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Author(s): Bradley J. Bergstrom

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recent book in the same name as this chapter (Kelley 1988), which bring together a series of incredible photographs of scenes from outer space, taken and commented on by both astronauts and cosmonauts as they looked down upon their (our) home planet. Following is Rolston's concluding paragraph (p.236):

"It was feared by some that the space flights, reaching for the stars, was an act of human arrogance, hubris in extreme, more of the conquest and dominion by *Homo sapiens* that has already ravaged the planet. But people responded unexpectedly. The haughty, the high, and the mighty of spirit failed to materialize with the flight into space. Rather humility—from humus, meaning 'earthy,' also the root of 'human'—was the dominant experience. The value and beauty of the home planet, and our destiny in caring for it was the repeated reaction. Perhaps that is a truth in the beatitude: 'Blessed are the meek, for they shall inherit the Earth.' For Earth is indeed a planet with promise, a promised planet, and we humans have both the right to share in and the responsibility to help keep that promise. This is the biology of ultimate concern."

A commendable aspect of *Conserving Natural Value* is that the majority of it is readily understandable to the lay reader, an attribute often missing from writings of philosophers. The reader may find certain portions difficult and may need to ponder them. Regardless, the book provides excellent ammunition and brain food for those of us whose job it is to clarify natural values to a willing, though often cynical, American public.

We currently find a high degree of polarization and ambiguity in the general perception of natural values. One group views nature as threat, another as humankind's salvation, with the great majority somewhere in the middle. As natural resource professionals, our understanding and articulation of such matters would do much toward building the political backing necessary for us to pursue our goals competently and effectively. We need to sharpen our skills in such things as value assessment and articulation, and *Conserving Natural Value* is an excellent place to start. Nothing could be more demeaning than to provide a legacy of highly competent publications relating to recently-extinct species. The book should be read, and its principles espoused publicly, by any conscientious fish and wildlife biologist whose commitment transcends a 40-hour work week. As difficult as it may be for us to accept, the future of our wildlife resources currently lies far more in the hands of the philosopher than of the scientist. Politicians may easily ignore the data and recommendations that we present to them, but they cannot long ignore the voices of those who elect them. Therein lies our challenge and our responsibility.

KELLEY, K. W., EDITOR. 1988. The home planet. Addison-Wesley, Reading, Mass.

ROLSTON, H., III. 1986. Philosophy gone wild. Prometheus Books, Buffalo, N.Y. 269pp.

———. 1988. Environmental ethics. Temple Univ. Press, Philadelphia, Penn. 391pp.

WILSON, E. O. 1992. The diversity of life. Harvard Univ. Press, Cambridge, Mass. 424pp.

—Edwin P. Pister, Desert Fishes Council, P.O. Box 337, Bishop, CA 93515, USA.

Handbook of Mammals of the South-central States.

By J. R. Choate, J. K. Jones, Jr., and C. Jones. Louisiana State University Press, Baton Rouge, La., USA. 1994. 304 pp. \$30.00 ISBN 0-8071-1819-2 (cloth).

When it comes to arbitrarily defining multi-state regions of the contiguous United States, few people show greater creativity than mammalogists writing "Mammals of..." reference books. Although *Handbook of Mammals of the South-central States* covers "some 342,000 square miles of territory" in Kentucky, Tennessee, Georgia, Alabama, Mississippi, Louisiana, and Arkansas, it omits the Carolinas, Virginia, and Florida, because, as the authors rationalize, suitable references for the mammalian fauna of those states already exist. Five of these seven states, however, were covered in Hamilton and Whitaker's (1979) mammal guide to all states east of the Mississippi.

The late J. Knox Jones coauthored three previous regional guides, for the "plains states", "northern Great Plains" and "north-central states," with Jerry Choate and Clyde Jones each coauthoring one of these. The three men are indeed respected names of long-standing in the field of North American mammalogy. Unfortunately, none of the three has any particular expertise in the southeastern corner of the continent (as defined in this book), and that lack of direct experience with the southeastern mammalian fauna is made apparent in the form of several errors of commission (as in range maps) and many more of omission.

Not everyone will agree with the stated need for this book to fill in the geographic gaps left by existing state and regional mammal guides. However, the effort could have been quite meaningful, and both accuracy and completeness would have been substantially improved, had the authors scoured the current literature and "picked the brains" of mammalogists currently working in these states, mining the considerable ore of unpublished data. Of the 225 references cited, only 61 (27%) are from the primary literature; 39 (17%) are from just two reference books (Chapman and Feldhamer 1982, Novak et al. 1987) and 69 (31%) are from Mammalian Species accounts. The latter are, of course, compilations of previously published articles relating to selected mammal species and are not likely to be found in small libraries, such as those of many colleges. This is important, for if the book were to be a useful reference for the student, teacher or professional in most locations in this seven-state region, it should serve to facilitate the discovery of more specific information. Moreover, the fact that there is a total of only 12 references that are post-1987—and

only four of these are from the primary literature—indicates a failure to adequately represent the current state of knowledge about the 103 species of mammals, native and introduced, discussed in this book.

Some aspects of the book do contribute to an understanding of mammalian biology in the region beyond what could be gleaned from the Peterson series field guide to the mammals (Burt and Grossenheider 1976) and the aforementioned books. Introductory chapters on the physical environments, physiography and biome distribution, and zoogeography of the seven-state region are rather well done, and the synthesis is, to a large degree, original. Further information on conservation and habitat alteration in the region would have been welcome in this context. Useful dichotomous keys are provided, including characters from both whole animals and skulls, first to the orders, and then for each order down to species (with keys to families provided only for rodents and carnivores). Lay users of these keys may have an occasional problem with terminology—for example, the term semi-prismatic is used in the key but not defined in the glossary—but this is a minor detraction.

Tables of dental formulae for genera of bats and rodents are also useful. Black and white photos accompanying each species' range map and page of text (all on facing pages) are of good quality (including many of Roger Barbour's excellent photos), although color would certainly have been more useful, particularly to the lay user and especially in helping to identify bats and rodents. Curiously, the key to orders (p. 39) omits *Perissodactyla* (there is a long-standing population of feral horses on Cumberland Island, Georgia, which is—even more curiously—completely ignored in the chapter titled "Introduced Mammals and Species of Possible Occurrence"). The key to orders also omits *Sirenia* and *Cetacea*, even though West Indian manatees (*Trichechus manatus*) and Atlantic bottlenose dolphins (*Tursiops truncatus*) as well as other cetaceans occur coastally and in the inland bays of as many as four of the seven states.

Broad-brush range maps, which characterize most such regional guides to fauna, are always of limited use (and are useless as far as assessing habitat associations or relative abundance), but a few of those in this book plainly miss the mark. The muskrat (*Onychomys leucogaster*) is shown to occur throughout the upper coastal plain and well into the lower coastal plain of Georgia, but there are only a few records below the fall line, those being along a couple of major rivers in the easternmost coastal plain. Recent work on the round-tailed muskrat (*Neofiber alleni*) has extended its known range in Georgia, a fact that could have been gleaned from Humphrey (1992), an important regional reference that the authors missed. The pine vole (*Microtus pinetorum*) occurs commonly throughout Georgia and into Florida, but it is shown as absent from most of the lower tier of Georgia counties. To my knowledge, the coyote (*Canis latrans*), although expanding its range, has not yet been recorded from the 200,000-ha Okefenokee Swamp or much of the Atlantic coastal-marsh strip, yet the entire state of Georgia is shaded in its range map.

The most annoying feature of this book is the habit of including extirpated species in the very same for-

mat, with the presumed original (i.e., pre-European settlement) range map displayed exactly as are those of the extant species. This could cause great confusion for those lacking native skepticism or pre-existing knowledge of species distributions. Sure, the fine print says they are (probably) extirpated, but the much more eye-catching maps imply that mountain lions and red wolves and bison are all over this area—just like raccoons! This could only fuel the persistent "panther" sightings (usually black) outside of Florida, which, like Sysiphys, I fear I will endlessly and futilely endeavor to refute. There is almost always a healthy margin below each page of description, which could have been used to convey greater specificity or more (and more recent, and more primary) references. For example, to describe the fox squirrel (*Sciurus niger*) as "principally a native of deciduous and mixed forests of the eastern United States" is to gloss over the fact that there are really two "ecological species" and two morphologically distinct subspecies of the fox squirrel occurring in this region. The large black-masked populations in the southeastern part of this seven-state region eschew most deciduous woods and even second-growth pines in favor of the few remaining open stands of mature pines (especially long-leaf) with mostly herbaceous understory, which are vanishing due to fire exclusion and conversion to slash pine plantations. Fox squirrels in the northwestern portion of this region are quite different, both morphologically and ecologically, and are much more common.

The nine-banded armadillo (*Dasypus novemcinctus*) has an interesting zoogeography in this region; populations from Texas through the central Gulf states apparently are descended from naturally expanding populations moving north and eastward out of Mexico. These are contacted by, and probably now overlap, populations expanding north and westward from an anthropogenic introduction into south Florida. The Florida-derived immigrants so far appear to be free of *Mycobacterium leprae*, the causative agent of leprosy, whereas the Texas-derived colonizers are known hosts to the disease. As is generally the case for the species descriptions in the book, this one would have been more interesting and valuable had the authors discussed such nuances.

There are some other peccadilloes—such as the cardinal sin among scientists of using English units (acres for home ranges)—but these don't merit further mention. The book does have its redeeming qualities, not the least of which are the dichotomous keys, and I can recommend with only slight hesitation that libraries obtain it for completeness sake, but I'm left thinking about what might have been, and hoping that a more definitive, accurate and exhaustive reference for mammals of the south (or southeast or south-whatever) will someday cross my desk.

BURT, W. H., AND R. P. GROSSENHEIDER. 1976. A field guide to the mammals: field marks of all North American species found north of Mexico. Houghton Mifflin Co., Boston, Mass. 288pp.

CHAPMAN, J. A., AND G. A. FELDHAMER, EDITORS. 1982. Wild mammals of North America. Johns Hopkins Univ. Press, Baltimore, Md. 1147pp.

- HAMILTON, W. J., JR., AND J. O. WHITAKER, JR. 1979. Mammals of the eastern United States. Second ed. Cornell Univ. Press, Ithaca, N.Y. 346pp.
- HUMPHREY, S. R., EDITOR. 1992. Rare and endangered biota of Florida, Vol. 1. Mammals. Florida Univ. Press, Gainesville. 292pp.
- NOVAK, M., J. A. BAKER, M. E. OBBARD, AND B. MALLOCK, EDITORS. 1987. Wild furbearer management and conservation in North America. Ontario Minist. Nat. Res., Toronto. 1150pp.

—Bradley J. Bergstrom, Department of Biology, Valdosta State University, Valdosta, GA 31698-0015, USA.

Wildlife in the Marketplace—The Political Economy Forum. Edited by T. L. Anderson and P. J. Hill. Rowman and Littlefield Publishers, Inc. Lanham, Md., USA; London, England, U.K. 1995. 320 pp. \$22.95 ISBN 0-8476-8025-8 (paper); \$57.50 ISBN 0-8476-8024-X (cloth).

Douglas North (1990), Nobel Prize Laureate in economics 1993, points out: "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic. Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change." That institutions in general, and property rights in particular, matter when it comes to ecosystem and wildlife management is illustrated by a wonderfully diverse selection of international perspectives on the role of property rights in ecosystem management in Hanna and Munasinghe (1995a, b). The essays therein take an extremely broad view of property rights and place them in the context of five general issues of property rights and the environment: (a) the design of governance systems for sustainability; (b) the relation among equity, stewardship, and environmental resilience; (c) the use of traditional knowledge in resource management; (d) the mechanisms that link humans to their environments; and (e) the role played by poverty and population.

In this genre, the collection of essays in *Wildlife in the Marketplace* present an informative, albeit much narrower variety of approaches to the well-known but not yet widely accepted arguments in favor of privatization of natural resources, more particularly wildlife habitat. They are generally well-written advocacy pieces, and as such are extensions of Garrett Hardin's (1968) famous article "The tragedy of the commons," to which, surprisingly, there is only one citation in the volume. Taken together they challenge the commonly held view that markets and wildlife are incompatible with one another. Rather, the authors offer many examples of institutional adjustments whereby market incentives have been successfully harnessed to help protect and enhance both wildlife species and their habitat. Citing ex-

amples from both North America and southern Africa, the authors thoughtfully explore the problems with wildlife management practices that do not take into account the incentives implicit in a wide variety of ownership arrangements.

The editors, Terry L. Anderson and Peter J. Hill, are senior associates of the Political Economy Research Center (PERC) in Bozeman, Montana and are well-known and respected authors in public policy circles. The meeting from which these papers are drawn was the fifth in a series of Political Economy Forums sponsored by PERC. It was designed to generate new ideas and provide a forum for constructive criticism and academic discourse over how best to recognize the value of the market, individual initiative, and the importance of property rights and voluntary activity in wildlife habitat management. Sponsored activities by PERC are designed to offer an antidote to government command and control tactics in the management of public lands and wildlife resources. The papers gathered in this volume (with one exception) were original manuscripts prepared for the 1993 Forum and fit PERC's objectives to a tee. Nevertheless, for readers familiar with the authors' and editors' previous work, there are few surprises and even fewer original ideas presented. The marketplace for ideas, like the marketplace for wildlife, however, is far from perfect and the authors and editors should be applauded for inviting their readers to confront these ideas over and over again.

The eight essays focus on the ownership of wildlife and wildlife habitat. Together with an introduction written by the editors, the essays illustrate the role of the market in creating incentives for habitat preservation and transforming wildlife from a liability to a management asset.

Dean L. Lueck explores the evolution and economic organization of wildlife institutions. His analysis recognizes that migratory patterns vary among different wildlife species and suggests that private ownership is more problematic as the propensity of a species to migrate across traditional property lines increases. Lueck argues that it is almost impossible to make a clear separation between private and public institutions because property rights to wildlife are a complex mix of both. Lueck's claim that modern institutions surrounding wildlife management and ownership evolved in response to incomplete ownership of property rights in wildlife is difficult to follow because, like the institutions he attempts to explain, his models are neither clearly explicated nor carefully delineated.

In contrast to Lueck who emphasizes the limitations on property right arrangements caused by wildlife migration patterns, James L. Huffman emphasizes the political and ideological barriers to widening the role of the market. Huffman argues that it will be necessary to carry out limited examples of institutional reorganization in order to move away from the ideological warfare that generally characterizes debates over privatization. He recognizes that although there is a generally accepted rule that allocative efficiency is best achieved through markets, there are widely recognized theoretical and practical shortcomings of existing property systems. "Thus," Huffman argues, "a fundamental prerequisite to pri-