

PUBLIC ATTITUDES TOWARD BEARS AND THEIR CONSERVATION

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Public policies regarding the conservation and management of bears are a product of the interaction of science, values, and politics. Successful bear management depends, of course, on an accurate understanding of bear biology and ecology. The lack of a corresponding knowledge of public values, political forces, and socioeconomic factors, however, will typically result in ineffective policies intended to assure the long-term well-being of this animal.

This perspective of bear management is reflected in Kellert and Clark's (1991:18-19) view of wildlife policy as the "interactive relationship of various constituencies in an exchange of information, values, and efforts to control wildlife...throughout the 'life' of [the] wildlife policy [process] from its initiation to termination." The key elements of this policy framework are the notions of constituencies, policy forces, and time, as illustrated in Figure 1.

Constituencies broadly reflect the political element of bear management expressed at both the community and organizational levels. Policy forces are represented by 4 major variable classes including biophysical, valuational, social structural, and institutional-regulatory forces affecting the development and implementation of bear policy, as reflected in Figure 2. The element of

time suggests the expression of these forces changes during the various stages of the bear policy process from its initial inception to the evaluation and selection of policy alternatives to the implementation of preferred policy options to the eventual evaluation and termination of chosen policies (Brewer and DeLeon 1983).

This multidimensional, interactive, and dynamic characterization of the wildlife policy process suggests its extreme complexity and subtlety. Ignoring this complexity by inordinately focusing on the biophysical dimensions of bear policy will often result in inadequate management practices. The recognition and understanding of bear policy as a complex web of interacting scientific, valuational, and political forces can enhance the chances for developing more successful policies, as well as increase the opportunities for greater professional effectiveness and a sense of control over the policy process.

This paper focuses on the importance of values in bear policy. This discussion will describe various attitudes toward bears, factors involved in the development of these perceptions, and the role of attitudes in designing effective programs for bear conservation. The geographic scope of this paper is North America, although the policy framework and

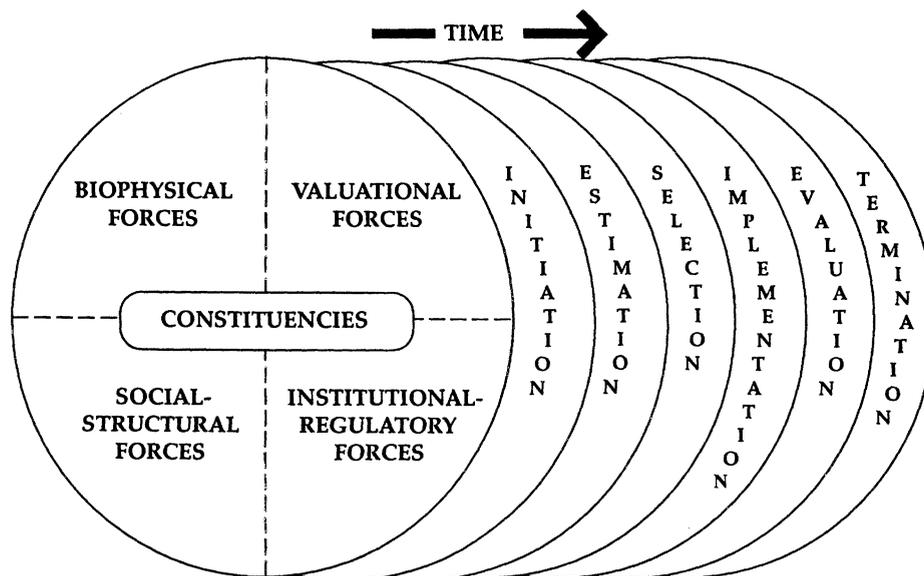


Fig. 1. Wildlife policy framework.

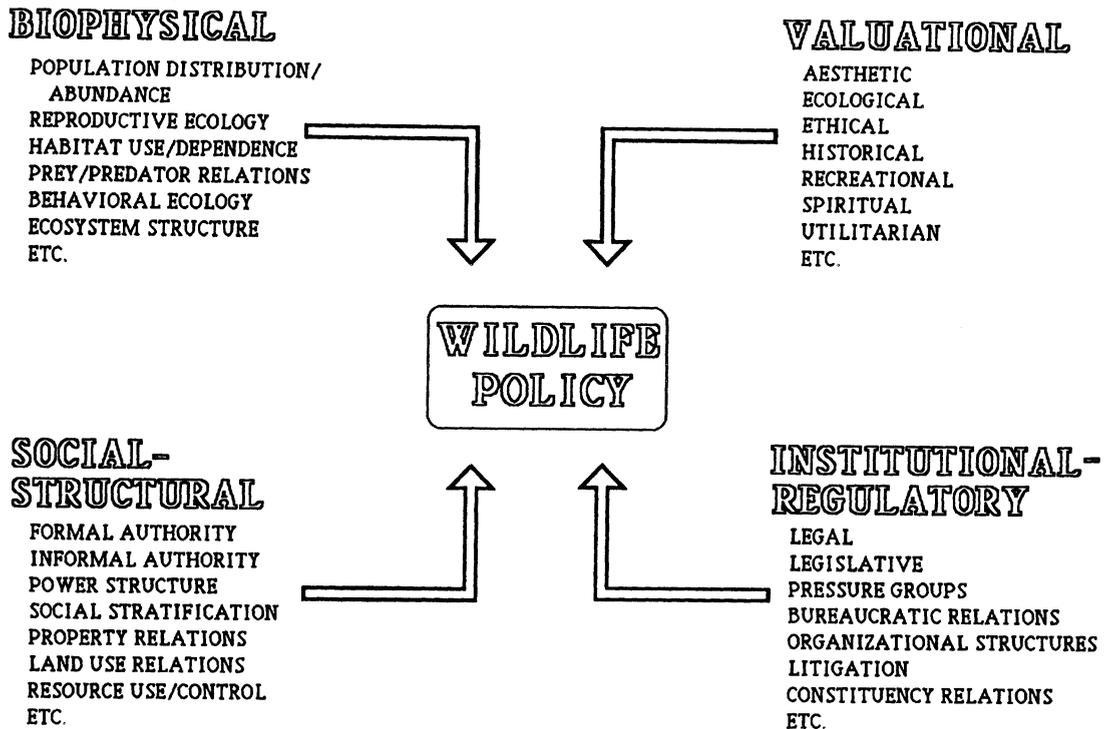


Fig. 2. Wildlife policy forces (from Kellert and Clark 1991).

attitudinal discussion may be applicable to other biogeographical regions. A basic assumption, as Amato and Whittemore have suggested (1989:17), is that "public values...[regarding bears] drives the political process and greatly influences the level of commitment of the management agencies and the enforcement of laws and regulations designed to protect [bears]."

Attitudes toward bears and, more generally, wildlife are regarded as resulting from 4 interrelated factors. These factors, as illustrated in Figure 3, include basic wildlife values, perceptions of particular species, knowledge and understanding of wildlife, and people-animal interactions. A typology of basic wildlife values has been developed by the author (Kellert 1980) and brief definitions are provided in Table 1. Perceptions of individual species such as bears typically derive from the influence of such factors as the phylogenetic relationship of the animal to people, the animal's presumed aesthetic value, its size, assumed intelligence, cultural and historic relationship, perceived dangerousness, likelihood of inflicting property damage, morphology, and mode of locomotion (Kellert 1985a, Burghardt and Herzog 1980). Knowledge of wildlife is expressed at varying levels including factual

understanding, ecological knowledge, and awareness of conservation issues. Finally, major people-wildlife interactions include population and conservation status (e.g., rarity and endangerment), conflict (e.g., damage to human property), utilization (e.g., consumptive and nonconsumptive use), and land-use relationships (e.g., protected areas, multiple-use public lands, private property).

This paper describes prevailing North American attitudes toward bears in the context of these 4 factors. Data from various studies are cited, although the absence of comprehensive research on public attitudes toward bears (from a geographic or issues-related perspective), and the author's restricted knowledge of the bear literature, necessarily limits the discussion. Despite this limitation, the importance of the subject should not be underestimated. As Grossman (1990:6) somewhat overstates: "It isn't food or cover that limits bears. It's human attitudes."

ATTITUDES TOWARD BEARS

Basic wildlife values broadly influence how people perceive a particular species such as bears. Of

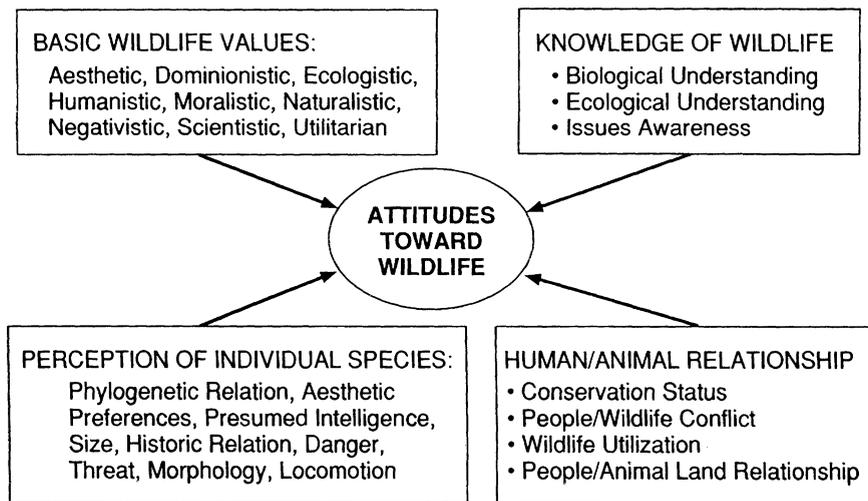


Fig. 3. Factors affecting attitudes toward wildlife.

particular importance is the distribution of these basic values among major population groups.

An especially important demographic distinction is human dependence on land and natural resources as reflected in rural residency, property ownership, and agricultural and other resource-dependent occupations. Various studies have identified highly utilitarian and dominionistic wildlife values among rural, large-

property owning and resource-dependent groups. Moreover, these groups typically express little support for moralistic and humanistic wildlife values. These patterns have been found in studies of the general American public (Kellert and Berry 1981; Kellert 1981, 1984), as well as investigations of individual species such as wolves (*Canis lupis*) and black-footed ferrets (*Mustela nigripes*) (Kellert 1986a, 1991a; Reading and Kellert 1992). One can conclude from these results that rural and resource-dependent groups, particularly livestock producers, would be inclined to endorse attitudes of exploitation and subordination of bears for the sake of enhancing various human interests and practical needs.

Socioeconomic status, as measured by education and income, represents a second demographic distinction relevant to an understanding of the relationship between basic wildlife values and attitudes toward bears. Data obtained in the previously cited studies have revealed highly naturalistic and ecologistic wildlife values among college-educated and higher income North Americans. Higher socioeconomic persons would, thus, be likely to express pronounced interests in the outdoor recreational experience of bears, as well as strongly support this animal's conservation and protection.

A third demographic distinction relevant to an understanding of attitudes toward bears are the ascriptive factors of age and gender. Various studies have found pronounced moralistic and humanistic wildlife values among younger and female respondents (Kellert 1989). These results suggest such demographic groups would be inclined to express strong affection for

Table 1. Basic wildlife values.

Term	Definition
Aesthetic:	Primary focus on the physical attractiveness and symbolic appeal of animals.
Dominionistic:	Primary emphasis the mastery and control of wildlife, typically in sporting situations.
Ecologistic:	Primary concern for the environment as a system and for interrelationships between wildlife species and natural habitats.
Humanistic:	Primary focus on strong affection for individual animals such as large wildlife species with strong anthropomorphic associations.
Naturalistic:	Primary emphasis on the direct experience of wildlife in an outdoor recreational setting.
Negativistic:	Primary orientation an avoidance of wildlife due to indifference, dislike, or fear.
Scientific:	Primary focus on the physical attributes and biological functioning of animals.
Utilitarian:	Primary emphasis on the practical value of wildlife or the habitat associated with wild animals.

bears, as well as vigorously oppose this animal's consumptive use.

The influence of basic wildlife values on attitudes is inevitably modified by the perception of individual species such as bears. Perceptions of bears will be assessed based on factors previously identified as critical in shaping attitudes toward individual animals. This assessment will be based on contemporary perceptions of bears. It should be noted, however, that values and images of bears have changed dramatically during the past century and more in North America (Shepard and Sanders 1985, Clark and Casey 1992).

Bears are currently viewed by most North Americans as phylogenetically similar to people, highly intelligent, and very aesthetically appealing. The bear's relatively large size, capacity to stand erect, and omnivorous diet represent additional physical characteristics predisposing most people to identify closely with this animal. Bears further possess a rich historic and cultural relationship to people of European and Native American heritage (Hallowell 1926, Herrero 1970, Jonkel 1975, Shepard and Sanders 1985). More negative perceptions of bears can be linked to the potential danger represented by this animal to people and livestock.

An overall assessment of these factors suggests most North Americans perceive bears in a highly positive manner. This general perception may be related to the bear's prominent symbolic value as expressed in myth, fairy tale, story and legend, and currently illustrated by Smokey the Bear, the Teddy Bear, Goldilocks and the Three Bears, Yogi the Bear, etc. (Shepard and Sanders 1985).

Knowledge and understanding of wildlife represents an additionally important influence on people's attitudes toward animals, although perhaps to a less degree than often assumed. Various studies have suggested, for example, that knowledge and attitudes are relatively independent dimensions of wildlife perception. In a recent study of Canadian perceptions of marine mammals (Kellert 1991*b*), for example, the most knowledgeable groups included sealers, Newfoundland residents, college-educated respondents, and members of environmental organizations. An examination of wildlife values among these groups, however, revealed widely divergent attitudes, with sealers and Newfoundlanders characterized by very pronounced utilitarian and relatively weak moralistic values, while college-educated respondents and environmental organizations members expressed nearly the opposite perceptions of marine mammals. This study found, as have many others (Kellert 1991*a*, Reading and Kellert 1992), that greater knowledge is often more a basis for

reinforcing and rationalizing attitudes than a cause for attitudinal convergence or change. Despite this qualification, one may assume knowledge exerts a moderately important influence on attitudes toward wildlife.

Knowledge of black bears has been examined in Great Smoky Mountains National Park (Burghardt et al. 1972, Petko-Seus and Pelton 1984, Hastings 1986) and in Colorado (Colorado Division of Wildlife 1989). These studies revealed a moderate knowledge of black bears, although increasing among better educated groups. These studies also found more knowledge of the feeding habits of bears and less understanding of bear breeding behavior and population status. Less information exists on ecological knowledge and public awareness of bears, although it appears most North Americans recognize the endangered status of grizzly bears and the potential for this animal to inflict human injury. These results suggest North Americans possess a moderate knowledge of bears, and are probably more familiar with this animal than most other wildlife species.

The most extensive research on North American attitudes toward bears has occurred in the context of major interactions between people and bears, including the animal's conservation status, direct and indirect conflicts, consumptive and nonconsumptive uses, and major land-use relationships. The conservation status of bears, particularly rarity and endangerment, has greatly affected North American attitudes toward this animal. Relatively strong support for brown bear conservation exists based on the perception of grizzly bears as threatened with extinction in the contiguous United States (McNamee 1984, Chase 1986). In a national study of Americans, a significant majority expressed a willingness to set aside millions of acres of national forest land, despite the possible loss of jobs and building materials, to protect grizzly bear habitat (Kellert 1985*b*). On the other hand, considerable variation occurred among major population groups, with only a minority of elderly, rural, and lower socioeconomic Americans supporting this degree of socioeconomic sacrifice.

Attitudes toward black bears have also been affected by its perceived population status. Substantial support for black bear conservation has been found in southern New England and New York where this animal is regarded by most of the public as rare and in danger of extirpation (Cardoza 1976, Brown et al. 1981). On the other hand, data from Colorado reveals a public majority in favor of black bear hunting as a method of overpopulation and animal damage control (Colorado

Division of Wildlife 1989).

Actual and perceived bear-people conflicts represents a second interaction critical in the formation of public attitudes toward this animal. Direct conflicts involve threats to human safety and property, while indirect conflicts focus on competition for land and resources.

Various studies have explored attitudes toward bears resulting from the possible danger represented by grizzly or brown bears (Herrero 1978, Trahan 1987, Braithwaite and McCool 1988, Clarke 1990). Even the scientific name for grizzly bears, *Ursus arctos horribilis*, suggests a historic perception of this animal as dangerous and fearsome. Despite Herrero's (1978) calculations of the far greater likelihood of North Americans being injured in motor vehicle accidents than by grizzly bears in North American parks (app. 1 in 4,600 for the former versus 1 in 1.5 million for the latter, according to 1975 statistics), grizzly attacks have received widespread publicity and elicited great attention from the public and resource managers. One could speculate this response may stem from the capacity of a wild animal to challenge modern man's apparent dominance over nature, as well as perhaps inspire an atavistic fear of being killed and even consumed.

Despite concern regarding bear attacks, studies in Glacier and Yellowstone National Parks have found most park visitors view this animal very favorably and are willing to modify their behavior to minimize disturbance to bears or their habitats (Jope and Shelby 1984, McCool et al. 1990). Attitudes toward bears among people permanently living in areas adjacent to grizzly populations appear less sympathetic, and may be a consequence of both perceived threats to personal safety and the greater likelihood of depredations to livestock.

Attitudes toward people-black bear conflicts are somewhat less clear. Limited data suggests most people view black bears as less threatening than brown bears, if for no other reason than the former's less intimidating physical stature (Pelton et al. 1976, Petko-Seus 1985, Hastings 1986). North Americans generally regard black bears very positively despite the potential for human injury or property damage. For example, studies in Colorado, New York, and Tennessee have revealed largely positive attitudes toward black bears and their conservation, despite the occurrence, respectively in each area, of livestock depredations, nuisance bears, and human injuries (Brown et al. 1981, Hastings 1986, Colorado Division of Wildlife 1989). Tolerance of human-black bear conflicts appears to be substantially less evident among agriculturalists.

Data is lacking regarding the affect of indirect people-bear conflicts on public attitudes toward bears. Previously cited data (Kellert 1979), as well as preliminary information from a study of Greater Yellowstone Ecosystem residents (Clark et al. 1992), suggests moderate support for grizzly bear conservation despite the potential for extensive habitat protection. Far more opposition to land-use restrictions has been found among resource-dependent groups, particularly livestock producers, loggers, and mineral extractors. Opposition to restrictions on public land resource use for the sake of assisting bears will be discussed in more detail later.

A third human-bear interaction affecting attitudes towards this animal is the utilization of bears, particularly consumptive uses such as sport and commercial hunting, and nonconsumptive uses including outdoor recreational viewing of bears. Available data indicates limited public support for sport hunting of grizzly bears, largely resulting from the perception of this animal as threatened with extinction (Chase 1986, Grossman 1990). This impression is further suggested by widespread opposition to the hunting of wolves—another threatened "charismatic mega-vertebrate"—in Minnesota and Michigan (Kellert 1986a, 1991a).

An informative study of attitudes toward black bear hunting was recently conducted in Colorado (Colorado Division of Wildlife 1989). A majority of respondents supported black bear hunting if populations were carefully regulated, although most respondents objected to black bear hunting in the spring and popular bear hunting methods such as using baits and dogs. A majority of respondents believed current rates of legal and illegal black bear hunting were leading to major population reductions and local extirpations. Support for increased restrictions on black bear hunting was greatest among more knowledgeable respondents.

Limited data exists on attitudes toward the commercial harvest of bears either for the pelts or for the international medicinal and ornamental trade. Most North Americans object to international wildlife trade when it involves declining or threatened species (Kellert 1979, 1986b). Attitudes toward trade in bear parts among importing nations are largely unknown, although a current study by Mills and Servheen (1994) should provide important information on the subject.

Attitudes toward nonconsumptive uses of bears has revealed strong interest among backcountry and park visitors in viewing bears, although apprehension concerning the possible dangers of encountering this animal in the wild (Hastings 1986, Trahan 1987). Most nonconsumptive users express a willingness to support

restricted access and limitations on backcountry use if these actions result in enhanced bear protection and reduced people-bear conflicts (Braithwaite and McCool 1988). Greater support for visitor restrictions and altered backcountry behavior has been found among more knowledgeable and higher socioeconomic nonconsumptive users.

A fourth people-bear interaction important in the formation of attitudes stems from various land-use relationships, particularly bears in parks and protected areas, private lands and multiple-use public lands. Public support for land-use restrictions to assist bears has been especially evident in national parks and other protected areas, as previously described. Not surprisingly, far less support exists for such restrictions on private lands, particularly in agricultural areas, although studies in the northeastern United States suggest an impressive tolerance for nuisance bears on even private lands (Decker et al. 1981).

A more ambiguous attitude exists in relation to the multiple-use public or common property lands, particularly involving the grizzly bear on Western public lands. The vast habitat requirements of the grizzly bear and extensive grazing, timber, and mining interests on the Western public lands has resulted in intense controversy among competing constituents. This clash has become so intense that the grizzly, at times, has assumed the role of a symbol in the debate over public land management. Attitudes in this situation may be more a case of "guilt by association," with hostility to the bear acting as a surrogate for broader conflicts regarding political control of public land resources (McNamee 1984, Chase 1986, Clark et al. 1991).

CONCLUSION

Based on the data presented, some general conclusions can be drawn regarding public attitudes toward bears and their implications for bear policy and management. The various results and related discussions broadly suggest very positive views among most North Americans toward bears and their conservation. This animal is generally regarded from a highly appreciative aesthetic, naturalistic, humanistic, ecological, and ethical point of view. Most North Americans view bears as especially intelligent, culturally significant, highly appealing, and, relatively speaking, similar to people. The rarity of bears, particularly the threatened status of brown bears, contributes to feelings of sympathy and support for this animal's conservation. Relatively greater knowledge of

bears and their conservation status further enhances public support for this animal. The bear's historic role as a game species, and its more recent dramatically increased nonconsumptive value, further contributes to its appeal among large segments of the public. The historic persecution and current exploitation of bears additionally fosters widespread support for its protection. Finally, the bear has been a major beneficiary of the wilderness movement, with this animal viewed by many as a symbol of pristine America.

More negative attitudes have also been described, particularly among resource-dependent groups including livestock producers, loggers, and miners, who often view bears as a direct, indirect, and even symbolic threat to their livelihoods and traditional land prerogatives. Pronounced dominionistic and utilitarian wildlife values among these groups further contribute to a negative perception of bears. The capacity of bears, especially brown bears, to inflict human injury may additionally foster ambivalent and negativistic attitudes toward this animal.

Despite these more negative attitudes, an overall assessment clearly indicates highly positive views of bears among the large majority of North Americans. This overwhelming impression leads one to conclude that most wildlife managers have been far too conservative in acknowledging the public's highly favorable attitudes toward bears and their population enhancement and recovery. As Richard Taber suggests in the case of the grizzly (pers. commun., Missoula, Mont., 1991), "the public...tolerates the grizzly more than the biologists think."

What is particularly remarkable, given the importance of public attitudes in driving the bear policy process, is how little effort has been devoted to obtaining needed information on the subject, despite many millions of dollars expended by the Grizzly Bear Recovery Team and other public agencies on bear management. In neither a geographic nor issues-related sense has any systematic or comprehensive effort occurred to assess public attitudes toward bear management and recovery. Only a few modest investigations have taken place and mainly for exploring public attitudes toward bears in Glacier and Yellowstone National Parks.

As suggested in the introductory section, wildlife policy is a complex consequence of science, values, and politics. The design of effective bear policy requires a careful consideration of biophysical, valuational, socioeconomic, and regulatory forces expressed through the competitive interactions of diverse constituencies

over time. The effective delineation and implementation of bear policy will require that managers and decision-makers obtain an understanding of all these policy forces.

Scientific understanding of bear biology and ecology is, of course, critical for effective policy formulation. But, ignoring the importance of valuational, socioeconomic, and regulatory forces can also result in ineffectual policy design, as well as encourage managers to omit many practical and important aspects of successful bear conservation. The current neglect of nonbiological factors in bear policy and management has resulted in a gross underestimation of public support for bear population enhancement and recovery. It would be ironic, given the current plight of the bear and valiant efforts to ameliorate this animal's condition, if ignoring and intuitively assessing public attitudes had unwittingly contributed to the bear's decline and precarious future.

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