governance systems [as we recommend in this volume] often self-

organize as social networks with teams and actor groups that draw on various knowledge systems and experiences for the development of a common understanding and policies. The emergence of ‘bridging organizations’ seem to lower the costs of collaboration and conflict resolution, and enabling legislation and governmental policies can support self-organization while framing creativity for adaptive co management efforts.”

The Connecticut River case is a clear example of where participants could better organize for improved governance outcomes.

Constitutive problems

Constitutive problems are implicit and fundamental, more so than either ordinary or governance problem. Most people find it hard to see these problems. Constitutive problems arise from the norms or rules that guide individual and collective decision making in a community or society. Constitutive norms determine how and why decisions are made, and who is involved in the decision making process – they represent the rules for making the rules about ordinary decision making interventions. The case studies in this volume suggest that models of large scale conservation can be improved by being more attentive to constitutive and governance problems.

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The implicit norms that underlie governance processes can be adjusted only by changing societal rules through what are commonly described as constitutive processes. Decisions affecting the constitutive process are frequently made unconsciously. The evolving structure of the constitutive decision process is often a result of the way in which a series of ordinary decisions were made, rather than an outcome of an explicit decision about how the overall constitutive process should work. In contrast to technical and governance problems, constitutive problems can be essentially opaque to those within a situation, making such problems difficult to identify, let alone address. Furthermore, few people engaged in large scale conservation projects are trained to understand constitutive process or identify constitutive problems. As a consequence, constitutive problems are overlooked, misidentified, and rarely addressed.

¹ See note at end of chapter

A THEORY OF HUMAN BEHAVIOR¹

Managing natural resources in pursuit of large scale conservation requires integrating biophysical information into a rational framework or theory for decision making (Clark 2009). In this volume, the theory (and framework) that we use to understand

the integration task can be most simply stated as “humans seek values through institutions using and affecting resources” (Lasswell 1971: 19). The centrality of these four elements—humans, values, institutions, and resources—in policy cannot be overstated. Carrying out large scale conservation successfully requires understanding and improving the way people make decisions about themselves, their values, institutions, and resources. The theory is foundational to this volume and informs case studies in Part II, and education and leadership issues in Part III of this volume.

Humans

All people have perspectives made up of identities, expectations, and demands. Understanding the social process in a large scale conservation venture requires discerning the motivations of all participants by analyzing their values, perspectives, and actions. Additionally, one should be cognizant of the situations (arenas) in which participants interact and the strategies they use to pursue their objectives. If one hopes to achieve outcomes that respect human dignity and are in the common interest, arenas should be open (i.e. relevant stakeholders must be included and allowed adequate participatory opportunities) and transparent (Steelman and DuMond 2009). Furthermore, because common interest actions may result in value deprivations for some participants, decisions should be made in an arena that is perceived as legitimate by relevant participants.

The goals of participants in any large scale conservation effort are a reflection not only of their values but also of their perceptions, or standpoint. According to the maximization postulate (Lasswell 1971:16) people are “predisposed to complete acts in ways that are perceived to leave them better off than if [they] had completed them differently.” One’s standpoint is the perceptual lens through which one views the world. Standpoint is a function of personal experience, professional training, and organizational affiliation. Individual experiences inevitably lead to preconceptions and biases that limit our ability to be fully rational. They influence what specific outcomes we value, how and what we perceive to be problems, and what we see as reasonable solutions. Clarifying one’s standpoint requires recognizing personal biases—whether they are personal, epistemological, disciplinary, organizational or parochial—and individual values. As discussed in Chapter 8 (this volume), standpoint clarification will not ensure complete objectivity, but may help to temper the effects of the biases.

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Values

Values are “orientations toward what is considered desirable or preferable by social actors,” (Zavalloni 1980: 74) and are often used as “criteria for preference or choice or as justifications for proposed or actual behavior” (Williams 1970: 27, 442). Values are embodied in ethical principles, normative properties, and moral responsibilities of

society; they often appear as moral or ethical statements about conduct that is beneficial or necessary for attaining human dignity at the individual, group, and societal level. Values are at the very heart of daily life, individual meaning, and social meaning. Consequently, value dynamics must be understood in order to collectively articulate the common interest.

Although potential values are multitudinous, they can be classified in terms of eight base values which represent a comprehensive list of underlying human motivations (Table 2). Using this classification scheme allows one to study values objectively (Bell 1997) and focuses attention on the key role that values play in decision making. Particular things that are valued or desired (e.g., the presence of wolves in Yellowstone, preservation of cultural landscapes in the Connecticut River valley) can be ascribed to one of these values. For example, Cherney et al. (Chapter 4, this volume) attributed the Connecticut River Watershed Council's interest in promoting restoration, conservation, and the wise use of natural resources to a combination of rectitude and wealth. Although all eight values are at play in most human interactions, and relative preferences among the base values determine the importance placed on specific outcomes. For example, participants might argue about the moral imperative to save an endangered species (rectitude) versus preserving jobs (wealth and well being).

Table 2 Base values that motivate human behavior (Lasswell 1971)

Value	Definition	Analytic Questions
Affection	Desire for friendship, loyalty or love.	How are professional, friendship, and loyalty values used in decision process? What are the outcomes?
Enlightenment	Desire to give and receive information.	How is information given and received? What are the outcomes?
Power	Desire to make and carry out decisions.	How is power given and received in interpersonal and decision process? What are the outcomes?
Rectitude	Desire for moral or ethical standards.	What are the ethics at play in interpersonal relations and in decision process outcomes? What are the outcomes?
Respect	Desire to give and receive recognition within a community.	How is respect or deference used (or not) in decision process? What are the outcomes?
Skill	Desire to develop talents.	What kinds of skills are used (or not) in problem orientation and in decision process? How and with what outcomes?
Well-being	Desire for mental, physical, and spiritual health.	How is well-being, both physical and mental, affected by the decision process? What are the outcomes?
Wealth	Desire to control resources (money, land, human capital).	How is wealth used and affected (given and received) by the process?

Four basic types of strategies can be used to obtain desired value outcomes: diplomatic, ideological, economic, and coercive. In general, diplomatic and ideological strategies are more likely to be sustainable than coercive strategies. Collaborative management and learning typically combine diplomatic and ideological strategies seeking more sustainable management actions (Fernandez-Gimenez et al. 2008, Wondolleck and Yaffee 2000). Well designed economic strategies can also be powerful (e.g. payments to ranchers for livestock depredations in order to conserve large carnivores). However, coercive strategies have sometimes been clothed in the guise of economic strategies with appeals to economic efficiency and rationality (e.g. the expropriation of customary use rights for “the public good,” or the fines and fences approach to park management).

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Institutions

Improving large scale conservation requires not only changing the way decisions are made and the content of those decisions, but also changing the constitutive factors that influence how we perceive of and think and feel about large scale conservation problems. Conventional appraisals of decision making usually fail to comprehensively examine both the decision making process and the decision making culture. A functional appraisal of the decision process requires analyzing all the specific functions (activities) that must be completed in order to move toward a preferred future. A complete decision process requires attending to seven decision functions (Table 3). Standards exist for evaluating the efficacy of each function (Appendix B, this volume). The decision process as a whole should be dependable, comprehensive, and integrative (Clark 2002). Although the functions can be carried out either sequentially or concurrently, it is important to attend to all seven functions since ignoring a function can lead to suboptimal outcomes. For example, plans end up sitting on the shelf when prescription and application are not considered in tandem.

A functional appraisal of the decision process requires analyzing all the specific functions (activities) that must be completed in order to move toward a preferred future.

Adequate appraisal of large scale conservation initiatives is especially important. Particular initiatives can be treated as *practice-based prototypes* or innovations (chapter 8, this volume). As these prototypes are applied, they should be monitored and evaluated in order to identify what works, why, and under what circumstances. Adequate appraisal requires: (1) determining whether an effort met its goals; (2) identifying shortfalls and accomplishments; (3) analyzing the causal factors behind the level of success of the effort; and (4) making recommendations on how future

efforts can be made more effective. Being clear on evaluative standards is essential to close feedback loops and actively learn at individual, organizational, and policy levels. Rigorous appraisal of prototypes will facilitate identifying best practices, diffusing those lessons widely, and adapting the lessons to new contexts. Appraisal of large scale conservation initiatives should also indicate whether the project passes the three tests of the common interest (Chapter 1, this volume).

Table 3 An overview of decision functions (after Lasswell 1971) and examples

Function	Definition	Examples	
		Legal proceeding	Timber management
Intelligence (Planning)	Gathering information about the problem	Congressional hearings	Cruise, market analysis
Promotion (open debate)	Weighing and recommending alternatives	Debates	Forest planning process/workshop
Prescription (selection)	Establishing the agreed upon response	Legislation	Management plan
Invocation (enforcement)	Preliminary effort to put a prescription into effect	Filing a legal case	Putting a sale up for bids
Application (implementation)	Final interpretation of the decision in practice	Court decisions	Harvest and receipt of proceeds
Appraisal (evaluation)	Comparing goals and performance of the decision	Congressional Budget Office review	Post harvest survey, annual accounts
Termination (conclusion)	Decision to end a prescription	Repeal or significant amendment of legislation	Revision of management plan

Institutions develop when habitual actions that were initially undertaken for pragmatic reasons take on a normative force (Berger and Luckmann 1966). Institutionalization allows us to construct our social reality. Institutions not only control behavior by dictating what actions are acceptable, but also free us to make decisions by letting us know what another's actions are supposed to mean. People take part in institutional cultures, which mediate how resource management decisions are made. According to Schein (1990: 111):

“Culture can now be defined as (a) a pattern of basic assumptions, (b) invented, discovered or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems.”

All people are part of cultures and subscribe to basic belief systems, or myths, about how the world works (May 1991, Patai 1972). Myths are not right or wrong, per

se, but some myths are more useful in a given context than others (Brown 2001). Within disciplinary cultures, myths are embodied in scientific paradigms (Kuhn 1970) and mental models (Senge 1990). Often epistemic communities develop around particular suites of issues and members of these communities play an important role in framing issues for debate, articulating causal relationships, proposing alternatives, and identifying negotiable elements (Haas 1992). Over time epistemic communities can develop distinct institutionalized cultures with their own sets of myths. Cultures have begun to develop around different approaches to large scale conservation (Chapter 3, this volume). Each approach is associated with a package of ideas, methods and underlying philosophies that guide practitioners as they make judgments and carry out conservation interventions.

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Myths can be defined in terms of doctrine, formula, and symbols. Although large scale conservation approaches have different origins and have been developed in different contexts, they all have been developed as part of an ongoing, adaptive process. Consequently, while there are variations in the doctrine, formula, and symbols employed by different approaches, there are also areas of similarity. Doctrine is the set of basic assumptions or philosophy that underlie an approach. The doctrine includes assumptions about the appropriate relation between humans and nature, the inherent value of biodiversity, and ecological and social paradigms. Formula is the set of operating principles that guide practices on the ground. The goals sought, the appropriate target of intervention, the acceptable methods, the degree of social and disciplinary integration, how decisions should be made, and who should make them are all defined by an approach's formula. Doctrines are seldom made explicit and, therefore, often go unchanged even in the face of public demands to do so. Symbols are used to promote and legitimize the approach. GIS maps, charismatic megafauna, and even "fences and fines" take on symbolic import as practitioners seek to promote, justify, and defend proposed interventions. Symbols, such as grizzly bears and wolves in the American West, are sometimes manipulated to convey implicit but very specific messages to a broad public audience.

Resources

Ecosystems are the basic resource unit of large scale conservation. As was noted in Chapter 1, ecosystems are being degraded and destroyed at unprecedented rates worldwide because of a complex mix of direct and indirect human activities. All living things depend on healthy ecosystems to provide life sustaining services. Consequently, destruction of native ecosystems is expected to have harmful and long lasting effects for all species, including humans. Avoiding or ameliorating harmful effects requires maintaining ecosystem structures, processes, and resiliency (Walker et al. 2004).

In addition to ecosystems as a whole, large scale conservation efforts are also intended to conserve ecosystem processes and functions. Large scale conservation projects may address concerns about preserving specific ecosystem services such as carbon sequestration potential, water quality and quantity, and fisheries. Additionally, attention is being paid to issues of spatial and temporal scale. For example, forest managers are now designating relatively young stands of trees for protection in order provide old growth habitat in the future, and protected areas are being designed with climate change in mind. Although large scale conservation efforts may eschew species specific interventions, charismatic megafauna, rare and endangered species, and old growth habitat still top the list of conservation priorities for donor organizations and individuals. It is often assumed that large scale efforts will benefit these individual ecosystem elements.

Sustainability is often depicted as a Venn diagram in which social, economic and environmental domains partially overlap. This picture suggests that ecosystems interact with social systems. It is an improvement on the framework that places man and nature in separate conceptual domains (Folke et al. 2002). However, it does not go far enough. Social systems do not merely interact with ecosystems; they are the context within which ecosystems are embedded. Today even the most “natural” of areas in the United States (e.g., wilderness areas) come about as a result of human management decisions and, consequently, are socially constructed. The line that separates wilderness from non-wilderness is primarily a management boundary on a map, not a natural feature of the ecosystem. Advances in large scale conservation will be more rapid when we start using a framework in which ecosystems are seen as fully embedded in social systems. Consequently, in addition to ecosystems and the biophysical elements of ecosystems, we must be attuned to the human resources that we are also striving to conserve. These include sustainable natural resource based industries and economies (e.g., fishing, ranching, forestry), cultural resources (e.g., opportunities for aesthetic and spiritual renewal), and social capital.

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CONCLUSION

Large scale conservation in the common interest requires that people be clear about the nature of the problems they face, the utility of the theory they employ, and the features of the situation that they attend to and try to manage. To better ground our large scale conservation work, we offer a typology of problems and a theory to guide practitioners who wish to enhance sustainability and human dignity in the common interest. The problem typology distinguishes between ordinary, governance, and constitutive problems. Too often governance and constitutive problems are

overlooked or misconstrued. The theory we present is grounded in the observation that “humans seek values through institutions that use and affect resources.” All four elements—humans, values, institutions, and resources—are open for empirical, systematic study. Skillful application of this theory enables practitioners to analyze the full suite of problems and develop realistic solutions. This problem typology and theory can significantly aid practitioners in achieving large scale conservation in the common interest.

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Endnote:

¹Before looking at basic theory, a word on “theory” as used in this volume is necessary. A *theory* is a “conceptual scheme that attempts to organize and explain facts of nature in terms of general principles or laws,” says McMartin (1995: 13). Good theories help: (1) explain and organize large bodies of data using a parsimonious number of variables, (2) suggest new ways of understanding that can be tested against experience, and (3) direct attention to key variables. A theory prevents us from becoming lost or bewildered or distracted by the details and complexity of the events we want to understand. Just as we base the practice of any kind of biological conservation on the theory of evolution, we also need a theory—comparable in power and validity to that of evolution in the domain of biology—for understanding elements of the social and decision processes including “human nature,” values, institutions, and resources. Practitioners need a practical theory of these processes to aid them in asking and answering important questions about themselves and other people (see Clark 2002, Lasswell 1971). The theory described in this chapter grounds the analysis presented throughout this volume. Knowledge of this theory will benefit practitioners who are engaged in large scale conservation projects by helping them to understand how to more successfully operate relative to the social system and decision process of which they are a part and by orienting them to the underlying paradigms and myths being employed in their project. The paradigms and myths currently tell people how to recognize situations that are problematic and what to do about them. Being able to sort through these and choose the most promising approach is essential to effective problem solving and successful leadership.

