
Case Studies in Wildlife Policy Education

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Wildlife policy may be broadly defined as what state, federal and private wildlife management agencies and organizations do for or to wildlife in the name of the "public interest." Culhane (1981:31) notes that policy is "often treated as an abstraction associated with dry prose and dusty volumes of government documents." In reality, policy is a dynamic, interpersonal, interorganizational process which results in product outcomes (e.g., the 1973 Endangered Species Act and the actual recovering of an endangered species).

Policymaking and implementation are both process and product. Some contemporary wildlife management texts, although technically excellent, emphasize only the product dimension of the policy process, listing key pieces of federal wildlife legislation, if policy is mentioned at all. Limited exposure to the wildlife policy process by wildlife students, especially as regards the implementation phase, through university training can lead to little explicit understanding of both the process and product of policy. Unfamiliarity with the policy process has not been without consequence to wildlife resources. Ongoing management dilemmas—and debacles—such as the endangered black-footed ferret (*Mustela nigripes*) program in Wyoming, the threatened grizzly bear (*Ursus arctos*) problem in the greater Yellowstone ecosystem, the endangered California condor (*Gymnogyps californianus*) program and many others highlight the need for greater understanding of the policy process by all concerned.

Romm (1984:15) emphasizes that wildlife professionals need education that will enable them to operate as well in the public forum of the wildlife policy process "as in the forest, field and stream." Wildlife policy has become highly dynamic in the last decade and public interest in natural resources, in general, has broadened, intensified and created new demands for wildlife professionals. It is

expected that enhanced wildlife conservation will result if wildlife students and wildlife practitioners become well versed in the policy process in addition to technical matters. This article examines the potential role of case studies in wildlife policy education, presents a selection of wildlife case studies and suggests several methods for preparing, analyzing and teaching case studies.

THE POLICY PROCESS

Before examining case study education as a means of teaching and learning the policy process, I would like to discuss very briefly the policy process as background to the remainder of this article. The policy arena includes those interests and stake holders, either individual or organizational, that are vying for control of decision-making and program implementation. Policy, according to Byars (1984), guides actions, outlines the framework within which objectives are established and selects strategies for implementation. Policy formulation and implementation, not to mention analysis and evaluation, can be an extremely fluid, complex and, sometimes, a conflict-laden process. The policy process can be characterized, according to Dana and Fairfax (1980:xiii), as "a series of negotiated settlements resulting from the interaction among competing interest groups, among competing regions and among agencies competing for the support, interest and attention of the public." The legislative history and subsequent implementation of the 1973 Endangered Species Act, for example, have been investigated by Yaffee (1982), who describes the many aspects of the policy process. Yaffee specifically studied those technical and sociological factors, both external and internal to the U.S. Fish and Wildlife Service, that affect implementation of the Endangered Species Act.

New public policies formed through the legislative process or executive order are by no means the end of the policy process, according to Clarke and McCool (1985) and other students of the policy process. In fact, it is only the beginning. "How policies get twisted, changed, modified, distorted and even at times successfully executed has become the subject matter of a flourishing subfield within the disciplines of political science and public administration" (Clarke and McCool 1985:2). In short, policy implementation is a major step in the policy process and as important as deciding on the content of the original policy itself. Policy implementation is done by one or more governmental bureaucracies and in studying implementation one is inevitably drawn into a study of organizational behavior (Warwick 1975, Yaffee 1982). "Whether policies succeed or fail in their objective is largely dependent upon the nature of the organization mandated to carry out the policy" (Clarke and McCool 1985:2). Because agencies vary, even though all share many bureaucratic characteristics, agency differences come into play in all aspects of the policy process, especially implementation. Differentials in political and organizational factors can sometimes be most easily seen in the implementation phase.

The policy process is seldom a simple, linear, rational decision-making process—a naive view of the uninitiated. One analytical scheme of the policy process describes six general phases a policy or program goes through—initiation, estimation, selection, implementation, evaluation and termination (Brewer and deLeon 1983). The two widely recognized components of the policy process—politics and analysis—are usually evident in any given case and both conflict and complement each other (Lindblom 1980).

CASE STUDIES IN WILDLIFE POLICY EDUCATION

A case study "is the systematic recording of an event or series of events with the objective of learning from that event" (Taylor 1983:261). The case study method is a teaching tool widely employed in the training of doctors, lawyers, social workers and other professionals (McNair 1954, Golembiewski and White 1983). Its current use in wildlife curricula appears limited, often focusing only on the narrow, technical, biological aspects of a wildlife problem or historical issue and perhaps falling short of meeting its full potential as a teaching tool. Despite a growing perception that the policy-making process needs to be a formal part of university wildlife curricula, a recent survey of wildlife programs in the United States showed that few universities actually teach such courses (Kellert and Clark in preparation).

What should wildlife policy courses cover? Romm (1984:16) said a policy course must develop "curiosity about and understanding of the processes of public policy," "a capacity to assess the causes of conflict and the

sources of leverage upon them," "the conceptual and communications skills to use leverage in an effective" and "an ability to maintain the integrity and vitality of a professional stance while active in often severe conditions of values." Teaching methods should mix historical themes, issue-projects, analytical concepts and technical and oral and written skills. A combination of lecture readings, guest speakers and case studies is expected to be most fruitful.

Case studies describe actual or hypothetical situations in detail and can illustrate complexities and subtleties of the policy process. Students can examine possible solutions without costly, real-life consequences and profit from combined analysis and judgment of groups. In real cases students can study the decisions, the outcomes and the consequences (Brinckloe and Couglin 1977). Because case studies can serve as models of appropriate responses, students can prepare through them for complex situations in the future.

Four types of case studies are recognized according to their complexity, detail and ease of analysis (Ronstadt 1980). The type used by instructors will vary depending on the purpose of the specific exercise. *Technical problem solving cases* are usually short, fact-laden and well ordered. The single "best" solution is sought, based on a given analytical model. *Short structural vignettes* generally lack a single "best" solution, but lend themselves to a "better" solution within the conceptual framework provided for analysis. *Long, unstructured problem/opportunity identifying cases* are as lengthy as their name. Complexities are introduced and the underlying problems or opportunities are unclear and do not permit a "best" solution. However, adequate theory or precedent is provided to allow a preferred conclusion to be derived. *Groundbreaking cases* include new situations where little, if any information from previous systematic research exists. Relevant theory, concepts and teaching objectives have not been identified. The case data must be worked in completely new ways.

TEACHING CASE STUDIES

Effective classroom use of case studies requires attention to content (which issues to emphasize) and process (which techniques to use to prepare and analyze cases; Golembiewski and White 1983). However, there is no single method for either case preparation or analysis. The method must be tailored to the students' evolving skills and understanding. Five sets of guidelines for case study preparation are given in Table 1. All five are similar, but Gilbert's (1971) is most detailed. Ronstadt's (1980) guidelines are "methodological," calling for the use of appropriate analytical methods in the case analysis. All five sets of guidelines cover the six general phases of the policy process given by Brewer and deLeon (1983) above.

Table 1. Some guidelines for preparation and analysis of case studies

Raymond (1954)	Gilbert (1971)	Ronstadt (1980)	Golembrewski & White (1983)	Byars (1984)
<ol style="list-style-type: none"> 1. Define central issue 2. Select pertinent areas of consideration 3. Analyze considerations and determine their relative importance 4. Investigate other possibilities 5. Draw final conclusion 	<ol style="list-style-type: none"> 1. Objectives (problem recognition) 2. Case situation (problem definition) <ol style="list-style-type: none"> a. Policies b. Budgets c. Statements d. Surveys e. Basis for arguments (pro or con) relative to situation f. Politics 3. History of effort (or lack of effort) <ol style="list-style-type: none"> a. Background info b. Reasons for present controversy or proposal 4. Publics involved and their tendencies <ol style="list-style-type: none"> a. Proponents <ol style="list-style-type: none"> 1) Internal publics (& sub-publics) 2) External publics (& subpublics) b. Opponents <ol style="list-style-type: none"> 1) Internal publics (& sub-publics) 2) External publics (& sub-publics) 5. Campaigns & communications <ol style="list-style-type: none"> a. Media used b. Other techniques <ol style="list-style-type: none"> 1) Propaganda 2) Samples and polls 3) Personal contact 4) Meetings 6. Results <ol style="list-style-type: none"> a. Analysis of techniques b. Sequence of events c. Basis for success or failure 7. Alternate solutions 8. Summary and evaluation 9. Future possibilities 10. Bibliography or literature cited 	<ol style="list-style-type: none"> 1. Determine key issues and hidden issues 2. Determine general analytical approach needed <ol style="list-style-type: none"> a. Systems approach b. Behavioral approach c. Decision approach 3. Determine how to focus analysis 4. Determine specific level and type of analysis <ol style="list-style-type: none"> a. Comprehensive analysis b. Specialized analysis c. Lead off analysis d. Hit & run analysis e. Integrating analysis 5. Translate the analysis into a form that is easily read and presented. Crystallize and reduce analysis to a few simple points. 	<ol style="list-style-type: none"> 1. Analyze content or substance of case—list characters, situations, or events 2. Double check and revise list of issues 3. Explain why and how the issues reveal themselves 4. Seek literature that offers empirical findings, theories on narratives that are possible explanations 	<ol style="list-style-type: none"> 1. Define central issue of the case 2. Determine pertinent areas of the process that need consideration 3. Evaluate available data, gathering and evaluating more data if necessary, drawing conclusions about central issues and other pertinent issues 4. Investigate other less critical issues 5. Draw final conclusion and possible action plan

Most written case analyses are five to ten typed pages long, plus exhibits, or appendices, and may require up to 25 hours to prepare. Ronstadt (1980) suggests these stages in group preparation efforts: initial individual reading and analysis (4-5 hours); initial group meeting to analyze the facts and the existing situation, identify the problem and make group work assignments (2-3 hours); second reading and analysis (4-5 hours); second group meeting to re-analyze the case and divide assignments, organize the paper, define key messages and write first draft (5-7 hours); and rewriting the paper, including final proof-reading of typed draft.

Use of the case study method depends on whether a technical or intuitive approach is desired, whether conflict in the classroom can be productively managed, whether the class should be directed via specific insights or should be allowed to grope toward its own discovery and whether uncertainty and questions are allowed or specific guided direction is sought (Golembiewski and White 1983:21). The discussion format is often used in teaching case studies, but its success depends on the role and attitude the instructor assumes. Ronstadt (1980) identified six case method formats. In the *teacher-to-student (cross-examination)* format, the instructor directs questions to specific

students. The *teacher-to-student (devil's advocate)* format calls for the student to think and reason on his feet, drawing on and weaving together case data, theory experience and common sense. The *teacher-to-student (hypothetical)* format poses hypothetical situations to which students must respond. *Student-to-student (confrontation and/or cooperation)* discussion is entirely between students. In the *student-to-student (role playing)* format, students assume roles and interact with one another. With the *teacher-to-class (the silent)* format, the instructor asks a student a question which he cannot answer and the question is then extended to the entire class.

The case study method of teaching depends, in large part, on the skills and resources of the instructor. Furthermore, decisions on the role the instructor is to take, techniques for case study preparation and how case materials are to be used must be made (Andrews 1954, Merry 1954a,b). Ronstadt (1980) listed eight discussion roles an instructor might take: the expert witness role, "bail 'em out" role, "assume a personality" role, "get the facts out" role, "industry expert" role, "I've got experience" role, "questioning" role and "wrap it up" role. These descriptive phrases accurately label the optional roles an instructor may assume.

LEARNING THROUGH CASE STUDIES

Examination of case studies is "designed to test the student's analytical powers and not his store of facts" (Raymond 1954:139). The case study method works best, according to Taylor (1983), when it has a style that allows readers to identify with characters or roles of the case, a mood that captures the dynamics of the unfolding situation and a distinction between the descriptive and conceptual/theoretical elements of the situation.

The educational philosophy underlying the case study method assumes that formal university programs must provide students with the skills needed to meet problems in new situations through thoughtful action (Dewing 1954). As Gragg (1954:6) noted, "wisdom can't be told." Simply listening to wise statements and sound advice does little for anyone. The case study method can provide a learning experience which enables the student to think for himself. Dewing (1954:2) said, "In fact, power to deal with the new and power to think are pragmatically the same." Human action within the policy arena must be judged by concepts and standards different than those in technical wildlife science. Technical facts are subject to empirical testing, but such is rarely the case in the realm of policy analysis. Dewing (1954:3) said, "When one attempts to reach fixed and certain facts, not to say truths, underlying human actions, one is confronted with an intricate and disordered heteronomy of happenings apparently devoid of order or causal relation. The situation is at its worst—or, perhaps, most complex—when we at-

tempt to discover order and scientific precision among the events of social economics."

The case study method provides conceptual, theoretic frameworks, historical background, skills and experience. Case studies can teach indirect socialization by pitting students against real-life situations; skills in distinguishing between facts and assumptions; and articulation of objectives and formulation of strategies for complex interactive situations. They also can develop experience in relating theory and concepts to real-life situations; experience in withholding judgments prior to hearing all the facts and diverse views; experience in relating overviews to small instances; personal experience of the "existential dilemmas" of participating in the policy process; awareness of the cultural values of the individual and organizations involved; and effective diagnostic skill in tailoring specific interventions to situations (Golenbiewski and White 1983:22).

Table 2 lists 15 wildlife case studies varying in data and scope and identifies some of the major policy concerns illustrated in each. It is beyond the scope of this article to apply the case study guidelines in Table 1 and detail even a single one of the cases in Table 2. The 11-item list of concerns and issues in Table 2 is not exhaustive nor is it exclusive, but it does represent a significant portion of the range of issues that surfaces in policymaking and implementation. Collectively, the cases emphasize technical/scientific issues, organizational issues and economic, political and other issues.

CONCLUSIONS

Use of the case study method in wildlife policy education offers a broad opportunity for a synthesis of a variety of social and technical disciplines all focused on issues. Essential to this is a solid foundation of conceptual policy and organizational knowledge. The case study method can serve as an effective educational vehicle for understanding, and a model for later individual operation in the policy process. Effective case study education requires extensive preparation and active participation from both students and instructors. We currently need a casebook (i.e., a book containing a description of the policy process, techniques for analyzing cases and case readings on which to apply techniques) with enough varied cases to reflect the impact of institutions, issues, traditions and processes characteristic of the wildlife policy arena.

Problems exist in encouraging students—and some instructors—to seek policy experience (Romm 1984). The concept of wildlife professionalism into which students are socialized encourages them to view problems as merely technical issues and to avoid social conflict (Clark 1986). Also, the education of wildlife professionals is often insulated from exposure to diverse values and interests, such as those in political science, organizational sociology, phi-

Table 2. Classification of selected cases by policy issue.

★ Major topic of case
☆ Other relevant topic

Case	Policy issue										
	Conflict	Politics	Organizations	Policy implementation	Policy formulation	Public issues	Ethical questions	Technical/scientific	Economics	Legal	Legislative
1. Yellowstone grizzly bears	☆	☆	☆	☆	☆	☆	☆	★			
2. Endangered Species Act	☆	☆	☆	★	☆	☆	☆	☆	☆	☆	☆
3. Spotted owls	☆	☆	☆	☆	☆	☆		★	☆		
4. Forest Service vs. National Park Service	☆	☆	★	☆	☆	☆					
5. Waterfowl and wetlands					☆	☆					
6. Black duck	☆	☆	☆	☆	☆	☆		☆	★		
7. Northern Yellowstone elk	☆	☆	☆	☆	☆	☆	☆	★			
8. Kaibab mule deer				☆		☆		★			
9. Galatin elk	☆	☆	☆	☆	☆	★	☆	☆		☆	
10. Grand Canyon burros	☆	★		☆	☆	☆	☆	☆	☆	☆	☆
11. Snail darter/Tellico Dam	☆	☆	☆	☆	☆	☆	☆	☆	☆	★	☆
12. Wildlife agency and its public	☆	☆	★			☆					☆
13. African wildlife management			☆	☆	☆		☆	★	☆		
14. Black-footed ferret	☆		★	☆	☆			☆	☆	☆	
15. California condor	☆	☆	☆	☆	☆	☆	☆	★	☆	☆	☆

1. Craighead 1978, McNamee 1983, National Academy of Sciences 1974, Gilbert 1971, Chase 1985.
2. Yaffee 1982.
3. Lafollette 1979.
4. Twilight 1983.
5. Hammack and Brown 1974.
6. Grandy 1983.
7. Houston 1982, Woolf 1967.
8. Caughley 1970, Leopold 1943, Rasmussen 1941.

9. Lovaas 1970.
10. Carlin 1967, Behan 1978, National Academy of Sciences 1982, Wolfe 1983.
11. Plater 1982.
12. Owens 1965.
13. Marks 1984.
14. Clark 1984a,b.
15. Brower 1983, Holden 1980, Phillips and Nash 1981, Temple 1983.

osophy, history, psychology and so on. Then students go on to employment in organizations with specific policy preferences and, if conflicts develop between the individual sense of professional responsibility and the sense of duty to employers, "professionalism typically succumbs to duty." Indeed, the letters to the editor of *The Wildlifer* by Hornocker (1982) and Finley (1983) (See "Professional Excellence in Wildlife and Natural Resource Organizations" in *Renewable Resources Journal*, Volume 4, Num-

ber 1, Winter 1986 issue, page 3) and the works of Kennedy and Mincolla (1985), for example, speak directly to this issue. These barriers can grow into a strong resistance to learn from disciplines outside "wildlife." As a result, many aspects of the policy process remain "invisible" to some wildlife professionals throughout their careers. The case study method described in this article offers an ideal pedagogic tool to meet these broader educational needs of wildlife professionals.

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Natural Resources in Regional and State Economic Development

Henry H. Webster

The Great Lakes/Upper Midwest region has passed through several stages of development, as is known to every observer. At the same time, the relationship of natural resources to economic growth in the area has changed considerably from one stage to another.

Resources were the very basis of the first stage of development of the region. Iron ore was one major resource; timber was another. Between them, they provided both the raw materials and the financial capital for further enhancement of a substantial part of mid-continent North America. Agriculture obviously was also a major part of this development. Man's discovery

and use of agriculture, incidentally, was described as the "tidal wave" of change in human history in Alvin Toffler's significant book, *The Third Wave*, published in 1980.

Further growth in the Great Lakes and Upper Midwest states greatly changed and reduced the relative importance of their natural resources for a substantial number of decades. A very strong, prosperous regional economy based on other factors arose, although this varied greatly from one part of the area to another. We might note two examples: a *heavy industry economy* based primarily on steel, heavy machinery and auto-