Lessons from Wolf Restoration in Greater Yellowstone

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Abstract: The Adirondack Park in upstate New York presents an attractive opportunity for wolf reintroduction. It contains large tracts of wilderness and possibly sufficient prey to support a viable population. However, it also presents challenges to wolf recovery. Residents have raised important questions regarding the biological, socioeconomic, and regulatory impacts of restoration. These questions are not new. Similar questions were raised and continue to be addressed in the emotionally charged effort to restore wolves to the Greater Yellowstone Ecosystem (GYE). Lessons from the Yellowstone wolf restoration effort useful to the Adirondack case ultimately rest on the nature of the wolf's biology and society's perceptions, the notion of "common interest" in governance of democratic society, and what is meant by learning. We offer lessons from the GYE by examining the six phases of the decision process inherent in all endangered species recovery programs. Lessons are practical guides for improving the efficiency, equity, and effectiveness of current and proposed wolf recovery efforts.

The reintroduction of wolves to Yellowstone National Park has been hailed as the most successful recovery effort in the history of the Endangered Species Act (ESA). Begun more than twenty years ago in an effort to restore the full complement of species to the nation's first national park, and eventually realized through a commitment to cooperation and compromise, wolf recovery has captured the imagination of the American people and, as such, has enjoyed tremendous popularity. However, not all Americans are thrilled with the prospect of a recovered wolf population. Ranchers and other local interests, particularly in states like Wyoming, view the return of wolves as a threat to their livelihoods and akin to a declaration of war on the West. Wolf recovery remains an emotionally charged management issue as the restoration process continues to unfold.

Finding practical lessons from this process to improve future wolf conservation in the Yellowstone area, the Adirondacks, and elsewhere is essential. We feel there are many lessons from this wolf reintroduction effort, which continues to have a very high profile. This paper: (1) briefly describes wolves in biology and society, governance in the common interest, and learning of lessons, (2) offers and illustrates some practical lessons about the restoration process, and (3) makes recommendations for current and proposed restoration efforts for wolves and other endangered species.

Our Standpoint. We have followed the wolf recovery process in Yellowstone closely for 20+ years and offer our views on what has (or has not) been learned to date. We are particularly interested in how communities address questions, like wolf

reintroduction, that have important environmental consequences for the present and future. We are also keenly interested in democracy and current problems in governance that are especially evident in states around Yellowstone National Park, but also apparent among New York State communities both within and outside Adirondack Park. Lastly, we are committed to truly interdisciplinary approaches to problems of governance and natural resources management (Clark et al. 1996a, 1997a, b, Clark In Press a, b). Application of an interdisciplinary approach to the issue of wolf recovery necessarily requires a holistic examination of the full array of biological and social factors that influences the process and places these factors in the appropriate historical and cultural context. Armed with this integrated information and the recognition of the particular importance of human values and perspectives, such problems are more likely to be identified, evaluated, and solved efficiently and effectively.

I. Wolves, Governance, and Learning: Finding Lessons

Lessons from the Yellowstone wolf restoration effort ultimately rest on the nature of the wolf's biology and society's perceptions, the notion of "common interest" in governance of democratic society, and what is meant by learning. This section briefly illustrates this perspective and provides a short history of the wolf restoration program in the Greater Yellowstone Ecosystem (GYE) (Clark and Minta 1994, Clark In Press b).

A. Finding Lessons from Wolf Restoration in Greater Yellowstone

Practical lessons have at their root a mixture of wolf biology and human cultural perceptions. As our knowledge and understanding of wolf biology has evolved, so have our perceptions. However, some beliefs are deeply ingrained and drawn from a steadfast adherence to accepted cultural myths. It is important to recognize how these myths have, in some cases, fed our fears and contributed to the public debate about wolf restoration and our responsibilities to the natural world, as well as to future generations (see also Lee 1993, Gunderson et al. 1995).

1. The Wolf in Biology and Society. The wolf is unique, both biologically and culturally. Biologically, wolves are fascinating animals displaying many adaptive features in reproduction, ecology, and social organization. Many aspects of wolf biology are described in Varley and Brewster (1992), the Northern Rocky Mountain Wolf Recovery Plan (USFWS 1987), the Final Environmental Impact Statement (USFWS 1994) concerning the reintroduction of wolves to Yellowstone National Park and central Idaho, and numerous other sources (e.g., Clark et al. In Press).

Culturally, wolves hold a special place among animals. They haunt our imagination and are burdened with the images, dreams, fears, and stories that have accumulated over centuries (Casey and Clark 1996). They are the subjects of fables, hunting stories, folklore, and myths from around the world, as well as literary and psychological analyses. Indeed, enough words have been written about the wolf to fill a library, with the images and meanings represented in these writings too numerous to count (Casey and Clark 1996). Not surprisingly, the public debate about what the wolf is and what it represents takes many forms; including whether we, as a society, value the wolf as a species to be protected and restored to portions of its former range. At the heart

of the debate is the old philosophical question about our relationship and responsibility to the natural world.

2. Governance and Common Ground in Wolf Recovery: An Endless Process. Since its passage in 1973, the ESA has been reaffirmed by the American people several times. However, it is still not supported by some segments of society. This public interest policy has been, and continues to be debated in theory and negotiated in practice. Similarly, finding the "common interest" or common ground in Yellowstone wolf recovery has been contentious and remains so (Klein 1998). This process in the GYE is being carried out in the field, in newspapers, and in the courts on a nearly daily basis. Wolf recovery then, like all efforts to find the common interest, becomes a process of balancing and accommodating the diversity of culture, class, and personality in society (McDougal et al. 1981). The nature of the process and its outcome is ultimately determined by the diverse perspectives of the people who are involved, the values, resources, and strategies they bring to the process, and the specific outcomes they seek (Reading et al. 1996). People seeking lessons from this process, such as Adirondackers and others should be guided by the idea of clarifying and securing the common interest in democracy. Outside observers may be able to help in this regard, and it is in this spirit that lessons learned from the ongoing wolf restoration effort in the GYE are offered.

We understand the common interest to evolve from a democratic process that is open, reliable, fair, and honest and reflects the interests of the majority of Americans. This process is a uniquely human endeavor through which participants share their particular perspectives, attempt to identify areas of overlap, and to arrive at some consensus. The ESA is one such process that represents a "noble human concern for other species," but it is vulnerable to less noble human traits such as aggressiveness and dogmatism, as well as domination by special interests (Brunner and Clark 1996:1). There are special interests at play in the wolf restoration process underway in the GYE, to be sure. These interests have become apparent in preliminary consideration of the question of reintroduction to the Adirondacks, and may or may not correspond with the common interest as it is revealed and determined over time.

Diverse interests may be principled (based on ethics), expedient (based on compromise), assumed (presumed to be in the common interest), or valid (supported by evidence) (McDougal et al. 1981) and are well documented in the contemporary written wolf record. The 51 stories retold by Casey and Clark (1996) also illustrate these interests and help ground the current debate about wolves in its historical and cultural context, moving it away from the vehement ranting of recent years towards a more informed, democratic discourse.

3. Learning From the Wolf Restoration Process. Lessons applicable to current and proposed recovery efforts are rooted in the concept of learning, particularly individual and organizational learning (Clark et al. 1994). Learning through the process of social inquiry begins with the introduction of new things and the new language used to describe them. Although new behavior may be the result of this exposure, the same basic rules, assumptions, and values may continue to operate as before. It is only when old assumptions begin to fall away and make room for new codes of conduct that new rules and accompanying behaviors can become established (Clark 1996a, b).

Inquiry begins with the identification of a problem and a search for solutions. To be efficient and effective in this regard, there must be willingness on the part of the inquirer to step into the problematic situation and continually respond to it as the problem, and his/her understanding of it, evolves. The process of social inquiry is an interactive one that shapes the outcomes of actions and relies upon the particular experience, intuitive knowledge and understanding, as well as the awareness of its participants (Miller 1999). It focuses on the present context and, by definition, is adaptable. It is not bounded by traditional knowledge systems, but is the outgrowth of interaction and therefore unique to a given situation (Schön 1983).

Because individual professionals are at the heart of the recovery process, individual learning is the key to addressing problems that arise during the process. By questioning familiar assumptions and biases, individuals can respond and adapt to new situations, creating solutions that may go beyond traditional and purely technical ways of doing things. But individuals generally work through organizations to accomplish recovery goals and the existing network of institutional systems of authority and control typically rewards technical rationality and expertise, not reflection and learning. Thus, it is not uncommon for professionals to find themselves confined to certain channels of operation, for the freedom to reflect, invent, and differentiate would threaten the order and constancy upon which organizational life largely depends. For endangered species recovery efforts to be successful then, organizations should be structured in such a way as to encourage and support open inquiry and foster what is known as "double-loop" learning. Such learning examines and addresses conflicts that challenge the operating assumptions and cultural norms of organizations, and perhaps holds the most promise for improving prospects for wolf recovery in both the Adirondacks and the GYE (Schön 1983, Clark 1996a).

B. History of the Process of Finding the Common Interest in Wolf Restoration

The decision to remove all reintroduced wolves and their offspring from Yellowstone National Park and central Idaho by U.S. District Court Judge Downes draws attention to the lack of clarification of the common interest in the process and the divisive debate that has ensued as a result. While there are many participants involved in the process of wolf recovery, environmentalists who support the return of the wolves to the GYE and members of the livestock industry who adamantly oppose reestablishment of the predator in their midst, and their representative organizations, are prominently featured. Their perspectives differ markedly, but the situations in which they operate are surprisingly similar. Environmentalists maintain that wolves are a necessary and integral component of the GYE and are actively engaged in the promotion of wolf recovery through specific campaigns, political lobbying, media attention, and participation in public hearings. In comparison, agriculturists view wolves as a significant threat to livestock, and perhaps more importantly, a cherished way of life in the West. They operate primarily in the political arena by exerting their considerable influence on conservative politics. Like environmental advocates, the livestock industry understands the power of the media and urges its constituency to capitalize on opportunities to express

their opinions and attitudes in public forums, effectively keeping the debate fresh and the question of whether or not wolves will remain in the GYE open.

Wolf supporters subscribe to a moral and ethical standard that considers the goal of recovery to be unassailable. Organizations at the forefront of the debate are leaders in the conservation arena. They project images of confidence and power through their commitment to advocacy, activism, and the acquisition of knowledge needed to resolve recovery problems. In comparison, livestock producers seek to maintain their position of power and privilege in the conservative West, as well as ward off threats to their economic status.

Those in favor of recovery employ strategies of education, litigation, research, and advocacy to promote their position, while those opposed rely primarily on advocacy and litigation. In general, however, both groups seek to persuade decision-makers and the public through political channels. In an effort to move the process of wolf recovery forward, Defenders of Wildlife (a leader in predator protection) responded to the concerns of the agriculturists with an innovative program designed to compensate ranchers and farmers for losses of livestock to depredation by wolves. Such economic incentives have obvious appeal. However, while this program has been responsive to all incidents of confirmed depredation, ranchers claim that it cannot adequately compensate for indirect effects of harassment, such as reduced survivorship and fecundity. This argument is becoming increasingly familiar to supporters of reintroduction as the population of wolves in the GYE nears recovery.

Strategies employed by the livestock industry have allowed its members to exercise and maintain their political power and status in the West. Similarly, those employed by environmentalists and their organizations have resulted in the desired outcomes of increased awareness and support of the role of predators in maintaining viable ecosystems, and the effects of a broader, more powerful public constituency. However, it is apparent from recent events that research results and educational programs, as well as innovative strategies employed in an effort to secure the common interest, have not succeeded in alleviating ingrained childhood fear and loathing of wolves. In addition, cooperation and compromise have pitted environmental groups against one another, with some preferring strict protectionist policies to programs that allow greater management flexibility. Such dissension has undermined the recovery effort and left recently returned wolves with an uncertain future.

II. Practical Lessons from Wolf Restoration in Greater Yellowstone

Restoring wolves in a way that supports the common interest requires carrying out a successful program. Such a program must be established, administered, and directed in the field as events demand. One useful way to conceive of a wolf restoration program, or any endangered species recovery program for that matter, is as a "life cycle" in which different phases or activities represent different developmental stages in the "life" of the program (Clark 1997b). These phases may include: (1) initiation of recovery efforts, (2) examination of the "problem" and possible solutions, (3) determination of program direction, (4) implementation, (5) evaluation of activities, and (6) termination or redirection of the program. Decisions in all six phases are made through attempts to

balance legal requirements, technical considerations, and the need to find political consensus. Close inspection of these decisions can reveal hidden dynamics of wolf recovery and provide valuable insight into the nature of the process by identifying where it needs improvement and determining potential points of intervention.

Initial appearances aside, program development does not necessarily proceed in a linear fashion. Several phases of the program may be underway at the same time and feedback loops may result in revisiting particular stages of the life cycle. It comes as no surprise, then, that more than 20 years have passed since the Rocky Mountain Wolf Recovery Team was formed to address recovery. We offer lessons learned from each of the six phases based on our understanding of the Yellowstone wolf restoration effort, particularly the events of the last three years.

A. Lesson One stems from the initiation phase in which people are focused on the problem of restoring wolves. During this preliminary stage, the problem is perceived, identified, and placed on the public agenda. Planning to achieve recovery goals is also begun at this time. What program participants often fail to recognize, however, is that endangered species restoration in general, and wolf reintroduction in particular, is an involved process requiring the long-term commitment of individuals and organizations, as well as substantial monetary resources. The process can become contentious and highly politicized and is, therefore, not for the weak of heart.

It took years for the idea of restoring wolves to the GYE to evolve to the point of serious consideration. Aldo Leopold was the first to broach the subject in the early 1940s. Canadian wolf biologist Douglas Pimlott added his support for recovery in 1967 and also proposed the return of wolves to Banff and Jasper National Parks. Defenders of Wildlife was a vocal proponent of recovery at this time. But, it was not until the creation of the Endangered Species Act in 1973 and the subsequent listing of the Rocky Mountain gray wolf requiring the development of a recovery plan that these early advocates were joined by many others and the idea gained momentum.

The idea of wolf reintroduction grew out of a developing awareness of the role predators play in natural ecosystems. However, this role was not greatly appreciated by those outside of ecological professions. Predators were largely viewed with a mixture of fear and hatred by western conservatives, particularly members of the livestock industry whose livelihoods, they perceived, depended upon wolf eradication. They maintained that "predator control was necessary" and that the West was "doing fine without wolves" (Huffman 1993). Returning wolves to the GYE was thus met with staunch opposition from politically powerful foes and the process experienced considerable difficulty moving forward as a result. For example, repeated calls for more research into the question of the feasibility of wolf reintroduction effectively stalled the process in the initial stages of development.

B. Lesson Two concerns examination of the problem of wolf reintroduction and identification of possible solutions. During this phase, the problem is defined in more detail using expert analysis and knowledge of technical considerations. Scientific investigations, such as feasibility studies, identify plausible options for responding to the

problem based on its likely impacts and outcomes. A programmatic response is outlined and critical parameters are listed. Outcomes of this stage in the life cycle include the gathering, processing, and dissemination of all information relevant to the problem of wolf recovery. Alternative policies are also identified and considered, and open, public debate is encouraged.

There is a distinct tendency to focus on the biological and technical aspects of wolf recovery (of which there are many) at the expense of a full consideration of the social impacts and an integrated look at both dimensions. Ultimately, social impacts will exert substantial influence on the success of the recovery program. Therefore, examination of the social context within which recovery efforts will be embedded is recommended. This involves identification of all potential participants in the process, their particular perspectives and values, the situations in which they operate, the strategies they employ to achieve desired outcomes, and the resultant effects of these outcomes. An understanding of the historical and cultural trends that have influenced the roles played by participants in the process, as well as the factors that condition these trends is also beneficial to clarifying the common interest and achieving recovery goals.

Wolves evoke strong emotional responses in people, both good and bad. Perhaps this is the reason that this predator is one of the most studied large mammals in North America. Regardless, there is a considerable amount of information available to scientists and managers charged with the responsibility of restoring wolves to former habitats. For example, the recently completed study of the feasibility of wolf reintroduction to the Olympic Peninsula in Washington State consulted nearly 1000 relevant documents in an effort to be comprehensive, yet selective (Ratti et al. 1998).

The Rocky Mountain Wolf Recovery team was formed in 1975 to draft a workable recovery plan, marking the beginning of a 15-year period of intelligence gathering. During this period, biologists searched for evidence of the presence of wolves in the GYE, found none and recommended reintroduction. Educational and promotional efforts, such as the Science Museum of Minnesota's "Wolves and Humans" exhibit, were launched and generated considerable interest in, and support for recovery. Political allies, such as Utah Democratic Representative Wayne Owens and Idaho Republican Senator Jim McClure, were recruited after considerable efforts on the part of key individuals and organizations. As a result, legislation that directed further study of potential impacts was introduced with the caveat that interests of agricultural constituencies would be protected. In a good faith effort to encourage support for recovery among livestock producers, Defenders of Wildlife established a $100,000 wolf compensation fund that promised to reimburse ranchers for any livestock losses incurred. Near the end of this stage of the program, a reintroduction plan was developed by the Wolf Management Committee as directed by the Secretary of the Interior.

While a considerable amount of information was generated to determine potential impacts of wolf reintroduction and make decisions as to how best to proceed, the emotional, and often hostile debate that ensued indicated continued resistance to the idea of recovery at local and regional levels. People exhibited strong feelings toward wolves, either for or against, and there was little middle ground (Huffman 1993). Some maintained that the debate represented resistance to social change and outside agendas

rather than opposition to wolves themselves. For example, Renee Askins, formerly of the Wolf Fund, equated the return of wolves to relinquishing control of the West. Wolves, then, become a symbol of resulting painful changes, with their associated sacrifices and compromises (Askins 1993). In this atmosphere, conflicts were inevitable and would later prove problematic for successful implementation.

C. Lesson Three focuses on the selected course of action to achieve recovery goals after all available options have been formulated, debated, and evaluated. The choice of the preferred alternative stabilizes expectations by clarifying information, rules, and implications for recovery. The traditional approach of preparing an Environmental Impact Statement (EIS), which evaluates a number of alternatives and identifies the preferred option, may not be sufficient to legitimize the process and gain adequate popular and political support. More attention to social context may be necessary to encourage endorsement of the prescription, specifically the recruitment of respected local and regional elites.

In comparison to the previous phase of estimation, this stage of the recovery program progressed rather rapidly. The Wolf Management Committee submitted their recommendations to Congress in 1991, a year which also witnessed the funding of an EIS. Information was again gathered and reviewed to evaluate reintroduction of an experimental, non-essential population as a means of wolf recovery, as well as identify and consider all other possible alternatives. Numerous public hearings were held and more than 160,000 written comments were received, the most ever generated by a federal action. The majority of opinions offered were favorable to the preferred alternative. During this time, Defenders of Wildlife continued to promote recovery by staffing "Vote Wolf!" booths in Yellowstone National Park. They collected more than 70,000 ballots, nearly all of which registered support for restoration. However, strong opposition still remained and, in 1994, the Wyoming Farm Bureau filed a lawsuit indicating their adversarial stance.

This lawsuit, when combined with one filed by a Wyoming couple and another filed by a coalition of environmental groups, would later result in the decision to remove reintroduced wolves from the GYE currently under appeal and illustrates the dissension among participants in the recovery process. Environmentalists disagreed among themselves with respect to the method of recovery to be promoted. Some preferred natural recovery to reintroduction, pointing to the close proximity of the population of wolves in northern Montana and the presence of individual dispersers in Yellowstone. It was only a matter of time before more wolves made their way south and established a population on their own. Natural recovery, proponents maintained, was more acceptable to local residents who react negatively to government interference, particularly in the form of costly programs (Cromley 1997). Additionally, wolves would enjoy full protection under the ESA, rather than being considered experimental and, in this case, non-essential.

Those in support of reintroduction, however, argued that the management flexibility allowed with such a designation and the resulting compromise in protection was essential to gaining local acceptance. They pointed to statements made by David

Mech (1995:E6), a recognized expert in wolf ecology, who concluded that the "best way to ensure recovery is to not protect (wolves) completely." They also reminded their colleagues that decades passed before reproduction was documented in Montana and a population of wolves was able to establish itself. Natural colonization, according to Hank Fischer of Defenders of Wildlife, was an "iffy" proposition at best (Hacket 1993). Reintroduction, proponents claimed, offered an expedient and realistic alternative to natural recovery that could also avoid the potential for genetic bottlenecks. Despite warnings by environmentalists and livestock producers that a decision to reintroduce wolves would result in legal challenges, the prescription was made and questions were raised in the minds of interested observers.

D. Lesson Four stems from the implementation of the selected course of action. Rules are interpreted, supplemented, and enforced to achieve recovery goals. The program's relationship to existing institutions is defined, as are incentive structures. Costs are minimized and performance expectations are detailed. This stage of the program, in which wolf recovery in the GYE is currently entrenched, requires consensus and cooperation among participants in the process to ensure success. Technical considerations are certainly important, but emphasis on the education and involvement of sympathetic members of the opposition in the process on the ground, especially at local and state levels, can limit hostility and reduce potential conflicts. Without local acceptance, however grudging, recovery can be compromised.

Once the preferred alternative, namely reintroduction as an experimental, non-essential population, was approved by the US Fish and Wildlife Service and endorsed by the Secretary of the Interior, implementation proceeded in the GYE. This entailed the capture and translocation of wolves from Canada to Yellowstone and central Idaho in 1995 and 1996, and subsequent monitoring of the reintroduced populations. The wolves adapted readily to their new environments. Pairs formed and established territories, and populations burgeoned. In fact, breeding was so successful that a third planned input of wolves from Canada was no longer deemed necessary to assist with recovery. Indeed, it appeared that recovery goals would be met earlier than expected.

Although wolves responded favorably to reintroduction, local residents, particularly livestock producers, were skeptical of promises made during program development. It was important that managers kept their promises to alleviate their fears and mistrust of government. Incidents of depredation were investigated and dealt with as quickly as possible and ranchers were compensated for the market value of confirmed losses to wolves. However, as wolves ranged beyond the boundaries of protected areas fears of restrictions on the use of public lands and an increase in federal control became more pronounced, and the recovery program less tolerable. It is apparent that wolves found outside Yellowstone National Park and other protected areas exist in a hostile climate. To ranchers, wolves heralded unwelcome changes in the traditional way of life in the West, with "outsiders dictating agendas" (Mader 1993). Their response? Kill the messenger.

E. Lesson Five focuses on appraisal of the program, appraisal that examines earlier established goals and all preceding program activity with a particular emphasis on the success or failure of implementation. A comparison is made between estimated performance levels and those actually obtained, and quality of performance is assessed. Evaluation may be formal or informal, and include both internal and external review. Decisions made relative to policy prescriptions are scrutinized, and responsibility as well as accountability for the outcomes of those decisions is appraised. Information is obtained and recommendations as to how to proceed are disseminated appropriately.

The evaluation of the success of a program should not be limited to biological aspects but should include an ongoing assessment of the social ramifications. In other words, increasing numbers of wolves may be a biological indicator of success, but observed strong trends toward renewed opposition to recovery may have much greater consequences for the long-term success of restoration efforts.

A cursory evaluation of the recovery program reveals better than expected success in achieving recovery goals. Wolves are breeding and rapidly approaching change in their protected status and future management. They are fulfilling their role as top predator and restoring ecological "balance" to the GYE, already revealing insights into predator-prey dynamics and their indirect effects. Incidents of depredation are managed according to prescription by prompt control of offenders and direct compensation for losses. Information about individual wolves and packs is updated and regularly distributed to interested publics. Visitors to Yellowstone National Park are rewarded with sightings of wolves far beyond what was predicted and their keen interest in the recovery effort has inspired and supported the proliferation of wolf books and other paraphernalia.

Upon closer examination, however, a number of problems (both real and potential) become evident. For example, the accelerated rate of recovery has stepped up plans for delisting and transfer of management responsibilities to state agencies. For reasons explained below, this may present difficulties. In addition, managers of the recovery effort can no longer monitor the whereabouts of every wolf and ranchers are not pleased. Incidents of depredation, no matter how few, fuel their antipathy. Compensation for losses is welcomed but is only paid for confirmed wolf kills and is considered by livestock owners to be insufficient to cover indirect costs of harassment (e.g., stress, low birth weights, trampling of pastures). Questions still remain regarding whether losses will be compensated after wolves are delisted.

Although the recovery program represents a substantial effort to accommodate local interests and ward off potential conflicts, these examples and continued litigation illustrate the need to fully attend to the social process or context of all such programs. Short-term successes do not necessarily ensure long-term viability of recovered populations.

F. Lesson Six concerns termination or redirection of the restoration program. This stage represents an opportunity to stop or modify practices that are not working and those that have accomplished their goals, and move forward to a new beginning. Endings or transitions inevitably occur during the course of a program. Change in the protected status from endangered or threatened to recovered, for example, is one goal of

endangered species restoration programs. However, there exists a general tendency toward failure to prepare for termination early on in the development of such programs, which can result in difficulties. Delisting of wolves in the GYE, accompanied by the transfer of management authority to the states, represents a case in point (Clark 1996b). Early attention should be paid to this stage of program development to anticipate potential areas of conflict that could adversely affect chances for successful recovery. It is also important to remember that changes or transitions in program direction or management can be difficult as participants are often emotionally invested in their roles in its development and committed to pursuing a particular course of action. Sensitivity to such difficulties should be exercised.

Responsibility for implementation and management of wolf recovery in Yellowstone National Park and central Idaho rests primarily with the US Fish and Wildlife Service, although the National Park Service and Nez Perce Tribe play important, collaborative roles. The population of wolves in the Park is fast approaching the 100 animals needed to qualify for recovery and delisting. Still, at least ten breeding pairs must be established for three consecutive years in each of the recovery areas following reintroduction to meet accepted criteria.

In discussions of the transfer of management authority and control from federal to state agencies, there exists considerable reluctance by the states of Montana, Wyoming, and Idaho to accept what they perceive as a substantial management expense. The agencies responsible for management of state wildlife populations want to exercise their authority and control, however, they are unwilling to commit their limited resources to the maintenance of a recovered wolf population without a promise of permanent funding from the federal government. The power and role of the states relative to the federal government is a major issue affecting wildlife management and the implementation of federal endangered species policy (Clark 1997a). It stems from the claim that with the creation of the ESA the federal government usurped states' ownership of resident wildlife and thus their traditional management authority and control. The current manifestation of the states' rights ideology highlights the sociopolitical forces that inhibit clarification of the common interest and undermine cooperative efforts aimed at achieving the goal of wolf recovery. Western intolerance of federal involvement in what is perceived to be a state issue is growing. It remains to be seen whether reintroduced wolves will survive the struggle for management authority and control of public lands.

III. Recommendations for Improving the Process

Wolf restoration in Greater Yellowstone represents a monumental achievement in endangered species recovery. It has been hailed as a model of success. Certainly, wolves would not argue with that assessment, as their numbers are rapidly approaching recovery goals. But despite such indicators of success, the effort has failed to win the acceptance and support of many powerful local residents upon which the long-term future of wolves in the GYE ultimately depends. It is apparent from continued conflicts that more attention needs to be paid to social impacts, both early on in program development and during the later stages. Our approach to the problem of endangered species recovery may be greatly improved by incorporating the following recommendations.

A. Be Problem Oriented

To navigate through the emotional and political morass of increasingly complex conservation problems, with some hope of arriving at long-term solutions in the common interest, it is necessary to become problem oriented (Wallace and Clark 1999). By focusing attention on the problem itself, it can be analyzed in relation to its entire context and approached from the standpoint of rational awareness. There are a number of intellectual tasks involved in this strategy that can be used to define problems more clearly and craft effective solutions (Clark et al. 1996b). The first task is to clarify the goals of the participants and determine the range of perspectives and values held in relation to the problem. The second and third tasks require developing a thorough understanding of the historical trends that have influenced the nature of the problem, including the conditions under which these trends have evolved. Once the historical context is understood the fourth and fifth tasks may be carried out whereby future trends in the problem are projected and analyzed, and alternatives invented and evaluated as possible solutions. It is important to remember, however, that creative problem solving with application of a problem orientation is largely an iterative process. Expect to revisit these tasks to refine chosen solutions.

B. Be Contextual

The importance of the human factor in endangered species recovery cannot be overstated. Mapping the social context in which conservation problems such as wolf reintroduction are embedded is essential to distilling the debate and promoting tolerance and understanding among participants in the process. People tend to behave in ways that they perceive will leave them better off than if they had acted differently. Perceptions differ among people, and these differences may be vast and seemingly irreconcilable. However, by attending to people's perspectives and the values they indulge through interactions in particular situations and strategies adopted to pursue specific outcomes and effects, human dynamics and their implications for wolf recovery may be better understood. The social context is not limited to individual participants but includes the institutions through which people pursue their values. Insights gained through its examination can suggest practical improvements and ways to engender support for recovery efforts. The social process, by definition, is not static and should therefore be continually mapped over the life cycle of any endangered species recovery program to anticipate conflicts and respond with creative solutions that encourage public involvement and participation (Clark and Wallace 1998).

C. Be Common Interest Focused

Wolf recovery is a human endeavor and therefore fraught with all the difficulties that arise when attempting to clarify and secure the common interest among diverse participants. If the social context is a reflection of a collection of narrow self-interests, then the stages in the life cycle of a recovery program represent an opportunity to reconcile these differences and foster development of the common interest. A working specification of the common interest generally takes the form of rules (decisions). Rules

are necessary to coordinate efforts among participants and make informed decisions that meet with expectations outlined in recovery plans, cooperative agreements, and other such documents. However, the existence of rules does not preclude participants in the recovery process from pursuing their own special interests at the expense of the common interest. Accountability is required to maintain respect for agreed upon rules of conduct and the quality of the program itself. Participants familiar with the decision process, how it works and how it can be monitored, are better able to intervene and improve decisions made and, in effect, support the partnership that has been formed to achieve the goal of recovery. An open, flexible process that encourages mutual exchange among members can minimize destructive conflict and secure the common ground that effectively solidifies partnerships and ensures success (Clark and Brunner 1996).

IV. Conclusions

Working to improve the way carnivore conservation is understood and approached can foster management efforts that are more efficient and effective at both local and regional levels. In turn, the process improvements we promote can lead to more favorable conservation outcomes.

Human values and attitudes toward wolves have changed substantially with time and with our increased knowledge and understanding of the role predators play in natural ecosystems, the importance of which has been dramatically displayed in the ecological changes that have occurred in the brief time since the reintroduction of wolves to Yellowstone National Park. Thousands of visitors have borne witness. However, the complex historical relationship between wolves and humans undoubtedly continues to influence the process of wolf recovery. In particular, the conservative climate that settled and shaped the West, and was largely responsible for the extirpation of wolves from the region and throughout the contiguous United States, still maintains its hold in the prevailing myth and undermines attempts at reconciliation with the emerging environmental ethic. To achieve the goal of successful reintroduction and ensure establishment of wolves in the GYE, as well as their responsible future management in the common interest, a systems approach is recommended. Such a holistic approach considers social acceptability to be equally as important to the long-term success of recovery programs as the numerous biological and technical factors involved.

The world is watching. How we choose to proceed in the GYE may have direct consequences for future recovery efforts, such as the proposed reintroduction of wolves to the Adirondacks. Certainly, a contextual, problem-solving approach to species reintroduction that promotes cooperative inquiry within an adversarial context and encourages participants to engage in reflective conversation regarding their values and attitudes offers the greatest opportunity to improve the process and achieve the common interest.

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