

ORGANIZING FOR ENDANGERED SPECIES RECOVERY

Tim W. Clark¹

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1. Dr. Clark is President of Northern Rockies Conservation Cooperative.

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Tim W. Clark
Department of Biological Sciences
Idaho State University
Pocatello, ID 83209

Endangered species recovery poses exceptional challenges—a complex task environment—to organizations of all types and demands two operational dimensions—technical and organizational. Wildlife biologists tend to focus on the technical aspects and minimize or ignore the organizational arrangements possible to facilitate recovery efforts. Recently, policy analysts have stressed the urgency of determining the type of organizations that can best manage endangered species. Despite the appropriate technical (biological) approach to a given endangered species recovery task, the organizational arrangements can be a "bottleneck" and are widely recognized by organizational designers as a potential major cause of organizations failing to meet their missions. In such cases, an organization exhibits inappropriate design and behavioral responses. Today, endangered species programs may involve 10 or more organizations (state, federal, private nonprofit, and others), each with a somewhat different history, domain, strategy, resource base, structure, culture/ideology, management mode, and so on, and ranging from rigid mechanistic (bureaucratic) to flexible organic (participative) structures and operational modes. Because of the inherent high uncertainty, high stakes, and high risk of the endangered species task environment, inter-organizational conflict and program politicization may result as interests differentiate and each organization seeks to legitimize its own efforts—unless organizational coalitions can be appropriately designed and coordinated to reflect the actual interdependencies among the organizations.

This paper examines actual cases from an organizational viewpoint, and 1) examines general properties of all endangered species task environments, 2) identifies the demands they make on various organizational types, 3) reviews the organizational design responses needed to meet complex, dynamic endangered species task environments, and 4) compares the range of organizational types, some of their underlying assumptions, and their behavior in endangered species recovery programs. A "parallel organization" design, which cuts across existing bureaucratic hierarchical structures and functional distinctions, is offered as an organizational model to meet endangered species task environments more effectively and efficiently. The role of coordinating personnel in such organizations is examined. Only by understanding both the technical and organizational aspects of Endangered Species Act implementation and actively working to match these two dimensions, can we hope to succeed consistently in a task environment as complex and demanding as that of endangered species

Draft

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INTRODUCTION

Endangered species recovery is always difficult. Because of this fact, we conservation biologists need to bring the best biological tools, skills, and experience to help in recovery efforts (Clark 1984a). As part of this effort, we also need organizational arrangements that actively facilitate and support getting the job done. Having an appropriately designed organization is just as important as having the appropriate biological tools (Clark 1984b). It is obvious that the type of organization needed for a combat battalion is quite different from the organization needed for a day care center. Simply put: the type of organization required depends on the job to be done. If the wrong type of organization is brought to a job, it's like trying to pound a square peg into a round hole--it simply will not fit, unless you use a hammer, and even then there is a poor fit.

We are surrounded by organizations all our lives, we were born into them, spend our lives working and living amongst them, and will die in their midst. We take them for granted so much so that their pervasiveness and influence is largely invisible, a fact that has led organizational designers to note that: "People who live their entire lives in organizations and are surrounded by them, (often) have only the vaguest knowledge of their workings--or underlying logics" (Jelinek et al. 1981:4). Many decision makers are completely unaware of the impact of their decisions at other

locations within their organizations. Embarrassingly little attention is paid to planning and managing organizations despite obvious problems.

Organizational designers widely recognize that inappropriate organizational arrangements are a "bottleneck" and that, if they are sufficiently mismatched to the task at hand, they may prevent an organization or coalition of organizations from meeting its goals. That is to say, the organization will be ineffective and inefficient. In endangered species recovery, this means that if we bring the wrong organizational arrangements (even if we are using the correct biological tools), we may not be able to recover the endangered species despite our best professional efforts. In Prohibitive Policy: Implementing the Endangered Species Act, Dr. Steve Yaffee (1982) stressed the urgency of determining the type of organizations that can best manage endangered species. He noted (pg 9): "While policies are written in words on paper, they exist only in the form of individuals, organizations, and agencies that implement them and the nature of the information, resources, authority, and incentives that flow between these actors."

At the heart of the matter is what appears to me an inescapable conclusion: that those of us concerned with endangered species conservation often make our job harder than it should be. Many of the impediments or barriers we create for ourselves are a direct consequence of the way we organize ourselves, beginning with how we recognize problems, how we define solutions, and especially how we design jobs and working relationships. We need to become more aware of how organizational designs can either facilitate or hinder our jobs, and then we can insist on having organizational arrangements that are tailored to our professional conservation initiatives.

My plan here is to pose four elementary but key questions about endangered species recovery and organization designs and then suggest answers based on the considerable experience and lessons from organization and

management, political science, especially policy studies, organizational sociology, psychology, and anthropology. These questions are the type we should be asking about our own activities and about the organizations we are a part of and which we collectively use to recover endangered wildlife. My focus is on the formal organizational arrangements best able to meet endangered species task environments and a very brief introduction to the organizational dimension of our profession.

QUESTION 1: HOW CAN WE CHARACTERIZE THE JOB OF SAVING ENDANGERED SPECIES FROM AN ORGANIZATIONAL VIEWPOINT?

The task at hand is recovering endangered species. The task environment is (like an animal in its environment) all those factors which affect the task. Because the task environment often represents a problem to be dealt with that is not under the control of the organization, it is often seen as a source of instability and uncertainty. We need to determine just what it is that the task environment presents to or demands of an organization. The task environment has five general dimensions: 1) complexity, 2) diversity, 3) change (or stability), 4) hostility, and 5) uncertainty according to Gordon (1983). Complexity and diversity reflect the number and variety of environmental elements affecting the organization, while change (or stability) reflects the degree to which environmental elements are experienced by the organization over time. Hostility reflects the degree to which the environment creates conflict or competition. Uncertainty reflects the degree of unpredictability of the changes in environmental elements.

Endangered species generally represent a very complex, very diverse, highly unstable, very hostile, and highly uncertain task environment. They are complex and diverse because they may be spread out over extensive

geographic areas (e.g., whooping cranes range from Canada to Texas). They involve numerous groups and interests (e.g., state, federal, and private), and they may be technically difficult (e.g., exactly how many grizzly bears are there in the Yellowstone Ecosystem?). An uncontrollable, rapidly changing environment has significant political and technical implications (note the demise of the black-footed ferret in South Dakota in the early 1970's). Endangered species task environments may be hostile for the organizations involved as they and other groups, intentionally or inadvertently, come into sharp competition over the task. For example, one organization may try to control or eliminate the other organizational actors for any number of reasons. This politicizes the program and increases overall hostility. The complexity, diversity, instability, hostility, and uncertainty are all assessed differently and responded to differently by each organization involved. Without an appropriate integrating mechanism based on the actual interdependencies between the actors (including formal organizational arrangements), differentials in organizational interests may lead to severe conflict. Interests are "recognized and unrecognized stakes that are affected by the interaction of parties" (Brown 1984:4). Lastly, and importantly, endangered species task environments are always high in uncertainty. Uncertainty, according to Hrebiniak (1978:155) "is the difference between the information needed for task completion and that which already exists. The greater the difference, the more difficult it is for the organization to control, coordinate, and complete tasks." Some organizations may confront a more dynamic, unstable, and less predictable futures than others. This has significant consequences for the way each organization behaves.

In endangered species programs, the stakes are high--if the species is lost because of a mistake on our part, it is lost forever there is no room

for error. Because the stakes are so high, there is considerable personal, professional, and organizational risk simply just being part of an endangered species program. Remember the incident where a California condor chick died in the nest during routine handling by researchers. Formal assessment of risk is seldom made as part of endangered species programs, but invisibly a sense of the risk factor always affects how individuals and organizations behave.

QUESTION 2: WHAT TYPE OF ORGANIZATION IS BEST ABLE TO MEET THE SPECIAL PROPERTIES OF AN ENDANGERED SPECIES TASK ENVIRONMENT?

Organizational designers recommend the following (e.g., Gordon 1983):

1. The greater the complexity, the greater should be the decentralization of the organization's decision-making. This goes hand in hand with a need for increased differentiation, diverse expertise, diverse goals, and diverse personal orientations which allow for unique responses to the great complexity. (Differentiation).

2. The greater the diversity, the greater should be the degree of divisionalization. By having independent subunits, the structure of the organization can directly respond to different aspect of the task environment (differences that exist over wide geographic areas, for example). (Differentiation).

3. The more unstable the task environment, or the more frequently it changes, the more "organic" and flexible the organization should be. Organizations can operate in relatively stable environments with a functional, "mechanistic," or bureaucratic structure. In dynamic situations, however, organizations need organic project design and management. (Differentiation).

4. Organizations with highly hostile environments require equally high centralization of decision-making. Mechanistic regimentation of personnel allows for rapid, controlled means of responding to competition or other threatening events. This is what makes military actions so effective. But it reduces the overall ability of the organization to meet other critical aspects of the task environment. Some bureaucracies responding more to environmental hostility than any other dimension may try to close off their boundaries, act as though they are a closed system, and respond defensively and hostilely to all other organizations in the same environment.

(Integration).

5. The greater the uncertainty (and the higher the stakes and the greater the risk) of the task environment, the greater flexibility the organization requires. Here again, an organic structure is the optimal design.

(Differentiation).

In summary, endangered species task environments demand a highly decentralized organic organizational response. That is a flexible form of structure characterized by bottom up decision-making (not top down as in bureaucracies) and integrating mechanisms called mutual adjustment.

QUESTION 3: WHAT IS AN ORGANIC ORGANIZATION AND HOW DOES IT DIFFER FROM OTHER MAJOR ORGANIZATION TYPES?

Organizations range from mechanistic organizations at one extreme to organic organizations at the other extreme. Mechanistic organizations are the classic bureaucracies where the only source of power is at the top of the hierarchy, producing formal emphasis on obedience. The hierarchy of authority determines which proposals are accepted or rejected; there is usually no appeal on decisions. The incentive system (rewards and

punishments) is controlled by the hierarchy, and it strongly promotes conformity, the status quo, and conservatism (Urbiniak 1978). If an endangered species task environment is constantly changing, for example, the fixed rules, roles, and regulations of a mechanistic organization do not allow the organization to deal effectively with it.

Organic organizations have little or no hierarchical structure. The organization is highly decentralized. Reliance is not on rules, roles, and regulations but on the expertise and judgment of individuals coping directly with the task environment. These organizations must be flexible. Experience and wisdom are found throughout the organization, not only at the top where it is assumed to be in mechanistic organizations. Reliance on professional norms allows adaptive responses to change. The dynamism of an organic organization is reflected in constant adjustments, task redefinitions, and new and changing communication networks.

Also at the heart of the differences between mechanistic and organic organizations is how organizations respond to uncertainty and risk. Two responses have been noted: a risk averse one (better known as the "cover your ass" approach) and less common, risk embracing (better known as the "go get 'em" approach). Whether an organization is risk averse or risk embracing, and how deeply and pervasive this attitude is built into the inner workings of an organization, greatly affects how that organization perceives and deals with complex, diverse, unstable, hostile, and highly uncertain endangered species task environments. The worst situation an endangered species can find itself in is a situation where its survival is totally dependent on a rigid, risk averse, mechanistic organization. Such an organization will be most concerned with "covering its ass" and will respond slowly, if at all, to the needs of the endangered species.

What happens when a mechanistic organization tries to deal with a task

environment as demanding as that posed by endangered species? A poor fit or congruence between an organization, its subcomponents, and the task environment is expressed in inefficiency, incompetency, and conflict, and is often perceived as a lack of commitment. This situation is seen as pathological. Four types of organizational pathologies are recognized (Schein and Greiner 1977). Those of you who have spent any significant time in the frontline trenches of endangered species conservation have no doubt seen many of these pathologies at work but may have expressed them differently than I do here. Most likely, many of the dents in your helmets are the results of these organizational pathologies.

The first pathology is "functional myopia and suboptimization". This means that managers too narrowly view and define the task environment's challenges and subsequent organizational responses. The net effect is less than an optimal program. The second is "vertical lock-ins and incompetency" of personnel. This pathology is better known as the Peter Principle where individuals are promoted above and beyond their abilities. The third is "top-down information flows and problem insensitivity". This means that too formal an organization (bureaucracy) with centralized decision-making and top-down control will show considerable insensitivity to emerging problems and to suggestions for solutions from below or outside the organization. The fourth is "routinization of jobs." This means that the organization tries to break the endangered species task up into segments, divides labor response, uses impersonal management styles, and generally tries to bureaucratize all aspects of the program and infuse it with constraining rigid roles, rules, and regulations (Warwick 1975). This leads to personnel dissatisfaction and possibly even alienation.

Endangered species recovery is too demanding for us to handicap ourselves with pathological organizations. The real cost of pathological

organizational responses is that they preclude alternative, innovative, organic organizational structures and management procedures which could respond to the task environment with greater efficiency, effectiveness, and with equality for the individuals involved.

I have been talking as though only a single organization was involved in each endangered species program. In reality, this is not the case. The general pattern in today's endangered species programs is coalitions of several very diverse organizations ranging from mature mechanistic organizations to new, highly flexible organic ones. Such a diversity of organizations makes the integration/coordination and management job very difficult.

QUESTION 4: WHAT SHOULD AND CAN WE DO TO ENCOURAGE THE NEEDED ORGANIC ORGANIZATIONS?

Because most existing organizations tend to be mechanistic, one possibility is to establish what organizational designers call a parallel organization. A parallel organization allows the benefits of an organic organization in a task environment dominated by mechanistic organizations. A parallel organization is a "flat, flexible, but a formal problem solving and governance organization that serves to supplement bureaucracy and exist side by side with it," not replace it (Stein and Kanter 1980:371). As a mechanism to prevent "over supervision" (i.e., bureaucratization), parallel organizations avoid the four pathologies seen in mismatches between mechanistic organizations and highly uncertain task environments. A parallel organization is designed to meet both the needs of the task environment and the people in the organization.

A parallel organization cuts across the bureaucratic hierarchial

structure and existing functional distinctions and creates an alternative (or supporting) structure to traditional bureaucracies. People are grouped flexibly, providing the potential for challenge, growth and learning (opportunity), and access to resources, as well as support and recognition (power). Stein and Kanter (1980:384) concluded: "Our experience shows that it is possible for a mechanistic (bureaucratic) and an organic organization to exist side by side, carrying out different but complementary tasks" and "the simultaneous availability and operation of parallel and bureaucratic structures provides a basis for the efficient operation of each because both are equally formal structures, able to carry out their specialized functions directly."

The parallel organization poses multiple authority and accountability (a matrix). If empowered by the parent organization(s) to make final decisions, it can do so. It is an officially acknowledged, independent management structure, but is linked back to the parent organization(s). The lessons and benefits of enhanced effectiveness, efficiency, and equality in decision-making in parallel organizations can be taken back to conventional hierarchial bureaucracies. The parallel organization offers opportunity and power to professionals and managers alike.

An additional role that can be added to parallel organizations, or any organizational type, is "coordinating." Coordinator roles function in "integrating roles." The "role requires the individual to behave in ways which remove possible impediments to sharing of information and behaving in a problem solving fashion" (Galbraith 1977:215). The coordinator's job is simple: he/she must create a situation to ensure that the quality of decision making is high. Because there are differences in power and access to information among the actors, this is a difficult job. The job of the integrator/coordinator is to manage the natural, inherent differentiation

that emerges and persists in highly uncertain task environments like those of endangered species. The differentiation caused by the demands of the task environment and the need for the existence of the differences must be understood if a coordinator is to function properly and be effective. "The coordinator must obtain overall task integration among the various groups or organizations without reducing the (needed) differences that lead to effective collective performance" (Galbraith 1977:152). Professional conflict management is a skill needed by integrators/coordinators (Brown 1984).

SUMMARY

In summary, besides using the most appropriate biological tools and skill in the difficult job of endangered species recovery, we need to be supported by organic organizational structures and modes of operation. To understand better how organizations can either aid or hinder our recovery efforts, we need to take a systems view. The ecosystem concept is a useful systems model of nature in the field of biology. We divide ecosystems into component parts and study these parts and their interrelationships and functioning. And so with organizations, we need to emphasize organizations as open systems with interdependent parts which must be relatively consonant if the whole system is to run smoothly. The key component parts can be grouped into three categories: 1) inputs, 2) organizational components, and 3) outputs (Nadler and Tushman 1980). The inputs are: 1) environment, 2) resources, 3) history, and 4) strategy. The organizational components consist of: 1) task, 2) individuals, 3) formal organizational arrangements, and 4) informal organizational arrangements. An organization's outputs are the sum of all the formal and informal (real or operating) goals of the

organization and they may not be all directed at saving the endangered species. A well-designed organization will exhibit alignment between all the component parts. The congruence or fit concept allows measurement of the alignment or match between all the systems' components parts.

Many people do not understand a systems view of organizational design and performance. Without it, an organization that is performing poorly, with inefficiency, ineffectiveness, and conflict, is misunderstood and attributed to some seemingly troublesome, incompetent, and uncommitted individuals. In this prevalent view, organizations are people and therefore only people can be the problem. Thus much of what goes on in organizations is invisible to the observer. Only after attempts to correct individual performances have failed may the underlying problems of organizational design be recognized (Jelinek et al. 1981).

Given a systems view--there are a number of aspects that I have not mentioned to this point. Important among these are the power setting (Warwick 1975), informal organizational arrangements, organizational strategies, organizational cultures/ideological sets, the role of advocates internal to the established mechanistic organizations, the forces that will resist change and implementation of parallel organizations, and the role of the nonprofit conservation community in all this, for example. In endangered recovery, these and other factors need explicit attention in addition to those organizational dimensions discussed previously.

Based on a record of successful application of organic organizations in the private sector in numerous situations (Peters and Waterman 1982), including use of parallel organizations (Kanter 1983), organizational designers promise us an easier road in endangered species recovery if we use the lessons from their considerable experience. Lastly, and most importantly, we can be satisfied that we are giving endangered species

recovery our best shot if we used both the needed biological tools and the best organizational arrangements possible--that is, organic organizational arrangements carefully matched to the difficult job of endangered species recovery.

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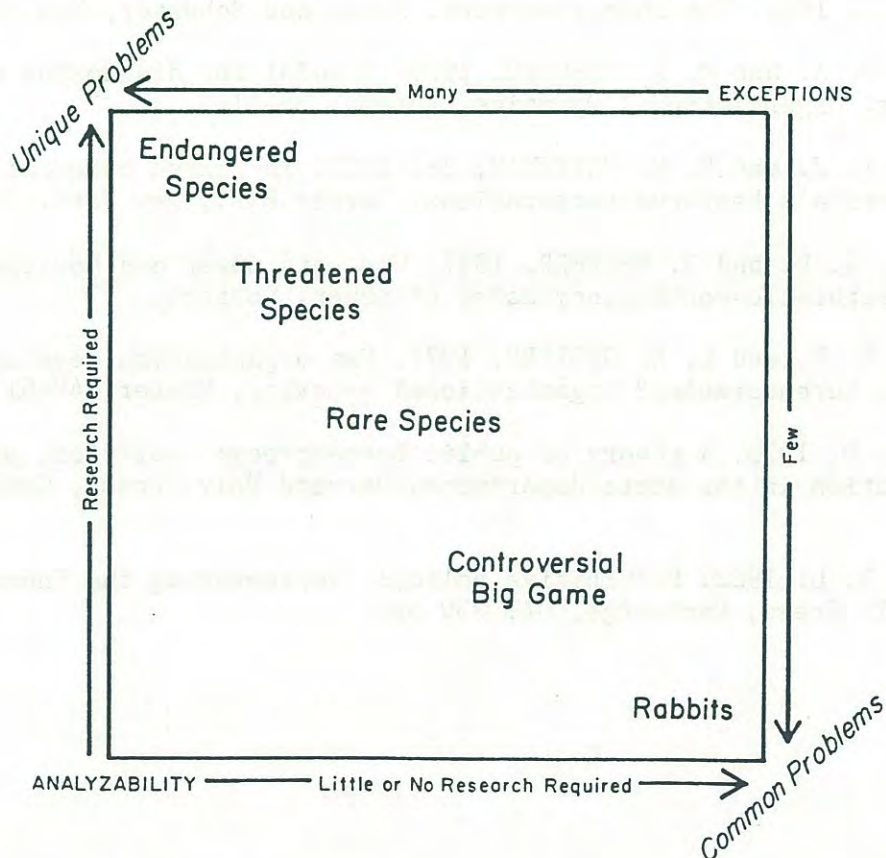
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SLIDE 1: Special Issue: Endangered Species, Cover National Wildlife Magazine

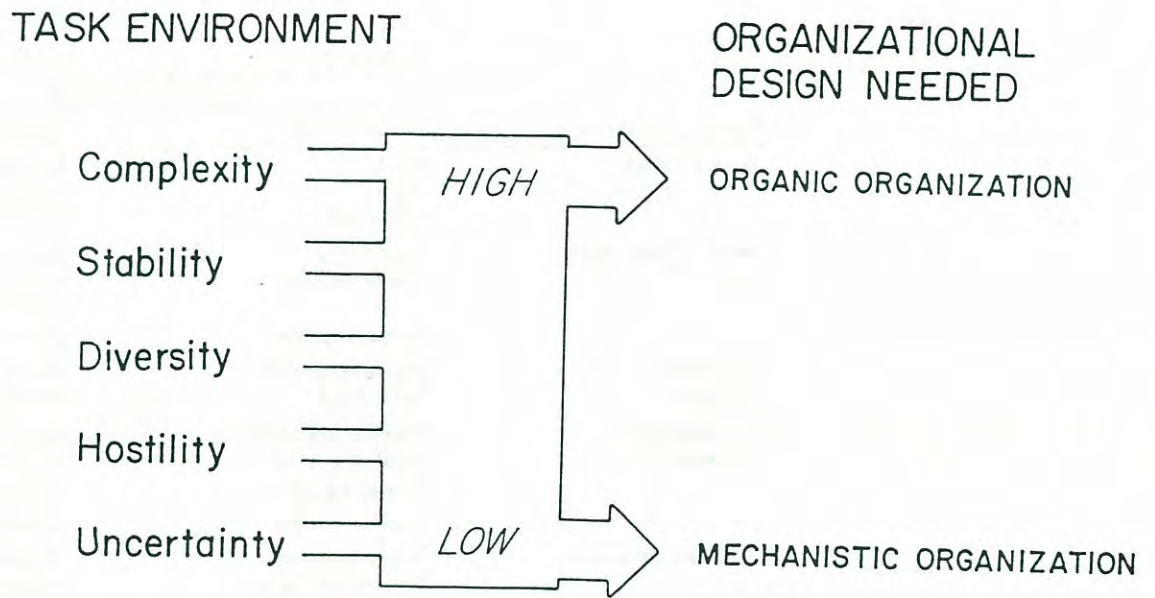
SLIDE 2: The assessment - decision process.

<u>Step 1</u>	<u>Step 2</u>
ASSESSMENT of :	DECISION (prescription) on the appropriateness of:
ENVIRONMENT	STRATEGY
HISTORY	ORGANIZATIONAL DESIGN
RESOURCES:	MANAGEMENT PRACTICES
Organizational	COORDINATION / CONTROL
Individual	Etc.
INTERDEPENDENCIES	
Etc.	

SLIDE 3: Endangered species pose "unique problems" and therefore represent a very complex, uncertain task environment for organizations.



SLIDE 4: Endangered species task environments, high in complexity, stability, diversity, hostility, and uncertainty require an ORGANIC ORGANIZATION.



SLIDE 5: Some comparisons between Mechanistic Organizations and Organic Organizations.

MECHANISTIC

- problems/tasks broken down into specialist roles
- each sees tasks as distinct from tasks of whole, as if each were a subcontractor
- precise definition of technical methods, duties, powers in each functional role
- vertical interaction within management

ORGANIC

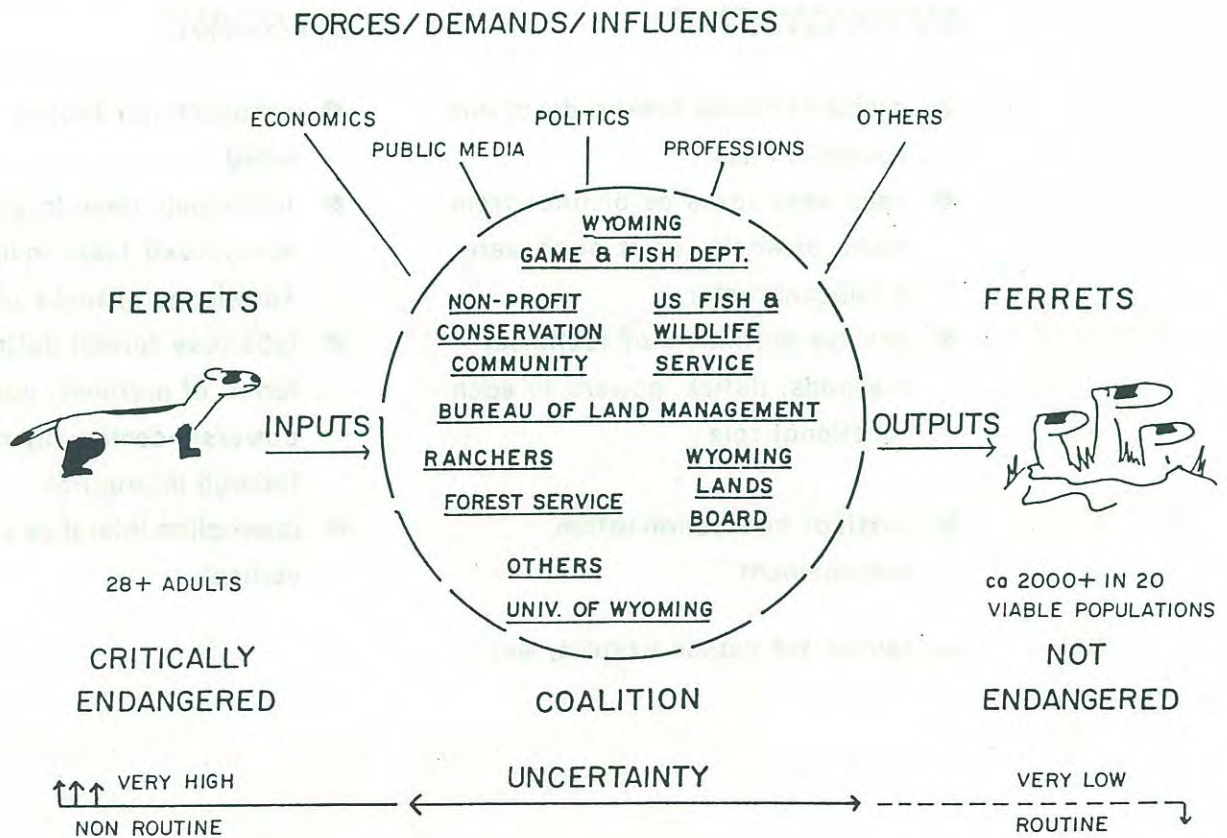
- problems not broken down/divided
- individuals have to perform specialized tasks in light of knowledge of tasks of whole
- jobs lose formal definition in terms of methods, duties, powers—continually redefined through interaction
- interaction lateral as much as vertical

from KANTER, THE CHANGE MASTERS, 1983

SLIDE : Some comparisons between mechanistic and organic organizations.

Components of Model	Mechanistic	Organic
	Nature of Environment	
	Certain (Stable)	Uncertain (Turbulent)
Mission/strategy	Simple implicit fragmented	Complex Explicit Integrated
People—management style	Conservative Seat of the pants	Risk taking Optimization of performance
Prescribed networks	Nonparticipative	Participative
Organizational processes	Simple integration mechanisms Minimal communication Conflict avoided Nonparticipative Decision making	Complex integration devices Open communication Conflict confronted Participative Decision making
Emergent networks	Friendship, non-task related cliques	Extensive task related networks Task coalitions

SLIDE 6: Endangered species programs are often made up of coalitions of organizations.



SLIDE 7: Some comparison between a mechanistic and and organic(parallel) organization.

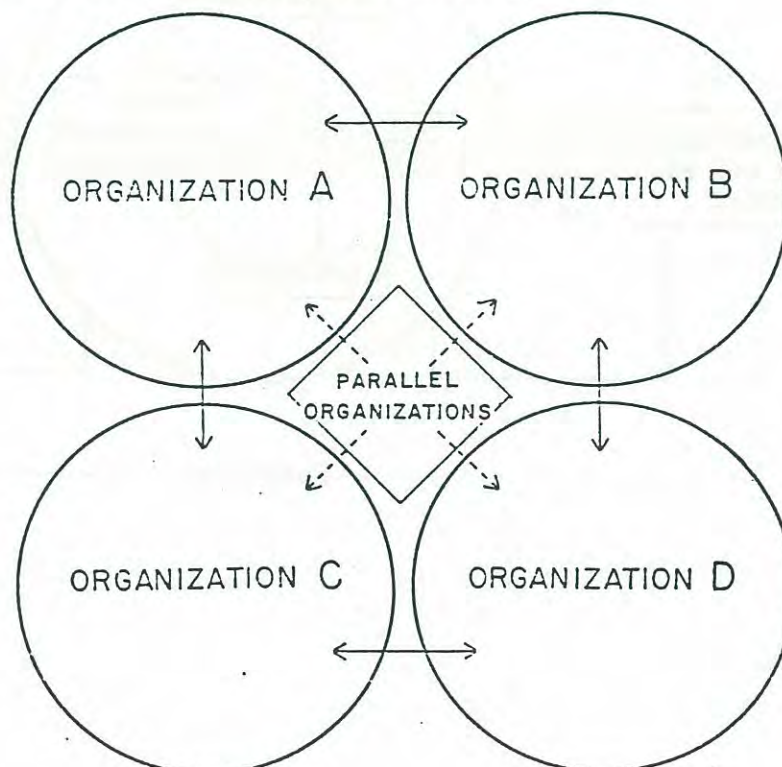
ORGANIZATION TYPE

MECHANISTIC ←-----→ *ORGANIC (PARALLEL)*

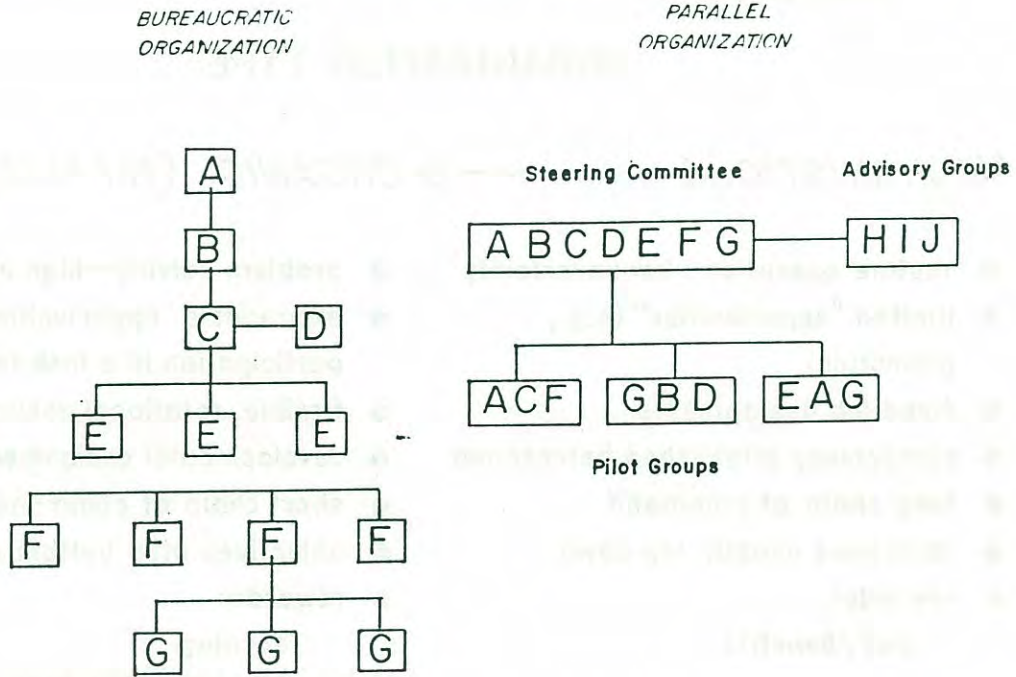
- | | |
|---|--|
| ● routine operation—low uncertainty | ● problem solving—high uncertainty |
| ● limited "opportunities" (e.g., promotion) | ● expandable "opportunities" (e.g., participation in a task force) |
| ● fixed job assignments | ● flexible, rotational assignments |
| ● competency established beforehand | ● developmental assignments |
| ● long chain of command | ● short chain of command |
| ● objectives usually top down | ● objectives also bottom up |
| ● rewards:
pay/benefits | ● rewards:
learning
recognition/visibility |
| ● functionally specialized | ● mixed functions |
| ● leadership a function of level | ● leadership drawn from any level |
| ● risk averse | ● risk embracing |

after KANTER 1983

SLIDE 8: Parallel organizations can be constructed to lie between existing organizations and supplement their operation.



SLIDE 9: A comparison of bureaucratic (mechanistic) and a parallel (organic) formal organizational arrangements. (after Kanter 1983).



SLIDE 10: A systems model of organizations useful in congruence (fit, match) analysis (after Nadler and Tushman 1980).

TRANSFORMATION PROCESS

