

Susan J. Buck
Department of Political Science
University of North Carolina-Greensboro
Greensboro, NC 27402 USA
Tel: 336 334 5144; Fax: 336 334 4315; E-mail: Susan_Buck@UNCG.EDU

Stream: Theory

CONTEXTUAL FACTORS IN THE DEVELOPMENT OF WILDLIFE MANAGEMENT REGIMES IN THE UNITED STATES

Note: This paper is a working draft that will be revised in light of the other papers on our panel. Comments are most welcome!

1.0 INTRODUCTION

In the United States, wildlife is a common pool resource (CPR) held in trust by the federal government and state governments for American citizens. Initially states had exclusive jurisdiction over wildlife within state borders, but wildlife management in the United States is now a unique blend of federal and state policies. The federal government has pre-empted state jurisdiction over some species that are threatened or endangered or that are subject to treaty obligations,¹ and wildlife on federal land is generally subject to federal jurisdiction rather than to the jurisdiction of the states within which the land is located. Even though the level of government that holds property rights in wildlife may vary by species and location, most property rights in wildlife are vested in governments rather than landowners.²

The problems of pre-empted, overlapping, and concurrent jurisdiction over American wildlife become even more complex when we consider multiple uses and users. For example, wildlife resources are managed for a variety of purposes, including hunting, angling, and recreation. These activities are not mutually exclusive. Specific activities within broad categories may also affect each other (e.g., hunting seasons on one species during the breeding season of another game species) and with other uses of the same resource domain (e.g., the well-known conflict between spotted owl protection and logging in old-growth forests).

Wildlife management in the United States is an extremely complicated issue. It is in constant flux as legislation and court interpretations change the property regime under which

¹ Examples of federal pre-emption include the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Convention on International Trade in Endangered Species (CITES) of 1973.

² Of course, landowners have property rights that affect use of wildlife on their property. For example, landowners may bar hunters or hikers, or they may charge fees for access to their land for hunting or other forms of recreation. But American wildlife is neither privately owned (*res privatae*) nor unowned until taken (*res nullius*).

wildlife is managed. Explicit examination of contextual factors (see below) that influence regime changes is a promising analytic technique for clarifying regime structures. Edwards and Steins (1998: 2-3) write:

Only through explicit analysis of the exact nature of the contextual changes and, more importantly, their specific effect on the action of individuals in using and managing the resource, can we begin to build a more complete picture of CPR management. This is of particular importance to research on complex, multiple-use CPRs, over extended periods. Clearly, in such cases, external changes are inevitable. Where such changes have affected the management of the CPR to the extent that the resource system has become degraded or depleted *or* the property rights regime has changed..., explicit analysis is needed to explain how changes in the contextual background to the resource were translated into revised action strategies and outcomes. (*notes omitted*)

This paper applies the framework developed by Edwards and Steins to the common pool resource regime of American wildlife management. The focus is on state wildlife management agencies and contextual factors that have influenced their institutional design and sustainability.³ I have chosen to focus on state management agencies for two reasons. First, state agencies are the primary institutions with responsibility for implementation of wildlife management policies. Second, they are nested (albeit not in a tidy Weberian hierarchy) within the national wildlife management regime and are therefore more acted *upon* than are federal agencies.

The paper is divided into four parts:

Contextual factors: Based on the contextual factors outlined in the panel discussion paper, factors which are particularly relevant to the development of American state wildlife agencies are identified.

Case study: State wildlife management: The evolution of state wildlife agencies from 1890 to the present is described briefly.

Analysis: This section discusses the insights gained from using contextual factors to organize longitudinal analysis of a multiple-use CPR regime. The utility of contextual factors to explain the changes that have taken place in the past thirty years, as concern for conservation and biodiversity have become central to American natural resource policy, is emphasized.

Further Research: Guidelines for using contextual factors are proposed. Further avenues for research, particularly in multiple-use common property situations, are suggested.

2.0 CONTEXTUAL FACTORS

Commons are resource domains in which common pool resources are found. They may

³ The paper does not address fisheries for several reasons: in coastal states, inland and marine fisheries are frequently managed by separate agencies; in marine fisheries policy, the federal role is substantial, and while commercial fisheries play a large part in state policies, there is no equivalent issue in wildlife management.

be very small (the parking lot for an apartment complex) or quite large (the high seas or the solar system). The property right to a resource is not a single right but rather a bundle of rights: rights of access, exclusion, extraction, or sale of the captured resources; the right to transfer one's rights to a second person; or the right of inheritance. The specific composition of each bundle of rights varies and is guaranteed and protected by government. The sets of rules (treaties, laws, regulations, customs) that define property rights are property regimes.

Contextual factors are environmental factors that surround the establishment and maintenance of a CPR regime.⁴ Edwards and Steins have developed a framework for organizing and analyzing information about multiple-use, multiple-user CPR regimes that incorporates contextual factors. They distinguish two types of contextual factors: **local** contextual factors such as the availability of alternative sources of income which "have a *direct* influence on the situational variables of the CPR [regime], including the user community, and can largely be affected by the user community," and **remote** contextual factors such as international treaty agreements which "have an *indirect* influence on the situational variables of the CPR [regime] and are usually outside the control of the user community" (Edwards and Steins: 5).⁵ As a result,

contextual factors define (i) what is physically, legally, economically and socially *feasible* in terms of the supply of products and services and (ii) what is economically, socially and culturally *desirable*, by establishing the demand factor (Edwards and Steins:6).

Contextual factors are a rich and complex influence on the options and strategies of all appropriators, regardless of the size or sophistication of the regimes in which the appropriators operate. Frequently these contextual factors are an analytic given in studies of CPR regimes that often focus on the internal rules and institutions that regulate appropriation of the resource flow. In multiple-use, multiple-user CPR regimes, however, we cannot assume these contextual factors as givens because they vary with each set of uses and users involved in the regime.

This is not to imply that contextual factors are unimportant in single use regimes; however, in a single-use regime, local and remote factors will bear on any individual appropriator with roughly equivalent weight. In contrast, in multiple-use, multiple-user regimes, the range of local and remote factors which might affect the regime is increased; a set of factors which influences one user may have little, more, or no effect on another user. Thus, for multiple-use, multiple user regimes, contextual factors are more important **analytically** than they are in single-use regimes.

⁴ Our discussion of contextual factors bears a strong resemblance to the public policy literature that addresses endogenous and exogenous factors affecting policy implementation (e.g., Mazmanian and Sabatier, 1983) and to the cultural theory approach that originated in cultural anthropology (Douglas, 1982) and was subsequently adopted by some public policy scholars (e.g., Buck, 1989; and Thompson, Ellis, and Wildavsky, 1990). This is an example of *convergent evolution*, which in ecology is defined as "the independent evolution of similar traits among unrelated organisms resulting from similar selective pressures" (Chiras, 1994: 71; Sunquist, 1996) but also occurs in the social sciences when similar concepts arise independently in different academic disciplines.

⁵ In a very small scale system, personal local factors such as health or family size may have more effect than they would in a larger, more bureaucratic system. This, however, is not what we mean by *local factors*. Using personal factors is not analytically feasible; data collection would be impossible for any but the smallest of systems, and the nightmare of infinite regression would soon overwhelm the analyst. Our discussion of local factors is limited to those local factors which affect, or have the potential to affect, the user-pools as a whole.

The contextual factors listed and discussed below are local and remote factors that would affect any given state wildlife management agency.⁶ The user-pool in the case of state wildlife management is, in theory, the entire population of the state. However, since the states are barred from interfering with interstate commerce, citizens of other states may use public state facilities and, assuming they have the proper licenses, may even hunt within the state. Thus, the user-pool is comprised of any person engaged in wildlife-related activities who has complied with appropriation and access rules set by the state.⁷ The primary historical objective of wildlife management agencies has been to provide a sustainable and accessible stock of game animals; however, in recent years, state agencies have faced demands that they manage wildlife for other recreational uses. I will discuss in the analysis section how changing public perceptions towards non-game wildlife have begun to affect the wildlife management agencies.

Local Factors

natural

1. habitat conditions
2. incidence of disease

political

3. political decisions of adjoining states
4. state legislation
5. state court decisions
6. state agency regulations
7. agency resource allocation (funding, personnel)
8. enforcement
9. custom
10. interest groups
11. constituencies (number, heterogeneity)

Remote Factors

natural

1. climate change (storm events, precipitation, temperature)
2. demographic change (immigration, urbanization, development, population change)
3. incidence of disease
4. recurring predator-prey relationships

political

5. treaties and int'l agreements
6. U.S. Constitution
7. national legislation
8. federal court decisions
9. federal agency regulations
10. political decisions of remote states
11. national interest groups

⁶ Ostrom (1990) and Mazmanian and Sabatier (1983) have been a great help in identifying these factors. See also McCay (1998: xxiv-xxv).

⁷ This is not an open-access regime although it bears a superficial resemblance to one. States do not use restricted access as a management technique (although they could). For example, hunters must purchase a license to exercise their rights to appropriate the resource (game); however, the license is not an exclusion device. This point was made clearly by the federal courts in 1983 when the state of Virginia argued that conservation interests allowed it to impose a residency requirement for licenses to fish in Virginia waters. The court ruled that Virginia clearly had no conservation interest that could override the national interest in interstate commerce because there was no limit on the number of Virginia residents allowed to have licenses (*Tangier Sound Watermen's Association v. Douglas*, 541 F. Supp. 1287 (E.D. Virginia, 1983)). State resource stocks are protected not by limiting access but instead through limits on harvests and restricted seasons. This is politically astute. The legal right of citizens to hunt state wildlife is not infringed; instead, the community of appropriators approves the creation of game commissions and agencies, voluntarily assumes fees to support their work, and delegates to them the responsibility for making appropriation rules.

legal

- 12. state court decisions
- 13. state agency regulations
- 14. local ordinances

scientific

- 15. data

legal

- 12. federal court decisions
- 13. federal regulations

scientific

- 14. data

While most of these factors are self-explanatory, several do bear elaboration. First, "court decisions" are both political and legal factors. They are political because the decision to bring a law suit, to fight a law suit rather than to settle or to arbitrate, and, to some extent, the court opinions are all political choices. Once an opinion is issued, compliance is also a political decision (how fully must an agency comply? What are the costs of compliance compared to the benefits of non-compliance?) as well as a legal constraint. Similarly, formulation and implementation of "agency regulations" are both political and legal factors.

Second, there is some overlap between "constituencies" and "interest groups." On one hand, the user pool (sportsmen, recreational users, etc.) are constituents of the agency since agency actions directly affect their access and use of the resource. On the other, sportsmen and recreational users are also members of interest groups such as the National Rifle Association, Audubon Society, and National Wildlife Federation which seek to affect agency decisions. The agencies themselves are members of interest groups such as the International Association of Fish and Wildlife Agencies. For the purposes of this discussion, interest groups are formally organized groups of individuals or of associations that influence policy decisions, while constituencies are the individuals who make up the user pool. The two sets are not mutually exclusive.

Finally, "scientific data" is listed as both local and remote because of the amount of control a state agency has over the data collected. State level information may have a substantial impact on state decisions, and how that data set is collected and used is largely in the control of state agencies. State level information on biological systems is state specific and longitudinal, although it is frequently incompatible with data gathered in other jurisdictions. State agencies have almost a century of administrative experience with the species and habitats in the state; state biologists have longitudinal information on population shifts, weather patterns, water flows, flooding conditions--a myriad of data which can only be properly assessed through the lens of local experience. Data collected at more remote sites or by scientists over whom the agencies have little control is less useful to the states but may have a substantial effect on remote factors. However, even if an enormous centralized data collection process were initiated, it could never duplicate the "time and place" information gathered locally over an extended period; the information costs are too high (Ostrom, Schroeder, and Wynne, 1993: 120-122). Another impediment to multi-state data collections is data incompatibility. For example, to be comparable, biological data should be collected using the same method and timing at each collection site, and samples should be analyzed by identical processes. Data which do not meet these criteria may not be compatible even with sophisticated statistical analysis (Buck, 1988).

3.0 CASE STUDY: STATE WILDLIFE MANAGEMENT

In the United States, traditional ownership of wildlife was vested in state governments through the transfer of the powers of the English sovereign to the colonies and hence to the states. The "state ownership doctrine" assigned property rights in wildlife to the state in which the wildlife was found, and the state then held this property in trust for its citizens (*Geer v. Connecticut*, 161 U.S. 519 [1896]). Initially, the federal government was powerless to protect wildlife. [*remote factors: U.S. Constitution, federal court decisions*]

In the early days of the twentieth century, species which are abundant today, such as eastern white-tailed deer and wild turkey, were on the brink of extinction; some, such as the passenger pigeon, slipped over the brink and were lost forever. The interest groups concerned at that time with wildlife were fairly well defined: market hunters, sportsmen, and conservationists, but their interests were usually limited by their state borders. Across the nation, a patchwork of state hunting regulations and irregular enforcement left many species at the mercy of the casual hunter, but there was no effort to coordinate the states' legislation (Orr 1992). In the first decade of the 20th century, interest groups began to focus their attention on the federal government. By 1920 the states had lost their absolute control over wildlife through treaties, legislation, and court decisions,⁸ and the mix of federal and state jurisdiction that exists today began to develop. [*remote factors: treaties, int'l agreements, national legislation, federal court decisions, national interest groups. local factors: state legislation, state agency regulations*]

During the nineteenth century, the inability of the states to provide sustainable game resources stemmed from many factors:

- ★ Game seemed so plentiful that many were unconvinced of the problem or, if convinced, refused to accept that diminishing numbers were the result of indiscriminate hunting. We see this denial at the end of the twentieth century as well, with many fishermen on both coasts refusing to accept that overfishing is a major cause of declining fish stocks. [*remote factors and local factors: scientific data*]
- ★ Local custom dating to colonial times endorsed unrestricted hunting; vestiges of this attitude remain today in state laws that assume private land is open to hunting unless it is posted. [*local factors: custom*]
- ★ Since wealthy sportsmen often brought substantial business into rural areas, rural-dominated legislatures were understandably reluctant to cut off the income supply by restricting hunting. [*local factors: interest groups, constituencies*]
- ★ States which shared both migratory stocks and borders frequently suffered long-standing and often violent disputes over resources and had little incentive to join multi-state compacts. Such compacts would, in any case, require congressional approval, and states were reluctant to involve Congress in their internal affairs. [*remote factors: political decisions of remote states. local factors: political decisions of adjoining states, interest groups*]

⁸ For a fuller discussion of the erosion of the state ownership doctrine, see Bean and Rowland, 1997, Chapter 1, and Buck (1996a), Chapter 6, esp. pp. 117-122.

- ★ There was no established professional class of administrators for wildlife. The Pendleton Act, passed in 1887, initiated a professional civil service corps at the federal level, but most states lagged far behind. State governments were so far from professional game management that in many states the sportsmen's clubs and conservation groups such as the fledgling Audubon Society paid private detectives to enforce the game laws (Orr, 1992; Tober, 1981: 215-216). [*local factors: state legislation, resource allocation*]

Many state wildlife agencies began as citizen groups of sportsmen or conservationists eager to protect their own state interests. Sporting constituencies wanted regulation to restrain market hunters from demolishing stocks, although their motives often differed. Some wanted to protect their own supplies from the encroachments of out-of-state hunters, while others wanted to guard private game preserves to lure wealthy hunters (often from out of state) into their communities. Regardless of the motives of the sportsmen, the conservation interests were natural allies. The coalitions urged the creation of state fish and game agencies. Quite naturally, they also wanted to control the activities of the agencies. By the end of the nineteenth century, almost every state had established fish and game commissions (Tober, 160). [*local factors: interest groups, constituencies*]

Today these commissions continue in 27 states. The commission form of regulatory agency, comprised of political appointees with expertise and experience in the policy arena, is frequently found in state government, although the close and usually cordial relationship between its client groups and the fish and wildlife agencies is not common. In recent years some states have consolidated their natural resource concerns into one centralized agency; six states have boards or commissions which oversee all natural resources, while several have retained some aspect of their old wildlife commissions nested within the larger agencies. Only two states, Maine and North Dakota, have separate wildlife agencies which are not overseen by a commission.⁹ [*local factors: state legislation, interest groups, constituencies*]

Commissioners are appointed by their state governors, occasionally subject to confirmation by the state senate or other legislative body. Many states have distribution requirements for the commissions; for example, in West Virginia, each congressional district provides one commissioner and the remainder are drawn from the state at large. Usually state law requires commissioners to have some expertise in fish and wildlife. Commissioners often have staggered terms, which provides even more independence from political vagaries. [*local factors: state legislation, interest groups, constituencies*]

State wildlife management agencies are funded by a combination of state general funds, license fees, and federal aid. License revenues and federal aid provide a stable funding mechanism for the agencies. State agencies receive funds from license fees which, as a condition of continuing federal fish and wildlife aid, cannot be diverted from the agency. Federal aid revenues to the states (provided to the states via the Federal Aid in Wildlife Restoration Act of 1937 and Federal Aid in Sport Fish Restoration Act of 1950) increase as prices rise because the source of the federal funds is an excise tax; the state share may fluctuate with the number of hunters, which is an additional incentive to provide an abundant, well-managed stock of game, but the agency can rely on a relatively predictable and steady source of income. Finally, although the original source

⁹ These data are compiled from the *1995 Conservation Directory* (Gordon 1995) and Musgrave and Stein, *State Wildlife Laws Handbook* (1993), supplemented by telephone interviews.

of the federal aid is tax revenue, it is, quite improbably, a tax voluntarily assumed by the taxpayers and vigorously defended against reductions by sportsmen, manufacturers, and conservationists.¹⁰ [remote factors: demographic change, national legislation, federal agency regulations, national interest groups. local factors: state legislation, interest groups, constituencies]

Although on paper the authority and responsibility of the commissions, the agency directors, and the other state natural resource agencies are clearly defined, in practice there is a great deal of informal communication, negotiation, and compromise. A commission is unlikely to overrule the recommendations of its state wildlife biologists who are in turn unlikely to recommend politically unrealistic policies. [local factors: interest groups, constituencies, scientific data]

Agency performance is measured by the extent to which they provide sustainable populations of mature, harvestable animals. Hunting seasons, bag limits, and related regulations are adjusted to anticipate or to compensate for shifts in animal populations. This is not necessarily an ecological approach.¹¹ There are, of course, substantial benefits for many wild species when any habitat is improved and preserved, and endangered species do receive special considerations, but the management of habitat primarily to sustain game species may also produce less than optimal conditions for non-game species. Regardless of incidental benefits to non-game populations, the overall mission of most wildlife agencies is the provision of a sustainable hunting stock. [remote factors: climate change, demographic change, incidence of disease, predator-prey relationships, national legislation, data. local factors: habitat, state agency regulations, agency resource allocations]

4.0 ANALYSIS

The first two sections of this paper defined remote and local contextual factors and recounted the bare bones of the history of state wildlife management agencies. In this section, I apply those factors to a discussion of contemporary agency design and how emerging trends in wildlife management will affect the effectiveness and efficiency of the those agencies.

As Edwards and Steins suggest, working backwards from changes in outcomes is useful in identifying critical contextual factors. In the last ten years, wildlife agencies have been under increasing political pressure to expand their mandates to include a greater concern with habitat preservation and biodiversity. This is a rough parallel to the mandates for the federal land use agencies that first emerged in the Multiple-Use Sustained-Yield Act of 1960 and later in the Federal Land Policy and Management Act of 1976. Following the analytic framework in their paper (here reproduced as *Figure 1*), we can see how changes in the remote and contextual factors have affected the design of the institutions that manage the resource and how those changes threaten institutional stability.

Does approaching the problem from the perspective of *feasibility/supply* and *desirability/demand* provide any new insights? First, let's examine what is currently "physically,

¹⁰ For a full account of the federal aid programs, see Buck, 1996a: 122-125 and Buck, 1996b.

¹¹ It does not, for example, usually incorporate predator species as a natural counterweight to overpopulation of prey; on the rare occasions where predators have been included, the agencies have paid a high political price. The recent reintroduction of wolves into Yellowstone National Park in Wyoming and the Alligator River National Wildlife Refuge in North Carolina infuriated local ranchers, although research consistently shows that wolves rarely prey on livestock and have a positive culling effect on wild deer populations.

legally, economically and socially *feasible* in terms of the supply of products and services" (Edwards and Steins: 6) and the extent to which the agencies can affect this feasibility (local factors) or have little to no control (remote factors).

The feasibility/supply of wildlife and wildlife management services is especially susceptible to "natural" remote factors (climate change, demographic change, incidence of disease, recurring predator-prey relationships) largely beyond the control of management agencies. For example, changing patterns of urbanization fragment habitat, eliminating contiguous ranges necessary for some species and driving others into areas where they interfere with human activities. In contrast, "political" and "legal" remote factors (treaties and international agreements, the U.S. Constitution, national legislation, federal court decisions, federal regulations, political decisions of remote states, national interest groups) have little impact on the supply of wildlife; rather they constrain the options available to the managers by protecting certain species or habitats and curtailing the state manager's bundle of property rights (e.g., placing wildlife on federal lands under federal jurisdiction). "Scientific" remote factors also have no effect on supply except to the extent the scientists themselves are part of an epistemic community that informs the development of local data. However, social feasibility is often affected by remote factors as cultural attitudes towards animals and hunting shift. For example, loudly expressed national opinions about wild horses and burros led to federal protection under the Wild Free-Roaming Horses and Burros Act of 1971; bison have been restored to the tallgrass prairie; and wolves have been re-introduced in Wyoming and North Carolina. Another example, the 1996-1998 rabies epidemic on the east coast of the United States, has changed public attitudes toward viewing wildlife; harmless opossums sleeping in city park trees have been surrounded by police, shaken down by firemen, and killed for fear of rabies. These changing social attitudes on the national or regional scale also affect state services.

It is in the demand side ("what is economically, socially and culturally *desirable*" [Edwards and Steins: 6]) of the equation that we see the greatest change for state management agencies. The changes, while often part of national or regional shifts in attitude, are most strongly affected by local factors. Citizens look to their state agencies to provide and to control wildlife and wildlife habitat for a variety of recreational uses; pressure for nongame uses such as hiking, photography, and wilderness adventure is increasing.¹² State management agencies respond to political pressures brought to bear by state interest groups and new constituencies. As the agency constituencies become less homogenous, the political tightrope that the agencies must walk becomes thinner and the crosswinds pick up.

There is been an interesting dichotomy in conservation thinking that has segregated hunting concerns from the concerns of mainstream conservationists, although their policy preferences are often remarkably similar. A thorough discussion of the extent of this dichotomy and the reasons for it are topics for another paper, but I believe it is based in cultural differences (Buck, 1989; Thompson, Ellis, and Wildavsky, 1990) between the two user groups. However, in recent years, conservation interests have focused increasingly on two new concerns: biodiversity and sustainability, and they have begun to see an opportunity for issue linkage by associating new non-game wildlife policy interests with existing game programs. They are critical of state agencies for what some perceive as an unbalanced emphasis on game programs to the detriment of nongame species, for example, managing public lands to provide quail and pheasant habitat which reduces deep forest songbird habitat.

¹² Public expectations that state agencies will be the change agents in weaker in the West, where large tracts of land (and in some states, the majority of land holdings) is in federal jurisdiction. Western state citizens address many of their requirements to federal agencies.

One result of this increased scrutiny has been a call for funding for nongame programs. States have tried several innovative techniques to raise money such as tax refund check-offs, dedicated license plates, and state endowment funds. One state has even implemented a state sales tax dedicated to state conservation efforts. A recent national drive to instigate a federal excise tax on nongame-related products is wending its way through the policy process. Regardless of the success of these efforts to provide funds for nongame programs, they have already shifted the range and impact of remote and local contextual factors.

As we saw in the case study, the remote factors that were most influential on a regular basis were *national interest groups* and *national legislation* while at the local level, *state legislation*, *interest groups*, and *constituencies* were critical. The new emphasis on nongame species reflects a change in interest groups which now include groups with different resources, policy networks, political orientations, and policy goals. They will affect state legislation and they will also force agencies to consider redistribution of resources.

An even more profound effect would occur in the relationships between the agencies and their constituencies. The old hunting constituency would find its influence diluted. The qualifications for commissioners would be likely to change to include more conservation interests. Unless an insulated and reliable revenue source for nongame programs were in place, the balance between the state legislatures and the agencies would become unstable, and in some states, legislative interests would seize the opportunity to rework the relationship. For example, if state legislatures simply mandate greater consideration of nongame programs without increasing general revenue funding, agencies will be forced to cut game programs, thereby aggravating the old hunting constituencies and disrupting their current smooth issue networks. Newer, nongame constituencies will still be negotiating their role in the policy balance and may see this as an opportunity to garner more resources. The resulting conflict over resource allocation will place state wildlife agencies in vulnerable positions within state government.

5.0 FUTURE RESEARCH

This preliminary discussion has raised a number of research questions that relate to both methodology (use of the analytic framework) and substantive concerns (wildlife management in the United States). It also suggests preliminary guideline for using contextual factors in analyzing multiple-use, multiple-user commons.

5.01 Research Questions

1. *Are contextual factors better expressed as a matrix (network/decision tree/hierarchy) rather than a list?* For example, interest groups have a direct effect on agencies but they also affect legislation, regulations, and court decisions. Oversimplification of this complex relationship may hide important links between contextual factors and public policy.
2. *To what extent do spatial factors influence contextual factors?* For example, agencies of neighboring states are likely to cooperate, but as states become more geographically remote, the likelihood of cooperation decreases, so that contextual factors become conceptually remote as well.

3. ***How do contextual factors affect decisions at the three levels of institutional choice: constitutional, collective, and operational?***

Constitutional choice. At the level of constitutional choice, the power of the states to regulate wildlife is quite literally a *constitutional* one; this is one of the "reserved" powers of the states under the U.S. Constitution.¹³ In the past century, the balance between national and state power has shifted, and the responsibilities of the states over wildlife are constrained by such remote factors as treaties, legislation, and court decisions. However, the states still largely control game animals, and this power is delegated by state legislatures to state management agencies. ***Are multiple-use commons more likely to be affected at the constitutional level by contextual factors? If so, are remote factors more or less influential than local ones?***

Collective choice. Collective choice decisions are then made at the agency level through rulemaking and adjudication as well as resource allocation (personnel, funding, etc.). Agency administrators conduct hearings on proposed regulatory changes, consider current research results, and consult with adjoining states which share wildlife ranges before making final decisions. Because these decisions are made at the administrative rather than the legislative level, they can be changed fairly rapidly in response to new scientific data or sudden, unanticipated changes in local factors such as habitat, disease, or climate. ***How do the activities of agencies as agents affect the institutional design of the regime? They are embedded in a complex administrative structure. How do they balance policy mandates with bureaucratic imperatives?***

Operational choice. Operational choice decisions are also made at the agency level by "street-level" bureaucrats (perhaps we need to coin a new term for environmental operations: the "field-level" bureaucrat), because decisions about monitoring, enforcement, sanctioning, and implementation are made not by the appropriators (hunters and recreationists) but by the agency personnel.

Let's explore this phenomenon by isolating one group of field-level administrators: the game wardens. They are also state citizens with the same rights of access and appropriation as other citizens but when they are acting in their official capacity, they are responsible for enforcing state wildlife laws and regulations which involves both monitoring and, to some extent, sanctioning (in the same sense that a police officer can control sanctions by exercising discretion in choosing which charge to bring). Their authority comes from the state government, and the powers of the state government are, in turn, given to it by the citizens of the state. Thus, although citizens are not directly participating in the operational choice of the regime, they do participate directly in the constitutional choices (by electing officials) and the collective choice decisions (by public participation and influence on the elected officials who ultimately control the agencies). ***To what extent does this shift in locus of operational choice decisions affect the operation of the multiple-use commons?***

4. ***How should the differences between eastern and western states be reflected in discussing contextual factors in state wildlife management?***

While regional differences among the states account for a great deal of variation in contextual factors, two issues especially germane to this initial paper draw our attention to the

¹³ "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." Constitution of the United States, 10th Amendment (1791)

divisions between eastern and western states: the role of the federal government, and differences in water law. The federal lands comprise over 700 million acres, or about one-third of the United States, with most of the land held in the western states. In some western states, the federal government owns over half of the land. For state wildlife management agencies, this certainly shifts the relative weight of remote and local contextual factors towards remote factors. In addition, water law in the west is based on prior appropriation rather than riparian rights. It seems likely that this difference would affect the ability of state agencies to manage habitat.

5. ***What is the impact of economic (i.e., market) factors on state wildlife management?***

Economic contextual factors were not included in the earlier list of remote and local factors affecting state wildlife management agencies. Although wildlife-related activities generate significant expenditures (\$101.2 billion in 1996 [U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, Bureau of the Census, 1996: 5]), agency missions and their primary constituencies are not motivated by economic forces. There is little market for game animals, although some trophy animals such as bighorn sheep are themselves an economic commodity and there is a considerable market built around their appropriation. The issue of how economic concerns drive agency decisions needs to be explored.

5.02 **Preliminary Guidelines**

1. Contextual factors for multiple-use, multiple-user commons should be constructed as matrices (networks/decision trees/hierarchies) rather than as lists to show the complex connections between them.
2. Contextual factors will differ for every commons and groups of users/uses, but the general *categories* should be relatively constant. As a starting point, we might consider five categories; natural, political, legal, scientific, and economic.
3. The effect of contextual factors should be tested against the three levels of institutional choice: constitutional, collective, and operational. While they may have little or no impact on one or more of these levels, we should still routinely ask the question.

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