

Endangered Species UPDATE

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Organization and Management of Endangered Species Programs

by

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Endangered species recovery is nearly always difficult, and as a result, conservation biologists need to use the best tools, skills, and experience available. It is not always easy to determine the precise causes for dwindling, small populations and habitats and to devise timely, efficient means to restore them to evolutionary health. While the use of good biology is absolutely essential to species recovery, other factors of an organizational nature are also indispensable, such as problem analysis and problem-solving strategies, organizational design, work group effectiveness, and clarity and specificity of goals and objectives. Inadequacy in any of these factors may result in inefficiency and ineffectiveness, and ultimately, the species may not be recovered.

In this paper, we introduce organization and management concepts and recommendations that can help the work of conservation biologists and managers. We offer only a brief introduction to the complex organizational dimension of restoration work. We also direct you to the extensive literature of this field and to several checklists and self-tests that allow you to diagnosis your present situation.

The Organizational Dimension of Restoration Work

The challenge of successful species restoration includes many organization and management issues (Clark 1989), although this fact often goes unrecognized (Clark 1986). It is obvious that good science is needed in restoration work. It is less obvious to many people that good organization and management are also needed. Our study of the organizational dimensions of conservation work and our participation in various species restoration efforts have led us to conclude that an explicit understanding of how organizations are structured and

how they function is essential to successful conservation. By studying the activities and structures of programs and teams, for example, we can learn which ones best support the demands of conservation work (Clark et al. 1989). Understanding organizations and knowing how to make them work for species recovery can make the difference between a program that succeeds and one that fails (Argyris and Schon 1978, Clark 1985).

Unfortunately, it is common for professionals in many disciplines to ignore or depreciate the value of these organizational factors. They see only the biological, technical aspects of the problem and underappreciate organization and management dimensions. Because of this, their job may be harder than it should be. They may unconsciously create impediments or barriers as a direct consequence of how they organize and manage themselves, how they structure their thinking and actions, beginning with how they identify problems, how they define solutions, and especially how they design and implement jobs and working relationships. Because of this failure and because of the urgency and the risks in recovery efforts, conservation professionals would do well to incorporate knowledge of organizations into their repertoire of skills and to learn how different organizational designs and management modes can either facilitate or hinder their work. Extensive research on many different kinds of organizations has revealed common problems, patterns, and concerns. For example, it is estimated that 50-75% of organizational behavior, patterns, and problems is common to most organizations (Galbraith 1977). A little of this kind of knowledge can go a long way in saving species.

Embarrassingly little attention is paid to designing and managing organizations and decision-making processes

in conservation despite evidence of chronic and obvious problems. Yaffee (1982) described many of these problems in his classic study of implementation of the Endangered Species Act, including: slow decision-making; rewards for incompetence and penalties for aggressive, effective action; overly rigid bureaucratic controls; long hierarchies of authority; and importantly, scientific and bureaucratic conservatism. These problems are probably more prevalent than is currently recognized in recovery efforts.

"It is obvious that good science is needed in restoration work. It is less obvious to many people that good organization and management are also needed."

People are surrounded by organizations all their lives. They take them so much for granted that their pervasiveness and influence are taken as a matter of fact. This has led organizational designers to observe that: "People who live their entire lives in organizations and are surrounded by them have only the vaguest knowledge of their workings— or underlying logics" (Jelinek et al. 1981:4).

Task Environments and Information Processing Models

Restoring species, of course, requires that we take their environments into consideration. Plants and animals evolve in dynamic environmental contexts. Indeed, the reason many species are now endangered is because these contexts have been drastically altered

by humans. Just as species live and act in environmental contexts, the restoration task is recognized by organization designers to have an "environment." The sum total of all the forces and factors — technical, organizational, and policy — that affect the work of species recovery is the task environment. There are internal and external aspects of the task environment (Clark 1985, Clark and Westrum 1989).

The systems properties of many endangered species task environments are uncertainty, complexity, diversity, and instability (Clark et al. 1989). Uncertainty is the difference between what conservationists know when they start a recovery effort and what they must eventually know to be successful. In the beginning, uncertainty is often great. There are complex relationships between endangered species and their biological and physical environments often showing thresholds and indirect and nonlinear relationships. Such relationships possess much natural variability. Uncertainty and complexity lead to unpredictability.

There is uncertainty not only in ecological systems themselves but also in the organizations involved. There are often differences in perception and expectations among the individuals and organizations involved (Hrebiniak 1978). Many differences exist between field level agency managers, top level bureaucrats, university researchers, conservation organizations, and others. For example, even though all these individuals may agree on the goal or end — to save the species — they frequently disagree on the means. When you figure these differences into the hundreds of decisions or clearances that must take place in a typical recovery effort, it can be seen that it is virtually impossible to create an effective, efficient, and equitable program without a good working knowledge of organization and management principles.

Organizational designers offer what they call "information processing models" for programs confronted with much uncertainty, such as recovery programs (Daft 1983). These models view the task basically as one of proper information generation and management. They

generally illustrate that programs confronted with much uncertainty (e.g., little information about how to solve a problem initially) need to be structured and operated in special ways. Every program should have the capacity to get and process information matched to the demands of the task environment. To the extent that a program's information processing requirements change over time, the task of structuring and managing the program is a continuous job in itself. In the beginning, programs should be highly flexible. As the problem gets resolved, eventually more fixed, standardized procedures can be used.

Task Forces and Project Teams

Task forces and project teams can be one of the most useful program elements for endangered species recovery (Clark and Westrum 1989). Small, flexible teams are useful because, with the unpredictability of the task environment, problems arise which do not respond to traditional rules, roles, and regulations of bureaucratic management. The work team, once it has adequate resources, can move quickly to stay ahead of problems. A good team can generate and process needed information rapidly offering up solutions to the recovery task. We all know of so-called teams, for example, that are just rigid extensions of standard bureaucratic structures and operating principles. These are teams in name only and they often perform poorly in endangered species conservation.

The team needed for restoration, by contrast, should be task and action oriented, focused on getting the task completed successfully. It must be willing to accept the uncertainty and risk inherent in endangered species challenges. Considerable emphasis must be given to quality information flow and continuous evaluations. The amount of administrative control over the team will vary from case to case, but fundamentally, administrators must be committed to the task and provide the latitude necessary for professionals to do the work.

To be effective, individual team members must be perceptive, energetic, willing to work without close supervi-

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Eastern barred bandicoot (*Perameles gunnii*) interagency recovery team, Victoria, Australia
Photo by Tim W. Clark

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sion or extensive rules and regulations, and able to learn well. Team membership should be based on an individual's contribution to solving problems and less on the political representation he or she may provide. Both agency and nongovernment participation is necessary. A team set up and operated this way stands a much better chance of being successful than one which is not.

Understanding the Character of Your Organization

The previous descriptions of task environments and task forces and project teams are all characteristics of task-oriented organizations. Not all organizations are task-oriented, however. There are also power, role, and people orientations (Harrison 1972, 1975). These four orientations are defined and accompanied by a questionnaire about them which you can take to learn about your own organization's culture (Harrison 1972, 1975). NOTE: This information is available from the senior author. If the wrong culture or orientation is used by the team or the overall program, it is unlikely that the restoration job will be successfully met. So it is essential to understand the type of culture your organization has, and if it is not a task orientation, it needs to be changed to one that is.

Let's look briefly at the concept of organizational cultures. At the core of every organization is a culture or system of thought that is the central determinant of its character (Harrison 1972, 1975). The culture is a set of values and cognitive perspectives that are largely shared by members. Some people become highly socialized to organizational cultures, whereas other people are less well socialized. "An organization's culture affects the behavior of its people, its ability to effectively meet their needs and demands, and the way it copes with the external environment" (Harrison 1975:169). Much of the conflict between and within organizations is the result of cultural differences between organizations or subunits within the same organization.

From an operational point of view, an organization's culture may or may not be well matched to the conservation

work to be done. If it is, it will aid task completion; if not, it will hinder the work. Both the program's culture and the team's culture should be predominantly task-oriented to be most matched to the work of species restoration.

In task-oriented conservation teams, members should have no ideological commitment to authority and order per se in such programs (Clark and Westrum 1989). Authority should be seen as legitimate if it is based on knowledge and competence and is used to meet the recovery task. Authority is illegitimate if it is based on power or position and is not used to meet task objectives.

Managerial Processes

How should task forces and project teams be managed in a complex and uncertain task environment? Special attention must be given to management processes. Whether recovering species or conducting other complex tasks, organization and management concepts have wide application in problem-solving situations. Management is the use of people and other resources to accomplish objectives. This very brief overview of terminology, theory, and perspectives has practical value you can apply (Mintzberg 1971, Brickloe and Coughlin 1977, Kanter 1983, Boone and Kurtz 1984, Steers et al. 1985). We will describe briefly four of the primary functions that take place in organizations, focusing on how these functions should be carried out in the high performance teams that could be useful in conservation.

Organizing Teams. The way a team is set up and run provides a map of tasks to be performed, responsibilities, and reporting relationships. Obviously, a marine combat team should be organized differently from a day-care center or a program to save an endangered species.

Getting the organization right for a restoration team should be a major concern. Given the task environment of restoration work, the overall program should have little formalization and few hierarchical levels, rules, and regulations. Elsewhere, we have described many organizational concerns in conservation (e.g., Clark et al. 1989). The

bureaucratic centralization of decision-making and other managerial functions should be minimal. For example, referring problems upward within bureaucratic hierarchies may destroy team cohesion and will frequently result in critical time lags if decisions by top management are delayed too long, if lines of communication become too long, if too many people are involved, or if the relevancy of the issue becomes distorted by the time it takes for the administration to make a decision.

Planning in Teams. The kind of planning that an effective restoration team uses may be quite different from that typically used by bureaucracies. In teams, planning requires continual re-evaluation, analysis, and adjustments — all directed toward the restoration goal. Plans need to respond quickly to changes suggested by field operations. Extensive preplanning and rigid overplanning should be avoided.

Establishing and putting a plan in place involves decision-making. Both the team and supervisors in the overall program must understand the overall system of decisions being made. The people and the decision-making process should collectively focus on the task. Team members are usually highly skilled in conservation science and management, and they should be included in all decision-making and planning.

Decision analysis has been used successfully in several endangered species recovery plans (Maguire 1986). In short, decision analysis is a form of risk assessment wherein the problem is outlined in a "decision tree." It is extremely valuable in unpredictable technical and socio-political task environments; endangered species restoration is a prime example.

Leading Teams. Leadership of the team and the overall program should be task-oriented. The team leader should be a team builder and a skilled manager of conflict. Differences of perception and interests will arise in any joint task, but coupled with emotionalism, differences can be magnified to unproductive levels. Team leaders should be evaluated on the overall performance of the team and not solely on their individual performance or on the basis of their

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employing agency's incentives. Team leaders can find themselves in a dual role. One role is task-oriented and the other is representation of their employing agency. The two roles can be incompatible, so team leaders should possess an ability to separate scientific fact from inference or judgments that reflect policy and politics.

Controlling Teams. Controlling teams is necessary to maintain working relationships and to insure that performance standards are met. In restoration teams consisting of professionals, the control function will largely be self-imposed by the members themselves, assuming a commitment to the task, an environment that provides feedback on team performance, an evaluation system, and appropriate recognition and rewards for performance.

All team members should participate in defining the problem they are working on, in designing appropriate strategies, and in agreeing upon the standards on which their performance will be judged. Once all members have accepted the legitimacy of the task and the performance standards, then controlling the task becomes less formidable. Feedback on individual and team performance should come regularly as the team conducts its activities.

Analyzing Organizational Problems and Developing Action Plans

Endangered species recovery requires a framework for analyzing organizational problems and for implementing change. For example, a team may recognize that their day-to-day effectiveness is hampered by a lack of freedom to confront one another on relevant task issues. Having agreed that they need to talk more openly, each team member waits for someone else to begin. After considerable frustration, they may ask, "Why can't we change the way we work together?"

In this example, there may be many reasons to be more open. An important one is that team members must perform effectively for their own sakes, for the good of the team, and for their employing organizations. Accomplishing needed changes, even if they are well recognized, is not always an easy task. Often forces

hidden in the sociology of the team hinder change and may require a professional organizational consultant. By the same token, other problems, both organizational and technical can be effectively addressed by the team directly if they follow a systematic process of problem-solving and action-planning. NOTE: Some guidelines are available from the senior author. This procedure is self-explanatory and could be used by teams, agencies, and organizations experiencing technical, organizational, or other problems.

Conclusions

There is evidence of poor performance in endangered species programs in this country (Kohm 1990). Many of these problems can be traced to poor design and mismanagement of organizations. Once biologists understand this, they will be able to apply the concepts, terms, and descriptions used in this introductory paper and the extensive literature cited to identify, analyze, and begin to rectify the problems in their own programs. The task of restoring species and their habitats to a healthy status is difficult enough without being hampered by poorly designed and managed organizations, especially when researchers in these fields already have valuable concepts and techniques which are directly applicable to conservation programs. It seems clear that conservation biologists must become knowledgeable about what makes for a good recovery program and how to achieve it.

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