Making Partnerships Work in Endangered Species Conservation
An Introduction to the Decision Process

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Those committed to restoring endangered species can recognize years of heroic effort (e.g., Yaffee 1982, 1994; Alvarez 1993; Clark et al. 1994; Bennett et al. 1995; Miller et al. 1996; Clark in press). At the same time, they can acknowledge significant shortfalls in the overall effort. The tendency to subordinate the goal of recovery to other interests represented in a recovery program is one reason, among many, for these shortfalls. "Cooperation among scientists is not always a simple matter" (Mares 1991:59). The scientists, however, are not alone; bureaucrats, advocates, and others involved in a recovery program also have interests in addition to species recovery. A recovery program, in other words, is a human endeavor. It represents a noble human concern for other species, but it is vulnerable to goal substitutions and other human traits, including aggressiveness, dogmatism, and worse.

The increasing number and scale of partnerships augments both the possibilities for successful recovery and the vulnerabilities. Many types of partnerships exist, focusing on different species in different locations facing different biological challenges with different people involved. Some partnerships work better than others for species recovery (e.g., National Fish and Wildlife Foundation 1993; Beatley 1994; Clark & Cragun 1994; Jentoft & McCay 1995; Hutcheson et al. 1995; Roy & Fischer 1995). Despite differences, every partnership entails a decision process through which the partners attempt to clarify and secure their common interest. Every decision process must perform certain functions well in order to succeed, whatever the common interest may be. An improved understanding of the decision process—and how to evaluate and improve its critical functions—can maximize the possibilities for successful recovery and minimize the vulnerabilities.

This article discusses the problems and possibilities in the decision processes of partnerships formed to recover listed species. It illustrates these using the Australian eastern barred bandicoot (*Perameles gunnii*) and the American black-footed ferret (*Mustela nigripes*) recovery programs. Components of the decision process itself are then identified.

Partnerships

The trend in endangered species programs is toward more and larger partnerships. Habitat Conservation Plans (HCPs), called for under the Endangered Species Act (ESA), are just one form of partnership. About 50 HCPs are underway and hundreds more are under discussion (Bob Baum 1996, personal communication). Moreover, partnerships are no longer limited to government agencies as conservation groups, universities, and businesses are becoming more prominent and, under some circumstances, even taking the lead in new partnerships. Ideally, a partnership is motivated by the partners' common interest in recovery of an endangered species. The expectation is that the goal of recovery is beyond the reach of any one agency or organization; none of them, working alone, has the resources, such as expertise, funds, and authority, necessary or sufficient to get the job done. By cooperatively using pooled resources, partnerships can maximize possibilities for species recovery.

In practice, however, recovery is not always the primary (or even a priority) goal for everyone in the partnership. For some participants, the partnership may be a chance to maintain funding for an existing agency or organization that has priorities other than recovery. For others, the partnership may be an opportunity to perform basic scientific research that may or may not contribute to recovery. These types of "goal substitutions" make the partnership more vulnerable to failure and the species more vulnerable to extinction. The style or approach that participants use to pursue their own goals can further jeopardize the partnership. Participants who are aggressive, dogmatic, secretive, suspicious, and vindictive can easily dominate the partnership. Participants who are excessively timid, compromising, open, trusting, and forgiving may unwittingly collude in the destruction of cooperation; they reinforce dominating and destructive behavior by letting the others get away with it. Without partners of good will and good sense, there is little that can be done to cope with such patterns of behavior. A better understanding of decision process can go a long way toward minimizing these potentially damaging patterns and maximizing the possibilities for successful recovery.

Two cases illustrate the importance of the decision process for successful partnerships and recovery programs.

Eastern Barred Bandicoot Program

The Australian eastern barred bandicoot program, composed of a single governmental agency for over ten years and later joined by non-governmental organizations (NGOs) and universities, was unable to obtain key information needed to plan and carry out recovery. Intelligence gathering, planning, and open debate about what to do and when to do it were limited. The partnership never clarified rules or guidelines for its own operation or for species recovery. After a few years, individual and organizational partners pursued separate goals and actions without adequate consideration for the consequences to overall species recovery or to the developing partnership. As a result, implementation—both technically and organizationally—was inadequate, and the species continued to decline. Essential data were lacking, especially feedback about the efficacy of manage-

ment actions as well as the quality of the program itself. No comprehensive program appraisal was conducted, thus, there was little learning, and improvements were not possible. In short, despite activity in meeting rooms and in the field, the wild population continued to decline and the captive population grew little.

A "crisis intervention" appraisal of the entire program was eventually undertaken by several participants. The appraisal—systematic, comprehensive, and professional—resulted in a reorganization to streamline and upgrade all decision functions. Intelligence was improved by setting up working groups to gather scientific and social information, including a computerized captive breeding management plan. Open debate about the program and its future were encouraged. Implementation was improved by giving the working groups "the authority, guidance, and resources to develop and meet their own targets using their professional expertise," by appointing a strategic planner, and by developing the first true recovery plan for the species (Backhouse et al. 1994:263). Appraisal systems were improved by having the working groups meet with and report to core decision makers at frequent, regular intervals, by giving working group members better access to decision makers, and by having the partnership conduct regular assessments of the program. Ongoing evaluation has led to several refinements in the structure and operations of the program. All in all, these efforts resulted in significant improvements in partnership interactions and the species' status in a very short time (Backhouse et al. 1994; Clark et al. 1995), although it is premature to declare the species recovered.

Black-footed Ferret Program

Over the past fifteen years, the American black-footed ferret program has shown similar dysfunctional features: limited debate among partners about how to proceed, inability to obtain consensus on rules for progress, unproductive conflict, individual behavior contrary to the best interests of ferret recovery or the partnership, and a lack of appraisal, to mention a few problems (Clark & Harvey 1988; Reading & Miller 1994). According to Miller et al. (1996) the decision process functioned poorly relative to the overall goal because of goal substitution, narrow ideologies about power, and the use of coercive strategies on the part of the lead government bureaucracy. Decision functions were concentrated in the hands of a few and activities were channeled in ways that were congenial to the most powerful individuals and agency. Although the powerful role of government bureaucracies in decision functions is widely recognized, concentrating power over these functions seemed to be an end in itself in the ferret case, and the goals of species recovery and a successful partnership faded into the background.

These problems have not been addressed by federal or state authorities, despite widespread publicity. Due to a lack of progress and funding difficulties, however, the U.S. Fish and Wildlife Service (FWS) asked the American Zoo and Aquarium Association (AZA) to conduct a program analysis and action planning process. While the appraisal focused primarily on technical issues and fell short of looking comprehensively or systematically at the decision process, it did address parts of the decision functions and found them lacking. The appraisal's final report is forthcoming. Regardless of the AZA's recommendations, the FWS is ultimately responsible for making the partnership's decision process serve the overriding goal of ferret recovery.

Decision Process

By knowing how the decision process works, or does not work, partners in endangered species recovery can maintain good practices or correct a poorly functioning process. The decision process is a means of reconciling or at least managing conflicts among policies through politics. Politics are inevitable because people develop and pursue different policies that reflect their own interests. Yet, in many instances, like endangered species restoration, people must reconcile policy differences to secure a common interest. In the

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Cover: Trumpeter swan (*Cygnus cygnus buccinator*) cygnets to be released to the wild through Iowa's Trumpeter Swan release program. Photograph by Mike Nepper, Milwaukee County Zoo.

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decision process, a working specification of the common interest takes the form of rules, both substantive and procedural (e.g., what is to be achieved and how?). There are many kinds of rules for many kinds of partnerships and communities, including informal guidelines and social norms that are accepted in a group (e.g., norms of discussion in meetings), requirements established by experts (e.g., population viability analyses), laws by representatives of the people for a local, state, or national community (e.g., the ESA), and rules about rule making (e.g., the U.S. Constitution). Rules are necessary for any group of people to coordinate, albeit imperfectly, the expectations and actions of its members. An action by a member is appropriate to the extent that it complies with applicable rules already prescribed by the relevant community; it is inappropriate when it does not comply. Fortunately, there is a large body of experience and theory about decision processes that can be applied directly and practically to species conservation (Lasswell 1971).

The decision process of a species conservation partnership should be an open, flexible, and fair means to produce operational rules for all partners to follow in meeting the partners' common goal. Recovery plans, management plans, proposals, cooperative agreements, and the like are the basis for rules. Yet, the existence of a recovery plan does not necessarily indicate a good decision process or adequate rules for cooperation and recovery. Partnerships cannot work if some members seek rules that benefit their own special interests at the expense of the common interest. Once rules are specified and agreed upon, the rules must be enforced against challengers. The rules can be evaluated by the partnership and changed if necessary—provided, of course, that the rules are clear enough to be evaluated.

Although many people think of decisions as a precise point in time when commitments to the rules are made, in fact, many related decisions precede that moment and many follow. Decision making is better described as a process rather than an event. Seven functions can be distinguished in every complete decision process (Lasswell 1971). The best way to introduce them is to ask seven general questions: (1) How is information about a problematic situation gathered, processed, and brought to the attention of decision makers? (2) Based on this information, how are recommendations promoted and made? (3) How are general rules prescribed? (4) How are the rules invoked against challengers in specific cases? (5) How are disputes in specific cases decided or resolved? (6) How are the rules and the decision process appraised? (7) How are the rules and the process terminated or modified? Table 1 lists and describes these seven functions, gives some examples as well as standards they should meet, and suggests some basic questions that decision makers, other participants, and observers need to ask. In any ongoing decision process it is usually quite easy to identify these seven functions and the groups that are carrying them out, and to judge how well they are working. Consequently, it is also possible to intervene and improve one or more decision functions so that species recovery is enhanced and the partnership runs more smoothly.

Although it is possible to point to agencies and organizations that specialize in a given function, all partners perform all functions to some extent. It is apparent, too, that most functions are performed outside as well as inside the organizations involved in species conservation. For example, as directed by the ESA, the FWS carries out all seven functions, but many other organizations are involved as well. The National Biological Service and university researchers are primarily involved in gathering intelligence, planning, and estimating the conservation threat (e.g., pollution, habitat loss) and what to do about it. Conservation groups and businesses are often highly visible in promoting one course of action over others, although it should be acknowledged that all groups (and often subgroups and individuals), despite claims of objectivity and neutrality, take positions and promote decisions that will serve their own interests. Rules are set not only by legislative bodies, but also by agencies, which have enormous influence in the design and operation of actual recovery programs, including field team activities. The FWS is usually joined by other agencies and organizations in implementing programs. The agencies are again involved in dispute resolution, as are the courts, while the media are involved through reporting on conflicts. The agencies, NGOs (e.g., AZA in the ferret case), and the public are involved in review and evaluation of conservation efforts. The final decision to terminate is usually made by government, but many other organizations are involved or affected by decisions to stop or significantly alter programs (e.g., see the dynamics of grizzly bear delisting in the Yellowstone region; Mattson & Craighead 1994; Greater Yellowstone Coalition 1995; Interagency Grizzly Bear Committee 1996). In the decision process of any organized partnership we may expect to find several official and unofficial participants involved in one or all the decision functions.

Whether part of the formal partnership or not, people committed to species recovery should demand excellence in each decision function and in the overall process. The decision functions described in Table 1 can be used to ask hard questions and to develop standards to be applied, continuously and independently, by all concerned. Partnerships in endangered species recovery will be much more effective and efficient when they develop high-quality decision processes, which will depend on members learning explicitly about how the decision process works, how they can monitor the process, and how to intervene to improve decisions. With a relatively complete picture of the decision process, based on good intelligence and appraisal, participants can realistically and functionally describe their interactions with other members and explain the actual processes and outcomes in their specific cases. A detailed analysis of the decision-making behavior of partnerships can reveal which values are at stake for individual members and the overall partnership. There must be fair trading and mutual exchange among members for a partnership to work well. In some (perhaps many) programs, however, partners do not share similar values, and

... seven decision functions essential to all endangered species conservation efforts (after Lasswell 1971).

Function[1]	Activities	Examples	Standards	Questions to ask
Intelligence Planning	Gather, process and distribute relevant information. Plan and predict outcomes. Clarify goals.	Field work, social surveys, models, pluralistic discussion	Reliable, creative, open, comprehensive yet selective	Intelligence collected on all relevant components of problem and its context? From all affected people? To whom communicated?
Promotion Open debate	Debate course of action. Promote different alternatives. Mobilize resources, data, and opinion to secure preferred out-comes. Clarify expectations and demands.	Forums, pluralistic discussion, recommendations	Integrated, comprehensive	Which groups urge which courses of action? What values are promoted or dismissed by alternatives? What groups served by each?
Prescription Setting rules or guidelines	Formulate and enact policies or guidelines for action. Crystallize demands. Examine and clarify information, rules and implications. Involve all concerned parties in approval of rules.	Recovery plans, other written and verbal agreements for species/habitat conservation	Comprehensive, open	Will new prescriptions harmonize or conflict with existing agency rules? What rules does partnership set for itself? What prescriptions are binding ?
Invocation Enforcing rules	Apply general rules to actual cases.	Programs organized, teams formed, work begins in field, lab, office	Prompt, open, not open to abuse by individual members	Implementation consistent with prescription? Who held accountable to follow rules? Who enforce rules?
Application Dispute resolution	Resolve differences or deviations from rules. Implementation proceeds. Interpret and supplement rules. Integrate old and new prescriptions into working program. Enforcement, continuous review and approval or disapproval of behavior are necessary.	Open, pluralistic forums, internal and external means. Courts may figure promi-nently, but many resolutions take place formally or informally inside program.	Conforming to common interest prescriptions, independent of special interests, must work in practice, mobilizing consensus and cooperation	Will disputes be resolved by people with authority and control? How do participants interact and affect one another as they resolve disputes?
Appraisal Review	Evaluate efforts. Assess success and failure in terms of goal achievement and responsibility and accountability for outcomes. Gather information on how past decision functions worked. Assess quality of performance. Disseminate findings and recommendations to appropriate people and publics.	Formal and informal, internal and external evaluations	Dependably realistic, on-going, independent of special interests, fully contextual (take factors such as politics, matters of rationality, morality, into account)	Who is and is not served by program? Is program regularly and fully evaluated? Who responsible and accountable for success or failure? Who appraises one's own activities?
Termination Cancellation	End past prescriptions and frameworks. Compensate people adversely affected by termination.	Stop practices that are not working and those that have accomplished their goals, move to new beginning	Prompt, respectful, consistent with human dignity, comprehensive, balanced, ameliorative	Who stop or change rules? Who is served, who is harmed by ending a program?

[1]The terms intelligence, promotion, prescription, invocation, application, appraisal, and termination are described in detail by Lasswell (1971).

little group effort is spent on clarifying and developing common ground. For example, while power, wealth or special knowledge are often necessary for effective partnerships, these resources can distort the decision process. Power can be used to centralize, concentrate, or legalize certain decision functions to the detriment of other involved or concerned people. The consequences may be catastrophic; if the partnership becomes embroiled in destructive conflict and disintegrates, the species may go extinct.

Decision making must be grounded in real-world contexts. It must be comprehensive yet manageable. The decision model presented here is a tool for building a map of each particular process. And the map can be used by partners to guide the recovery effort, ensuring, for example, adequate intelligence and appraisal functions. Decision making requires a successful pattern of thought and action, and it is this crafting and maintaining of a good decision process that is the central challenge to partnerships in endangered species conservation.

Conclusions

Partnerships are being used with growing frequency to tackle many natural resource problems. The combined assets of government, conservation groups, business, and public involvement are a powerful tool to address these challenges. For partnerships to be effective, considerable attention must be given to the decision making process. Modern conservation practice demands a working knowledge of the seven decision functions; this knowledge is necessary for learning how to recognize and avert problems and how to build and maintain rational, participatory and equitable decision making processes to achieve species recovery.

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Literature Cited

Alvarez, K. 1993. Twilight of the panther: Biology, bureaucracy, and failure in an endangered species program. Myakka River Publishing, Sarasota, FL. 501 pp.

Beatley, T. 1994. Habitat conservation planning: Endangered species and urban growth. University of Texas, Austin, TX. 234 pp.

Backhouse, G.N., T.W. Clark, and R.P. Reading. 1994. The Australian eastern barred bandicoot program: Evaluation and reorganization. Pages 251-274 in T.W. Clark, R.P. Reading, and A L. Clarke, editors. Endangered species recovery: Finding the lessons, improving the process. Island Press, Washington.

Bennett, A., G.N. Backhouse, and T.W. Clark, editors. 1995. People and nature conservation: Perspectives in private lands and endangered species. Transactions of the Royal Zoological Society of New South Wales, Australia. 228 pp.

Brewer, G.D., and T.W. Clark. 1994. A policy sciences perspective: Improving implementation. Pages 392-416 in T.W. Clark, R.P. Reading, and A.L. Clarke, editors. Endangered species recovery: Finding the lessons, improving the process. Island Press, Washington.

Clark, T.W. In Press. Averting extinction: Reconstructing the endangered species recovery process. Yale University Press, New Haven.

Clark, T.W., and R. Westrum. 1987. Paradigms and ferrets. Social Studies of Science 3:3-33.

Clark, T.W., and A.H. Harvey. 1988. Implementing endangered species recovery policy: Learning as we go? Endangered Species Update 5:35-42.

Clark, T.W., and J. Cragun. 1994. Organization and management of endangered species programs. Pages 9-33 in M.L. Bowles and C.J. Whelan, editors. Restoration of endangered species. Cambridge University Press, New York.

Clark, T.W., R.P. Reading, and A. L. Clarke, editors. 1994. Endangered species recovery: Finding the lessons, improving the process. Island Press, Washington. 450 pp.

Clark, T.W., G.N. Backhouse, and R.P. Reading. 1995. Prototyping in endangered species programs: The eastern barred bandicoot experience. Pages 50-63 in A. Bennett, G.N. Backhouse, and T.W. Clark, editors. People and nature conservation: Perspectives in private lands and endangered species. Transactions of Royal Zoological Society of New South Wales, Australia.

Greater Yellowstone Coalition. 1995. Court ruling a victory for the threatened grizzly bear. Greater Yellowstone Report 11(4):14.

Hutcheson, M.S., D.J. Dupuy, B. Matyas, L. McGeorge, and R. Vanderslice. 1995. Reconciling science and policy in setting federal drinking water standards—four state perspectives. Regulatory Toxicology and Pharmacology **22**:11-23.

Interagency Grizzly Bear Committee. 1996. IGBC, Forestry Sciences Lab., Missoula, MT. 8 pp.

Jentoft, S. and B. McCay. 1995. User participation in fisheries management. Marine Policy **19**:227-246.

Lasswell, H.D. 1956. The decision process: Seven categories of functional analysis. Bureau of Government Research, College of Business and Public Administration, University of Maryland, College Park MD. 23 pp.

Lasswell, H.D. 1971. A pre-view of the policy sciences. American Elsever, New York. 173 pp.

Lasswell, H.D., and A. Kaplan. 1950. Power and society. Yale University Press, New Haven. 295 pp.

Mares, M.A. 1991. How scientists can impede the development of their discipline: Ego-centrism, small pool size, and evolution of sapismo. Pages 57-75 in M.A. Mares, and D.J. Schmidley, editors. Latin American Mammalogy: History, biodiversity, and conservation. Oklahoma Museum of Natural History, Norman.

Mattson, D.J, and J.J. Craighead. 1994. The Yellowstone grizzly bear program: Uncertain information, uncertain policy. Pages 101-130 in T.W. Clark, R.P. Reading, and A.L. Clarke, editors. Endangered species recovery: Finding the lessons, improving the process. Island Press, Washington.

Miller, B.J., R.P. Reading, and S.C. Forrest. 1996. Prairie night: Black-footed ferrets and recovery of endangered species. Smithsonian Press, Washington.

Minta, S.C., and P.M. Karieva. 1994. A conservation science perspective: Conceptual and experimental improvements. Pages 275-304 in T.W. Clark, R.P. Reading, and A.L. Clarke, editors. Endangered species recovery: Finding the lessons, improving the process. Island Press, Washington.

National Fish and Wildlife Foundation. 1993. Conservation partnerships: A field guide to public-private partnering for natural resource conservation. National Fish and Wildlife Foundation, Washington. 39 pp.

Reading, R.P., and B.J. Miller. 1994. The black-footed ferret recovery program: Unmasking professional and organizational weaknesses. Pages 73-100 in T.W. Clark, R.P. Reading, and A.L. Clarke, editors. Endangered species recovery: Finding the lessons, improving the process. Island Press, Washington.

Roy, M., and H. Fischer. 1995. Bitterroot grizzly recovery: A community-based alternative. Endangered Species Update **12**(12):1-4.

Willard, A.R., and C.H. Norchi. 1993. The decision seminar as an instrument of enlightenment and power. Political Psychology **14**:575-606.

Wondolleck, J.M, S.L. Yaffee, and J.E. Crowfoot. 1994. A conflict management perspective: Applying the principles of alternate dispute resolution. Pages 305-326 in T.W. Clark, R.P. Reading, and A.L. Clarke, editors. Endangered species recovery: Finding the lessons, improving the process. Island Press, Washington.

Yaffee, S.L. 1982. Prohibitive policy: Implementing the federal Endangered Species Act. MIT Press, Cambridge. 239 pp.

Yaffee, S.L. 1994. The wisdom of the spotted owl: Policy lessons for a new century. Island Press, Washington. 430 pp.

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