To The Graduate School:

The members of the Committee approve the thesis of Tyra A. Olstad presented on March 2, 2007.

Deborah D. Paulson

Ronald E. Beiswenger

Frieda Knobloch

APPROVED:

John L. Allen, Head, Department of Geography

Don Roth, Dean, The Graduate School

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This research explores how and why people have developed an attachment to Wyoming's Red Desert as both an intimate place and an open space. After describing geographic interpretations of "Place," eco-phenomenological methodology, and qualitative research methods, it divides analysis into four interrelated sections: understandings of the Red Desert's location and attributes; steps of the place-creation process; the meanings ascribed to the region, with particular consideration for the attachment to space; and the implications perceptions have for land management.

DESERT DIMENSIONS :
ATTACHMENT TO A PLACE OF SPACE

by
Tyra A. Olstad

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Table of Contents

INTRODUCTION 1

LITERATURE REVIEW 2

I. Understanding "Place"
Place Attachment
Public Places

II. Contributions of this Research

METHODOLOGY AND METHODS 6

I. Basic Philosophy
Eco-Phenomenology

II. Interpretivist Research
Data-Collection Methodology and Methods
Analytical Methodology and Methods

RESULTS AND ANALYSIS

I. The Place: Descriptions 11

A. Where is the "Red Desert"?
Place Names
Location and Extent

B. What is the "Red Desert"?
GIS Analysis
Descriptions of the Desert
Senses of the Desert

II. The Process: Place-Creation 18

A. Experiencing the Red Desert
Sensation...
...plus time...

B. Perceiving and Valuing the Red Desert
...equals memories of specific places...
...and meanings attributed to those places

C. Creating Senses of the Red Desert
Identity and Expression
Participation

III. The Results: Place Meanings …………………………..……………… 28

A. Desolate Flats
First Impressions
Life and Beauty

B. Place of Space
Place of Adventure and Openness
Space Attachment

IV. The Implications: Place Management …………………………………….. 34

A. Challenging Senses

B. Implications for Land Management

C. Politics of Place

CONCLUSION ……………………………………………………………….. 40

BIBLIOGRAPHY ……………………………………………………………... 42

LIST OF FIGURES

1: Where is the Red Desert? Perceptions of Location and Extent … 15
2: Dimensions of Place ……………………………………….…. 27

APPENDICES ……………………………………………………………….. 46

I. Additional Sources for Qualitative Analysis

II. Interviewee Codes

III. Interview sources for Figure 1

IV. Statistical Analysis of Red Desert Attributes and GIS Sources

INTRODUCTION

Will you walk along the edge of the desert with me?
I would like to show you what lies before us.
– Barry Lopez, Desert Notes

The Red Desert is a desolate expanse that stretches between Rawlins and Rock Springs in south-central Wyoming. People who travel Interstate-80 speed by the rusty soil, sagebrush flats, and wide open sky, hardly glimpsing the topological, geological, ecological, and cultural diversity it harbors. But people who live near and work in the place are much more familiar with these attributes.

Three Field Offices of the Bureau of Land Management are entrusted with the care of the public lands. With a recent boom in oil and gas development, some citizens have begun to question the agency's ability to respect and provide for multiple uses. When officials received a record-breaking number of comments regarding a Draft Environmental Impact Statement on the Jack Morrow Hills Critical Action Plan, many of which called for a Citizens' Red Desert Protection Alternative, they had to acknowledge that people cared deeply for the region.

But what, exactly, is it that people care for in the Red Desert? Such an outpouring of concern could be blamed on environmentalist idealism – peoples' love of abstract concepts such as "wilderness." But many people have expressed an interest in specific locations – Jack Morrow Hills, Adobe Town, Honeycomb Buttes. Their personal experiences and interpretations imbue the land with meaning. Geographers have been studying how such senses of place can be integrated into land management decisions, but much research uses survey methodology to consider the development of social and cultural ties to lush natural settings, thus neglecting deeper, more personal attachment to "desolate" desert landscapes.

The primary purpose of this research is to explore how and why people develop an attachment to the Red Desert as both an intimate place and an open space. Such an understanding can enrich geographic research and also inform public land management philosophies.

This paper will introduce current academic interpretations of "Place," explain the methodological concept of eco-phenomenology, describe qualitative research methods used, then divide analysis into four interrelated sections: sources' *descriptions* of the Red Desert's location and attributes; steps of the place-creation *process*; the *meanings* that people ascribe to the place, with particular consideration for the curious expression of attachment to space; and the *implications* these perceptions will have for management.

I. Understanding "Place"

Geographer Yi-Fu Tuan grounded study of the concept "place" in his fundamental work *Space and Place*, writing: "What begins as undifferentiated space becomes place when we endow it with value" (1977, p. 6). Researchers and theorists have since sought to explicate this statement by defining "undifferentiated space," identifying "we," evaluating the process of "endowment," and attempting to qualify and quantify "value."

With minor variations, "undifferentiated space" is generally agreed to encompass the physical environment – natural and human-built features, attributes, and processes (Davenport and Anderson 2005, Cheng et al. 2003, Stedman 2003, Brandenburg and Carrol 1995, Tuan 1977). The ecological and architectural characteristics of space constitute the objective world.

The objective world has existence, but no *meaning* without people. Although Tuan's "we" can be loosely interpreted as humanity in general, it more often refers to the individual, a social group, a society, or some combination of the three. (Davenport and Anderson 2005, Williams and Stewart 1998). Sociologists and anthropologists tend to focus more on the social constructionist dynamics of place and place-creation (Greider and Garkovich 1994), while psychologists explore individuals' environmental cognition (Stedman 2002, Proshansky et al. 1983).

The noun "place" includes, by definition, a verb – that of creating place. Whether it's labeled "constructing" (Williams and Stewart 1998), "perceiving" (Cheng et al. 2003), "experiencing and interpreting" (Davenport and Anderson 2005, Stedman 2003), or "endowing" (Tuan 1977) value, people must directly and/or philosophically interact with objective spaces to create subjectively significant places. This process often takes time and familiarity. Although there are instances in which a person may see a landscape and claim to instantly "fall in love" with it, that love is superficial without memory-building and deeper understanding through a long-term relationship (Connelly 2001, Eisenhower et al. 2000, Williams and Stewart 1998). Moreover, place-creation is a perpetually dynamic process – as "we" and the physical attributes themselves change through time, places can be and are reconstructed (Williams and Stewart 1998).

What, finally, is the "value" of place? Vigorous debate rages over the qualities and quantities of a place's attributes. Rolston and Coufal (1991) have compiled a list of ten basic landscape values – life support, economics, science, recreation, aesthetics, wildlife, biotic diversity, natural history, spirituality, and intrinsic worth; Brown and Reed (2000) add subsistence, cultural, and therapeutic values; Cheng et al. (2003) supplement instrumental value with intangibles such as social and personal belonging. As people intuit and interpret the natural world according to such attributes, they may develop a deep, positive relationship with space – an attachment to place.

Place Attachment

"People smile when they remember such particular places on the earth where the seasons and textures and colors belong to them. Where they know, with assurance and precision, the place and their relationship to it." (Trimble 1996, p. 20)

Davenport and Anderson describe sense of place as "the physical characteristics of a setting, activities and experiences in a setting, social phenomena and processes, and individual interpretations." (Davenport and Anderson 2005, p. 627). Although often used in relation to and, mistakenly, interchangeably with "sense of place," the term "place attachment" involves a deeper dimension of environmental interaction and interpretation. Broadly referred to as the positive relationships people form with the land, it connotes a depth of connection that is poised between place-based satisfaction and self- and social-identity (Stedman 2003, Eisenhauer et al. 2000, Tuan 1977).

Satisfaction is the level of fulfillment or appreciation a person feels for a place in relation to their expectations. In their article "Public Understandings of Nature," for example, Hull, Robertson, and Kendra (2001) examine local knowledge of and satisfaction for the health, naturalness, authenticity, and wildness of Virginia's Jefferson National Forest, finding that people continually judge their surroundings based on factors such as these. Feelings of satisfaction or disappointment with the forest are based on a combination of personal values and perceptions.

Place identity involves a much deeper relationship with the land – a feeling of 'at homeness' in a location (Tuan 1977). When people recognize "a particular landscape...that informs who [they] are" (Tempest Williams 2002, p. 18) or settle into "the ideal place, the right place, the one true home" (Abbey 1990, p. 1), they develop a bioregionalistic connection to their surroundings (Snyder 1980). The idea that "[k]nowledge of *who* we are...[is] embedded in the soils of *where* we are (Burks 1994, p.12) can be interpreted on an individual and/or a societal level: some geographers focus on social belongingness and insider/outsider dynamics of place (Davenport and Anderson 2005, Kaltenborn and Williams 2002), while others consider how places can satisfy physical and/or psychological needs of inhabitants (Davenport and Anderson 2005).

Place attachment requires a certain degree of satisfaction and often involves self- and social-identification. Before people can form attachment to a place, however, they have to experience and interpret it physically, emotionally, and cognitively/symbolically – to develop a multidimensional sense of place.

Public Places

"What, then, is the connection between people, places, and politics?"
(Cheng et al. 2003, p. 89)

In their 2003 article "'Place' as an Integrating Concept in Natural Resource Politics," Cheng et al. provide a diagram depicting "place" at the convergence of Biophysical Attributes and Processes, Social and Cultural Meanings, and Social and Political Processes (p. 90). On

private land, the social, cultural, and political dimensions would read “Individual Meanings and Processes” – the owner decides how to manage his or her land based on the sense of place he or she has developed. On public lands, however, as Cheng et al. (2003) note, social, cultural, and political processes determine management laws and regulations. Thus, senses of place – often very personal and deeply-held – must enter the public sphere.

This is not a smooth process. Land management decisions affect not just the biophysical attributes of spaces, but the values, meanings, and symbols those places represent. Sometimes people perceive the same meanings in and value the same aspects of place, but more often, conflicts erupt over competing senses of appropriate use (Cheng et al. 2003, Williams and Stewart 1998). As Terry Tempest Williams notes, “It is a simple equation: place + people = politics. In the American West, the simplicity becomes complicated very quickly as abstractions of philosophy and rhetoric turn into ground scrimmages” (2002, p. 3).

Recently, studies have begun to explore what is referred to as the “politics of place,” attempting to facilitate the integration of competing senses of place with public land management decisions. Mitchell et al., for example, interviewed recreational users, managers, and nearby landowners of National Forest lands on Washington’s Chiwawa River to identify and determine the depth of competing interests. Comparing levels of place-intimacy and generalization, they found that people did not decide where to recreate based on locational “usefulness” or commodification, but rather by attachment to specific places. This suggests that land managers should not look simply at usage when making decisions, but should attempt to understand deeper, more nuanced senses of place (1993). Eisenhauer et al. research supports this recommendation. They surveyed communities in southern Utah to identify self-defined “special places” and tried to ascertain reasons for favoritism, finding that “[e]motional attachments to place are...based on an appreciation for the land that goes beyond its *use* value” (2000, emphasis added) – people bond emotionally with their environment based on personal perceptions and cognition of *intrinsic* values (Stedman 2003, Tuan 1977).

Although competing senses of place are blamed for divisiveness, places also have the potential to unite parties. Insisting that people will and must find a way of living together in a place, Kemmis touts collaborative efforts that help communities find common ground regarding common ground (1990). Williams and Stewart present techniques for place-conscious land management, showing that “sense of place can be the shared language that eases discussions of salient issues and problems and that affirms the principles underlying ecosystem management” (1998, p. 18). Brown suggests in his article “Mapping Spatial Attributes in Survey Research for Natural Resource Management” that Geographic Information Science technology can be used to create multiple-criteria maps showing areas of agreement over perceived landscape values, areas of potential conflict, and objective landscape features. Such techniques could be used to “develop a system for ranking potential land use activities for consistency with landscape values” (2005, p. 29). Provided people can express their perceptions openly, appreciation for a place has the potential to alleviate divisive politics and literally ground resource management decisions.

II. Contributions of this Research

How do we describe 'familiarity,' that quality of 'at homeness' we feel toward a person or place? Are space and place the environmental equivalents of the human need for adventure and safety, openness and definition? How long does it take to form a lasting attachment to place? Is the sense of place a quality of awareness poised between being rooted in place, which is unconscious, and being alienated, which goes with exacerbated consciousness?"
(Tuan 1977, p. 203)

Despite burgeoning interest in the formation, meaning, and implications of attachment to places, there are methodological and substantial gaps in the research. Methodologically, researchers have often sought to understand a very nuanced concept through surveys and questionnaires, assuming that even "intrinsic values" can be defined, measured, and delineated in a chart or on a map (Brown 2005, Eisenhauer et al. 2000, Williams et al. 1992). Cheng et al. note that "these connections are not readily amenable to replicable measurement, quantification, and generalization across populations" (2003, p. 90); they suggest that analyzation of documents and oral histories can complement an interview process of the sort that Mitchell et al. (1993) and Davenport and Anderson (2005) conduct. When participants are allowed and encouraged to express their perceptions using their own words in their own manner, the themes and patterns that emerge will be richer, if a bit more unwieldy, than those that were neatly analyzed and constrained statistically.

Moreover, research on "place" has neglected to address three important dimensions: local non-recreational perceptions, expression and communication of values, and attachment to "desolate" desert landscapes.

First, tourists and newcomers can develop strong senses of place (Williams and Stewart 1998), but long-term visitors and residents have more time to experience the environment and thus greater opportunity to develop relationships with places. Despite the likelihood for deeper, more memoried senses of place, most research "has focused on visitors' attachments to recreation areas, which may be less complicated than or at least fundamentally different from those of local residents" (Davenport and Anderson 2005, p. 638).

Second, both individual and societal forces influence the formation of person-place relationships, but little has been done to explore the processes by which private values are expressed in a public sphere. This is extremely important in relation to public lands management – conflict and appeasement depend on peoples' ability to communicate their senses of place to community members and land managers.

Finally, academic researchers have examined attachment to National Parks, National Forests, woodlands, lakeshores, rivers, and other notably scenic or lush landscapes. None have studied deserts. Large, open, arid regions are popularly maligned as inhospitable and barren, yet some local residents may express strong appreciation for desert landscapes. Geographers need to take their senses into consideration – to determine the nature and implications of desert senses of place.

Scholars have approached sense of place research through the philosophical lenses of cognitive psychology, social constructionism, and phenomenology (see Stedman 2003, Cheng et al. 2003). Because these approaches focus on different elements of "place," they describe the process of place-creation and implications of place-attachment quite differently.

I. Basic Philosophy

Cognitive psychologists such as Proshansky et al. (1983) explore the processes by which individuals perceive, interpret, and value their environment. They assume that people create senses of place independently, according to unique experiences, abilities, and attitudes. By this philosophy, environmental perceptions are rooted deep in the individual mind and thus extremely hard to identify, explain, and communicate.

Social constructionists such as Greider and Garkovich focus on social dynamics, saying places are identified, attributed, and debated almost entirely in the public sphere. Cheng et al. take this further, discussing how place perceptions can in turn define and enhance group identification; they include circles for "Social and Cultural Meanings" as well as "Social and Political Processes" in their diagram of 'place' (2003, p. 90). Sense of place thus becomes the "attributed values/symbols as well as the emotional and social bonds that provide opportunities and context for perception" (Williams and Stewart 1998).

Both of these perspectives focus entirely on environmental interpretation – on the layers of meanings that humans create to add to geographic locations. As Tuan (1977) points out, they "suggest that sense of place is not intrinsic to the physical setting itself, but resides in human interpretations of the setting, which are constructed through experience." Researchers operating under these assumptions explore the whats, whys, and hows of creation of meaning rather than the physical world, which is seen as "meaningless" (Greider and Garkovich 1994). But as Stedman (2003) considers in his article "Is It Really Just a Social Construction? The Contribution of the Physical Environment to a Sense of Place," geographic research needs to acknowledge and explore biophysical elements of the landscape as well.

Eco-Phenomenology

Eco-phenomenology is based on a double claim: first, that an adequate account of our ecological situation requires the methods and insights of phenomenology; and, second, that phenomenology, led by its own momentum, becomes a philosophical ecology, that is, a study of the interrelationship between organism and world in its metaphysical and axiological dimensions (Brown 2003, p. xiii)

Phenomenologists also believe that people create personal places as they interact with the physical world and layer meanings upon it, but they import a seemingly minor nuance, arguing that senses of place are quite literally grounded in real, physical space (see Bachelard 1994). According to this philosophy, the values and symbols that individuals and societies perceive and

interpret "are at least partially based on some material reality" (Stedman 2003, p. 673) and that that material reality is a significant factor in the formation of attachment to place.

Cheng et al. (2003) include Biophysical Attributes and Processes as one of three dimensions of "place." Far too often, however, "[e]mpirical research...has neglected the role of the physical environment, focusing on place meanings and attachment as products of shared behaviors and cultural processes" (Stedman 2003, p. 671). Recently, some geographers have sought to reintegrate phenomenological perspectives into their methodology – to consider the contribution of the natural environment to the creation and understanding of place (see Brown 2005, Davenport and Anderson 2005, Cheng et al. 2003, Stedman 2003, Kaltenborn and Bjerke 2002).

A number of studies have concluded that perceptions of and attachment to landscapes are at least partly dependent on the location's natural characteristics or values (see Brown and Reed 2000, Rolston and Coufal 1991). Ryden found sense of place to be "grounded in those aspects of the environment which we appreciate through the senses and through movement: color, texture, slope, quality of light, the feel of wind, the sounds and scents carried by that wind" (1993, p. 38); Kemmis considered how community attachment is based on natural environmental amenities (1990); Shumaker and Taylor (1983) and Sax (1980) separately assert that people are apt to identify emotionally with locations that have richer or more outstanding physical features. As Stedman writes, "[p]hysical features do not produce sense of place directly, but influence the symbolic meanings of the landscape, which are in turn associated with evaluations such as attachment" (2003, p. 674).

People form relationships with places based on direct contact, symbolic interpretation, individual cognition, and/or sociocultural alignment. Embracing all of these dimensions, this research subscribes to the philosophy Brown and Toadvine call "Eco-phenomenology" – "a study of the interrelationship between organism and world in its metaphysical and axiological dimensions" (2003, p. xiii).

II. Interpretivist Research

"[to] enable...the researcher to document the subjective nature of real world phenomena, unearth anticipated findings, and embrace the context of the study."
(Davenport and Anderson 2005, p. 630)

Many researchers have used quantitative methodology to attempt to understand senses of place (see for example Brown 2005, Stedman 2003, Brown et al. 2002, Mitchell et al. 1993, and Rolston and Coufal 1991). Standardized questionnaires and calculated sampling techniques offer some advantages: they allow researchers to expediently include a larger number of participants and thus potentially consider a wider ranger of perspectives; they can also be statistically analyzed to produce relatively clear and concise conclusions.

What quantitative techniques gain in breadth and clarity, however, they lose in depth. As the plethora of theories and philosophies indicates, sense of place is a richly nuanced topic; because environmental perceptions and attachments are often very personal, deeper and more

delicate aspects are often difficult to articulate and nearly impossible to probe using formulaic questions.

In their study, subtitled "An Interpretive Investigation of Place Meanings and Perceptions of Landscape Change," Davenport and Anderson justify and describe their reliance on qualitative techniques:

> "Interpretive research uses inductive or theory-generating data collection and analysis techniques versus deductive or theory-testing techniques common to positivist research designs. Data collection and analysis procedures were designed to capture a range of perspectives and preserve their richness and detail. The goal of the sample plan was not to represent the larger population within the community, but to gain an in-depth understanding of river meanings from a particular community subgroup" (2005, p. 630)

This study abides by a similar methodological philosophy: qualitative methods were used to gather and interpret data, with the intent to explore place-attachment more deeply through participants' subjective expressions and researcher's inductive analysis (see also Cheng et al. 2003, Bogdan and Bicklin 2002, Crotty 1998).

Data-Collection Methodology and Methods

"By examining people's connections to places as expressed through their own words, these studies capture the subjective, lived experiences people have"
(Davenport and Anderson 2005, p. 629)

Wyoming's Red Desert was chosen as a study area for two main reasons: recent debates over land management priorities in the region and the natural landscape itself. Because citizens have begun to vociferously assert their impressions of and appreciation for the desert in the public sphere, the region is ripe for a study of attachment to arid places.

Employing interpretivist methodology, this study analyzes mostly participant-generated data, in the form of relevant publications (Appendix I: Additional Sources for Qualitative Analysis) and open-ended interviews.

Written data sources consist of professional publications as well as personal testaments. Professional sources include: governmental reports such as Bureau of Land Management resource plans, Environmental Impact Statements, and issued press releases; pamphlets and brochures issued by concerned environmentalist groups such as Friends of the Red Desert and Biodiversity Conservation Alliance; advertisements for regional tourism; articles published in national media sources, such as the magazine *On Earth*; journalistic articles published in local media sources, such as the Casper Star-Tribune newspaper; and formal websites. These data were assumed to contain statements carefully worded and designed to communicate professional positions of the sponsoring source.

Personal written sources include materials that were published by an individual to express their individual opinion, such as: letters-to-the-editor and opinion pieces published in local newspapers or newsletters; letters submitted in response to BLM management plans; and signed testaments included on electronic sites. Although many of these materials contained themes that echoed or were intended to advance professional positions, by signing their name to them, the authors indicated a more personal understanding of the content. These materials must also be distinguished from spoken data due to their written nature, which allows for revision of expressions, as well as their intended public audience.

A total of ten open-ended interviews were conducted with individuals selected for their accessibility, expressed interest in the Red Desert, and variety of experiences. Although they were not intended to be spokespeople for certain positions, interviewees do come from different sides in the debate over land management priorities, including BLM employees and environmentalists (Appendix II: Interviewee Codes).

Because this study seeks specifically to explore the creation and implications of place-attachment and not to survey general perceptions or to compare land management priorities, disinterested parties were not included in the interviewing procedure. Review of written materials suggests that these sources would have contributed obliquely at best.

Participants were identified through word-of-mouth recommendation from research advisors and interested parties, then contacted via electronic mail or telephone during a period between May 2006 and February 2007. All but four of the interviews were tape recorded and transcribed; of the others, two were conducted over the telephone due to logistical constraints and two were recorded manually when interviewees expressed discomfort with tape-recordings. Extensive notes were taken during all interviews, each of which lasted between a half-hour and an hour.

All of the data was collected with the stated intent to allow the source to express personal perceptions and ideas. In the case of the written materials, the researcher was absent from the publication process; in the case of the interviews, the researcher attempted to maintain as neutral and unobtrusive presence as possible. Although it was necessary to ask certain formulaic questions in interviews – specifically, "What do you believe is the location and extent of the Red Desert?" and "In just a few phrases, how would you describe the Red Desert?", – interviewees were welcomed and encouraged to discuss whatever issues came to mind regarding the place during the semi-directed conversations. These procedures provide richer, more organic information, allowing for deeper interpretation (see Davenport and Anderson 2005, Cheng et al. 2003, Bogdan and Bicklin 2002, Crotty 1998,).

Analytical Methodology and Methods

"In interpretive analysis, the goal is to generate a framework or structure for understanding data." (Davenport and Anderson 2005, p. 631)

Because research themes were not predetermined and corroborated but rather expected to emerge during the data collection procedure, the analytical process consisted of continual

(re)evaluation and (re)review of information through thematic coding. Written materials and interview transcriptions were analyzed to determine common themes and relationships with academic literature, then categorized, sub-categorized, and coded accordingly into the elements discussed herein (Results and Analysis)(see Davenport and Anderson 2005, Bogdan and Bicklin 2002, Crotty 1998).

Geographic Information Science techniques were also integrated into the analysis, providing an extra dimension to the qualitative process. Perceptions of the Red Desert's location and extent expressed in written materials and interviews were digitized into the ArcMap system over Extended Digital Raster Graphics of the region (see Appendix III: Interviewee Sources for Figure 1). This provided both a visual and a geographic tool for analysis: Figure 1 "Where is the Red Desert?" maps these perceptions in relation to towns and highways (Figure 1); the smallest (BLM_RS_2) and largest (BCA) polygons were identified to represent the perceived Core and Greater extents of the Red Desert, then intersected with data for land cover, ownership, and management, allowing for spatial and statistical analysis of attributes (Appendix IV: Statistical Analysis of Red Desert Attributes and GIS Sources).

RESULTS AND ANALYSIS I:
The Place : Descriptions
"It's a state of mind, not a geographic spot" (BLM Rw 2)

After the BLM released their Green River Resource Area Resource Management Plan and Draft Environmental Impact Statement for public review in November 1992, they received a total of 321 written comments (see GRRA RMP and FEIS, BLM 1996). A full quarter of the published personal letters voiced concern for "the Red Desert." The original document, however, did not contain reference to such a place, much less define its location and describe its characteristics – commenting parties interpolated these into their readings of the Management Plan, then BLM officials responded without asking where and what the "Red Desert" is.

But those central questions need to be asked and answered. Different spaces – locations with biophysical existence but no personal or social meaning – have different attributes. The extent and attribution of geographic space needs to be considered before perceptions and conceptions of place can be compared and analyzed.

A. Where is the "Red Desert"?

Researcher: "Well, to start, where is the Red Desert?"
Rancher: [laughs] "That's a good one!..."

In South-central Wyoming just off Interstate-80, there's a town called Red Desert which anchors the topological quadrangle titled "Red Desert Basin." "RED DESERT" also sprawls borderlessly across the southern half of the Great Divide Basin on state highway maps and is touted in tourism brochures. The Red Desert lends its name to scientific studies and environmentalist brochures and energy development projects and a Friends organization. References to the Red Desert frequently and familiarly pop up in public radio reports, in newspaper columns, in magazine articles, in conversation, as in, "Oh, yes, the Red Desert..." But where is the actual "Red Desert"?

Place Names

Place names are very powerful. They symbolize familiarity with and understanding of places: "Through naming comes knowing; we grasp an object, mentally, by giving it a name – hension, prehension, apprehension. And thus through language we create a whole world, corresponding to the other world out there. Or we trust that is corresponds" (Abbey 1990, p. 257). To use a name is to acknowledge a relationship with a place; when people write and speak about the Red Desert, they reference and reinforce a link between themselves and certain values and meanings they associate with that place, though this name need not always correspond with the physical location (Williams and Stewart 1998).

Yet for all their importance, place names are often taken for granted and bandied about without any clear geographic identification. People assume that everyone knows where the Red Desert is and so there's no need to bother stating it explicitly or to admit that they had never thought about what the name refers to. As one interviewee mused, "the ranching families I've

grown up around say they're 'going out to the Red Desert,'[but couldn't say exactly where they were going out to]" – the name referred more to a sociological understanding than a specific territory (see also Nelson 1898, p. 11).

Place names are often granted a relaxed authority. In 1972, BLM officials compiled a "Red Desert Study" on 4.5 million acres of land stretching north of the Interstate. They conceded that "the area embraced in the study is not precisely the Red Desert from a physiographic viewpoint," but rationalized, "the name is generally appropriate for the region studied" (BLM 1972, p. 1). The appropriateness is debatable, however.

If place-names were based solely on their descriptive properties, there is an area of south-central Wyoming that could aptly be called the "Red Desert" – an arid region with richly rust-colored soil just north of the Interstate between Rock Springs and Rawlins, repeatedly referred to as the area "where the soils are red" (BLM Rw 1). Some call this place specifically the "Red Strip," however, while BLM documents and transportation maps qualify it as the "Red Desert *Basin*" and/or "Red Desert Watershed Management Area." But perceptions of the Red Desert extend far beyond this red desert region.

Location and Extent

"In my mind, I had a geographic location for the Red Desert – what's truly the Red Desert." (BLM Rw 3)

Cities have political boundaries and natural landmarks can have topological edges, but the Red Desert is a large space with varying geological, biological, climatic, aesthetic, and perceived properties which boasts no single dotted-line demarcation on a map. Rather, it has been mapped numerous times for various purposes.

Compiling a report entitled *The Red Desert of Wyoming and Its Forage Resources* for the U.S. Department of Agriculture in 1898, Aven Nelson began by defining his study area. He first acknowledges the Red Strip/Red Desert Basin and took note of the place name:

> "The name ['Red Desert'] was first applied to a tract, possibly less than 15 by 20 miles in extent, characterized by the peculiar red clay soil of the Wasatch Eocene formation. Near the center of this limited by really *red* desert area we find the side track and section house on the Union Pacific bearing the designation 'Red Desert.'" (p. 11)

He then expounded:

> "The larger Red Desert now understood includes, however, all that arid section of salt-impregnated soil in southern Wyoming...Platte bluffs on the east to the Green River bluffs on the west; from the northern limit of Sweetwater County to the hills and mountains separating Colorado and Wyoming on the south. Geographically, then, it is situated between latitudes 41 and 42 20' north and longitudes 107 to 109 30' west." (p. 11)

These same perceptions – ranging from the small, dry, red original location to the extended, still arid but much more topologically and geologically inclusive area – persist more than a century later. The map "Where is the Red Desert? Perceptions of Location and Extent" displays nine different borders, as expressed in interviews and/or textual resources (Appendix III: Sources for Figure 1) and digitized over 1:250,000 Extended Digital Raster Graphics for Rock Springs, Rawlins, Lander, and Casper using ArcGIS. As it shows, there is relative consensus on the location of at least part of the Red Desert; nearly all sources cite a core region of about a half-million acres north of Interstate-80 and west of Wamsutter – the Red Desert Basin. Beliefs in the extent, however, sprawl to include up to an additional five and a half million acres, ranging north to near Lander, east to Rawlins, south to the Colorado border, and west to Rock Springs.

When people write or speak of the place called the Red Desert, they don't always explain what space they are considering. And even when they explicitly state the geographic extent, others may disagree as to the legitimacy of identification. If the name is interpreted literally, the description applies only to the Basin; but as used in popular media, conservation-oriented literature, and conversation, the term more often references the Greater Red Desert. Those who insist the real Red Desert is "politically and geographically north of the interstate" (BLM RS 2) express surprise and in some cases dismay to see "how it has grown" in others' eyes to include a larger, more ecologically diverse and politically controversial region (BLM RS 1). Differences in perceptions of the "Where" of the Red Desert are directly related to differences in the "What."

B. What is the "Red Desert"?

GIS Spatial Analysis

Once perceptions of the Red Desert are mapped and the smallest and largest extent – the Basin and Greater regions, respectively – identified, two geographically-registered representative polygons can be intersected with other spatial data and the results statistically analyzed using ArcGIS (Figure 1). Comparison of land cover, land ownership, and land management attributes demonstrates how differences in geographic perception influence understanding of the desert's composition (see Appendix IV: Statistical Analysis of Red Desert Attributes).

Using maps produced by the University of Wyoming's Spatial Data and Visualization Center, it was determined that the Red Desert Basin has 10 different types of landcover, primarily Wyoming big sagebrush (71.6%) and greasewood fans and flats (11.2%). Vegetated dunes and unvegetated playa – rather uncommon and agriculturally nonprofitable types – cover small but significant territory (totaling 6.0%). With 24 different types of cover and use, including human settlements and even irrigated crops, the Greater Red Desert displays much greater diversity. Wyoming big sagebrush also dominates this larger region (66.7%), with desert shrub, greasewood, and wetlands making up the majority of the rest (totaling 23.7%). Wetlands and riparian areas – classes not typically associated with the term "desert" – cover a total of 7.4 % of the region – much more than in the Basin. The Greater Red Desert also contains areas of juniper woodlands (2.5%) as well as disturbances such as surface mining and logging operations (totaling 0.6%), while the Basin is void of both.

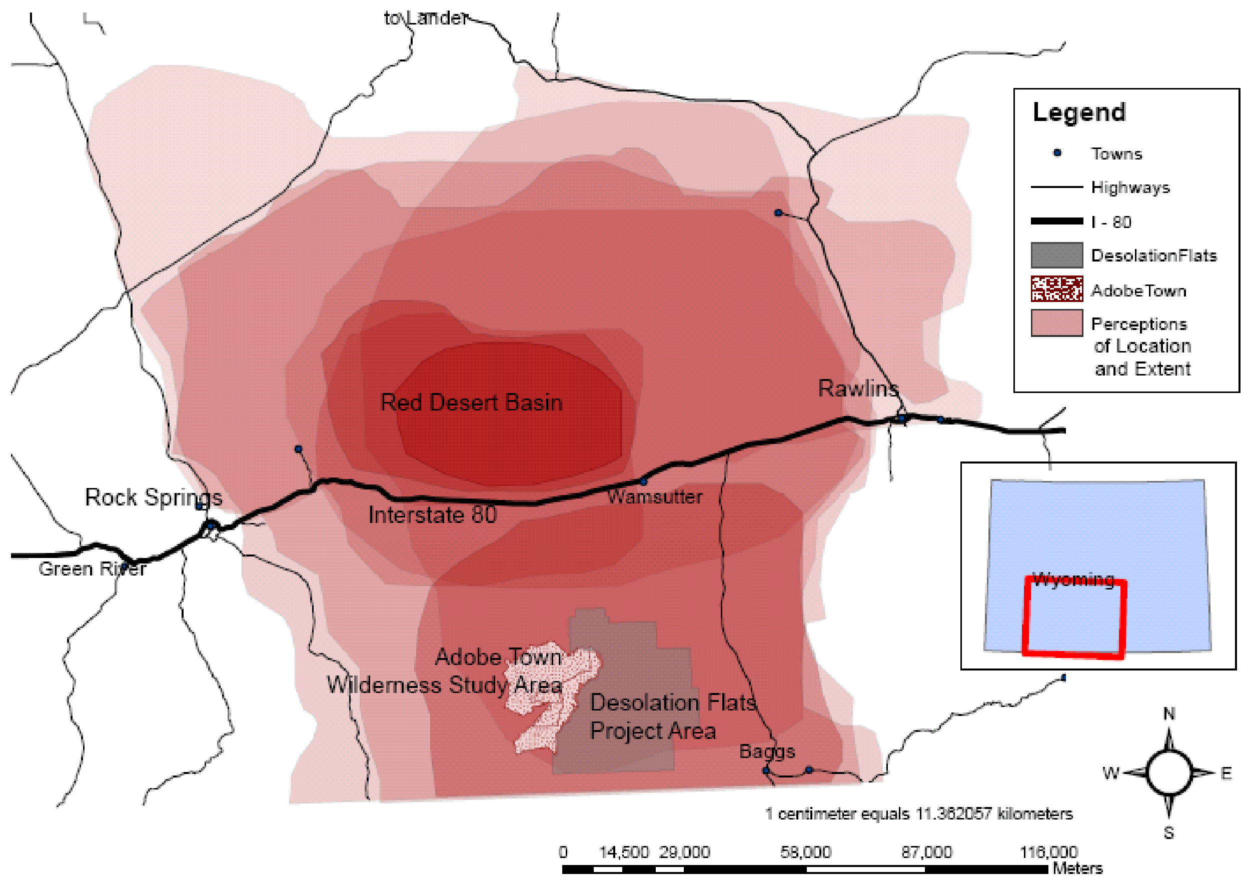
Perhaps the most telling statistical analysis relates to management concerns for biodiversity conservation. As might be ascertained from the land-cover data, the Red Desert Basin has less potential for biodiversity: according to management plans, 59.4% of the lands found in that region have low potential; the rest are ranked medium-low. The Greater Red Desert, with nearly 2 ½ more types of land-cover, is considered to have mostly medium-low potential for biodiversity conservation as well (69.8%), but less land is ranked low (29.4%) and there are areas designated medium-high and even high (totaling 0.73%).

Ownership of the region follows typical checkerboard patterning designated federal, private, or state. Although the Basin contains much more private land (39.1%) than the Greater region (26.1%) – status which could have implications for management, use, and perceptions of the different areas, – both are managed predominantly by the Bureau of Land Management. The lands are not managed by the same BLM offices, however; both regions are divided into Rock Springs and Rawlins jurisdictions, while the Greater also extends into Lander. Because these offices share responsibility for the management of these lands, they must collaborate to form cohesive plans.

As designated by the BLM, the Greater Red Desert encompasses regions with special management classification (see Figure 1), including Atlantic Rim and, especially Desolation Flats – areas that are under consideration for natural gas development. There are no proposed sites for resource extraction within the Red Desert Basin. The only specially designated federal land within the Basin is a surprisingly large (judging from interviewees' perspectives) Wilderness Study Area. Wildernesses, designated as such for their highly pristine and scenic qualities, often become points of contention between land managers and users; although they cover a relatively small territory – 5.5% of the Basin and 4.1 % of the Greater, including the highly touted Adobe Town (see Figure 1) – their presence/absence dominates debates over management of the Red Desert.

Judging from these spatial analyses, people who apply the name "Red Desert" to merely the small, red-soiled area north of the Interstate would be considering a desert of sagebrush and greasewood flats with relatively low biodiversity, checkerboard private and public lands, and few special management areas – in short, an area with few notable attributes. The Greater Red Desert, however, covers a territory with a broader range of land-cover types, more biodiversity, and highly controversial management areas extending into three different BLM Field Offices. People who believe the borders stretch to include this Greater Red Desert understand and debate not just a larger but a more diverse and threatened region.

FIGURE 1:
Where is the Red Desert? Perceptions of Location and Extent



Sources:
BCA
Beartooth Mapping, Inc. 19990301
BLM RS 2
BLM Rw 1
BLM Rw 2
BLM Rw 3
Bureau of Land Management 1972
Bureau of Land Management - Wyoming State Office 200009
Bureau of Land Management - Rawlins Field Office Unknown
FRD
Rancher
Spatial Data and Visualization Center 19961211
Sportsman
Wyoming Geographic Information Science Center 1996

Descriptions of the Desert

"You can't see the signature landscapes of Wyoming's Red Desert from the interstate, traveling through at 80 miles an hour. This is a land that gives up its secrets grudgingly. But for those who are willing to venture beyond the blacktop, the Red Desert's bumpy gravel roads lead deep into America's outback, where breathtaking high-desert landscapes are waiting" (http://www.redddesert.org)

GIS analysis of mapped biophysical attributes and management classifications does not necessarily correspond with perceptions of these characteristics. Sense of place is constructed through people's experiences and interpretations and emotional relationships, not solely objective geographic data. The Red Desert becomes much more diverse and complex when explored through people's written and spoken descriptions.

On a basic level, people wrote and spoke of the Red Desert as a high-altitude desert ecosystem managed by the BLM and private landowners. The red clay soils and greasewood flats north of the Interstate – the Basin region – were conceded to be relatively unexciting, or, as one interviewee delicately described, "a little more *'subtle'*" (BLM Rw 1). For the Greater extent, "diverse" was the keyword: topologically, it contains "ridges and high rims – not mountains – that rise from relatively flat, wide open spaces and low rolling hills" (Rancher); geologically, the red soils give way to volcanic cores, sand dunes, fossil deposits, and even jade; ecologically, the sagebrush, woodlands, and riparian areas provide habitats for a number of animals, including pronghorn, mule deer, elk, golden eagles, sage grouse, and wild horses; and culturally, the area's rich human legacy can be seen in prehistoric sites and artifacts, historic sites and trails, and ethnographic landscapes.

Descriptions publicly written or presented by private individuals as well as professionals read as if comprehensive checklists of these attributes, weighed according to interest. Oral descriptions, however, focused less on geographical attribution and more on emotional and aesthetic perspectives. Interviewees didn't so much *describe* the Red Desert as evince a *relationship* with it. (This concept is more fully discussed in Results and Analysis III).

Senses of the Desert

"'My grandpa used to call it miles and miles of nothing but miles'"
(Marian Doane, quoted in Clifford 2002)

Most interviewees had trouble fitting their impressions of the Red Desert into words, saying that "it's hard to define. Because it's big big expanses" (BLM Rw 2). In addition to the big open spaces, similarly touted in tourist brochures and conservation-oriented writings, people cited the variety and beauty of natural topographic features – "the magnificent landscapes that you look at them and your jaw drops – you're in awe of the landscape" (BCA). For some, images of these sweeping landscapes mentally dominated the statistically more prevalent "flat rolling sagebrush that's not particularly spectacular at all" (BCA). But that is enough for others: "What is there to see here?...There is only the land, which is only itself, and the short grasses, and the lengthening shadows whose color no one can define" (Lillegraven 2007).

Voicing general perceptions, one interviewee, when asked to provide a one-word summary of the Red Desert's features, responded:

> "Wide open spaces...,"

immediately complemented with:

> "Spectacular geological landforms...An abundance of wildlife, it's often described as an American Serengeti, there's just wildlife popping out...Endless views to the horizon...Clean air...Silence, when taking people out, they often remark on the quiet...One of the last great blank spots, where you can feel like you're exploring for the first time, seeing with new eyes..." (FRD).

From wildlife to wilderness, the Red Desert has many dimensions. (For further discussion, see Results and Analysis III: Place Meanings).

RESULTS AND ANALYSIS II:
The Process : Place-Creation

"[Sense of place includes] the physical characteristics of a setting, activities and experiences in a setting, social phenomena and processes, and individual interpretations" (Davenport and Anderson 2005, p. 627).

Development of an attachment to place requires sensation, perception, and conception, growing from "direct and intimate" physical experience to "indirect and conceptual" social and personal interpretations (Tuan 1977, p. 6 and 8). Theories about this complex process debate the relative contribution of a number of elements, especially specific locations as opposed to manifested values and social or professional positions as opposed to personal interests. Phenomenologists agree, though, that place-creation begins with the land itself and peoples' experiences of it.

A. Experiencing the Red Desert

"Our relation to the natural world takes place in a place*, and it must be grounded in information and experience." (Snyder 1990, p. 39, his emphasis)*

To get from Rawlins to Rock Springs, you have to drive through a large, empty swath of land. A Wyoming vacation guide tries to make the long drive seem interesting, saying "[p]erhaps nowhere in the West are the spaces as wide and open as they are in th[os]e 108 miles" Wyoming State Office of Travel and Tourism 2005), but the landscape is easily perceived to be a tedious blur. This is the only experience many people have with the Red Desert – seeing the landscape through a car window at a rate of 80 miles per hour.

Researchers and the general public use that word "experience" liberally. The Biodiversity Conservation Alliance – an environmental advocacy group that is one of the Red Desert's staunchest supporters – insists that "Every Wyoming outdoors person must take a trip soon to the Red Desert and experience the thrill and enchantment of hiking through the maze of Honeycomb Buttes without another person or sound but that of the wind" (Wyoming Wilderness Association 2006). Should citizens want to contact their governmental representatives regarding land management, they are encouraged by environmentalist organizations to "[t]alk about personal experiences and what you enjoy doing in the Red Desert" (Friends of the Red Desert 2006) – to explain and justify personal attachment to the land through understandings of experience.

What is "experience," though? And what is its significance? Considered the method by which "undifferentiated space becomes place" (Tuan 1977, p. 6), experience mixes the elements of sensation and time to produce memories and meanings. Stedman (2003) explains its crucial role: "previous behaviors or experiences in the landscape may create lenses through which humans attribute meanings to landscape" (p. 674). From I-80, the Red Desert is space, but it can become place when people build a relationship with it through experience.

Sensation...

You can't see the desert if you can't smell it" (Abbey 1990, p. 233)

The basis of experience is sensation – people's interaction with the world through their abilities to see, smell, touch, taste, and hear. Of these, visuals would appear to predominate. Written and spoken descriptions of the Red Desert turn first and foremost to the aesthetics of the region – the sweeping vistas, the intricate badlands, "the way the light hits a place or the look of the sky" (BCA), the "elemental, intolerable beauty" (Lillegraven 2007). Attempting to share their experiences, interviewees set the scene visually:"[i]t's not unusual to stand in one spot and see an animal six miles away, or to be standing in another spot looking straight up a cliff" (Rancher); "[i]f you get to this ridge, you're looking over into a canyon, that's where the arroyos are" (BLM Rw 2).

People don't even have to travel I-80 to get a sense of the place; they can "see" it through photographs published in popular media, printed in brochures, or presented at slide-shows. Trusting that each picture really is worth a thousand words, organizations working to increase awareness of the Red Desert's natural value rely on images to convey a sense of beauty and importance; they find that "[p]eople are really stunned by the photographs" (BCA).

But simple sight misses important dimensions. Firstly, the characteristic of openness is difficult to convey visually; "[p]hotos don't even do it justice" observed one interviewee, "You can have great photos, but you really don't get the same sense of space and grandeur and scale" (BCA)(see also Sontag 1977). Secondly, the region offers extreme visual clues: on a delicately nuanced scale, "[t]he air is thin, the light is hard, and the transitions of color and tone are so subtle as to be almost invisible" (Lillegraven 2007); and on a grander scale, "you can see too far, you can see too much and don't know how to process it" (Artist).

As many descriptions intimate, richer experiences of the Red Desert include the smell of the sage and feel of the wind and sound of the silence and taste of the dust (Artist) – sensations that may be described or evoked with words or images, but requires physical presence for full awareness.

...plus time...

"Abstract knowledge about a place can be acquired in short order. But the 'feel' of a place takes longer to acquire. It is made up of experiences, mostly fleeting and undramatic, repeated day after day and over the span of years." (Tuan 1977, pp. 183-184)

Some people express the optimistic belief that physical sensation is all that is needed for experience:

> "The best way for people to feel investment in these landscapes and to understand the need to protect them is not to send them a ten-page diatribe or talk on the radio or be in the newspaper – that doesn't convey it. All you have to do is set people in front of this landscape, and without saying anything to them at all, they get it." (BCA)

But simply setting someone in front of a landscape need not inspire them to develop a sense of place. Experience includes the fourth dimension – time spent in a space.

"Time" includes reference to both the duration and the pace of sensation. County tourism officials encourage visitors to linger in Rock Springs and Rawlins – to drive the Wild Horse Scenic Loop, to see the White Mountain Petroglyphs, to hike Adobe Town, to breathe the fresh desert air, and to spend money in the local hotels and restaurants. This exhortation exemplifies the philosophical underpinning of time as duration – the longer someone spends in an area, the more geographic territory they will be able to explore. Said more directly: "to get a feel for [the Red Desert], you'd have to take several days to go through the area...I see more just the amount of time I spend out there...You end up finding just little places" (Sportsman).

Moreover, by pulling off the interstate, driving some back roads, perhaps even parking the vehicle and wandering off on foot, people slow down their experiences of the land, exemplifying the element of time as pace. Many sources echoed Edward Abbey's famous passage:

> "In the first place you can't see *anything* from a car; you've got to get out of the goddamned contraption and walk, better yet crawl, on hands and knees, over the sandstone and through the thornbush and cactus. When traces of blood begin to mark your trail you'll see something, maybe." (1990, p. xiv)

For example, one citizen wrote to the BLM to say, "I do believe that people need the freedom to roam about at will, and can think of no better way to do this than with the use of my feet" (BLM GRRA Comment letter #131, p. 918). When traveling on foot, another interviewee remarked, there are more opportunities to notice and appreciate the minutia – the smaller, more subtle biological, geological, and aesthetic elements of the Red Desert (paraphrased from BLM Rw 2).

Thus, experience is both geographic and temporal. Explaining "How to Get from Space to Place in a Fairly Short Stretch of Time," Edward Casey states that "[t]he phenomenological fact of the matter is that *space and time come together in place*" (1996, p. 36, his emphasis). Writers and interviewees demonstrated a desire to encourage people to spend time exploring the Red Desert, believing that extended and deliberate experience provides opportunities to sense the place on large and small scales.

B. Perceiving and Valuing the Red Desert

"Or is something else at work in perception that conveys more about place than mere sensory signals can ever effect?" (Casey 1996, p. 17)

According to phenomenological theory, physical sensation eventually leads to mental engagement. Describing how photographs have little meaning without personal context, one interviewee insisted that people look at a landscape and wonder, "what is our place in that space?" (Artist). Experiences give individuals an opportunity to remember and interpret their interaction with the natural world, perceiving and conceptualizing places.

When analyzing cognitive interpretations in relation to place attachment, "it may be useful to identify two types of attachment: attachment to the specific area itself and attachment to the type of area it represents" (Williams et al. 1992, p. 19). This distinction is not always easy to ascertain. Some people convey their attachment to the Red Desert by sharing memories while others express appreciation for more abstract values, but the line between memory and value is often blurred in relation to specific places.

...equals memories of specific places...

"No settled family or community has ever called its home place an 'environment.' None has ever called its feeling for its home place 'biocentric' or 'anthropocentric.' None has ever thought of its connection to its home place as 'ecological,' deep or shallow...The real names of the environment are the names of rivers and river valleys; creeks, ridges, and mountains; towns and cities; lakes, woodlands, lanes, roads, creatures, and people." (Berry 2002, p. 148)

People in the Red Desert "story" the landscape – used as a verb – by attaching personal stories and memories to specific locations. They talk about the time they saw a moose or helped a stranded visitor (BLM Rw 1), when they "encounter[ed] a golden eagle out in the remote corners" (BCA), when they "sat in camp one spring morning" and "another time [when] we hiked up..." (Wyoming Wilderness Association 2006). Written sources such as magazine articles and personal testaments open with sentences such as "When I first drove off the pavement into the Red Desert…" (Jones 2005) "…trudging across the Killpecker Dunes, I…" (Clifford 2002). As people spend time out on the land, they note the feel of the weather and light of the day and store those sensations and impressions away in their minds. Later, they can share these senses with friends and researchers, or "bore kids to death telling stories, out there in places" (Rancher).

When telling stories, people often refer to specific locations or features – to Atlantic Rim, Skull Creek Rim, Doug Springs, the Little Snake River, the Haystacks, Boar's Tusk, Ferris Dunes, Powder Mountain, Continental Peak, Honeycomb Buttes, Oregon Buttes, Monument Valley, and/or Adobe Town. In citing a poetic list of place names (see, similarly, Tempest Williams and Abbey), sources quite literally locate their memories, describing how "I looked down into this...," "so I could see clear to...," "my vista was..." (BLM Rw 3, BLM Rw 2). As Wyoming resident Tom Bell states in the film *A Land Out of Time*, "I looked up at that Red Butte [for the first time after a long absence] and said, 'I'm home.'" Such expressions support the findings of Mitchell et al. that "[s]pecial names for certain locations personalize...bond[s] with the area" (1993, p. 33).

Storied landscapes also corroborate a proposition set forth by Cheng et al. (2003): "People Perceive and Evaluate the Environment as Different Places Rather Than an Assemblage of Individual Biophysical Attributes" (p. 96). By referencing certain moments at certain spots in the Red Desert, people delineate and add value to those locations.

...and meanings attributed to those places

Specifics can become examples – places that hold not just memories but meanings. When thinking of the desert, interviewees were "remember[ing] the feel of a place…a sense of the space, the sound of the grass, the smell of the wind" (Lillegraven 2007) – recalling sensations

and evoking a relationship with the land. As one interviewee insisted, in order to describe a region in words or images, you have to have "something in your mind, in your memory, you have to be close enough to it, to have that feel for it" (Artist).

What is that "something," that "feel"? Trying to convey the sense of grandeur and wonder that the Red Desert provides, another interviewee explained:

> "It's [a special sense of grandeur] readily apparent when you're standing on top of something like the Skull Creek Rim and you're looking across this expanse of 26 miles of pristine country; or you're on top of Continental Peak looking across the maze of the Honeycomb Buttes; or you're up on Oregon Buttes or another high point looking out across the landscape" (BCA)

These spots aren't simply names on a map, they're opportunities for appreciation and attachment.

This is particularly true for Adobe Town Wilderness Study Area (WSA). The Casper Star-Tribune editorialized Adobe Town as "one of the few spots left in the country where visitors can view pristine landscape that stretches from horizon to horizon. It is a priceless treasure" (January 24, 2006); Friends of the Red Desert contend that "Adobe Town is one of the most pristine bastions of wildness in this arid and windswept land" (http://www.reddesert.org); the Bureau of Land Management proffers that the 85,710 acres of "colorful badlands, buttes, and grotesque spires" 80 m SW of Rawlins offer "outstanding opportunities for solitude" (http://www.wy.blm.gov/rfo). All but one interviewee (Rancher) cited the region unprompted, referring to the scenery as "impressive" (Sportsman) and "dramatic" (BLM Rw 1), containing unique and "just awesome" badlands (BLM RS 2) and "National Park-quality landscapes" (BCA); when asked about the Red Desert, thoughts turned to the wildness of Adobe Town.

People reference experiences at specific areas to demonstrate familiarity and attachment and concern for those locations, but also to exemplify certain values. Published materials such as tourist guides and conservationist brochures chant place names as mantras for outstanding environmental appreciation and recreational opportunities. In conversation, people were somewhat more reserved in their name-dropping, referring more to locations as "an old drainage…two miles outside of town" (BLM Rw 3) or even just as "out there" (BLM Rw 1), but not necessarily less avid in their abstraction and valuation. Trying to talk through their understanding of why and how people become attached to the Red Desert, interviewees cited numerous uses for the land, including economic as well as ecological benefits, but also delved into more theoretical realms, saying, for example, "as a people, we realize that we value open space, we value hunting and fishing, we value public lands" (BCA).

What does it mean, though, to say that "[p]laces like the Red Desert are *real*" (Artist). When forced to describe perceived meanings and attributed feelings, people use increasingly diffuse language. Some interviewees eventually expressed reservation and even frustration with extreme abstraction or attribution, saying: "People, I think, too, hear about things, get attached to certain areas just because they're [talked about] rather than trying to find some meaning [of their own]" (BLM Rw 3); or sometimes people who use the term 'wilderness' may be "thinking more

about abstract ideas" than concrete places (BLM Rw 3). What does it mean to call Adobe Town a 'wilderness'?

Since the passage of the Wilderness Act in 1964, which allowed for and mandated review of especially pristine and naturally important regions such as Adobe Town for inclusion in a National Wilderness Preservation System, land managers and academic theorists have charged that labels and designations demonstrate symbolic as opposed to practical concerns. Some geographers contend that researchers should be studying places, not ideals (see Cronon 1995), but others insist that the idea of wildness is inextricable from the designation of wilderness (see Nash 2001, Turner 1997). As a Wilderness Study Area, Adobe Town is assumed to have a quality of wildness about it; when an interviewee believes that "those open spaces are a true wilderness" (Artist), it can be assumed that they perceive that same characteristic. (Results and Analysis III further discusses the meanings of desert).

Phenomenologically, valuation and symbolism are elements of place-creation. Sensual and temporal experience provides people opportunities to build memories and meaning – to develop emotional attachment to places.

C. Creating Senses of the Red Desert

Although individuals see smell, hear, taste, and feel the desert on their own, they must attempt to share their perceptions with others in order to debate values. As understandings and expressions of place-attachment become increasingly abstract, the line between private and public opinion becomes increasingly blurred. (For a discussion of how senses of place also become public issues when public lands are involved, see Literature Review I and Analysis and Results IV.) Researchers have developed many theories about the personal and social dimensions of place relating to the nature and process of attachment as well as the expression of that sense. This study contributes to that debate by examining the role of the individual as a voice for a group.

Identity and Expression

"Although the self-conscious experience of place may at base be a private affair, tangible representations of it are commonly made available for public consumption. (Basso 1996, p. 56)

Social constructionists posit that understandings of the environment are rooted in the cultural network of beliefs of an individual's social group (Eisenhauer et al. 2000, Greider and Garkovich 1994) and even that people believe in places due to their desire to belong to a cultural or political group (Cheng et al. 2003). This position is corroborated by anthropologists and ethnographers, who often note that cultures view their local landscape as a repository for ancestral lore (see, for example, Basso 1996 and Feld 1996). In these cases, knowledge of place not only perpetuates cultural beliefs, but even allows groups to protect and maintain space by distinguishing between "insiders" and "outsiders" (Cheng et al. 2003, Kaltenborn and Williams 2002).

This type of social identity may be a contributing factor to place attachment in some regions, but not necessarily in the Red Desert, where people experience place on a more visceral,

individual level. Indeed, the outstanding opportunity for *solitary* recreation – not group bonding trips – in remote regions where "you seldom encounter other people" (Sportsman) was cited as one of the region's attributes (BLM RS 2).

In conversation, people spoke of themselves in relation to the land – how and why they came to live in the area and what the Red Desert means to them personally, – supporting Cheng et al.'s assertion that "People's Perceptions and Evaluations of the Environment Are Expressions of Place-Based Self-Identity" (2003, p. 96). When self-identity enters the public sphere, however, individuals express their senses of and attachments to place using social, political, and cultural definitions and understandings. People seemed far less likely to express private views in published materials – the pronoun "we" replaced "I" and "our position" superseded "my view." Discussing his personal relationship with the land in an open forum, for example, Tom Bell referred to "*my* beloved Red Desert," but when he shifted tones, to attempt to rally listeners to take action to protect the Red Desert, he referred to "*our* public lands, *our* wild places" (January 23, 2007, emphasis added). Personal opinions can be drowned out by professional positions, creating disjunction between individual attachment to place and expression of senses of place.

Employees of agencies or organizations with professional positions may feel a need to be careful when expressing personal views, and thus find themselves discussing what "we believe" or "our take on the matter" (especially BCA, FRD, and BLM RS 1 and 2). Cheng et al. try to attribute such positioning to peoples' identification with social groups (2003, see Proposition 4, p. 97), but such maneuvers are more political than social. As representatives of a certain group or faction, individuals must be aware of and concede to the perceptions and desires of their supporters and/or constituents. The BLM, for example, must respond to the general public, especially local landowners and land-users, offering a "BLM line" that takes multiple land-use perspectives into account while attempting to be as "sincere" as possible (BLM RS 2). Environmentalist groups must recognize their members' desires to promote long-term economic and ecological stability while keeping hunting open or allowing wild horses to run free; a representative prefaced statements with the phrase "I should say" before carefully remembering to include the views of all important factions (FRD). Less attributable to social or cultural dynamics, these careful attempts at balance force individuals to say: "Well I have a personal opinion and I have a professional opinion" (BCA). But for this individual, that distinction, even if unexpressed, is still there.

Unfortunately, excessive use of professional opinions has the potential to perpetuate miscommunication and even to suppress and manipulate full, rich personal opinions. Many sources expressed frustration with certain public positions, subscribing to stereotypes about bureaucratic officials, tree-hugging environmentalists, "hardscrabble and contentious" ranchers, and hypocritical county tourism boards. When spoken with privately, individuals within these generalized groups expressed opinions that didn't necessarily conform to expectations: a BLM official can form a personal attachment to place, saying "I love the wide open places," (BLM RS 2); an environmentalist can admit to a poor first impression, saying "when I first saw the Red Desert from I-80, I didn't think it was all that special" (FRD); a rancher can work with others to maintain ecological health, saying "I talk to the scientists, know [about the status of the land] through monitoring" (Rancher).

These private views, however, don't always carry through in public documents' formal, impersonal phrasing; governmental reports carefully remove any trace of individual interpretations and environmentalist brochures suggest that everyone can and should recognize the desert's delicate beauty. By pigeonholing themselves into their stock positions in the public sphere, individuals lost sight of possible points of agreement. Even after one interviewee acknowledged that "there is a lot of common value even though it doesn't always get recognized," they continued to occasionally use professional rhetoric to combat contrary professional rhetoric (BCA); it's easy to slip into a role and lose sight of personal opinions.

Thirty years ago, Tuan noted that "[w]e are in the habit of denying or forgetting the real nature of our experiences in favor of the cliché of public speech". (1977, p. 204) Even citizens who are not speaking for and/or employed by any political group may find themselves expressing positions instead of interests. For example: Biodiversity Conservation Alliance provides a model for people interested in writing a letter to the BLM:

> "I urge you to adopt the Western Heritage Alternative for a revised Great Divide Plan that will balance industrial uses of my public lands with the needs of public recreation, clean air and water, and desert wildlife."
> (http://www.voiceforthewild.org/greatdivide/letter0117.html)

Presumably, writers will have already decided for themselves that they support the balanced planning of the Western Heritage Alternative; this sample sentence may simply offer inspiration and guidance for voicing personal beliefs, but it also may be an attempt to expropriate personal beliefs in support formal positions. Groups can manipulate and market place meanings, denigrating personal attachments (Cheng et al. 2003, p. 97).

People need to truly believe that "[t]he object of writing a Letter to the Editor is to start a dialogue within your community and Wyoming about the Red Desert" (http://www.voiceforthewild.org). Provided they try to infuse positions and stereotypes with personal perceptions, expressions of place can inform and enrich a larger, community-based relationship with the land (see Trimble and Tempest Williams 1996, Kemmis 1990).

Participation

"[P]laces can inspire people to take collective action" (Cheng et al. 2003, p. 93)

Social groups do not necessarily *create* attachment to place, but rather political groups can be *created by* individuals who have developed their own senses of place – an important distinction that social constructionists do not address.

Cheng et al.'s third proposition – "Social Groups That Seemingly Emerge Around Using, Protecting, or Altering the Physical Attributes of a Location May Be Engaging in More Fundamental Processes of Defining Significant Social and Cultural Meanings to That Place" (2003, p.96) – warrants closer examination. Because they cite "friends" groups as examples of such organizations, Friends of the Red Desert is a legitimate case study. This group has emerged to protect the region's natural attributes and to perpetuate responsible uses. In doing so, it

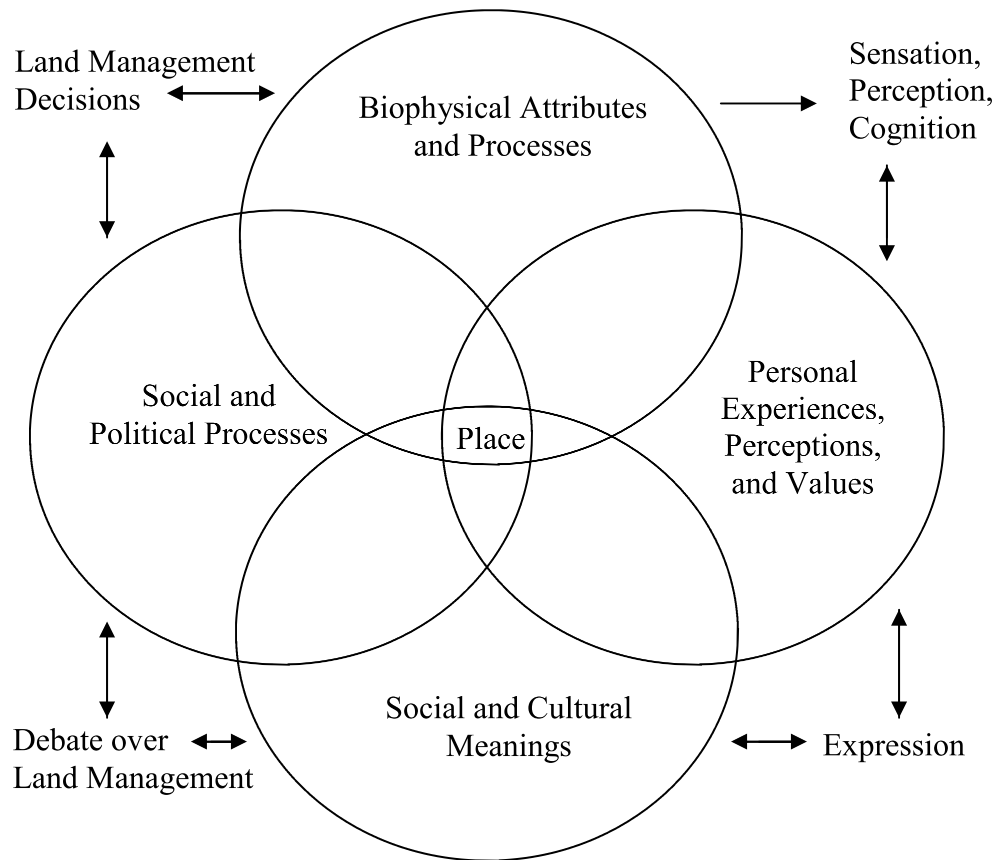
defines significant social and cultural meanings – members advocate not just actions, but values, supporting undisturbed open space, healthy ecosystems, and wilderness philosophies.

But there are two problems with Cheng et al.'s proposition – one minor, one major. Firstly, in the case of an organization that is concerned less with members' relationships with one another and more for their relationships with the land, the word "Social" might be more appropriately replaced by "Societal." A social group of family and friends has different motives: numerous interviewees talked about taking visitors out to favorite spots to show the areas off; one person explained that hiking with a group "enrich[es] the experience *for me*" because "I also can then notice the things that [the other people] notice that I wasn't going to notice" (BCA, my emphasis). Societal groups, however, coalesce around political or environmental beliefs: Friends of the Red Desert may use a variety of personal voices to introduce national audiences to the diverse and deep attachments to the region (see http://www.reddesert.org/) and people who write to their local newspaper or the BLM obviously want to communicate and advocate their views, but the individual speakers and/or writers do not necessarily interact socially. Such testimonies to place may be more a reaction to and affirmation of an individual's perceptions of and attachment to that location than a desire to participate in a social function.

Secondly, Friends of the Red Desert was not "organized by individuals who share not only similar experiences but goals to protect, use, and maintain a particular natural area," as Cheng et al. suggest (2003, p. 94). The individuals who make up the group – hunters, ranchers, Native American tribes, environmental recreationists, scientists, wilderness enthusiasts, and/or local community members – share goals, but certainly haven't and don't share similar sensual and conceptual experiences of the land. Both Derrick Meeks, who sees the Red Desert as a place "'where our people [Northern Arapaho] go to get medicine and pray,'" and Harold Shultz, who knows it as the place where he killed his first elk, attended BLM hearings in 2005 to demand protection of the region (Doane, 2005); although they voiced similar or even identical uses for certain lands, they didn't share similar senses of those places. In the case of Friends of the Red Desert, individually-created attachments provide inspiration for forming a societal group.

Unfortunately, these individual perceptions can be tamed or even lost when expressed in the public sphere, obfuscating the place-creation process. But problems in translation shouldn't discount the place-creation process, nor discourage expression of attachment. A bubble for "Personal Experiences, Perceptions, and Values" needs to be added to Cheng et al.' diagram of "Place," to connect with "Biophysical Attributes and Processes" via experience, "Social and Cultural Meanings" via expression, and "Social and Political Processes" via land-management debate (Figure 2).

FIGURE 2
Dimensions of Place



Adapted from Cheng et al. 2003, Figure 1, p. 90

The Results : Place Meanings

"Are space and place the environmental equivalents of the human need for adventure and safety, openness and definition?"
(Tuan 1977, p. 203)

Biodiversity Conservation Associates protests that the so-called Desolation Flats Project Area "is anything but desolate. This country is...wild, remote, and pristine" (http://www.voiceforthewild.org). The word "desolate" – to lay waste, make barren or unfit for habitation – is often used to define and describe deserts – barren, uninhabited, desolate regions (Onions 1955). Moreover, some people interpret "wild" and "remote" just as negatively. The idea of deserts as wild, remote, inhospitable wastelands is deeply ingrained in American consciousness, thanks to negative imagery as varied and ubiquitous as Judeo-Christian gospels and children's cartoons (Nash 2001, Oelschlaeger 1993). The Red Desert is maligned by general perceptions of desolation. People who have formed an attachment to the place have also expressed a desire to break through this wasteland stereotype, to assert the benefits of wildness and remoteness.

But an even more serious charge has been leveled against deserts by academic theorists, who try to wholly separate place from space. Tuan authoritatively establishes "place is security, space is freedom" (1977, p. 3); "space [is] that which allows movement, then place is pause (1977, p. 6); and, of course, "[w]hat begins as undifferentiated space becomes place when we endow it with value" (1977, p. 6). In *The Poetics of Space*, Gaston Bachelard describes how the home is the ultimate place of security, pause, and valued space (1994). By definition, these theorists allot no overlap between desolate flats and intimate homes (see also Cronon 1995).

If only "place" has value and "space" must stay "undifferentiated," what happens when people form an attachment to freedom and movement, when they come to understand the Red Desert as a "place" due to its nature as "undifferentiated space?" The theories must be reconsidered.

A. Desolate Flats

"In Wyoming today, I think the Red Desert is recognized as one of our important landscapes. That's due largely to the efforts of people like the Wyoming Outdoor Council and the Sierra Club and Biodiversity Conservation Alliance that have been busily educating the public and showing them what's out there, so that we can burst this myth that it's just this empty void that's just waiting for drilling rigs and bulldozers to make dollars out of it." (BCA)

Studying *Man in the Landscape: A Historic View of the Esthetics of Nature*, Paul Shepard determines that "[p]ark landscapes have paradise imagery – water, grass, trees" (1991, p. 256) – Americans appreciate green rolling hills, bubbling brooks, and rich woodlands. When touring their country, Americans want to see breathtaking mountain vistas, crashing waterfalls, and thick forests – Wendell Berry notes that "[t]here is, significantly, no prairie national park" (1992, p. 142). Many interviewees mused that there are "a lot of people out there who view the only beautiful landscapes as they have to have mountains, trees, they have to have water" (Artist). To most people, big sagebrush and greasewood flats are neither lush nor awe-inspiring; they're the

boringly-, even intimidatingly-open and seemingly-barren territory between Rawlins and Rock Springs. To some longtime Wyomingites, the Red Desert is first and foremost "'a harsh sonofabitch'" (Leonard Hay, quoted in Clifford 2002).

But some people who have spent time exploring the land insist that there are little secrets worth appreciating – beautiful vistas, encounters with wildlife. And to some people, wildness, remoteness, pristineness, even "desolation" are alluring words.

First Impressions

"While the traveler's first impression of [the Great Divide Basin] might be of a hard, dry and barren land, closer inspection will reveal a fascinating variety of flora and fauna"
(Wyoming State Office of Travel and Tourism 2005)

Many people qualify their first impressions of the Red Desert as poor, especially when they experience it from the interstate: "Saw it going along I-80. It wasn't all that special. My first thought was, 'Wow, hmm, kind of barren'" (FRD). As spatial analysis of land cover determined and peoples' descriptions corroborated, the Red Desert is covered primarily by rather dull sagebrush flats, which are especially prevalent in the Basin region visible from the highway. According to one interviewee:

> "When I talk to people about the Red Desert, I typically introduce it by saying, 'If you drive through the Red Desert on Interstate-80, you probably think there's nothing out there because it doesn't go to any of the spectacular landscapes; it goes through kind of the drab parts of it. So that creates a false sense of lack of value for the Red Desert – the face of the RD that people see driving through on the interstate does not reflect the richest wildlife habitats or the prettiest landscapes or the areas indeed that are pristine and untouched. You notice, driving through, oil and gas development, strip mines – you name it, – pipelines, powerline corridors everywhere." (BCA)

Thus when folks just pass through on the interstate, the land they perceive may easily – and perhaps "incorrectly," as one source opined – be interpreted as just "this valueless void" (BCA).

Even if people pull off I-80, it's unlikely that they'll immediately fall in love with the land. As an interviewee mused:

> "There's maybe some people that can appreciate it right at first, but I think the starkness of Wyoming overall and the desert for sure – unless you're there in the springtime with flowers, you may need some time to really appreciate what it offers, especially if you come from a different place." (BLM Rw 3)

Writing an opinion piece for a local newspaper, one citizen, who eventually became very attached to and concerned for the region, reassured readers that even she did not immediately care for it: "When I first drove off the pavement into the Red Desert, I wondered what was so special about this place. All I saw was miles of flat desolate sagebrush-covered land. Why did so many people care about such a forbidding place?" (Jones July 2005).

In her case, experience – sensual and temporal – answered that question: “The further we drove the faster this sentiment dissolved” (Jones July 2005). Many others have noted that deserts take time and effort to see and appreciate (Clifford 2002, see also Tempest Williams and Trimble 1996, Abbey 1990). For those who are willing to do so, “as [they] look more closely, the desert has a way of drawing [them] in, inviting [them] to explore its mysteries” (Friends of the Red Desert 2006).

Life and Beauty

Far from being a dead place, the basin literally moves with life's activity.”
(Wyoming Vacation Guide 2005)

Spatial analysis of land cover and sources' descriptions also noted that aside from the sagebrush and greasewood flats, the Red Desert is fairly diverse – the Greater extent includes unexpected attributes such as riparian areas and forests. One interviewee explained that as they got to know the region, they “realized that it's a lot more than sand and sagebrush” (FRD). In particular, people fought the wasteland stereotype by citing the region's “incredible” and beautiful biological and topological diversity (especially BLM Rw 2, BLM Rw 3, Rancher, BCA, and Artist).

Deserts being understood as barren, uninhabited, desolate regions, the Red Desert is much more alive than people might expect. It has been called “a biological ark” – a repository for a number of species whose numbers are dwindling elsewhere (BCA); attempting to simply list a few of the more recognizable animals that call it home, one interviewee couldn't help but interrupt themself as they remembered species to add: “It's got sagegrouse and ferrigenous hawks and burrowing owls and white-tail prairie dogs and swift fox, all of which... (and Wyoming prairie gophers,)... all of which... (and pygmy rabbits)(I don't want to leave anybody out here!)... All of these species are disappearing across the country, and we still have strong populations of them in the Red Desert” (BCA). In addition to the mammals, there are a multitude of smaller plants and animals that make the ecosystem “so much more sophisticated than a person observes just from driving on the road” as well (BLM Rw 2). Referring to the Red Desert as “a mecca,” a botanist described how inconspicuous microbiotic crusts, for example, serve vital but poorly-understood roles in the ecosystem (BLM Rw 2). Although the BLM has made fairly comprehensive studies of the region's biological attributes and wildlife enthusiasts and hunters have launched awareness campaigns touting the diversity, the stigma of biological emptiness persists among the general public. One interviewee's comment sums up frustration with perceptions of lifelessness: “I see more life out there in the desert than I do east on, quote, ‘productive’ grounds” (Rancher).

The Red Desert has been praised for its “dual perspectives” – the biological one “at your feet” and the scenic view “far-reaching and vast” (Wyoming Wilderness Association 2006, p. 1). One interviewee insisted:

> “There are parts like Adobe Town and parts of the Jack Morrow Hills planning area and the Ferris Dunes where really the magnificent vistas and the scenic values are among the highest in Wyoming. Indeed, Adobe Town has landscapes

> that have been compared favorably to a number of national parks by a number of different people who have visited. It is a national-park-quality landscape." (BCA)

Until fairly recently, notes Sheperd, desert esthetics would not have been considered national-park-quality. Traditionally scenic landscapes like those in Yosemite, declared a National Park in 1890, and New York's Adirondacks, protected as 'forever wild' in 1894, are lush with mountains and forests, have, "big shapes…big contrasts between light and dark" (Artist). People understand these vistas, know how to interpret scale and distance and imagine their place in the landscape. A painter compares the traditional perception of natural aesthetics to the openness of Wyoming:

> "The high plains aren't everyone's first choice for beautiful landscapes. None of the standard picturesque elements are there: no soaring peaks, or winding rivers, or majestic trees to frame the view; no moist atmosphere to soften the edges. There is only the Big Empty." (Lillegraven 2007)

Observing that "[i]t's a cultural thing – which landscapes are regarded as beautiful," one interviewee added appreciatively, "and I think it's changing, a little bit…There are more and more people who appreciate open landscapes" (Artist). Thanks to writers like Edward Abbey and Terry Tempest Williams, appreciation for these "abstract wonders" has grown tremendously (1991, p. 258); people are beginning to recognize that Abbey's famous opening line – "This is the most beautiful place on earth. There are many such places" (1990, p. 1) can be applied to places like the Red Desert.

But "if you want to see that there's nothing there, that's what you'll see" (Artist). If people don't care to commit the time and effort needed to explore the desert, they may persist in believing it's lifeless and ugly (Clifford 2002)(see also Analysis and Results II). And even those who do attempt to see the desert's biological richness and recognize subtle beauty simply may not like the desolation: when "there's nothing to hide behind, you feel vulnerable, exposed" (Artist); "[g]reat open spaces intimidate us with their offer of infinite freedom of choice" (Lillegraven 2007). The Red Desert has a "unique and different" dimension (Jones July 2005) that may be hard if not impossible for some people to attach to – open space.

B. Place of Space

"And that's what it's about, it's about space." (BLM Rw 2)

Referring back to Yi-Fu Tuan, the concepts of space and place are related – "[w]hat begins as undifferentiated space becomes place when we endow it with value" (1977, p. 6) – but exclusive – space is undifferentiated, place valued. At the conclusion of *Place and Space*, Yi-Fu Tuan asks: "Are space and place the environmental equivalents of the human need for adventure and safety, openness and definition?" (1977, p. 203); at the opening of the work, he had posited: "From the security and stability of place we are aware of the openness, freedom, and threat of space, and vice versa." (1977, p. 6). To Tuan, then, space is adventure and uncertainty, freedom with threats. These qualities would seem to neither encourage nor facilitate the intimacy and cognition necessary to create places.

But in expressing their perceptions of and attachment to the Red Desert, people say first and foremost that they appreciate the "magnificent sense of *space*" (BLM Rw 2). Have they formed an attachment to space as place?

Place of Adventure and Openness

"One of the most striking aspects of the Red Desert, in my mind, is its immensity. Here is a place big enough to get lost in. There aren't a lot of places like that left in the world" (Jones 2005).

One interviewee linked the adjective "desolate" – assumed to have a negative connotation – to "open," then "beautiful"– assuredly positive – and used all three to describe their sense of the Red Desert (BLM Rw 3). Describing why they were drawn to the desert, another interviewee explained that "it was really the open space and the emptiness of the landscape. It's really unique... I've driven all over the West and there just aren't that many places that are that *empty*" (BCA). They weren't being contradictory, rather expressing a different understanding of "desolate." Some people like openness and emptiness. Sources voiced this in many ways: assuming that "what most people like about any portion of the desert [is] how there's nothing out there" (BLM Rw 3); and referring to themselves as the sort of people who "love desolate, who hear 'desolate' and think, 'Let's go there!'" (BLM Rw 2)

But why go to an open, empty, desolate space? Some people have grown up locally, spent their whole lives with the sky arching fully overhead, immensity letting them breathe (paraphrased from Marian Doane, quoted in Clifford 2002). Others come seeking adventure, secrets, and/or surprises: "[historic] adventurers may have been seeking to explore this wild, isolated country for the sake of adventure – just as today's visitors do" (http://www.reddesert.org); "surprises and paradoxes are a kind of norm for the Red Desert" (Clifford 2002); "the more you know about the desert, the more you know how much you don't know" (BLM Rw 2). Many people expressed a desire to be able to lose all geographical orientation, reinforcing the sentiment of one interviewee: "I think that there are always going to be places in the RD where you can lose yourself. I hope so" (BCA).

"Losing yourself" geographically need not entail losing your identity of self or place. Contrary to Tuan's assumption that the openness and freedom of space, by definition, preclude the sense of intimacy necessary for place-attachments, there are elements of the Red Desert that people showed remarkable familiarity with and appreciation for. In his masterpiece *Desert Solitaire*, Edward Abbey described the benefits deserts offer, all of which were cited by sources in relation to the Red Desert:

> "...clean air to breathe...; stillness, solitude, and space; an unobstructed view every day and every night of sun, sky, stars, clouds, mountains, moon, cliffrock and canyons; a sense of time enough to let thought and feeling range from here to the end of the world and back; the discovery of something intimate – though impossible to name – in the remote" (1990, p. 39)

That possibility for "something intimate...in the remote" provides for a personal sense of place in the justifiably undifferentiated, or unnamed, remoteness of space.

Attachment to place requires experience – intimate perception and cognition – to turn undifferentiated space into a place *of* space. When people rhapsodize about lack of familiarity and understanding, they demonstrate appreciation for abstract values. Phenomenologically, these ideals must be – and can be – traced back to their biophysical roots.

Space Attachment
"The desert is the environment of revelation, genetically and physiologically alien, sensorily austere, esthetically abstract, historically inimical. It is always described as boundless and empty, but the human experience there is never merely existential. Its solitude is a not-empty void, a not-quiet silence. Its forms are bold and suggestive. The mind is beset by light and space" (Shepard 1991, p. 43)

Rather than discourage the formation of places, as Tuan insinuates, adventure, uncertainty, and freedom may actually inspire people to consider their relationship with the land on a deep, visceral, individual level: "this is the saturation of solitude, the ultimate draft of emptiness; it brings introversion, contemplation" (Shepard 1991, p. 44). As an interviewee realized:

> "[in the Red Desert, I feel] this magnificent sense of being insignificant in the face of an enormous natural force that dwarfed the human effort. That's what I mean by the magnificent – the thing that puts the size and the scope of humanity in its place – that gives you the proper humility in the face of something greater than you. ....Getting out into a space that is so enormous that it dwarfs the ego is a good way to center yourself and give yourself a proper humility and perspective on your own insignificance in the universe. It's almost a *spiritual* thing." (BCA)

Although they do not provide the nurturing, traditionally beautiful vistas that mountains and woods do, Shepard recognizes another opportunity that deserts provide: "Go to the desert – not to escape but to find reality" (1991, p. 44). That reality includes awareness of self, of the physical world, and one's relationship with the real world.

Phenomenologically, self-awareness allows individuals to take perceptions from and build memories and meanings into the physical world – to create a phenomenological relationship with place. The awe-inspiring space of deserts is acutely suited to inspire deep place-attachment: it is "neither pretty nor comfortable. It is sublime" (Lillegraven 2007).

RESULTS AND ANALYSIS IV:
The Implications : Place Management

Not everyone loves open spaces; not everyone sees value in or is attached to the Red Desert for its scenic, ecological, and/or spiritual attributes; not everyone has developed the same sense of place; not everyone has even developed a sense of the Red Desert. People have formed very personal and very different relationships with the land and thus expect and demand very different uses of it.

Because more than sixty percent of the region is publicly owned, the Bureau of Land Management has a difficult mandate to take all possible points of view into account and determine best appropriate uses. Their management decisions may, however, challenge some peoples' sense of place.

A. Challenging Senses

"[A]n ideological battle is being fought among those who value what is here. Some value what lies on the surface; some value what lies beneath." (Clifford 2002)

The Red Desert has been changing, due most visibly and rapidly to oil and gas development. Sense of place is partially based on the biophysical attributes of the land; when those change, the effects ripple through peoples' perceptions and understandings of the region. Land management decisions that allow for actions that alter the physical dimensions of public lands threaten peoples' places; planning involves the maintenance, challenge, and/or negotiation of place meanings (paraphrased from Davenport and Anderson 2005, p. 627, see also Stedman 2003, Mitchell et al. 1993).

While this study has focused on people who have demonstrated an attachment to the open spaces and diverse ecosystems of the Red Desert, it must be noted that many others view the region as simply a rich repository for natural resources. In a comment letter to the BLM's GRRA Resource Management Plan draft, for example, a local citizen explained that from his perspective, the Red Desert looks like a region whose natural gas has the potential to provide jobs and revenue to improve the local economy (see BLM 1996, Letter #83, p. 881). A rancher and an oil and gas developer "...[who's] proud of the community and economy his family helped build" also recognizes the Red Desert's value as in "the oil, coal, and natural gas that lies beneath it" (Clifford 2002). Development of the region is important to the country and world thirsty for energy, and to the state, towns, and local people who hope to provide it.

To get to these natural resources, though, industry officials have to go through the desert that sprawls above them. Their wells, drilling rigs, and supporting infrastructure such as roads and power lines will alter the biophysical characteristics of developed regions. Some people don't mind that. Numerous sources noted that the general public simply isn't aware of the importance of these impacts: "a poll in the *Casper Star-Tribune* found that 70 percent of Wyomingites believed that oil and gas development was not harming the environment" (Kloor, 2007). Interviewees expressed their frustration with people who didn't know, or, worse, didn't care. For example, one felt that out-of-towners trashed the landscape, not noticing and/or not caring about the biological richness:

> The increased amount of litter found in the Red Desert "is from the workers; they're driving around throwing their crap out of the windows, that's what they think of this area. That says a lot to me about what these guys think of it – 'It's just the desert. If you gotta wreck someplace, it oughta be this place.'"(BLM Rw 2)

Another noted that people "seem to have this attitude that there's so much open space out there, so much undeveloped space that we can afford to just carve it up willy-nilly, but there isn't that much out there, there really isn't" (Artist); this sentiment was reinforced with the grave warning that "[o]ften times, the people who are so close to these attributes [like open space] don't really realize how important they are until they've lost them" (BCA).

There may be a "false sense of lack of value for the Red Desert" (BCA). This could be partially attributed to the fact that few people spend the time to experience it, to build an awareness of and attachment to place. It can also be attributed to traditional perceptions of "desolate" deserts as lifeless, useless, beauty-less landscapes. Neither of these understandings is simple to overcome. And some sources expressed concern that their efforts to value the desert are being deliberately undermined. According to Friends of the Red Desert, "[t]here actually is no feature named 'Desolation Flats' in this part of the Red Desert; oil and gas projects are now given misleading names to fool the public into thinking that favorite landscapes will not be desecrated" (http://www.reddesert.org).

Some people may dislike desolation while others may believe that development of rich energy resources is more important than the land, but many people have written and/or spoken publicly and/or privately to express concern that their places are being desecrated. Saying that "[o]nce you criss-cross the Red Desert with drilling rigs and a road to every well pad, it really will damage the place," one interviewee added, "I think I'm not alone in caring" (Artist). This interviewee is not alone.

Another person described drastic visual changes in the region:

> "Particularly now with all this development, there are so many roads – I'm on a road, I'm on a road, I'm on a road... – Oh it's insane. On the Baggs Highway, all you'll see is oil wells. That's happened in less than 3 years, everything that you'll see, all the oil development has happened in less than three years." (BLM Rw 2)

And was worried about the effects such development could have on wildlife:

> "If you read the documents, they'll say it's mitigatable, but frankly...there's a lot of fractionalization....there's noise associated with those.... A lot of the oil companies that'll show you pictures of pronghorn laying down right next to their pad, but when you consider what used to be there, how many pronghorn used to be there and travel through there freely..." (BLM Rw 2)

Another noted cultural impacts of increased traffic:

> "[When I was a small child there,] you could travel all day long and not see a soul; if you saw tire tracks, you'd know who'd been there and, most likely, where they were going...We'd look out for one another...Now you have to use turn signals and are darn near lucky if you don't get hit by an oil rig." (Rancher)

And some sources even cited conceptual, personal values, for example:

> "It's the development of the roads that messes everything up...If I want to go someplace to get away from people, ...I go to the Red Desert. When you let roads develop willy-nilly, there is a loss of solitude, and that solitude is a fascinating thing" (Bill Crump, quoted in Clifford 2002)

Each of these people has found that oil and gas development has changed their perception of the Red Desert and challenged the values that attach them to the place. Land managers need to respect these deep, personal senses and values.

B. Implications for Land Management

The debate over the values of the Red Desert involves not only "what is present, but also what is absent" (Clifford 2002). As cited in the previous paragraph, changes to that which is present – landforms and lifeforms – are readily discernable. Because land managers are aware of regions' ecological characteristics, they can take them into consideration when preparing Environmental Impact Statements and Management Plans. Impacts on elements of absence – the empty space and opportunities for solitude – are much more difficult to ascertain. The BLM cannot develop and apply a subjective enough scale for openness, as it has for Visual Resources, nor a measure for "some kind of special quality" (Doane 2005), as it has for endangered species populations. Yet in their article "Forest Places of the Heart: Incorporating Special Places into Public Management," Mitchell et al. (1993) posit that: "[i]f one accepts the thesis that public lands can be viewed by their constituencies in terms of both their utility and as the object of emotional attachments, and that affective ties with a place or landscape are important, then public land management planning should address both values." (p. 32)

Theorists say they should, but *how* can officials take abstract values of absence into consideration? They need to begin by acknowledging the perceptions and opinions that people have expressed.

People have inundated and continue to inundate the BLM with expressions of their perceptions and opinions. Because they challenge people's values and/or attachment to places, decisions allowing oil and gas development "invariably generate a response from people, even among people who have never even been to the place in dispute" (Cheng et al. 2003, p. 97). Environmentalist groups are mounting public awareness and action campaigns; local newspapers are publishing editorials; private citizens are writing hundreds of letters; county commissioners are passing resolutions against development (Casper Star Tribune, November 23, 2006); even the Wyoming State AFL-CIO has sent the BLM a formal protest (Gearino, November 14, 2006).

Few of these people and groups insisted that the entire Red Desert be closed off as a Wilderness; they're just concerned with the pace and places of development: "I think we just need to be really careful" (BLM Rw 3). One interviewee allowed "well, there's always been a little bit of oil and gas development in the RD," but was upset to note that "since about the late-1990s, it's grown like a cancer in the RD, and it's just blown up into a huge intrusion on the RD, with enormous impacts on the wildlife and the land" (BCA). Most sources, like Wyoming State AFL-CIO executive secretary Kim Floyd, are quick to assert that "'we're not anti-development by any means'" and insist most vociferously that "'we have to strike a balance between development and wildlife'" (quoted in Gearino 2006). Land managers typically 'balance' economic needs and benefits, environmental protection, and recreational uses, wholly missing places with which individual citizens have expressed a personal and/or philosophical relationship.

Those places and the values they symbolize become hot points of contention; most arguments against resource development in the Red Desert came down to a matter of geography: "'There are appropriate places in the state where oil and gas development should occur, but we're saying [the developers] can't have it all. There has to be something left'" (Kim Floyd, quoted in Gearino 2006). Some sources, like the interviewee who said open-endedly "Oil and gas in some places, I mean that's fine, but ..." (BLM Rw 3), don't pinpoint locations to preserve. But many cite specific sites:

> "Most reasonable people recognize that, while Wyoming is an important source of oil and gas for the nation, there are areas of the state that deserve special protection. One of these is the Jack Morrow Hills area of the Red Desert, home of the Boar's Tusk, Steamboat Mountain and the Killpecker Sand Dunes." (Casper Star-Tribune Editorial, July 25, 2006)

Adobe Town is the most frequently referenced location. Many people feel that the Wilderness Study Area and surrounding land – namely Desolation Flats – have ecological and recreational resources that merit protection: "Adobe Town is an area of such overwhelming importance to the public and to state union members that it should not be 'sacrificed' for the benefit of producing a 'marginal' gas resource" (Kim Floyd, quoted in Gearino 2006) But Adobe Town also epitomizes those deeply-held and hard-to-define place values:

> "You can't go to many places in our county right now without seeing some sort of road, or a pipeline, or a compressor station…Listen, we can extract and extract and extract, but when you get into places like this [Adobe Town], you are destroying something that you will never be able to reclaim." (Sweetwater County Commission Chairman John Pallesen, quoted in the Casper Star-Tribune, November 23. 2006)

How can land managers identify and consider these "somethings" of place to which people have expressed attachment?

C. Politics of Place

"It is a simple equation: place + people = politics. In the American West, the simplicity becomes complicated very quickly as abstractions of philosophy and rhetoric turn into ground scrimmages." (Tempest Williams 2002, p. 3)

In their article "Sense of Place: An Elusive Concept That Is Finding a Home in Ecosystem Management," Williams and Stewart offer recommendations that "can give the relationship between people and the land the careful, systematic attention it requires and deserves" (1998, p. 21). Firstly, they suggest that land managers use local place-names, to show an appreciation for the symbolic meanings that local citizens associate with specific locations (See also Brown 2005). This is not being done in the study region, where "[t]he problem," as one official put it, "is that people are going to perceive things differently based on what they know to be the Red Desert" (BLM RS 2). The BLM understands the Red Desert as the Basin or Watershed – the small red-soiled area north of the interstate – which "was not found to contain values that met the relevance and importance criteria and therefore would not be recommended for Area of Critical Environmental Concern designation" (BLM 1996, p. 46). Groups or individuals advocating for such designation, or even for protection as a National Conservation Area, cite areas such as Jack Morrow Hills and Adobe Town, which are located in the Greater extent, not the Basin. Such geographic miscommunication and/or disagreement hinders debate over actual management of the land.

Secondly, and more importantly, Williams and Stewart implore land management officials to "understand the politics of place," explaining that "[i]f a place is especially scenic or spiritually significant or was the site of an event that has deep meaning…any proposed chance or management action will be closely scrutinized" (1998, p. 22). This assertion – that politics of place involves not just scenic attributes or recreational uses but also spiritual and/or philosophic meaning – deserves reiteration.

When people form relationships with certain locations, they view them as places, not commodities, yet "[n]atural resource management has tended to view places as commodities and perpetuated a focus on use orientation" (Mitchell et al. 1993, p. 34. See also Williams et al. 1992). Opportunity for recreation is important, yet there are many people – such as the interviewee who said, "[j]ust because I'm not going to go out backpacking doesn't mean that it's not important to me" (Artist) – who don't think of the Red Desert in terms of uses.

Regarding scenic significance, the BLM has demonstrated a commendable appreciation for and intention to protect the aesthetics of some of the Red Desert. Responding to comments submitted on the Green River Resource Area Draft Environmental Impact Statement, an official wrote: "[t]here was agreement that the special value of the Red Desert was its vastness and open space. As a result, the plan specifies the need to protect these values" (BLM 1996, #129, p. 917); "[t]he team did agree that the most important quality of the Red Desert was its vastness and agreed that we should manage the area for its visual qualities" (BLM 1996, #94, p. 906). The Final document reads:

> "The [BLM] management objective for the Red Desert Watershed Area would be to provide large areas of unobstructed views for enjoyment of scenic

> qualities...the Red Desert watershed area would be managed to ensure developments and activities conform with the concepts of open space." (BLM 1996, p. 45)

These commitments are both encouraging and incomplete. They demonstrate that land managers are aware of public sentiment and can commit to "special value[s]" such as "vastness and open space." But the BLM has extended such protection to only the Red Desert Watershed Area – not the Greater Red Desert containing the frequently-cited Adobe Town and Jack Morrow Hills that many citizens perceive to be the extent of "the Red Desert." Moreover, "open space" is not simply a "visual quality," but rather a dimension of some peoples' deeply-held and personal attachment to the place of space.

CONCLUSION

"Yes. Feet on earth. Knock on wood. Touch stone. Good luck to all." (Abbey 1990, p. 268)

Some people understand the Red Desert as far more than a desolate expanse that stretches through south-central Wyoming. To them, it may be a region of varying geographical location and extent consisting of diverse geological, ecological, and cultural attributes. The name conjures up memories of experiences of the space – senses and perceptions that contribute to interpretations of place. The Red Desert is an open region with both sensory and symbolic import.

Phenomenologically, people form relationships with the biophysical environment through personal interaction and individual conceptualization. While social constructionists insist that social and political forces construct "places," in some cases, apparent group-identity may be attributed to professional and public positioning rather than place-based identity; many people may have difficulty expressing their deeply-held and personal senses of place.

But people who have developed an attachment to the region cite its spaciousness, even its desolation, as primary attributes. The greasewood flats of the Red Desert Basin require a more subtle appreciation, but the open grandeur of the Greater Red Desert provides a sense of freedom and intimidation that may inspire connection with the landscape. Although some geographers imply that conceptions of "place" and "space" cannot coexist, deserts allow senses of both.

The ability of local residents to connect to public lands for both use-based and philosophical reasons has implications for management of those places. Officials need to recognize some peoples' rich appreciation for the Red Desert. Politics of place requires people to be engaged and expressive. While officials are responsible for recognizing and considering place attachment as a valid management priority, citizens also have a responsibility. Believing that "each of us belongs to a particular landscape, one that informs who we are, a place that carries our history, our dreams, holds us to a moral line of behavior that transcends thought….[i]n each of these places, home work is required, a participation in public life" (Tempest Williams 2002, p. 19). As the letters, articles, and interviews demonstrate, people who have developed an attachment to the Red Desert have taken this exhortation to heart. When developed by individuals through sensual, perceptual, and cognitive experience and communicated openly and honestly without falling into stereotypes, place-attachment can be a powerful force influencing land management, even when involving values as complex as appreciation for spaciousness.

This idea needs to be researched further – more broadly and more deeply. Firstly, this study used interviews and published testimonies from particularly interested individuals in order to evaluate the formation and implications of place-attachment, but there is also value in gauging popular sentiment. Survey methods could determine the extent of attachment – the number of people who are concerned about the Red Desert as well any specific locations these people might be particularly interested in. This information would be particularly useful for land managers.

Secondly, this study focused on the Red Desert. Further research could expand to include other deserts. This could help distinguish between attachment to the Red Desert as a specific place and/or as an open, arid region. It could also open up a whole new set of questions: do people relate to all deserts in the same manner or do different deserts evince different reactions? Why do some people appreciate the spaciousness while others decry the desolation?

Moreover, this study could only consider the expressions of place cursorily, leaving much to be considered about communication of ideals, mainly: how effective are people in translating their personal interests in a public and/or professional manner? How can citizens better express their concerns, and how can professionals take these expressions into consideration more fully and honestly?

Even if there is, as Edward Abbey writes, "something about the desert that the human sensibility cannot assimilate" (1990, p. 242), it is worth seeking answers to these questions. By exploring the many dimensions of attachment to arid landscapes, people can better understand their place in the natural world.

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APPENDIX I

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APPENDIX II

Interviewee Codes

Note:
The interviewees were encouraged to discuss personal perceptions and opinions, not professional positions; titles and codes are used only for identification purposes, and are not intended to be read as representative.

BLM RS 1: Bureau of Land Management, Rock Springs Field Office
May 4, 2006. Length: 1 hour.

BLM RS 2: Bureau of Land Management, Rock Springs Field Office
May 4, 2006. 1 hour.

BLM Rw 1: Bureau of Land Management, Rawlins Field Office Range Management Specialist
May 5, 2006. 45 minutes.

BLM Rw 2: Bureau of Land Management, Rawlins Field Office Wildlife Biologist
May 5, 2006. 1 hour.

BLM Rw 3: Bureau of Land Management, Rawlins Field Office Range Management Specialist
May 5, 2006. 1 hour.

Sportsman: Rawlins resident and sportsman
May 5, 2006. 30 minutes.

Rancher: Third-generation rancher
August 18, 2006. 30 minutes.

BCA: Biodiversity Conservation Alliance employee
September 6, 2006. 1 hour, 30 minutes.

FRD: Friends of the Red Desert employee
October 11, 2006. 30 minutes.

Artist: Laramie resident and artist
February 4, 2007. 1 hour.

APPENDIX III

Interview Sources for FIGURE 1
"Where is the Red Desert? Perceptions of Location and Extent"

Question: Where is the Red Desert?

"I always figured that the name had something to do with it... the red soils...west of Wamsutter. I guess...The true definition...[is] where the soils are red" (BLM Rw 1)

"South of the interstate, including Adobe Town. I haven't seen a lot of north places at all... through Skull Creek Rim country...[to] Kinney Rim and Delaney Rim." (BLM Rw 2)

Powder mountain north to Jeffrey City. Rawlins west to Bittercreek area, 10 or 12 miles (Sportsman)

"I guess I would at least run from the true Red Desert [red soils] all the way maybe to the Atlantic Rim area. Not too far south, I wouldn't push it all the way to Baggs, I keep that separate.... to just south of the interstate...the whole area west of Rawlins... I also realize that Adobe Town is very well known, but I don't consider it part" (BLM Rw 3)

"West of Wamsutter, mostly north of what was highway 30 and is now the Interstate, south maybe to Delaney Rim. Not as far as 30 miles north of interstate, though some may say so. If you look at the soil, it does belong in the Red Desert... It's what we ranchers call the 'Red Strip'" (Rancher)

"It's a small area north of the interstate, where the soils are red." (BLM RS 2)

"Going back to the 1890s, there was a USDA publication called 'Wyoming's Red Desert and Its Forage Resources' that defines the Red Desert as everything from the Green River in the west to the Platte River in the east, north to the continental divide and south to the Colorado state line. We take a slightly more constricted view of that, and would bound it on the east by the Atlantic Rim…and on the west we bound it by the Pine Mountain/Quaking Aspen mountain access because that too is kind of a coniferous forest type that's not typical of a desert. And on the north and the south roughly by the continental divide -- the north end of the continental divide and the bluffs above the Little Snake on the south." Map available at: http://voiceforthewild.org (BCA)

"Friends of the Red Desert describe it as 6 million (others might say 8 million) acres from Rock Springs to Rawlins to Wyoming border, north up into under South pass (before Antelope Hills) stop by LaMonte at north, across to Big Sandy Reservoir, some of Monument Buttes by Farson, then down to Rock Springs." (FRD)

APPENDIX IV

Statistical Analysis of Red Desert Attributes

	Core Red		**Greater Red**	
	absolute	relative	absolute	relative (% total)
Total area	1,985,034,930		23,840,058,333	
Significant				
Wyoming big	1,421,543,037	71.6	15,896,816,977	66.7
Desert shrub	92,008,729	4.6	2,627,563,804	11.0
Greasewood fans and	221,612,371	11.2	1,653,479,957	6.9
Wetlands	11,341,284	0.6	1386335968	5.8
Saltbush fans and flats	51807617	2.6	772,746,871	3.2
Juniper woodland	0	0	606,215,425	2.5
Basin exposed	44472205	2.2	600,878,919	2.5
Shrub-dominated	4039583	0.2	374,839,287	1.6
Vegetated dunes	99496799	5.0	246,879,176	1.0
Unvegetated playa	20,241,528	1.0	62,907,921	0.3
Surface mining	0	0	38,356,617	0.2
Recognized disturbance (logging)			86038291	0.4
Field Office				
Lander	0	0	1910139176	8.0
Rawlins	859779136	43.3	11343008877	47.6
Rock Springs	1125255789	56.7	10585059639	44.4
Management Classifications				
Wilderness Study	111050049	5.6	980454017	4.1
Atlantic Rim			1,053,070,191	4.4
Desolation Flats			947,803,543	4.0
Special Mgmt Areas / Areas of Critical Env			1,325,024,101	5.6
Ownership				
Bureau of Land	1166094019	58.7	16382536492	68.7
Patented (private):	776773455	39.1	6215274773	26.1
State	26587158	1.3	782,441,673	3.3
Designated potential for biodiversity				
Highest		0	6731067	0.03
Medium-high		0	178745325	0.7
Medium-low	1179793370	59.4	16637110132	69.8
Low	805241560	40.6	7015007545	29.4

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