

Primal Hypotheses: The Relationship Between Naturalness, Solitude, and the Wilderness Experience Benefits of Development of Self, Development of Community, and Spiritual Development

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Abstract—This paper describes what we call “the primal hypotheses,” which assert positive relationships between the legislated wilderness attributes of naturalness and solitude and three broad constructs that embrace human benefits from wilderness experience reported in the literature—“development of self” (DOS), “development of community” (DOC) and “spiritual development” (SD). These hypotheses support the notion that managing wilderness for naturalness and solitude will generate wilderness experience benefits for people, in addition to meeting a legal mandate for wilderness protection. We find the hypotheses generally supported by studies reported in the literature on wilderness experience and by a limited test using data from three wilderness experience programs.

This paper describes what we call the primal hypotheses, which assert positive relationships between the legislated wilderness attributes of naturalness and solitude and three broad constructs that embrace human benefits from wilderness experience reported in the literature—“development of self” (DOS), “development of community” (DOC) and “spiritual development” (SD). We use the term hypotheses in a limited sense to suggest relationships between naturalness, solitude and the DOS, DOC and SD constructs, much like a forester would assert relationships between certain silvicultural treatments and certain forest conditions. That is, the primal hypotheses are to be considered working assumptions, standing true against general evidence, but certainly subject to further testing and confirmation. These hypotheses support the notion that managing wilderness for naturalness and solitude will generate wilderness experience benefits for people, in addition to meeting a legal mandate for wilderness protection. The primal hypotheses are relevant to the issue of whether to manage wilderness under a biocentric philosophy privileging naturalness or an anthropocentric philosophy adapting nature to human convenience and preference (Hendee and others 1990). We find the

hypotheses generally supported by virtually all studies reported in the literature on wilderness experience and by our limited test using data from three wilderness experience programs with different populations.

Wilderness is appropriately understood as a human construction, a state of mind (Nash 1982). Individual perceptions of wilderness vary, as do the environments described as wilderness. However, a relatively high degree of naturalness and opportunities for solitude have been identified as two defining qualities of wilderness by the Wilderness Act of 1964. These attributes are embraced in wilderness management direction in federal agency manuals and synthesized into instructional textbook material on the subject (Hendee and others 1990). We refer to the attributes of naturalness and solitude as “primal” because they represent essential conditions that wilderness protection seeks to preserve.

Wilderness provides myriad general benefits to individuals, society and nonhuman organisms (Driver and others 1987b; Nelson 1998), but our focus here is on benefits that arise from direct, personal experience of wilderness. Driver (1996) has defined a recreational benefit as an improved condition, prevention of an undesirable condition or attainment of a desired condition. In this paper, we consider wilderness experience benefits as improved human conditions in the categories of development of self (DOS)—meaning personal benefits; development of community (DOC)—meaning interpersonal and group benefits; and spiritual development (SD)—meaning a profound sense of connection to nature, the larger universe or transcendent “Other.”

A fundamental basis for wilderness stewardship, maybe especially so in the emerging ecosystem management paradigm for public lands and wilderness, is the relationship between wilderness experience benefits and the environmental settings in which they occur. One principle of wilderness management is to produce human values and benefits (Hendee and others 1990), but managers must also meet legal mandates and protect and sustain the integrity of the resource qualities that give rise to benefits. We believe it is therefore important to understand the relationships between the key wilderness attributes of naturalness and solitude and the wilderness experience benefits that we have categorized under the headings of DOS, DOC and SD.

Previous research examining relationships between environmental settings and natural resource-based recreation experiences has largely been driven by management concerns about providing a diverse set of recreation opportunities under the ROS planning framework (Clark and Stankey

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1979; Driver and others 1987a). However, as Patterson and others (1998) note, the ROS framework was designed as a broad-scale guide, and more specific information about person-environment transactions is desirable. A new line of inquiry has developed that seeks to give greater importance to nature as an actor in the wilderness experience drama. This is broadening the parameters of recreation research to include the environment as a primary point of inquiry (Fredrickson and Anderson 1999). To further advance this perspective, we present these primal hypotheses, which contend that there are positive correlations between the wilderness attributes of naturalness and solitude and DOS, DOC, and SD benefits from wilderness experience.

The Primal Hypotheses

Wilderness experience benefits have been operationalized and measured using many methods, including participant observation, journal analyses, questionnaires and interviews, and analyzed with varying degrees of rigor, ranging from quantitative analyses of psychometrics and scaled continua to qualitative analyses of verbal and written responses. These studies consistently confirm that wilderness experience benefits exist, and that negative effects are virtually nonexistent (Burton 1981; Friese and others 1995; Kaplan and Kaplan 1989). We assert that these wilderness experience benefits can be generalized into three broad categories defined as development of self (DOS), development of community (DOC) and spiritual development (SD). The DOS, DOC, and SD categories logically synthesize a spectrum of previously reported outcomes from wilderness experience and provide a plausible framework for organizing reported benefits.

Development of Self

The first of the primal hypotheses asserts that wilderness naturalness and solitude are positively related to development of self (DOS) benefits from wilderness experience. Underlying this statement is the assumption that the development of self construct logically synthesizes previous research findings on “self-centered” wilderness experience benefits and provides a plausible framework for organizing them.

Among all the research findings about wilderness experience benefits, the most commonly reported are positive, self-centered effects. These consistent findings appear in so many complex variations and slightly different definitions that it prompted our use of the DOS construct as a generic category—an umbrella under which all the self-centered effects would fit (Russell and Hendee 1997). DOS encompasses personal growth (Hendee and Brown 1987), restored functioning (Kaplan and Kaplan 1989), and the numerous self-measures identified in wilderness user benefit studies, such as self-actualization (Scott 1974; Shin 1993; Young & Crandall 1984), self-concept (Gillet and others 1991; Lambert and others 1978; Schreyer and others 1990), self control/ locus of control (Marsh and others 1986; Scherl 1989) self efficacy (Cockrell 1990), reduced anxiety (Ewert 1988) and self esteem (Kaplan 1977). In a critique of 72 studies of Outward Bound®

and similar wilderness experience programs, Burton (1981) noted that 59 different evaluation instruments were used to measure 41 different outcome variables, and among all the studies, enhanced self-concept was the most frequently reported benefit. However, the differences between the various psychological measures are often poorly defined or unimportant. The DOS category encompasses these measures to reduce unnecessary complexity and to provide a plausible framework for organizing reported benefits into a usable form.

Development of Community

The second of the primal hypotheses asserts that wilderness naturalness and solitude are positively related to development of community (DOC) benefits from wilderness experience. Underlying this statement is the assumption that the development of community (DOC) construct logically synthesizes previous research findings on “community-centered” wilderness experience benefits and provides a plausible framework for organizing them.

While development of self benefits have been firmly established in the literature, somewhat less attention has been paid to interpersonal, group or community-centered effects, despite the knowledge that most wilderness use occurs in small groups of family and close friends (Hendee and others 1990; Lucas 1980)—in what Heywood (1990) describes as a spectrum ranging from primary groups to collectives. Primary groups are members with a past and future social history of interdependent relationships, such as family or friends, while collectives are combinations of individuals unknown to each other before the experience, such as clients in a wilderness experience program. Along the continuum are groups that contain varying degrees of primary and collective qualities. Wilderness experience presents a situation in which formality and role barriers are reduced, and this nurtures various forms of social cohesion such as trust, cooperation, open communication and group problem solving ability (Cheek 1981). Davis-Berman and Berman (1994) remark that even in threatening environments where activities involve risk-taking, a common set of goals fosters compatibility within the group.

The development of community (DOC) construct encompasses wilderness experience benefits accrued while passing through various stages of group development. For example, Ewert and Heywood (1991) tentatively concluded that programs operating in wilderness or comparable settings may be effective in creating well functioning and integrative groups with problem solving abilities. Arnould and Price (1993) found that river-runners developed a sense of “*communitas*,” or feelings of communion, linkage, belonging and devotion to a transcendent group goal. DOC benefits are analogous to social identity benefits (Driver and others 1987b), and a very common DOC benefit is the strengthening or development of bonds among wilderness group members. For many wilderness experience programs aimed at the personal growth of participants, enhanced peer relationships with improved communication and teamwork—the development of community—is both a program goal and personal growth tool (Russell and others 2000).

Spiritual Development

The third of the primal hypotheses asserts that wilderness naturalness and solitude are positively related to spiritual development (SD) benefits from wilderness experience. Underlying this statement is the assumption that the SD construct logically synthesizes previous research findings on spiritual benefits from wilderness experience and provides a plausible framework for organizing them.

This third category of wilderness experience benefits refers to a deep sense of connection to all things, such as the larger universe, a higher power, nature, a feeling of oneness—what is referred to as “connection to Other,” as opposed to “connection to self” (McDonald and others 1985; Riley and Hendee 1999). Spiritual development as a wilderness benefit has received little attention, although there is evidence that researchers and managers increasingly recognize the importance of moving toward an expanded land management ethic that incorporates such hard to define values (Driver and others 1996). Investigation into the spiritual benefits of wilderness experience has been hampered in the past because spiritual experiences are intensely personal and often inexpressible, and because the varied personal meanings of spirituality have made spirituality difficult to operationally define. Also, spirituality is often thought of in a religious notion, and since most wilderness and outdoor recreation research is federally funded, studies of spiritual benefits may be avoided because that might hinder approval of research methods—that is, where it is necessary to obtain Office of Management and Budget approval of proposed questionnaire and interview studies for federal funding.

While research of SD benefits is limited, some studies do report a relationship between the wilderness environment and spiritual development. McDonald and colleagues (McDonald 1989; McDonald and others 1985; McDonald and Schreyer 1991) have explored the process and content of spiritual experience in wilderness settings, and identified factors that influence the experience. Stringer and McAvoy (1992) used naturalistic inquiry to investigate the spiritual dimension of wilderness experience, suggesting several characteristics, emotions and feelings, and other factors that contributed to or detracted from spiritual experiences in wilderness. Recently, Frederickson and Anderson (1999) used a qualitative inquiry to explore spiritual inspiration as a benefit of wilderness experience and discovered, among other findings, that participants felt being in bona fide wilderness was important to spiritual inspiration. In a study of participants in a commercial wilderness vision quest program over a 10-year period, Riley and Hendee (1999) found that to “go on a spiritual journey” was a leading motive for participating, and “spirituality-connectedness” and “connection to nature” (benefits in the SD construct) accounted for 26 percent of the reported benefit comments. These vision questers also said that being in wilderness with naturalness and solitude—as opposed to a developed recreation area with roads and campgrounds—was essential to gaining the benefits they reported.

Testing the DOS, DOC, and SD Constructs and Relationships

We believe the credibility and practical utility of the DOS, DOC, and SD constructs is demonstrated by research

reported in the literature on wilderness experience benefits. That is, research findings on wilderness experience benefits all seem to fit in one of the three categories. However, after developing the constructs, we tested their credibility and practical utility in a study (White 1998) that employed qualitative analysis (Miles and Huberman 1994) of post-experience interview and focus group data collected from participants in three wilderness experience programs in Montana, Idaho and Oregon in the summer and fall of 1997 (N = 44). The three wilderness experience programs included: 1) two “Wilderness Discovery” six-day backpacking trips with students from the Trapper Creek Federal Job Corps Center, operated by the U.S. Forest Service in Darby, Montana (Russell and Hendee 1997); 2) “IN IDAHO,” a University of Idaho new student orientation program with a six-day wilderness backpacking experience (Farmer 1999); and 3) a “Wilderness Vision Quest Experience” class at the University of Idaho, featuring three weeks preparation and a six-day wilderness experience with a four-day and four-night solo fast (Riley 1997).

We found that the DOS, DOC, and SD constructs captured and discriminated between all the self-reported benefits generated by participants’ responses to the open-ended question, “In your own words, what were the most important benefits you gained from this experience?” Similar responses were coded into specific subcategories for each wilderness experience program. This data reduction process served to sharpen, sort, focus and organize (Miles and Huberman 1994) the interview data. Next, three separate focus groups were conducted with the participants from each program that provided the opportunity for the members to check the researcher’s interpretations, and to synthesize and clarify meaning.

After the in depth within-case analysis, benefit subcategories were compared across the three programs. Through a cross-case analysis the DOS, DOC, and SD categories emerged. The purpose of this analysis was to use empirical data to test the initial assumption that benefits from wilderness experience can be logically grouped into the DOS, DOC, and SD categories. The credibility of the constructs was further demonstrated when multiple coders from the research team reviewed the analysis and established a high inter-coder reliability index.

As an initial test of the hypothesized relationships between the benefit categories and wilderness naturalness and solitude, the participants were asked to rate the importance of both naturalness and solitude to gaining the specific benefits they reported, as well as their perception of what effect a less natural environment or less opportunities for solitude would have on their ability to gain their specific benefits. Descriptive statistical analysis of Likert-type scales demonstrated that these participants from three different wilderness experience programs believed naturalness and solitude were important to gaining their DOS, DOC and SD benefits (table 1). Participants also said that a less natural setting—such as a more developed recreation area with roads, structures and facilities—or fewer opportunities for solitude—such as more frequent contacts with other persons and less alone time—would have negatively affected their ability to gain the specific benefits they reported (table 2). Therefore, initial evidence from a limited convenient sample supports our assertion

Table 1—Mean scores from participants in three wilderness experience programs reflecting their perceived importance of naturalness and solitude to gaining the specific benefits they reported (coded as DOS, DOC, and SD benefits)^a.

	Wilderness Discovery (n = 19)		In Idaho (n = 11)		Vision Quest class (n = 14)	
	Naturalness	Solitude	Naturalness	Solitude	Naturalness	Solitude
DOS	1.67	1.08	2.00	1.67	2.08	2.46
DOC	2.00	-0.56	0.50	2.17	0.87	2.00
SD	3.00	3.00	-	-	1.50	3.00

^aSeven point Likert-type scale ranging from -3 "extremely unimportant" to +3 "extremely important." Means are from focus group consensus rankings of the importance of naturalness and solitude to specific benefits reported that were coded as DOS, DOC, and SD.

Table 2—Mean scores from participants in three wilderness experience programs reflecting their perceived effect of reduced naturalness and reduced solitude on their ability to gain the specific benefits they reported (coded as DOS, DOC, and SD benefits)^a.

	Wilderness Discovery (n = 19)		In Idaho (n = 11)		Vision Quest class (n = 14)	
	Naturalness	Solitude	Naturalness	Solitude	Naturalness	Solitude
DOS	-2.35	-2.20	-2.67	-2.11	-2.00	-2.32
DOC	-1.82	-1.76	-1.64	-1.82	-1.45	-1.91
SD	-3.00	-3.00	-	-	-2.67	-3.00

^aSeven point Likert-type scale, ranging from -3 "extremely reduced" to +3 "extremely enhanced." Means scores are from interview participants from each program who reported specific benefits later coded as DOS, DOC, or SD.

that naturalness and solitude are positively related to benefits classified as DOS, DOC, and SD.

Conclusions

We found that the DOS, DOC, and SD constructs are consistent with wilderness experience benefits reported in the literature, and they provided a useful framework for our study in which we tested the primal hypotheses with data from participants in three wilderness experience programs. We found support for the hypotheses, that is positive relationships were affirmed between naturalness and solitude and development of self (DOS), development of community (DOC) and spiritual development (SD) benefits—although our test was limited to 44 participants in three programs.

We think the DOS, DOC, and SD constructs provide a useful wilderness benefits classification scheme. But further validation is surely needed, as well as other studies investigating the relationships between the three benefit categories and the wilderness attributes of naturalness and solitude. Further, although there are abundant studies documenting development of self benefits from wilderness experience, more research is needed to clarify development of community benefits, and much more inquiry is needed into spiritual development benefits.

Management Implications

The primal hypotheses and our limited study support the notion that a biocentric wilderness management focused on maintaining the naturalness and solitude of the wilderness environment will produce benefits for people experiencing

those attributes. Wilderness stewards working within ecosystem management and utilizing limits of acceptable change (LAC) and associated planning frameworks (such as ROS/WROS; VERP; VIM), may find the DOS, DOC, and SD constructs to be a useful tool for classifying wilderness experience benefits into generic categories. This could facilitate a benefits-based management approach (Driver 1996), under which managers would catalog the types of benefits to be gained experiencing attributes on lands under their stewardship, and then focus management to provide them. Under the primal hypotheses, wilderness lands that are managed to retain high levels of naturalness and solitude, just as we believe the Wilderness Act of 1964 requires, and expressed in a biocentric management philosophy should produce development of self (DOS), development of community (DOC), and spiritual development (SD) benefits from wilderness experience.

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