A Qualitative Examination of Value Orientations Toward Wildlife and Biodiversity by Rural Residents of the Intermountain Region

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Abstract

The values that individuals associate with wildlife and biodiversity are many. This study explores the values associated with wildlife and biodiversity by residents of a small, rural community in the Intermountain West region of the United States. The community is located within an area rich in wildlife and, in general, the research aims to examine how these individuals define their own value orientations toward wildlife and biodiversity, how these value systems have been shaped by regular interaction with nature within a rural setting, and whether these rural residents view their value systems as distinct from other population groups. Overall, the results demonstrate the fallacy of assuming constant value orientations within rural population groups, the importance of local context within value formation, and the myriad ways in which individuals define "environmental value."

Keywords: *American West, biodiversity, environmental values, rural communities, wildlife*

Introduction

The values that individuals associate with wildlife and biodiversity are many. Some individuals view wildlife through a utilitarian lens, emphasizing nature's material benefits as derived by humans. From a very different perspective, individuals may attach a spiritual reverence for elements of the natural world emphasizing an ethical reciprocity between humans, other creatures, and nature more generally (Kellert 1996).

This study qualitatively explores the values associated with wildlife and biodiversity by residents of a small, rural community in the Intermountain West region of the United States. In-depth interviews were conducted with 20 randomly selected community residents, providing rich insights into these residents' environmental perspectives. The community is located within an area rich in wildlife and, in general, we aim to understand 1) how these individuals define their own value orientations toward wildlife and biodiversity, 2) how these value systems have been shaped by regular interaction with nature within a rural setting, and 3) whether these rural residents view their value systems as distinct from other population groups. The third objective is not necessarily comparative, but rather, allows participants to reflect on their own perceptions as related to other population groups. While insights into the complexities of rural environmental values are interesting in an academic sense, they are also highly relevant from an applied perspective. Specifically, land managers would be wise to be cognizant of the local values associated with species richness and biodiversity, thereby better allowing placement of management costs/benefit discussions within the most salient framework for local residents. In other words, consideration of place-based value systems should be incorporated into discussions of land management practices and policies that support biodiversity over the long-term.

Background

Two topical areas within the social science literature provide background for the study. First, researchers have outlined various value orientations toward nature and wildlife. This literature provides guidance in the identification of the different value perspectives exhibited by the study population. Second, researchers have examined rural environmental attitudes and perceptions, both with a focus upon rural residents and as contrasted with urban dwellers. Findings from these areas of research are key to understanding the rural dimensions of the perspectives offered by the study participants.

Value Orientations Toward Wildlife and Biological Diversity

Research has identified nine basic values of nature and living diversity that characterize individual outlooks toward wildlife and biodiversity (Kellert 1996; see Table 1). Importantly, these different value orientations are not mutually exclusive. As demonstrated in the results of this study, individuals may exhibit a dominant orientation, while also expressing sentiments reflecting other orientations.

Individuals demonstrating "utilitarian" orientations tend to emphasize the practical uses of nature, the many ways in which humans derive material benefit from the natural world. Such material benefits form the base not only for extractive industries such as timber or mining, but also include the potential future benefits derived from the genetic properties of animal and plant species.

Those emphasizing the "naturalistic" values focus on the satisfaction people gain from direct experience with nature and wildlife. Such satisfaction can include physical, emotional, and intellectual benefits; consider the "escape" and relaxation afforded by outdoor recreation. A more systematic examination of the natural world is reflected in an "ecologistic" perspective, while a focus upon the awe-inspiring values of nature can be considered a more "aesthetic" orientation emphasizing natural features that consistently evoke emotional response (e.g., a breaching whale, the contours of a mountain landscape). "Symbolic" values reflect the tendency for humans to use nature for communication and thought; consider the centrality of animals in children's books. And finally, individuals also express "humanistic" and "moralistic" outlooks toward nature. The former often results in "humanizing" wild creatures, particularly culturally significant vertebrates and domesticated animals. The moralistic perspective emphasizes connectedness between humans and nature, a basic kinship that binds all life together. In a very different vein, "dominionistic" perspectives focus upon mastery or dominance over nature, while fear and aversion of the natural world may reflect a "negativistic" outlook (Kellert 1996). These categories, representing a variety of perspectives toward the natural world, play a central role in the present study as they comprise the framework through which the qualitative data are analyzed.

Table 1. A typology of basic values attributed to wildlife and biodiversity.

Value	Definition
Utilitarian	Practical and material exploitation of nature
Naturalistic	Direct experience and exploration of nature
Ecologistic-Scientific	Systematic study of structure, function, and relationship in nature
Aesthetic	Physical appeal and beauty of nature
Symbolic	Use of nature for language and thought
Humanistic	Strong emotional attachment and "love" for aspects of nature
Moralistic	Spiritual reverence and ethical concern for nature
Dominionistic	Mastery, physical control, dominance of nature
Negativistic	Fear, aversion, alienation from nature

Source: Kellert 1996, 38

Rural Environmental Orientations. Past research suggested urban/rural variations exist with regard to value orientations toward the natural world, although more recent social research has suggested these variations may have declined. In early work, two theories were typically put forth to explain differences in environmental outlooks between urban and rural residents (Tremblay and Dunlap 1978). Some argued that urban residents are more likely to be exposed to environmental degradation than rural residents, resulting in greater levels of urban environmental concern. Others argued that utilitarian values are held more strongly by rural residents because their livelihoods are more likely to be characterized by natural resource dependency (Tremblay and Dunlap 1978).

As noted, research examining these two hypotheses has tended to produce conflicting results. While some studies, particularly those of more than a decade ago, find that urban residents are *slightly* more concerned with environmental problems than rural residents (Lowe and Pinhey 1982; Tremblay and Dunlap 1978; Jones and Dunlap 1992), others find little distinction (e.g., Arcury and Christianson 1993; Jones, Fly and Cordell 1999; Morrissey and Manning 2000). Several drawbacks of this research have been outlined including measurement issues (Van Liere and Dunlap 1980, 1981) and, relatedly, the fact that levels of expressed concern tend to vary according to whether the issues are framed within local or national context (e.g., Tremblay and Dunlap 1978; Freudenburg 1991; Vorkinn and Riese 2001). Additionally, respondent occupation matters, with those involved in extrac-

tive industries expressing different outlooks than other rural residents (Freudenburg 1991).

Although we certainly have an interest in relating the qualitative results here with earlier work on rural environmental perspectives, the present study is not comparative in nature; it is not designed to examine urban-rural distinctions in the values associated with wildlife and biodiversity. Our rural focus is especially related to an interest in linking wildlife interaction with the values which residents afford wildlife and biological diversity. The chosen rural community is proximate to substantial amounts of public land that is available for myriad outdoor recreational opportunities, including both "appreciative" activities (hiking, camping, photography) and "consumptive" activities (hunting, fishing, ATVs) (as distinguished by Dunlap and Heffernan 1975). Although past research has found little support for an association between environmental concern and participation in various outdoor recreation activities (e.g., Dunlap and Heffernan 1975; Geisler, Martinson and Wilkening 1977; Nord, Luloff and Bridger 1998; Van Liere and Noe 1981), more recent empirical work has found that participation in outdoor recreational activities *is* positively associated with pro-environmental behavior, which is argued to be a stronger measure of environmental concern (Theodori, Luloff and Willits 1998). Accordingly, within this study, the role of outdoor recreation in descriptions of value orientations was considered during the qualitative examination of the interview transcripts.

Our rural focus is also of interest as related to previous research examining environmental orientations in rural communities, as opposed to those above offering rural/urban contrasts. As an example of such work, Jones et al. (2003) examined environmentalism in a rural area of eastern Tennessee, specifically contrasting in-migrant and non-migrant residents. In general, the researchers find that rural non-migrants (long-term residents) expressed environmental concern and commitment to environmental values, although they appeared to place relatively less priority on environmental issues than do recent in-migrants. As such, Jones et al. argue that value orientations do not necessarily *clash* between these two groups, but rather there are value *differences* reflected in the relative priority placed upon local issues. Also suggesting that longtime rural residents are not necessarily anti-environment, Smith and Krannich (2000) find that longer-term residents share substantial common ground with newcomers with regard to local issues, with longer-term residents actually often expressing stronger desires than newcomers to limit population growth and community development. Work in rural areas outside the U.S. also reveals pro-environmental sentiments (e.g., Rokicka 2002; Skogen 2001; Vorkinn and Riese 2001).

As for our focus on a rural community within the Intermountain West, the region provides an interesting study area and one in which different value systems as related to the natural world increasingly come in conflict. The rural economies of the West have historically been characterized by dependence upon natural resources, therefore subject to the boom and bust cycles of extractive industries. Rural westerners have also been characterized as holding strong commodity production values, although some call these stereotypes "exaggerated and misleading" (Rudzitis 1996, 95). Additionally, environmental support tends to have a liberal political base (e.g., Jones and Dunlap 1992), while the Intermountain West is politically conservative and often characterized or perceived as "strongly antienvironment" (Bennett and McBeth 1998, 371). Previous research in the Greater Yellowstone Ecosystem (including portions of Idaho, Montana, and Wyoming) has indeed demonstrated some of these value orientations with respondents expressing strong utilitarian, dominionistic, and libertarian values. Within the Yellowstone region, the local values appear strongly shaped by the region's historical orientation toward agriculture and natural resource extraction (Reading, Clark and Kellert 1994).

In general, the background literature suggests that there are many different value orientations that individuals may exhibit toward the natural environment. Work also suggests that historical urban/rural distinctions (e.g., Lowe and Pinhey 1982; Tremblay and Dunlap 1978; Jones and Dunlap 1992) may be waning (e.g., Arcury and Christianson 1993; Jones, Fly and Cordell 1999; Morrissey and Manning 2000) and today's rural residents may be expected to exhibit pro-environmental orientations (e.g., Jones et al. 2003). That said, given the historical utilitarian leanings of the rural Intermountain region (e.g., Bennett and McBeth 1998), we are not hypothesizing any particular value direction given the context of this study. Rather, this research was designed to allow the respondents to tell their stories with regard to wildlife and biological diversity, and based upon these stories, we aim to better understand 1) how these individuals define their own value orientations toward wildlife and biodiversity, 2) how these value systems have been shaped by regular interaction with nature within a rural setting, and 3) whether these rural residents view their value systems as distinct from other population groups.

Methods

This research represents the second stage of a project examining the association between population and biodiversity within the state of Utah. The first phase identified areas within the state characterized by high levels of human pres-

ence as well as biological diversity. These "biodiversity hotspots" were identified through examination of a spatially-explicit dataset created from the merging of 1990 U.S. Census demographic data with indicators of biological richness from the National Biological Service's Utah Gap Analysis Program (Hunter, Beal and Dickinson 2003). Gap Analysis is a recently developed tool designed to inform conservation policy, basically allowing geographic comparison of land management status and species distributions to identify "gaps" in biodiversity protection.[3] Within this project's first phase, we made use of Gap Analysis data for Utah to measure biodiversity at particular geographic locations through calculation of "species richness," defined as the number of vertebrate species representing four specific taxonomic groups (mammals, birds, amphibians, and reptiles) expected to be found in each census-defined block group. Our map of species richness was then intersected with census data, the intersection allowing the identification of "hotspots" — block groups with high levels of population density and relatively high numbers of vertebrate species.

The second stage was designed to qualitatively examine public perception of wildlife and biodiversity in general, values associated with wildlife and biodiversity, knowledge of the forces leading to species decline, personal interaction with wildlife, and perceptions of various conservation strategies. A purposive case study approach was used as the research objectives guided the choice of a rural "hotspot" proximate to public lands; the chosen community has a population less than 1,000, is fairly isolated, and borders forested land both publicly and privately owned. The community is an historic Mormon settlement and retains a Mormon majority. The community is racially homogenous, with 96% of the population classified as white in the 2000 U.S. Census. Indeed, these conditions limit the generalizability of the findings to other, more secular rural communities, more racially diverse and with broader religious representation. However, the study community does socially approximate a substantial number of rural communities within the Intermountain West, with the use of in-depth interviews offering rich insights into residents' environmental perspectives. As argued in the paper's conclusion, we believe these insights are important both academically and with regard to applied conservation policy.

Twenty face-to-face, in-depth interviews were conducted with adult residents in their homes. The lead author conducted 18 of the interviews, with two undertaken by a graduate research assistant. Interviews averaged 1.5 hours each (minimum = 1 hour, maximum = 2.25 hours), with respondents including 11 women and 9 men. The average age was 52 years (minimum = 27 years, maximum = 74 years). On average, the respondents had lived in the community for 17 years (minimum = 2 months, maximum = 61 years). Finally, the respondents represented a variety of occupational backgrounds including professionals (e.g., accountant, marketing consultant, teachers), laborers, artists, and several retirees. The study participants were recruited from randomly selected telephone numbers and offered $20 compensation for their time.[4] As typical of interview-based research, it is possible that our respondents are characterized by some selectivity. Indeed, the substantial difference in respondent median age (52 years) relative to the community's in general suggests that more elderly individuals had a greater likelihood of participating in the research. Limitations related to this selectivity are discussed in the concluding section.

The research was conducted using structured interviews (e.g., Fontana and Frey 1994), with an interview guide employed to organize the discussions, although participants were allowed the opportunity to expand upon their thoughts as they desired. The interview guide was designed to yield insight into respondents' environmental orientations, knowledge, concern, and experience with wildlife and biodiversity more generally, perspective on specific human-environment tradeoffs (details below), and response to particular species. In order to facilitate data analysis and organization, the respondents were asked to rank several reasons often put forth to justify wildlife conservation. The various rationales for conservation include wildlife's useful values, knowledge values, the personal satisfaction gained from interaction with the natural world, moral connections to wildlife, and the symbolic aspects of nature.[5] Respondents were also asked to draw their mental map of the local community and to contrast their environmental orientation with those of American society more generally. During each interview, the interviewer aimed to establish and achieve "balanced rapport," in which the interviewer rewards respondent participation but does not offer evaluative statements (Fontana and Frey 1994).

During the interviews, respondents were presented with several real-life environmental controversies in order to elicit discussion about human-wildlife tradeoffs. As an example, the following passage was read to the respondents:

> *Coral Pink Sand Dunes State Park, located northwest of Kanab, Utah, was established in 1963 as a place where people can camp, hike, and ride off-road vehicles. It is also home to the Coral Pink Sand Dune tiger beetle which only lives in this area and can be found in the vegetated spaces between the dunes. Because the tiger beetle lives in one of the smallest geographical ranges on Earth and because it is suspected that it is vulnerable to human disturbance, the tiger beetle is listed as "threatened" by the U.S. Fish and Wildlife Service, making it a potential endangered species.*

Because of this classification the tiger beetle has become the focal point of disagreement. Recently, federal, state, and local officials have attempted to establish "conservation areas" within the park and adjacent federal land within which off-road vehicles would be banned. Officials say the restrictions will remain in effect at least until a new management plan for the sand dunes is completed sometime next year. Off-road enthusiasts, however, worry that some of their traditional recreation areas are being restricted.

The respondents were then asked: Have you heard about this controversy? Where would you stand on this issue and how would you like to see it resolved? Several other scenarios were incorporated within the interview guide.

Each interview was recorded and transcribed in entirety for analysis. The qualitative data analysis software NUD*IST, Version 4.0, was used in analysis, although the software was used primarily as a data management tool facilitating coding and data retrieval, as opposed to being applied for theory development.

For the purposes of this paper, the analytical focus was upon value orientations as evidenced in response to the questions presented within the structured interviews. The authors worked together to identify statements reflective of particular a priori value orientations as outlined by Kellert (1996). Although a grounded theory approach was not used in this analysis, the generation of categories based on a priori theory still offers theoretical contribution. As suggested by Denzin and Lincoln (1998), throughout the analytical process, researchers make decisions about categorical significance, definition, and validity. Indeed, as related to the present study, our efforts to classify value orientation yielded interesting qualitative evidence as to the overlapping nature of Kellert's value categories.

In the following section, we present results for each of our three research objectives. First, we review the dominant values expressed by the respondents with regard to local wildlife and biodiversity, where analysis revealed emphases on perspectives related to usefulness, knowledge, and moral connections to local species. Second, we review results that reflect values as influenced by place, where analysis revealed substantial linkages between rural residence, wildlife interaction, and development of perspectives with regard to local species. Finally, we explore the ways in which respondents deem their value systems as distinct from other population groups. Here, analysis revealed strong contrasts made between respondents' value systems and those of "city folk" and "environmentalists." In all cases, the quotations selected for inclusion represent clearly articulated expressions of what we deemed to be respondent value orientations. On occasion, ellipsis points ("...") are used where words non-essential to sentence meaning have been omitted for clarity of presentation. All names are pseudonyms.

Results

The results are presented in order of our three research objectives. In particular, we offer insight into 1) how respondents define their own value orientations toward wildlife and biodiversity, 2) how these value systems have been shaped by regular interaction with nature within a rural setting, and 3) whether these rural residents view their value systems as distinct from other population groups.

Value Orientations Toward Wildlife and Biodiversity

The following discussion of value orientations makes use of the respondents' rankings of orientation toward wildlife and biodiversity as an organizing tool; those ranking "useful," "knowledge," and "moral" reasons as their primary orientation toward wildlife and biodiversity are discussed in groups below. Although the additional value orientations outlined by Kellert were offered to respondents for the ranking exercise, 18 of the 20 respondents noted one of these categories as their primary orientation. As such, we make use of these three categories as an organizational scheme in the section that follows.

Usefulness as a Dominant Value. Among the five respondents noting "useful" as the primary justification for conservation, only two voice particularly strong utilitarian sentiments. The remainders tend to describe naturalistic appreciation for wildlife, as well as the role which species diversity plays within ecological processes.

George (age 74, retired, residence 30 years)[6] is strongly utilitarian, demonstrating no concern for environmental issues generally, or wildlife more specifically, unless a direct link can be made to his own well-being. In discussing species decline, for instance, George states he is not concerned:

...because it doesn't affect me in any way I know of. Maybe if there's things that were brought to my attention rather than just to say that it's disappearing — how is that going to affect me?

An even more explicit utilitarian perspective is voiced by Joe (age 63, retired professional, residence 61 years). In describing his concern for other species, he states:

I guess the things that concern me are things that are useful ...if it's some little insect or something, like a mosquito, I wouldn't care if they wiped [it]

out until there's nothing left! I can't see they do any good to us!

He describes game animals as "*beautiful*" and he "*loves*" bald eagles. Mice, however, are "*no good at all*" and raccoons are "*really quite a pest*."

Five additional respondents rank "useful" as the primary justification for species conservation, yet naturalistic, moralistic, and humanistic sentiments abound in their discussions of wildlife interactions and species diversity.

Mary Ellen (age 74, retired teacher, residence 2 years) expresses personal commitment to the natural world through actions such as contributing volunteer labor to rebuild the local bird refuge after flooding and caring for injured wildlife (e.g., coyote, bobcat, deer). Her motivation does, however, demonstrate some personal utility: "*We need to help them if we can, they're part of what we like in the world*." Further demonstrating a personal connection to nature, on several occasions Mary Ellen wistfully mentions the evenings throughout her life during which she slept outside "*under the trees and stars*." In discussing wildlife generally she often mentions the "food chain" and discusses individual species within a "cycle of life" framework, suggesting that Mary Ellen views species diversity as ecologically significant. "*I guess if you got one [species], you've got to have all the others, like the mountain lions, the deer, the elk .... [they're all] part of nature ....*" Indeed, such comments suggest that Mary Ellen's perspective could also be seen to reflect ecologistic interests, whereby individuals express interest in the systematic study of nature's structures and functions.

Jason (age 56, craftsman, residence 25 years) also ranks "usefulness" high on the written scale, but verbally demonstrates strong naturalistic and moralistic perspectives: "*We need [wildlife], and they need us*." He is an avid hunter, but could be considered a nature hunter[7] in the sense that the kill does not appear to be his primary motivation:

I just love the outdoors ... when I go hunting ... it's not just to go out and kill an animal. I look at a particular tree and I think "that's a pretty tree" ... I wonder how old it is. I look at little flowers on the ground ... I see the rocks ... the way they're shaped and the color.

A deer thermometer hangs on his front porch. Demonstrating his ecologistic interests and recognition of the ecological value of species richness, Jason argues:

I think when you start losing some of these species ... it's a pretty serious thing. I think it's one of God's ways of saying Earth's life is getting a little shorter ... because I don't believe the Earth can live without all the creatures.

Expressions by other respondents echo similar sentiments, suggesting utilitarian perspectives shaded by naturalistic and ecologistic interests — respondents often note that ecological integrity is necessary for human survival:

We need wildlife to survive, if we didn't have it we would cease to exist (Paul, age 37, artist, residence 9 years).

I realize that a lot of people look at man and animals as two totally different things, but they're still a part of the same system, and you lose one and you're going to lose the other (Tonia, age 27, professional, residence 4 years).

I think it is important to keep species alive because they are obviously here for a reason ... there must be a purpose for them to be here ... if they are eliminated then that is going to mess up something ... there must be a reason (Samantha, age 36, teacher, residence 10 years).

Knowledge as a Dominant Value. The three respondents ranking "knowledge" as the primary justification for concern with species diversity offer parallel perspectives to those reviewed above. While one respondent expresses strong utilitarian sentiment, another emphasizes that humans are a component of the natural cycle. The other varies somewhat from these two by focusing on the aesthetic values of nature while also demonstrating a somewhat utilitarian perspective.

Bill (age 53, professional, residence 15 years) is an avid outdoorsman. He belongs to several sportsman organizations and regularly reads hunting and fishing periodicals. He enjoys watching and learning about game animals — deer, elk, and moose in particular — hence his rank of "knowledge" in primary position. Yet he clearly emphasizes utilitarian values of nature and wildlife. Regarding the tiger beetle of the Coral Pink Sand Dunes, Bill asks:

What benefit are we getting from this beetle? Is there something that will give us a scientific medical breakthrough with this guy? What is he giving us?

Contrast this with the "*euphoria*" that Bill experiences coming across a moose or elk during his commute to work: "*it's just a good feeling ...*" This varying appreciation for different species is summed up in this statement:

I think nature, wildlife, plants, birds, bees, insects were all put here for our benefit and to gain some use of them, be it from a recreation standpoint, bird watching, a necessity standpoint ... scientific standpoint ... they are not put here just to occupy space.

Obviously, Bill places utilitarian values paramount across all species, although he personally enjoys observing and learning about game animals.

Ben (age 45, self-employed, residence 4 years) is the most articulate and informed respondent with regard to biodiversity and species decline. He also ranks "knowledge" as a key value of nature while verbally expressing a strong utilitarian viewpoint:

> *...I have stewardship over [natural resources]. I have a responsibility ... to use those things effectively. Not perfectly. But effectively and responsibly. The Earth is here for my use.*

Accordingly, Ben views humans as part of nature and extinction as part of the natural process:

> *I don't view species decline as necessarily a bad thing. Just because a certain species is extinct ... that's simply part of the natural process. Even if it is as a result of something that man did ... man is part of nature and what we do, our building, is natural. Just as it is for a beaver to build a dam."*

According to Ben, the "importance" of any particular species is based upon its relation to the whole, including its relation to humans:

> *I don't believe that every species that ever existed on Earth has a burning need to be preserved ... Whether or not [a certain species' extinction] is a problem would be based upon ...what effect that species has on closer related species, what effect that has on my existence as a human being, what effect that has on the ecosystem.*

In general, species decline is not an urgent matter to Ben, although he feels it is important that we consider biodiversity within future planning; "*responsibility and stewardship*" are key.

The only female respondent to rank "knowledge" as the primary value of species diversity is Judith (age 51, professional, residence 2 years). Judith appreciates nature as an observer, recently purchasing small books to identify birds and animal tracks. She often uses the word "*fun*" in justifying her interaction with wildlife. Judith states that all species have a purpose:

> *I care about the balance, I feel like there needs to be space for the animals to live ... I just think there's a purpose for everything ... part of the functioning of the planet.*

Nonetheless, in the discussion of a tradeoff between tiger beetle habitat and sand dune recreationists, Judith asks:

> *[Is this the] only place in the whole world that has that beetle? And if it is, then how important is [that beetle] to the world?*

Moralistic as a Dominant Value. Demonstrating substantially different value orientations, eight respondents note "moral" reasons as the primary motivation for species conservation within the written ranking exercise. As compared to those individuals emphasizing utilitarian and knowledge values, these respondents more frequently mention the importance of species diversity as a component of functioning ecosystems — often suggesting each individual species has a "*purpose*." Utilitarian values are, however, consistently mentioned by these respondents and management strategies are favored which seek to balance the needs of humans and the natural environment.

One of the more moralisitic outlooks is provided by Mark (age 38, self-employed, residence 14 years), who also on occasion expresses a spiritual connection with the natural world. Mark firmly believes that conscientious environmental stewardship is the responsibility of humans, and that conservation strategies must strive for a balance between human needs and those of nature:

> *Man has to learn to live in harmony with all species...For the ecosystem to work properly and right, everything needs to be there. And when one species dies off, it hurts the ecosystem.*

He continually emphasizes the interconnections within nature and the reciprocal aspect of the human-wildlife relationship:

> *I love wildlife ... Each and every one of us need to recognize [wildlife] as a part of our survival, as well as the survival of the [wild] species. They depend on us like we depend on them.*

Finally, Mark expresses a spiritual connection to the red rock canyons of southern Utah:

> *I just started spiritually thinking about [how it was formed and created]...When I was a little boy I could have been playing in the sand with my Heavenly Father creating all of the 'swirlies' in this rock ...*

A humanistic emphasis characterizes Joyce's (age 70, retired teacher, residence 55 years) outlook. She has significant appreciation for animals and enjoys watching local wildlife a great deal. She expresses kindness towards all creatures and she donates to several wildlife organizations. Joyce told several stories about snakes, including one that

came from under her house to sun each day on a rock "*...I could have easily killed it, because it sat there, but the thought of it broke my heart*." She saw more snakes on a walk with her granddaughter, "*I know some people would have a great urge to kill [them], but I have a great urge to save [them]*." She sums up her philosophy toward species diversity by stating:

> *Everything that's here on earth ... it was meant to be here ... Everything kind of works together in one way ... whether we understand it yet or not ...It seems a shame for anything to become extinct.*

Yet even among respondents such as these who emphasize moral and humanistic values, balanced conservation decisions are desired. Judy (age 55, teacher, residence 20 years), for instance, notes that she is:

> *Sympathetic towards people that have to make a living [logging] and feed their families, that's important. But so is the [spotted owl] in a way. But the [owl] isn't more important than children starving, they are our priority and we must use wisdom [in management decisions].*

Joan (age 46, student and homemaker, residence 11 years) expresses a similar sentiment:

> *I would always try to protect wildlife, but I would suppose that I would draw the line between human life and wildlife ... I don't want to be destitute and homeless to save animals, but I want to do what I can.*

Concern with ecological well-being for the sake of future generations is one underlying rationale for moralistic outlooks. Demonstrating this, three of the respondents offering moral outlooks toward conservation make mention of children within their arguments on species value. Mark (age 38, self-employed, residence 14 years) discusses the symbolic importance of wildlife with regard to animal stories aimed at children:

> *I love my kids, I love my children, and as a kid those kind of stories interested me. They got my attention in animals right off the bat ... because as kids growing up they hear them stories and it might get their interest into what really is important in life.*

More specific to species preservation, Joan (age 46, student and homemaker, residence 11 years) notes the importance of preservation for the sake of the enjoyment of future generations: "*I like the [animals] that are here ... I want my kids to see those things*." Also in this vein, Judy (age 55, retired teacher, residence 20 years) argues for conservation "*...because I want my children, my grandchildren, my great grandchildren to be able to know those animals exist ...*"

One other respondent consistently expressed concern with environmental quality for future generations, but from a somewhat different emphasis. Jeff (age 46, laborer, residence 2 years) is an avid hunter and in the written ranking emphasized utilitarian values. On several occasions during the interview, Jeff expresses concern with sustaining game populations in order for his children to continue his family's hunting tradition ... "*I'd donate my hunting rights even as much as I enjoy it, to see that [the deer] come back, so that the kids [can go out hunting when they're sixteen]*."

Value Systems as Shaped by Local Nature. Our second research objective was to explore the ways in which respondents described their value orientations as a product of place. Indeed, examination of the data reveals that respondents consistently attribute their self-defined positive environmental value orientations to rural life generally and local wildlife interaction in particular, contrasting their appreciation and concern with wildlife to that of "city folks." Two sections below elaborate on these patterns: 1) examples of the respondent's general appreciation of rural life, and 2) specific local interactions with wildlife.

1) Appreciation for rural life in general: As discussed above, a wide range of the length of local experience characterizes these respondents; while one individual is new to the community (2 months), others have lived the majority of their lives within this small town (61 years). The average length of residence is 17 years, and only five of the respondents note previous residences outside of the western region. The respondents overwhelming express great appreciation for rural life in general, in some cases romanticizing days past:

> *[I was] raised in a rural area like this, our closest neighbor when I was growing up was uncles and aunts that were a mile away. ... you rode horses, you done fishing, you done whatever you wanted. Them days are gone, you'll never see them again* (Jeff, age 46, laborer, residence 2 years).

Mark (age 38, self-employed, residence 14 years) also likes the "*country life, away from the hustle and bustle of the city*" and Mary Ellen (age 74, retired teacher, residence 2 years) "*love[s] being around the hills*." Bob (age 55, professional, residence 21 years) expresses similar sentiments: "*I love the mountains, I love the out-of-doors, the closeness to nature*." Finally, Pam (age 71, retired teacher, residence 36 years) details her appreciation for local context and rural life more generally:

> *I love the mountains. I love the surroundings we have here.... I love the air, I love the plant life, the*

mountains that have growth and rocks, just like a huge rock garden. I love every season of the year. Every season is different and beautiful. The fall, the leaves, the leaves in the fall. And the smell of burning leaves and bonfires. And gardens maturing, and eating fresh vegetables and fruits. I'm strictly a rural person! ... I love to walk in the snow, and pull the children on the sleigh.

2) Interaction with wildlife: The interviews are replete with stories of local interaction with wildlife, particularly observations of locally encountered charismatic species. As examples:

We just look out our back window for wildlife! The other day ...there were two horses chasing a moose! ... deer come up to eat the apples, they walk right through our yard (Samantha, age 36, teacher, residence 10 years).

Because of where we live, we have a moose and calf here, right by our house, every winter (Joan, age 46, student and homemaker, residence 11 years).

We have wildlife coming down into town! And we all enjoy it, get a kick out of it, and learn from it, and talk to each other about it. The boys go out hiking and run into rattlesnakes and all kinds of stuff all the time. It's considered normal (Ben, age 45, self-employed, residence 4 years).

There is fishing, a lot of birds around, pelicans, herons, finches ... this place is right in the middle of everything. You can see moose feeding. It happens all the time (Tonia, age 27, professional, residence 4 years).

These types of stories are central to the respondents' descriptions of their own environmental value orientations. Pam (age 71, retired teacher, residence 36 years) explains that "*I love wildlife, it plays a very important part in my life*" and Samantha (age 36, teacher, residence 10 years) believes that a true love of wildlife is a rural, western value. Spiritual connections are rarely mentioned, although Ben (age 45, self-employed, residence 4 years) notes that :

...I'm not some kind of very deep traditional Indian tribal kind of a thing, but yeah, I think there is certainly a spiritual connection between me and the animals around me. I think it's supposed to be that way. I just sort of take it for granted ... watching, I love watching eagles soar. We have a lot of them up here.

Sue (age 40, teacher, residence 10 years) rides her "*four-wheeler up the mountain to see lots of deer*" and Tonia (age 27, professional, residence 4 years) explains:

I've grown up ... hunting and fishing ... so I believe that I do have environmental values. I might not be the animal activist ... but I believe we need the wildlife, we need the environment."

Karla (age 54, professional, residence 26 years) also attributes her rural upbringing to her appreciation of wildlife and the local environment "*...I learned from my parents about the different types of wildlife and just growing up ... close to nature.*"

The positive impacts on children of living near wildlife are also frequently mentioned. Several individuals mention that their children participate in outdoor activities such as fishing, hiking, and camping. Joan (age 46, student and homemaker, residence 11 years) explains that her children are curious about wildlife because of "*where we live*." Paul (age 37, artist, residence 9 years) tells the story of a bike ride with his daughters, when after returning from a walk:

There was a big moose sitting right there by the bikes ... we sat and watched him for a while, that was kinda fun. I think it was good to expose these girls to that..."

He contrasts these opportunities to life elsewhere — "*the rest of the world doesn't get to see that kind of stuff all the time, to go for a walk and run into a moose*."

Orientations as Distinct from other Population Groups. Our third research objective was to explore the ways in which respondents characterized their orientations toward wildlife and biodiversity as distinct from other groups. Here, analysis revealed two distinct contrasts between "city folk" and environmentalists. Importantly, the respondents were not prompted to contrast with these two groups, but rather, were queried more generally as to whether they believed their environmental outlook reflects that of American society as a whole. Comments elicited in response to this question, in addition to more spontaneous commentary on the distinctiveness of their values, were used to formulate the summary statements below.

1) Orientations as contrasted to urban dwellers: The types of interactions with local wildlife noted above play central roles in respondents' distinction between their environmental appreciation and that of urban dwellers. When asked if they believe their individual value systems reflect those of Americans more generally, many respondents contrast their appreciation of the natural environment with those of "city folk." For the most part, they explain differences in value

orientations as a result of differences in regular interaction with wildlife. Pam's (age 71, retired teacher, residence 36 years) explanation typifies this perception:

> *[City dwellers] may not have been exposed to wildlife like I have, so they don't appreciate it as much as I do, and maybe if they were exposed, then they would appreciate it.*"

Karla (age 54, professional, residence 26 years) also argues that urban dwellers appreciate wildlife to a lesser degree as a result of not having regular contact:

> *I think there's so many people that live in the city that don't have any contact with any of these things that they cannot be important to them because if you don't know about those kind of things, how can it be important in your life?*

Specifically relating to her own personal experience as a rural resident, Judith (age 51, professional, residence 2 years) explains that her value system has been influenced by:

> *living in a rural area, having animals around me all my life, being on a farm, seeing things grow ... [This] tends to make me more aware than had I grown up in a city where I was not exposed and had the same opportunities to feel and be a part of nature...Then, maybe I wouldn't feel the same.*

2) Orientations as contrasted to "environmentalists": Another key theme in the interviews was an expressed desire for "balance" within conservation management; the necessity of considering the needs of humans as well as other species. This desired balance is often described as being antithetical to the approach taken by "*extreme environmentalists [who] forget that we're part of the environment, too, and we have our rights*" (Bob, age 55, professional, residence 21 years). The balance in environmental management appears particularly critical when conservation priorities stand in the way of human "progress."

> *I think it would be too bad if ... some of [those species] would become extinct. I think that would be sad. But I don't think that we need to be radical about this and stop progress because of a turtle or a whatever — a frog (Pam, age 71, retired teacher, residence 36 years).*

Also willing to sacrifice some species, Sue (age 40, teacher, residence 10 years) explains that since she has not missed the dinosaur, she probably won't miss the Tiger Beetle. She distinguishes herself from environmentalists by stating "*I'm not a tree hugger ... I'm not going to ban everything from everywhere for a bug or two, I'm just not concerned about it...*" The slowing of development due to conservation mandates is also a contentious issue for George (age 74, retired, residence 30 years) who believes that the government has "*too much power ... in stopping people from using their land*." He provides the example of a recent controversy over highway construction in Utah:

> *For instance, we were talking about building a road ...But there's a lot of trouble over wetlands ...I think that's getting a little ridiculous. It's not going to destroy that much of your wildlife. If something's endangered, I'd say it's probably endangered for other reasons than one road or one building or one farm. It's not going to destroy all of the species ...We need another highway... We should have had it a long time ago.*

In addition to the "tree hugger" contrast by Sue, several additional respondents contrast their own environmental value systems with those of environmental "radicals." When asked the specific question "Do you believe that you have environmental values?" answers reflected a resounding "*yes*." As evidence of positive environmental concern, respondents consistently offered behavioral manifestations, including teaching children the importance of not littering, making donations to environmental organizations, and displaying animals within the household through paintings and taxidermy.

Although the respondents typically ascribed positive environmental values to the American public as well, many carefully make a distinction between their own value systems and those of the "radicals," often by using examples of management controversies. For instance, Joe (age 63, retired professional, residence 61 years) states:

> *I think most of the so-called "environmentalists" are quite radical. I think the general public [doesn't] want industries dumping in all the rivers and killing all the fish, we don't want this acid rain stuff. That needs to be limited.*

He then provides examples of the "idiotic" proposal to drain Lake Powell, the timber-spotted owl controversy in the Northwest, and when the "*environmentalists shut down a big dam back in Tennessee because of a little snail darter, a little trash fish that we don't care two hoots about*."

Similar sentiments are expressed by Bob (age 55, professional, residence 21 years) who characterizes his own appreciation for the natural environment in contrast with environmentalists:

> *I love the mountains, I love the out of doors, the closeness to nature ... But I sure get ticked off at the*

> *extremists ... I think that you need to have respect for the environment, I think you have to have a balance ... we've been put here on this earth to use the resources ... These extremists who go out there and tell me that I'm not supposed to kill a cow, you know, those are the resources that we're supposed to use.*

When presented with a short summary of the current controversy over the draining of Lake Powell within which the Sierra Club was mentioned, Bill (age 53, professional, residence 15 years) says:

> *I am totally opposed to all policies and goals of the Sierra Club ... I think they are a bunch of radicals and they don't even belong in this country." ... They are too far to the right (sic) ... They could have some benefit but they are going about it the wrong way.*

The later part of this statement suggests that while Bill does not necessarily oppose the larger goals of the organization, he does not approve of the Sierra Club's approach to meeting those goals.

As implicated by the above results, there is substantial anxiety about over-regulating, especially among those espousing predominantly utilitarian values. "*Most of what's happening with wildlife, the eagles, stuff like that, you know it's natural, let it be that way, regulate when you need to, but stay out of it when you need to*" (Tonia, age 27, professional, residence 4 years). Regulations specifically related to land access is of concern to Joe (age 63, retired professional, residence 61 years):

> *If they paved [some of the back road trails], it would be more usable for people like me ... but we have these elements come in and say, "no, we don't want to make that nicer, we want it all to ourselves ...we're the backpackers ... we want to use that and we want to keep you people out."*

Discussion

The rural West, and especially long-standing residents of the rural West, has been characterized by some as "antienvironment" (Bennett and McBeth 1998; Hays 1991). Indeed, some evidence suggests that western elected officials consistently vote against environmental bills and seek to undermine environmental legislation (Bennett and McBeth 1998), while other evidence suggests that grazing, ranching, and mining interests continue to successfully resist many of the environmental organizations' attempts at limitation (Hays 1991). As such, a predominant utilitarian outlook toward the natural environment is often attributed to the extractive-commodity focus of many western rural communities.

While the results of the present study corroborate, to some degree, the utilitarian focus of rural westerners, evidence of other environmental value systems is also apparent that echo other social research that argues against considering rural communities as "culturally monolithic" (Skogen 2001). In our study, moralistic, humanistic, and aesthetic appreciation of the natural environment are reflected in sentiments describing local wildlife specifically and the more general ecological role of species diversity. These rural residents *do* care about environmental integrity — only one individual expressly distances himself from environmental issues. In general, these rural residents express desire for balanced resource management that considers human needs as well as those of the natural environment. Such sentiment supports other research on rural perspectives as related to environmental and development issues (e.g., Smith and Krannich 2000).

Interestingly, these complex value orientations are not voiced only by new migrant arrivals to the rural landscape, but by long-standing rural westerners. As argued by Fortmann and Kusel (1990), these environmental values may reflect "old beliefs," beliefs that are held by long-standing residents as well as new rural residents. In their research, Fortmann and Kusel conclude that pro-environmentalism (as measured by low support for clear cutting, herbicide application, and an expressed desire to balance timber harvesting with other forest uses) characterizes a substantial portion of long-term rural residents. These residents do not, however, tend to be engaged in local resource management conflicts. As a result, the new migrant arrivals provide "voice" to these pro-environmental values as they become active in local debate. Related, Jones et al. (2003) found that although nonmigrant residents in Southern Appalachia are concerned and committed to environmental values, they may place relatively less priority on them than in-migrants, who were more actively engaged in social and political activities that promote environmental values.

Within this study, the respondents' value orientations toward wildlife and biological diversity are deeply rooted in local place as apparent by the discussions' focus on local species and their experiences in these biologically rich places over time, echoing work in Norway related to place attachment (Vorkinn and Riese 2001). Especially important to our study respondents are those species representing the subject of consumptive or appreciative recreational activities (e.g., local birds, deer, elk, moose). Their value orientations stem from life experiences especially as related to interaction with local wildlife, and accordingly they distinguish their orientations from those individuals with different life experiences such as "city folk" and "environmentalists."

According to Kellert (1996, 56), urban/rural distinctions remain a "fundamental factor in American perceptions of the land and its creatures." He argues that the effect of rural residence *per se* has declined as a result of transportation and communication advancements and related suburbanization patterns, although the extent of dependence upon natural resources for a livelihood continues to be related to one's environmental and wildlife values. Those living in open country areas, people who own large amounts of land, and farmers tend to express more pragmatic, less protectionist, attitudes toward nature and animals:

> *extracting a living from the land often encourages a belief in the need to subordinate nature, whatever affection for the natural world one might have. Many rural people have a deep affinity for the land and its creatures, but they tend to view these resources from the perspective of their utility and a familiarity that often takes their long-term welfare for granted.* (Kellert 1995, 59)

Many components of this assertion ring true within this study. Wildlife's abundance can breed familiarity: "*... I just took [wildlife] for granted because when I was raised out in the country .. there was plenty of it ...*" (Jeff, age 46, laborer, residence 2 years). Wildlife's abundance can also bring about attachment and appreciation:

> *I constantly see hawk, red-tailed hawk that's probably my favorite hawk, a great big majestic looking bird .... I do react to them. I notice them. I watch them. I appreciate them* (Ben, age 45, self-employed, residence 4 years).

Yet utilitarian sentiments underlie many of these other value orientations, as especially apparent when the respondents are posed with a tradeoff between human needs/desires and ecological integrity:

> *...I think it's wonderful to have a variety of insects and animals, but I don't think it ought to go to the extreme. If we need to have that land or if there's something on that land that would benefit everyone, then maybe the beetle needs to be sacrificed ... what benefit are we getting from the beetle?* (Pam, age 71, retired teacher, residence 36 years).

Cohort effects may also play a role in the prevalent utilitarian sentiments. Recall that the 52 years represents the mean age of study respondents, and their utilitarian value orientation may, in part, be a result of different life experiences. Honnold (1984) argued that important events that occur during the crucial adolescent and young adult phases could permanently affect a cohort. For example, respondents 60 and older were socialized in an era shaped by economic downturn, and preceding environmental milestones such as Earth Day. These life-events may influence environmental value orientations by potentially resulting in more utilitarian outlooks. Although we cannot identify a definitive age effect due to the small sample size, the high median age of the study respondents may partially account for the more pragmatic attitudes toward nature and animals.

As specifically related to implications, in a recently published interview, Steve Hinchman — a self-defined "environmentalist" active in Colorado wildlife and resource controversies — discusses the difficulty in creating coalitions between "locals" and "environmentalists." His insights capture many of the distinctions between the types of appreciation for the natural environment exhibited by different groups:

> *Environmentalists miss what the locals see because the locals go different places at different times. [Environmentalists] go to the high country, or kayak the river canyons, or float the rivers — all in the summer. But most locals go into the pinon-juniper or scrub oak, ponderosa pine, and aspen — the drier middle-elevation country — during hunting season ... Locals also want solitude and quiet ....but they are being driven out of places they have enjoyed all their lives.* (Hinchman 2000, 14-15)

Conclusion

Different types of experiences yield different types of value orientations. As aptly described by Rudzitis (1996, 98), "persons in the West who profess that they hate the "environmentalists" who are always protesting logging sales will tell you that they themselves are the real environmentalists because they live with and love the land." In the end, this study suggests that the "New West" is not only comprised of recent migrants, but of long-standing rural residents who attach multi-faceted values to the local environment, wildlife, and biological diversity. In general, our results demonstrate the fallacy of assuming constant value orientations within rural population groups, perhaps providing insight into the complications inherent in efforts to dichotomize urban/rural environmental value orientations. In addition, the qualitative insights here reveal the importance of local context within value formation, and the myriad ways in which individuals define "environmental value." Although underlying utilitarian values do, indeed, prevail, these rural dwellers do not ascribe only "use" value to the local environment — their experiences with and appreciation for the local landscape are actually much more complex. As mentioned at the onset,

land managers would be wise to be cognizant of the local values associated with species richness and biodiversity, thereby better allowing placement of management costs/benefit discussions within the most salient framework for local residents. More succinctly, appreciating such value complexity would likely behoove those aiming to forge alliances for the sake of the western environment.

Endnotes

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3. The species distributions are estimated from vegetation coverage as discerned from remotely sensed imagery. Of the several types of satellite imagery available, Gap Analysis programs have used either Landsat Multispectral Scanner (MSS) or Landsat Thematic Mapper™ scenes — each allows identification of boundaries between major changes in vegetation.
4. Forty-eight contacts were made to achieve the research goal of 20 in-depth interviews.
5. These reasons reflect a collapsed version of the most commonly noted value orientations identified in the previous research reviewed above.
6. Length of residence in the study community is noted in parentheses by "residence" in years.
7. Kellert (1996) describes three categories of hunters: 1) nature hunters are motivated by the intimate interaction with the natural world, exhibiting great appreciation and awareness of natural details and processes, 2) meat hunters are motivated by the harvest of game for sustenance, and 3) sport hunters are motivated by social, competitive, and sporting attractions of the activity.

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