

The Humane Society Institute for Science and Policy
Animal Studies Repository

9-17-2014

Annotated Bibliography: Attitudes Toward Wildlife and the Environment (1998-2013)

Erich Yahner

Humane Society Institute for Science and Policy

Follow this and additional works at: http://animalstudiesrepository.org/hum_ed_bibs



Part of the [Animal Studies Commons](#), and the [Other Anthropology Commons](#)

Recommended Citation

Yahner, Erich, "Annotated Bibliography: Attitudes Toward Wildlife and the Environment (1998-2013)" (2014). *Humane Education Bibliographies*. 6.

http://animalstudiesrepository.org/hum_ed_bibs/6

This Bibliography is brought to you for free and open access by the Humane Society Institute for Science and Policy. It has been accepted for inclusion by an authorized administrator of the Animal Studies Repository. For more information, please contact eyahner@humanesociety.org.

**An Annotated Bibliography of Research Relevant to
Attitudes toward Wildlife and the Environment
1998-2013**

The Humane Society Institute for Science and Policy

**Compiled by Erich Yahner
(All Abstracts and Summaries From Authors or Publishers)**

JOURNAL ARTICLES

Baruch-Mordo, S., Breck, S. W., Wilson, K. R., & Broderick, J. (2011). The Carrot or the stick? Evaluation of education and enforcement as management tools for human-wildlife conflicts. *Plos ONE*, 6(1), 1-8.

Evidence-based decision-making is critical for implementing conservation actions, especially for human-wildlife conflicts, which have been increasing worldwide. Conservation practitioners recognize that long-term solutions should include altering human behaviors, and public education and enforcement of wildlife-related laws are two management actions frequently implemented, but with little empirical evidence evaluating their success. We used a system where human-black bear conflicts were common, to experimentally test the efficacy of education and enforcement in altering human behavior to better secure attractants (garbage) from bears. We conducted 3 experiments in Aspen CO, USA to evaluate: 1) on-site education in communal dwellings and construction sites, 2) Bear Aware educational campaign in residential neighborhoods, and 3) elevated law enforcement at two levels in the core business area of Aspen. We measured human behaviors as the response including: violation of local wildlife ordinances, garbage availability to bears, and change in use of bear-resistance refuse containers. As implemented, we found little support for education, or enforcement in the form of daily patrolling in changing human behavior, but found more support for proactive enforcement, i.e., dispensing warning notices. More broadly we demonstrated the value of gathering evidence before and after implementing conservation actions, and the dangers of measuring responses in the absence of ecological knowledge. We recommend development of more effective educational methods, application of proactive enforcement, and continued evaluation of tools by directly measuring change in human behavior. We provide empirical evidence adding to the conservation managers' toolbox, informing policy makers, and promoting solutions to human-wildlife conflicts.

Bjerke, T., & Ost Dahl, T. (2004). Animal-related attitudes and activities in an urban population. *Anthrozoös: A Multidisciplinary Journal of the Interactions of People & Animals*, 17(2), 109-129.

We surveyed residents' attitudes toward common urban animals and their participation in animal-oriented activities in the city of Trondheim, Norway. The results show that people most like small birds, squirrels, butterflies, hedgehogs, ducks, geese and dogs, and dislike bats, snails, invertebrate species, mice and rats. Birds of prey, foxes, cats, bumblebees, magpies, pigeons, badgers, gulls, grasshoppers and crows received a neutral ranking. Generally, females more than males liked the popular and neutral species, while males more than females liked the less-preferred animals. A negative association was found between age of respondents and preferences for birds of prey, dogs, cats, badgers, bats, mice and rats. This relation was positive for some invertebrate species, and small and medium-sized birds. A positive correlation was found between educational level of the respondents and preference scores for most of the species listed. Watching television programs about nature (59% often/very often) and watching/feeding birds (41%) were the most frequently reported animal-related activities. When walking in the neighborhood, important animal-related motives for doing this were to observe birds (42%) and to observe mammals (34%). Interest in bird observation and television programs about nature increased with increasing age. Few respondents reported experiencing problems with wildlife, but dogs and cats were more often (36%) considered to create

problems. These results indicate that wildlife plays an important role in shaping urban residents' daily experiences, and that both animals and their habitats should have a higher priority in urban planning and management.

Bright, A. D., & Tarrant, M. A. (2002). Effect of environment-based coursework on the nature of attitudes toward the Endangered Species Act. *Journal of Environmental Education*, 33(4), 10-19.

The purpose of this study was to examine (a) college students' attitudes and complexity of thinking about the Endangered Species Act (ESA) and (b) the effects of environment-based coursework on students' attitudes and thinking. Using self-report questionnaires in a pretest--posttest design, the authors examined attitudes in terms of their direction, extremity, ambivalence, and importance. Complexity of thinking was measured as integrative complexity. Results suggested that college students (N = 205) who had moderate and ambivalent attitudes toward the ESA wrote significantly more integratively complex essays about the issue than did students who had unambivalent attitudes. Students' integratively complex thinking was not related to the direction of their attitudes toward the ESA or its personal importance to them. Students who were enrolled in an environment-based, university-wide writing course showed a significantly greater increase in integratively complex thinking about the ESA than did students enrolled in a nonenvironment-based, university-wide writing course.

Daigle, J.J., Hrubec, D., & Ajzen, I. (2002). A comparative study of beliefs, attitudes, and values among hunters, wildlife viewers, and other outdoor recreationists. *Human Dimensions of Wildlife*, 7(1), 1-19.

A mail survey (n = 395) assessed perceived benefits of outdoor recreation activities. Based on the theory of planned behavior, the study revealed that hunters, wildlife viewers, and other outdoor recreationists differ greatly in terms of their beliefs about the outcomes of these behaviors and in terms of their attitudes, subjective norms, and perceptions of behavioral control, as well as wildlife-related values and values to life in general. Preferred activities were perceived as producing more desirable outcomes than less preferred activities, and they were associated with more favorable attitudes, subjective norms, and perceptions of control. They also reflected broad value orientations to wildlife and to life in general. These findings suggest that some activities are better suited than others to produce desired benefits for different types of individuals, and that outdoor recreationists need to be served in different ways to optimize the benefits they derive.

Dettmann-Easler, D., & Pease, J. L. (1999). Evaluating the effectiveness of residential environmental education programs in fostering positive attitudes toward wildlife. *Journal of Environmental Education*, 31(1), 33-39.

Residential environmental education programs offer many benefits to students, including time to be "in" nature, additional time for programs (evenings in addition to days), and flexibility in the types of programs offered. The authors examined 6 residential programs in the upper Midwest to evaluate their effectiveness in fostering positive attitudes toward wildlife. Results indicated that students had significantly more positive attitudes toward wildlife after residential programs than they did after an in-class wildlife program, and that these changes were retained at least 3 months after the program. Recommendations for maximizing the effectiveness of residential programs are discussed.

Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the new ecological paradigm: a revised NEP scale. *Journal of Social Issues*, 56(3), 425-442.

Dunlap and Van Liere's New Environmental Paradigm (NEP) Scale, published in 1978, has become a widely used measure of pro-environmental orientation. This article develops a revised NEP Scale designed to improve upon the original one in several respects: (1) It taps a wider range of facets of an ecological worldview, (2) It offers a balanced set of pro- and anti-NEP items, and (3) It avoids outmoded terminology. The new scale, termed the New Ecological Paradigm Scale, consists of 15 items. Results of a 1990 Washington State survey suggest that the items can be treated as an internally consistent summated rating

scale and also indicate a modest growth in pro-NEP responses among Washington residents over the 14 years since the original study.

Eagles, P. F., & Demare, R. (1999). Factors influencing children's environmental attitudes. *Journal of Environmental Education*, 30(4), 33-37.

In a study of 6th-grade students, it was found that ecogistic and moralistic attitudes toward the environment correlated with talking about the environment at home, watching nature films, and reading about the environment. There were no gender differences in ecogistic attitude, but girls showed higher moralistic attitude scores. A week-long Sunship Earth program at a residential camp did not produce any measurable differences in ecogistic or moralistic attitudes. Results suggest that the students entered the camp program with moderate levels of these attitudes, derived from several influences, including family, media, and previous school-based environmental education programs.

Hunter, L. M., & Rinner, L. (2004). The association between environmental perspective and knowledge and concern with species diversity. *Society and Natural Resources*, 17(6), 517-532.

As communities continue to engage in debate surrounding land use and preservation, insight into stakeholder knowledge and concern with local species becomes increasingly important. This project explores the association between individual knowledge/concern with species diversity as related to environmental perspective, measured through the New Ecological Paradigm scale. We aim to understand whether concern with local species diversity is associated with species-specific knowledge and/or ecocentric outlooks more generally. Results from a mail survey in Boulder, CO reveal that individuals with ecocentric perspectives place greater priority on species preservation relative to those with anthropocentric perspectives, regardless of species knowledge. These results imply that to engage local publics in issues of biodiversity, outreach should not simply provide background specific to local species, but also demonstrate the significance of ecological integrity and biological diversity more broadly.

Manfredo, M. J., & Dayer, A. A. (2004). Concepts for exploring the social aspects of human-wildlife conflict in a global context. *Human Dimensions of Wildlife*, 9(4), 1-20.

This article develops an approach for exploring the social and cultural aspects of human-wildlife conflict in a global context. The proposed micro-macro level model integrates the cognitive hierarchy theory of human behavior and materialist theory of culture. This model guides research of human behavior in these situations and yields information that can aid conflict prevention and mitigation on the local level and offer suggestions for effective coordinated global, national, or regional efforts. Past applications of the micro (individual level) component and preliminary research and potential areas of future exploration for the macro (cultural level) component are discussed. Cross-cultural research will be highly useful in advancing an understanding of human-wildlife conflict.

Manfredo, M., Teel, T., & Bright, A. (2003). Why are public values toward wildlife changing? *Human Dimensions of Wildlife*, 8(4), 287-306.

While there is an assumption that values toward wildlife have changed in the United States over the last half of the twentieth century, few studies have addressed this topic. This article overviews a research program designed to examine wildlife value orientation shift in the U.S. Theory and empirical research suggest that increasing affluence, education, and urbanization, and declining residential stability drive value shift. We tested whether these factors are associated with the proportion of individuals with traditional "Materialist" values and a utilitarian orientation toward wildlife across six western states (Alaska, Arizona, Colorado, Idaho, North Dakota, and South Dakota). We conducted state-level analysis and found that the proportion of "traditionalists" within a state is strongly and inversely related to level of income, urbanization, and education, and positively related to residential stability. Results provide support for explanation that if current

economic and social trends continue, a sustained erosion of traditional orientations toward wildlife is likely. This forms a key hypothesis to be tested in further research on this topic.

Marino, L., Lilienfeld, S. O., Malamud, R., Nobis, N., & Broglio, R. (2010). Do zoos and aquariums promote attitude change in visitors? A critical evaluation of the American Zoo and Aquarium Study. *Society & Animals, 18*(2), 126-138.

Modern-day zoos and aquariums market themselves as places of education and conservation. A recent study conducted by the American Zoo and Aquarium Association (AZA) (Falk et al., 2007) is being widely heralded as the first direct evidence that visits to zoos and aquariums produce long-term positive effects on people's attitudes toward other animals. In this paper, we address whether this conclusion is warranted by analyzing the study's methodological soundness. We conclude that Falk et al. (2007) contains at least six major threats to methodological validity that undermine the authors' conclusions. There remains no compelling evidence for the claim that zoos and aquariums promote attitude change, education, or interest in conservation in visitors, although further investigation of this possibility using methodologically sophisticated designs is warranted.

Merkle, J.A., Krausman, P.R., & Melinda M. Booth, M.M. (2011). Behavioral and attitudinal change of residents exposed to human--bear interactions. *Ursus, 22*(1), 74-83.

Human-black bear (*Ursus americanus*) interactions (HBI) have been increasing in frequency and magnitude in North America since the 1960s, and many wildlife management agencies are turning to proactive management actions to reverse this trend. Information and education efforts (IEE) are the most common proactive management actions used; however, few studies monitor behavior and attitudes of residents exposed to HBI and IEE. We used a case study in the Rattlesnake Valley of Missoula, Montana, USA to describe the diversity of anthropogenic attractants available to black bears based on self-reported human behaviors, and to test for changes in resident behavior and attitudes over a 4-year exposure to HBI and IEE. We identified >5 non-vegetative attractants, and >12 species of native and non-native vegetation available to black bears. Comparing the responses from mail questionnaires in 2004 (n = 369, response rate = 74%) and 2008 (n = 560, response rate = 60.1%), we found that the prevalence of 1 important behavior (outdoor garbage storage) decreased, and support for management actions used to deal with HBI increased, suggesting behavior and attitudes of residents changed from 2004 to 2008. We suggest that bear managers developing proactive management plans for HBI must incorporate (1) the varying effects of reducing the prevalence of 1 or numerous attractants, (2) the changing dynamics of human behavior and attitudes, and (3) the importance of incorporating monitoring and evaluation procedures.

Randall, T. (2012). Assessment of change in conservation attitudes through zoo and aquarium Education. *IZE Journal, 48*, 13-16.

The article discusses a 2010 study conducted by the Oklahoma City (OKC) Zoo to assess the change in conservation attitudes through zoo and aquarium education. The sample population used were visitors aged 14 to 18, divided into those who participated in a free-choice learning experience and those who participated in a formal learning experience. The findings showed that teenagers had significant positive affective change in conservation attitudes resulting from their zoo visits.

Randler, C., Hummel, E., & Prokop, P. (2012). Practical work at school reduces disgust and fear of unpopular animals. *Society & Animals, 20*(1), 61-74.

Disgust and fear are basic emotions that protect humans against pathogens and/or predators. Natural selection favored individuals who successfully escaped or avoided harmful animals; thus animals who pose a disease threat activate aversive responses in humans. However, all these animals who are generally disliked have rights to their own existence and play important roles in ecosystems. Here, we used three unpopular live animals (wood louse, snail, and mouse) in practical biology work with 11-13-year-old children

(experimental group). The control group had no opportunity to work with animals. Reported disgust and fear of these animals significantly decreased during the study in the experimental group but not in the control group. This study experimentally supports the idea that attitudes toward animals are positively influenced by physical contact with them.

Rule, A., & Zhbanova, K. (2012). Changing perceptions of unpopular animals through facts, poetry, crafts, and puppet plays. *Early Childhood Education Journal*, 40(4), 223-230.

Today's children are often separated from the natural world, developing fear and aversion to wild creatures. This humane education program used curriculum-blended science lessons that focused on eight generally disliked animals: bat, skunk, snake, mouse, spider, centipede, cockroach, and mosquito. First and second grade students participated in 6 weekly hour-long lessons that introduced appealing images of the creatures, facts, and poems that presented their lifestyles. Students practiced fine motor skills by making a craft version of each animal. Literacy skills were addressed by analyzing the poems and writing a script for a puppet play that told why humans don't like the animal and how these characteristics or behaviors help the animal survive in the environment. This pretest-intervention-posttest quasi-experimental study had 26 students (16 f, 10 m) in the experimental group and 16 (11 f, 5 m) in the control group. Students rated their liking for the eight targeted animals and four other animals not discussed in the intervention (dog, cat, goldfish, butterfly) on the pretest and posttest. Results showed significant differences for the experimental group for all animals considered together and for the targeted animals as a group. The control group did not exhibit these differences. The results indicate that lessons focusing on ecology and animal lifestyles help improve students' caring for animals.

Sorge, C. (2008). The relationship between bonding with nonhuman animals and students' attitudes toward science. *Society & Animals*, 16(2), 171-184.

This paper examines the relationship of bonding with nonhuman animals during an interactive, animal-in-the-wild science program (Talking Talons) and the science attitudes of 358 young children between the ages of 8 and 14. Talking Talons utilizes typically wild animals such as raptors, reptiles, and bats in a school-based educational science curriculum. Qualitative data from interviews with students in the program indicated that "bonding with animals" (BWA) and the educators (BWE) within the program were related to increased positive attitudes toward science. The program used quantitative methods to examine these dual relationships—with animals and with educators—on student attitude toward science. The program performed a step-wise multiple regression with "Attitude toward Science" as the dependent variable and "Gender," "Age," and "Bonding with Animals" as independent variables. Both "Bonding with Animals" and "Bonding with the Educator" contributed significantly to prediction of the participants' science attitudes. Altogether 28% of the variance in "Science Attitude" was predicted by both "Gender" and "Age" (10%), "Bonding with Animals" (16%) and "Bonding with Educator" (2%). Bonding with the animals had a large quantifiable relationship with student attitudes toward science.

Swanagan, J. S. (2000). Factors influencing zoo visitors' conservation attitudes and behavior. *Journal of Environmental Education*, 31(4), 26-31.

The author predicted that Zoo Atlanta visitors who had interactive experience with the zoo's elephant demonstration and bio-fact program would be more likely to actively support elephant conservation than those who simply viewed the animals in their exhibit and read graphics. The survey instruments used in this research consisted of 25 closed-ended questions, petitions, and conservation-action solicitation cards. A random sample of 471 zoo visitors was selected, and 350 individuals completed the survey, signed petitions, and took solicitation cards. The overall return rate of the solicitation cards was 18.3%; the return rate was higher for visitors who had higher levels of interaction with the elephant exhibit. The return rates by experience were highest--29.7%, high--20.3%, undetermined--14.8%, low--14.3%, and lowest--11.6%. For the five categories of experience, the distribution of return rates was not random, $\chi^2(4, N = 64) = 9.88, p < .04$.

Teel, T.L., & Manfredi, M.J. (2010). Understanding the diversity of public interests in wildlife conservation. *Conservation Biology*, 24(1), 128-139.

North American state wildlife agencies are increasingly faced with the challenge of effectively representing a diverse public. With increasing social conflict over wildlife issues, the future of wildlife conservation hinges on preparedness of the profession to respond to this challenge. In the interest of finding ways to improve response, 19 agencies in the western U.S. joined forces to initiate an investigation that would provide a better understanding of the diversity of wildlife-related interests in the region. Specific objectives, accomplished through use of a mail survey administered in 2004, were to categorize people on the basis of their value orientations toward wildlife and explore how different groups were distributed across states and to examine differences on socio-demographic characteristics and attitudes toward wildlife-related topics among groups. The focus was on two orientations: domination (view of wildlife that prioritizes human well-being over wildlife and treats wildlife in utilitarian terms); and mutualism (view of wildlife as capable of relationships of trust with humans and defined by a desire for companionship with wildlife). Four types of people were identified on the basis of these orientations. Types differed in their geographic distribution and wildlife-related attitudes and behaviors, revealing how value orientations can form the foundation for conflict on wildlife issues. Our characterizations of stakeholder groups offer a framework that can be applied over time and across geographic scales to improve conservation planning efforts and inform broader thinking about the social aspects of wildlife conservation.

Wells, N. M., & Lekies, K. S. (2006). Nature and the life course: Pathways from childhood nature experiences to adult environmentalism. *Children Youth and Environments*, 16(1), 1-24.

This paper examines connections between childhood involvement with the natural environment and adult environmentalism from a life course perspective. Approximately 2,000 adults age 18-90 living in urban areas throughout the United States were interviewed with respect to their childhood nature experiences and their current, adult attitudes and behaviors relating to the environment. Model testing and cross-validation procedures using structural equation modeling suggest that childhood participation with nature may set an individual on a trajectory toward adult environmentalism. Specifically, childhood participation in "wild" nature such as hiking or playing in the woods, camping, and hunting or fishing, as well as participation with "domesticated" nature such as picking flowers or produce, planting trees or seeds, and caring for plants in childhood have a positive relationship to adult environmental attitudes. "Wild nature" participation is also positively associated with environmental behaviors while "domesticated nature" experiences are marginally related to environmental behaviors.

Zeppel, H. (2008). Education and conservation benefits of marine wildlife tours: Developing free-choice learning experiences. *Journal of Environmental Education*, 39(3), 3-17.

Marine wildlife tours can provide a range of education and conservation benefits for visitors, including emotional (i.e., affective) responses and learning (i.e., cognition). Interpretive programs cover the biology, ecology, and behavior of marine species; best practice guidelines; and human threats to marine areas. The author reviews the education and conservation benefits of 18 marine wildlife experiences with dolphins, whales, and marine turtles by using (a) M. Orams's (1999) framework of indicators such as behavior or lifestyle changes in visitors and (b) 3 environmental indicators of conservation. Results of this meta-analysis showed that visitor learning and emotional empathy during mediated encounters with marine wildlife contributed to on-site behavior changes and some longer term intentions to engage in marine conservation actions. The author presents an experience-learning-action model to guide research and develop free-choice visitor learning.

BOOKS

Clark, T. W., Rutherford, M. B., & Casey, D. (2005). *Coexisting with large carnivores: Lessons from Greater Yellowstone*. Washington: Island Press. ISBN: 9781597260053.

As in the rest of the United States, grizzly bears, wolves, and mountain lions in and around Yellowstone National Park were eliminated or reduced decades ago to very low numbers. In recent years, however, populations have begun to recover, leading to encounters between animals and people and, more significantly, to conflicts among people about what to do with these often controversial neighbors. *Coexisting with Large Carnivores* presents a close-up look at the socio-political context of large carnivores and their management in western Wyoming south of Yellowstone National Park, including the southern part of what is commonly recognized as the Greater Yellowstone Ecosystem. The book brings together researchers and others who have studied and worked in the region to help untangle some of the highly charged issues associated with large carnivores, their interactions with humans, and the politics that arise from those interactions. This volume argues that coexistence will be achieved only by a thorough understanding of the human populations involved, their values, attitudes, beliefs, and the institutions through which carnivores and humans are managed. *Coexisting with Large Carnivores* offers important insights into this complex, dynamic issue and provides a unique overview of issues and strategies for managers, researchers, government officials, ranchers, and everyone else concerned about the management and conservation of large carnivores and the people who live nearby.

Corbett, J. B. (2006). *Communicating nature: How we create and understand environmental messages*. Washington, DC: Island Press. ISBN: 9781597260671.

A broader and more comprehensive understanding of how we communicate with each other about the natural world and our relationship to it is essential to solving environmental problems. How do individuals develop beliefs and ideologies about the environment? How do we express those beliefs through communication? How are we influenced by the messages of pop culture and social institutions? And how does all this communication become part of the larger social fabric of what we know as "the environment"? *Communicating Nature* explores and explains the multiple levels of everyday communication that come together to form our perceptions of the natural world. Author Julia Corbett considers all levels of communication, from communication at the individual level, to environmental messages transmitted by popular culture, to communication generated by social institutions including political and regulatory agencies, business and corporations, media outlets, and educational organizations. The book offers a fresh and engaging introductory look at a topic of broad interest, and is an important work for students of the environment, activists and environmental professionals interested in understanding the cultural context of human-nature interactions.

Duda, M. D., Jones, M. F., & Criscione, A. (2010). *Sportsman's voice: Hunting and fishing in America*. State College, PA: Venture Pub. ISBN: 9781892132901.

Nearly 34 million Americans ages 16 and older head outdoors to hunt and fish every year. Through hunting and fishing license fees and excise taxes on hunting and fishing equipment, hunters and anglers are responsible for the majority of fish and wildlife conservation funding in the United States. Fish and wildlife management programs funded by these fees have conserved millions of acres of habitat and have brought back many species, including wild turkey, wood duck, bald eagle, and pronghorn antelope, from unhealthy population levels. Understanding hunting and fishing, and hunters and anglers as a constituency, is vital to effectively managing the nation's natural resources. Policy makers, legislators, fish and wildlife professionals, conservation organizations, and hunters and anglers themselves have an unmet need for science-based, comprehensive information on hunting and fishing to inform their understanding, communications, decision making, and planning. *The Sportsman's Voice: Hunting and Fishing in America*, is the first book that provides a comprehensive, up-to-date look at hunting and fishing in America. It bridges the

gap between hundreds of scientific studies of the human dimensions of conservation and on-the-ground situations, giving this information meaningful context and real-world utility.

Farnham, T. J. (2007). *Saving nature's legacy: Origins of the idea of biological diversity*. New Haven: Yale University Press. ISBN: 9780300120059.

Biological diversity is considered one of today's most urgent environmental concerns, yet the term was first coined only twenty-five years ago. Why did the concept of biological diversity so quickly capture public attention and emerge as a banner issue for the environmental movement? In this book, Timothy J. Farnham explores for the first time the historical roots of biological diversity, tracing the evolution of the term as well as the history of the conservation traditions that contributed to its rapid acceptance and popularity. Biological diversity is understood today as consisting of three components--species diversity, genetic diversity, and ecosystem diversity. Farnham finds that these three tiers coincided with three earlier, disparate conservation traditions that converged when the cause of preserving biological diversity was articulated. He tells the stories of these different historical foundations, recounts how the term came into the environmental lexicon, and shows how the evolution of the idea of biological diversity reflects an evolution of American attitudes toward the natural world.

Krausman, P. R., & Leopold, B. D. (2013). *Essential readings in wildlife management and conservation*. Baltimore: Johns Hopkins University Press. ISBN: 9781421408187.

Prepared by two of the leading figures in wildlife biology, this book gathers in one volume the most influential articles published in the field. Paul R. Krausman and Bruce D. Leopold have collected the forty-two papers that every wildlife student should read. Each piece is introduced with a commentary that explains why it is important and a brief listing of papers that inspired or were inspired by the classic. Practical and conceptual topics consider every aspect of the wildlife profession, including ethics. Ideal for use as a textbook, *Essential Readings in Wildlife Management and Conservation* is divided into four sections: the philosophical roots of wildlife management, biology, habitat, and human dimensions.

Manfredo, M. J. (2008). *Who cares about wildlife?: Social science concepts for exploring human-wildlife relationships and conservation issues*. New York: Springer. ISBN: 9780387770383.

Who Cares About Wildlife? integrates social science theory in order to provide a conceptual structure for understanding and studying human interaction with wildlife. A thorough review of the current literature in conceptual areas, including norms, values, attitudes, emotions, wildlife value orientations, cultural change, and evolutionary forces/inherited tendencies is provided, and the importance of these areas in studying human-wildlife relationships is highlighted. No other book both considers the human relationship with wildlife and provides a theoretical framework for understanding this relationship on the individual, as well as cultural level. *Who Cares About Wildlife?* will be valuable both to students and to practitioners in wildlife management and conservation, as well those interested in the human relationship with wildlife, natural resources, and the environment.

Rotherham, I. D., Lambert, R. A., & International Institute for Environment and Development. (2011). *Invasive and introduced plants and animals: Human perceptions, attitudes, and approaches to management*. Washington, DC: Earthscan. ISBN: 9781849710718.

There have been many well-publicized cases of invasive species of plants and animals, often introduced unintentionally but sometimes on purpose, causing widespread ecological havoc. Examples of such alien invasions include pernicious weeds such as Japanese knotweed, an introduced garden ornamental which can grow through concrete, the water hyacinth which has choked tropical waterways, and many introduced animals which have out-competed and displaced local fauna. This book addresses the broader context of invasive and exotic species, in terms of the perceived threats and environmental concerns which surround alien species and ecological invasions. As a result of unprecedented scales of environmental change,

combined with rapid globalisation, the mixing of cultures and diversity, and fears over biosecurity and bioterrorism, the known impacts of particular invasions have been catastrophic. However, as several chapters show, reactions to some exotic species, and the justifications for interventions in certain situations, including biological control by introduced natural enemies, rest uncomfortably with social reactions to ethnic cleansing and persecution perpetrated across the globe. The role of democracy in deciding and determining environmental policy is another emerging issue. In an increasingly multicultural society this raises huge questions of ethics and choice. At the same time, in order to redress major ecological losses, the science of reintroduction of native species has also come to the fore, and is widely accepted by many in nature conservation. However, with questions of where and when, and with what species or even species analogues, reintroductions are acceptable, the topic is hotly debated. Again, it is shown that many decisions are based on values and perceptions rather than objective science. Including a wide range of case studies from around the world, his book raises critical issues to stimulate a much wider debate.

Sterba, J. P. (2000). *Earth ethics: Introductory readings on animal rights and environmental ethics*. Upper Saddle River, NJ: Prentice Hall. ISBN: 9780130148278.

This anthology contains numerous up-to-date, well-related readings on animal rights/animal liberation and environmental ethics—in addition to current topics such as ecological feminism, and practical applications. Approaching its subjects through a set of opposing readings shows the strength and weaknesses of various alternative positions. Readings cover the topics of Judeo-Christian Perspectives, Respect for Nature, The Land Ethic/Deep Ecology, Reconciliation and Defense, Social Ecology and Environmental Racism, and Non-Western Religious and Cultural Perspectives. For individuals concerned about the environment and the non-humans who inhabit it.