

PSYCHOLOGICAL BENEFITS OF NATURE EXPERIENCES:
AN OUTLINE OF RESEARCH AND THEORY
With Special Reference to Transpersonal Psychology

John Davis, Ph.D.

Naropa University and School of Lost Borders
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A strong body of psychological research, supported by widespread anecdotal evidence, confirms the hypothesis that direct contact with nature leads to increased mental health and psychological development. This research helps explain the attraction of nature for city-dwellers and supports the value of increasing contact with nature for children and adults.

Research settings include a full range of encounters with nature -- extended wilderness excursions, hiking in open space, strolling through a city park, gardening, tending a small plot of urban grass or a vacant city lot with its attendant ecosystem, and even watching nature scenes on TV. While different psychological approaches (evolutionary, behavioral, cognitive, psychodynamic, systems, humanistic, and transpersonal) focus on different aspects of the psychological benefits of nature experiences, all have shown that nature experiences are desirable and healthy. This is phenomenal agreement! There is also limited, but suggestive, research that these findings are cross-cultural and universal.

The degree of empirical support cited here varies. In addition to the research which has been conducted and confirmed directly on nature experiences, some findings from related literature, both empirical and theoretical, bears directly on this question. Those research findings which have not been conducted on nature experiences are based on strong research which can be easily generalized and tested. This literature review is not exhaustive, but I feel it covers a broad, and representative, sample of the research.

I. Relaxation, Stress Reduction, and Mindfulness

These benefits affect individuals directly and focus on prepersonal and personal levels of development, rather than transpersonal levels, which are discussed below. Most have strong documentation; some are strong hypotheses.

- A. Relaxation, restoration, peace, tranquility. Reduction of role load, conflict, and ambiguity. Reduction of burnout and tedium. Faster recovery from stress in response to nature stimuli than built settings. Over one hundred research studies show that stress reduction is a key perceived benefit of wilderness recreation. Comprehensive reviews have been done by Hartig, Mang, & Evans; Kaplan & Kaplan; and Ulrich, et al).

These findings include a range of settings from nearby nature to wilderness. This focus is on physical, cognitive, and affective relaxation. An example is this research presents a stressful video (such as industrial accidents) to research participants and shows that a subsequent nature video leads to faster recovery than a video with other content.

- B. Environmental Preference. Nature provides the characteristics preferred in an environment: Coherence, Complexity, Legibility, and Mystery. “Naturalness” is a characteristic of environmental preference which extends through all psychological approaches to scenic values (Bell, et al). Natural settings provide more “naturalness.” Psychological health arises from being in a more-preferred environment. Therefore, psychological health can be expected to increase with contact with more preferred, i.e., more natural, environments.
- C. Recovery from surgery, physical health and healing, improved performance. Research by Ulrich and others shows that a window view of nature (rather than a built environment) increases recovery from surgery, leads to less use of health care services among prison inmates, improves work performance in job settings, and increases job satisfaction. One can easily generalize from these benefits to mental health benefits. (This may also help explain the predominance of posters and picture calendars with nature scenes on walls of windowless office cubicles.) This research is helpful in pointing out that contact with “wilder” nature is beneficial anywhere along the spectrum from built environments to wilderness. For someone recovering from surgery in a hospital room, even a more natural view from a window promotes health.
- D. Increased sensory awareness and felt-sense. Gendlin showed this is closely related to mental health and developed a set of therapeutic methods around this Focusing. Schroeder showed the benefits of focusing in a natural environment. In a nature contact, Kaplan & Kaplan argued that nature experiences increase fascination, intrinsic interest, and enjoyment. The perceptual dishabituation of a new environment (e.g., a wilderness setting) leads to renewed attention and positive affect. This increased awareness in natural environments ties nature experiences to the strong body of research on sensory awareness and mindfulness (Langer; Sewall).

II. Hardiness, Locus of Control, Challenge, Flow, and Compatibility

- A. Hardiness (Kobasa and Maddi) is a combination of an internal locus of control, appreciation of challenge as opportunity, and commitment to self. Research by Kobasa and others shows that hardiness moderates the negative effects of stress and strengthens the existential dimensions of psychological health. Internal locus of control (Rotter), self-efficacy (Bandura), and perceived control (Stern) refer to attributions of controlling factors in one’s life (internally through one’s own actions or externally through powerful others, external events, chance, or

fate). An internal locus of control is both a mark of mental health and an antecedent to mental health. These concepts also tie in well to concepts of learned helplessness and learned optimism (i.e., the extent to which one's own actions determine outcomes; Seligman).

I would hypothesize that a wide range of nature experiences (from gardening to wilderness) will increase a sense of hardiness, healthy and realistic internal locus of control, and self-efficacy. These may be central intervening variables in the success of wilderness therapy and wilderness rites of passage programs. This may also explain some of the benefits of bringing plants and animals into hospitals and nursing homes. Plants and animals provide more contact with nature, and they may offer opportunities to demonstrate an internal locus of control.

Expanding on the locus of control concept, Shapiro distinguishes between healthy and unhealthy types of internal and external locus of control. I would hypothesize that nature experiences are particularly effective in increasing the healthiest combination of optimistic confidence (healthy internal locus of control) and trusting surrender (healthy external locus of control) and decrease the unhealthiest combination compulsive, i.e., anxiety-ridden attempts to overcontrol and frustrated helplessness of giving up control. There is evidence to support this hypothesis. For example, wilderness experiences lead to more trust and less need for control (Kaplan & Talbot). This balances grandiose tendencies in an internal locus of control. At its deepest, such trust is related to an existential kind of relaxation, a taoist-like harmony with the events of one's life. Indeed, content analysis of accounts of a wilderness experience agrees (Kaplan & Kaplan).

In my mind, the exact role of nature in these benefits is still an open question. In the benefits of nature experiences for hardiness and locus of control is a nature setting a critical variable, a synergistic variable, or simply a nice background?

- B. Challenge of wilderness experiences leads to self-confidence and improved self-esteem. This is true for a wide range of programs, including wilderness therapy, outdoor challenge (such as Outward Bound), and wilderness rite of passage programs (e.g., Keith Russell; Kellert & Derr). These effects are also found in environmental education programs which use direct contact with nature and wilderness. While most programs include therapeutic, as well as nature-based, interventions, there is reason to believe that exposure to wild nature itself is an important benefit of such programs (Kaplan & Kaplan). Based on the findings of health psychology and psychoimmunology, we would expect these benefits to increase physical health and health maintenance behaviors along with mental health.
- C. Coherence (defined as perceptions of connectedness, wholeness, and meaningfulness) is related to better mental health and reduced negative stress (Antonovsky). I expect direct encounters with intact, healthy ecosystems (i.e.,

ecosystems exhibiting a high degree of coherence) leads to a greater sense of psychological coherence.

- D. “Flow” (Csikszentmihalyi) involves high-stakes outcomes, high intensity, intrinsic motivation, balance of demands and abilities, merging of awareness and action, absorption into the activity, present-centeredness, healthy loss of ego (or ego-boundaries), and self-transcendence. It is a primary characteristic of optimal mental health, and Flow is characteristic of many nature encounters, both nearby and wilderness-based. Mitchell shows its connection to mountaineering and, presumably, many kinds of wilderness experiences: “The mountains offer the antithesis of alienation; they offer the potential for flow.” Goleman argues that meditation fosters Flow and uses this concept to explain a variety of effects and experiences of meditation. (Note: Flow is as transpersonal as it is personal and could be placed below.)
- E. “Compatibility” (Kaplan & Kaplan, 1989), a fit between one’s needs, one’s capacities, and what the environment offers. It seems related to Flow, but it is less intense or more a sense of “coming home.” (According to this definition, Compatibility would be closer to meditative experiences. At the extreme, Compatibility also becomes transpersonal, when the person feels the world as one beyond duality.)

III. Benefits of nature for child development

- A. Kellert (2002) reviewed the literature on nature and child development and concluded that cognitive, affective, and moral development is impacted significantly and positively by direct contact with nature. By “direct” contact, he means contact with wild nature unmediated by significant human manipulation, in contrast to “indirect” contact (e.g., parks, zoos) or “vicarious contact” which is mediated by technology (e.g., television nature shows or books). See Kahn & Kellert (2002), Chowla, Sobel, Nabhan & Trimble, and others.
- B. Kellert & Derr (1998) reviewed programs by Outward Bound, National Outdoor Leadership School, and Student Conservation Assn (N=700+ adolescents), both retrospectively and longitudinally, with surveys, in-depth interviews, observations, and qualitative analysis. There were some differences related to program orientations, but major positive impacts were observed in all three programs. Furthermore, these impacts increased over time following participation. “A large majority” of participants reported the experience as one of the most important in their lives with positive benefits for personality and character development. Specific benefits included self-confidence, self-concept, self-esteem, autonomy, and capacity to cope. There was a clear carry-over of effects from wilderness to urban settings. Results also indicate a strong increase in respect and appreciation for nature. Other, more qualitative, impacts included reports of increases in compassion, wisdom, guidance, and inner

peace. See also reviews from Wilderness Research Center at University of Idaho (Hendee, Russell).

- C. Edith Cobb conducted a large-scale retrospective study of the role of nature experiences in childhood. She reports positive developmental influences of nature that endure and grow into adulthood.
 - D. Pets help children develop self-esteem, positive relationships, intimacy, and higher levels of moral reasoning. Pets not only foster responsibility, healthy relationships, and a healthy internal locus of control; they also bring an added element of the natural world into children's lives.
 - E. The positive effects of nature are strongest in middle childhood (ages 6-12; in modern western cultures at least). While some research indicates that adolescents take a "time out" from nature, Kaplan & Kaplan (2002) argue that nature experiences for adolescents are significant and desirable as long as they also include the particular needs of adolescence, i.e., peer support, autonomy, and the opportunity to develop and demonstrate skill and strength. I would add that wilderness experiences offer opportunities to leave one's family, familiar community, and the roles that go with them, to try on new social roles, and to return with new self-images, behavior potential, and ways of relating. This is especially important during adolescence.
 - F. Adults report that childhood nature experiences are important and positive. When asked to identify the most significant environment from their childhoods, 96.5 % of a broad sample of adults identified an outdoors environment (Sebba, 1991). It stands to reason that adults who have more direct contact with such an environment would experience better mental health.
 - G. If nature experiences have positive benefits on child development, do they have benefits for adult development? Given that most conventional theories of psychological development have little to say about development beyond a healthy ego, this question is irrelevant. However, from an expanded view of adult development which extends beyond conventional models of mental health (e.g., transpersonal psychology), this is a legitimate research question. Available research suggests the answer is yes.
- IV. Miscellaneous benefits (I wasn't sure how to categorize these, but they are no less important.)
- A. Social aspects of nature experiences. While many nature experiences have a solitary component, many involve a social component, as well. Natural environments provide opportunities for affiliation, social support, intimacy, and group bonding in a new, "exotic" environment. A degree of shared challenge also increases social support and altruism. Social support has demonstrable health benefits (Cobb; Berkman & Syme).

- B. Exercise and increased physical fitness associated with most kinds of nature-based activities also leads to better mental health. Research shows that exercise is a factor in reducing depression and improving some other kinds of psychopathology. Research also shows that outdoor exercise has a more beneficial effect than indoor exercise (e.g., running on an outdoor track compared to an indoor track).

V. Transpersonal benefits of nature experiences – Research

Note: Refer to my article in *The Humanistic Psychologist* (1998) for a more extensive discussion of the transpersonal dimensions of nature experiences,, including benefits.

Transpersonal psychology focuses on the interface of psychology and spirituality with interests in optimal mental health and psychological development, mystical and spiritual experiences, inner peace, compassion, trust, fully-realized aliveness, and selfless service, as well as the barriers to transpersonal development. While there are subtle psychopathologies associated with transpersonal levels of development, transpersonal experiences are extremely healthy (e.g., Walsh & Vaughan; Scotton, et al). Furthermore, nature is an important element in many transpersonal experiences.

- A. Nature is a trigger for peak experiences
 - 1. Peak experiences (Maslow) are defined as experiences of optimal mental health, comparable to intense spiritual experiences or mystical experiences. Maslow also talked about plateau experiences characterized more by a sense of tranquility and serenity, lower intensity, and often, longer duration.
 - 2. Anecdotal evidence suggests that many spiritual leaders had key mystical experiences in wilderness settings, e.g., Moses, Jesus, Buddha, Mohammed, Black Elk, et al. Of course, many people have used nature experiences as paradigmatic examples of spiritual or transpersonal experiences. In a psychological context, the integral theorist, Ken Wilber, is notable for referring to “nature mysticism” in describing transpersonal experience.
 - 3. Survey results on frequency and triggers for peak experiences (Davis, Lockwood, & Wright) shows that nature is the most common trigger for peak experiences
 - a. Wuthnow (1978): 82% of the general population have "experienced the beauty of nature in a deeply moving way," 49% felt this had a lasting influence.
 - b. Greeley (1974): 45% of general population said "beauties of nature" led to an "intense spiritual experience."
 - c. Keutzer (1978): 50% of a large sample of students said "beauties of nature" and other nature-related experiences had led to "an intense spiritual experience." This was the most frequent trigger for peak experiences in her survey.
 - d. Davis (unpub): When asked to describe where their peak experiences had occurred, 78% of a sample of city college students (N = 100) said

outdoors or made reference to natural settings. Again, this was the most common setting for a peak experience.

- B. Kaplan & Talbot (1983) took students (from both rural and city schools), teachers, and others on week-long wilderness trips. These trips did not have an explicit psychological orientation, but they did include natural history and solo time. Qualitative content analysis of journal entries showed frequent positive psychological experiences, many with qualities of peak or mystical experiences. These peak experiences were more common among adults, but adolescents still had positive reports.

[During the backpacking trips] for many participants there is eventually a surprising sense of revelation, as both the environment and the self are newly perceived and seem newly wondrous. The wilderness inspires feelings of awe and wonder, and one's intimate contact with this environment leads to thoughts about spiritual meanings and eternal processes. Individuals feel better acquainted with their own thoughts and feelings, and they feel 'different' in some way — calmer, at peace with themselves, 'more beautiful on the inside and unstifled.' (p. 178)

[Immediately after the trip] the strongest connection between the wilderness experience and individuals' feelings about themselves [is that] they feel comfortable in their natural surroundings and are surprised at how easily this sense of belonging has developed. There is a growing sense of wonder and a complex awareness of spiritual meanings as individuals feel at one with nature, yet they are aware of the transience of individual concerns when seen against the background of enduring natural rhythms. (p. 179-180)

[After a follow-up] the wilderness is remembered as awesome, and is felt to have offered a compelling glimpse of a real world, and of a way of relating to one's surroundings and responding to one's daily opportunities and challenges, that was immensely satisfying. (p. 182)

VI. Theoretical foundations

- A. Biophilia (see Wilson, 1984; Kellert & Wilson, 1993), i.e., the need for positive contact with nature and the tendency to seek out nature experience. Wilson sees this as evolutionary. Kahn expands biophilia to include developmental psychological and cultural perspectives.. See Kahn (1999) for a good discussion of biophilia and biophobia. To the extent that biophilia is a real need, meeting this need will lead to positive mental health and unmet needs for contact with nature will lead to stress, pathology, and inhibited development.
- B. Ego psychology.
1. Ego psychology and transpersonal psychology provide a useful model based on disidentification and ego-transcendence. The more intense peak experiences are experiences of ego-transcendence and broader, deeper identification beyond the personal. The radically new input of the wilderness experience into the self-perceptual system causes a deep shift,

often to the point of disidentification leading to ego-transcendence (Tart, *J Transpersonal Psychol*). Ego is a more-or-less integrated set of structures including self-images, object representations, and reactive patterns. Essentially, ego is defensive. Among those with a healthy ego structure, disidentification from the ego and ego-transcendence lead to greater openness, authenticity, pleasure, intimacy, fulfillment, trust, support, and integration with the larger world.

2. Ego-transcendence can also be seen in terms of Object Relations Theory. If the self is a structure integrating the various object relations, going to a radically different environment would tend to destructure or disintegrate this self-structure. The disintegration of the self-structure and its reactivity, fixation, defensiveness, etc, expands one's identity. This expansion is experienced as a peak experience or spiritual experience. With ego-transcendence, an important issue is the difference between disintegration which is not integrated at a higher level, leading to difficult and pathological states, and disintegration which is integrated, leading to psychological development into higher personal and transpersonal dimensions. To the extent that the person has the support of a healthy ego and functioning ego capacities, ego-transcendence will lead to positive, transpersonal experiences.
3. According to psychodynamic theory, there are two aspects of the ego: Functional Ego (such as the ability to perceive, choose, delay gratification, witness, and relate) & Representational Ego (such as self-images and ego-identifications). Ego-transcendence is the result of the disintegration of the representational ego in the presence of an integrated functional ego. Meditation, for instance, tends to dissolve the representational ego and strengthen the functional ego (Epstein, 1990, *JTP*). (Others such as Winnicott, Guntrip, Horney, Almaas use the notion of Being rather than Functional Ego.) Wilderness and other nature experiences would seem to support the growth and integration of the functional ego and support disintegration of the self-images and object relations that make up the representational ego.

- C. Archetypal psychology. Nature promotes closer contact with some archetypes (Jung). While some archetypes are encountered more profoundly in built environments, nature serves as a canvas on which the Collective Unconscious can project many of the archetypes. The more natural the canvas, the more clear the experience of the archetype. At the same time, the natural environment can remove the veils, disclosing the archetypal underpinning of the soul. In wild nature, we stand a better chance of encountering the archetypes directly. Jung wrote, "Mystics are people who have a particularly vivid experience of the processes of the collective unconscious. Mystical experience is experience of archetypes" (1968, *Analytic Psychology*, p. 110).

I have also wondered whether we might find that different environments evoke different archetypes. Deserts evoke a different constellation of experiences that

mountains or deep woods or the ocean. Do these lead to different kinds of mystical experiences?

- D. **Spiritual emergency.** A number of psychologists have pointed out that spiritual awakenings are sometimes accompanied by psychological distress when the radically new experiences are too difficult to integrate; a spiritual emergence can become a spiritual emergency. There is often a remarkable similarity between wilderness experiences and spiritual crises (Assagioli), positive disintegration (Dembrowski), spiritual emergency (Grof & Grof), and related initiatory crises. This is especially true of wilderness-based rites of passage, vision fasts, initiations, and other forms involving solitude and fasting in a ceremonial structure.

In such a spiritual emergency, one needs a solid cognitive framework for understanding the experience, social support, and self-care (see Watson, *J Humanistic Psychol*). However, on the surface many wilderness experiences do what seems like the opposite: one is in an unusual environment with different perspectives so one's usual cognitive framework doesn't work (cognitive disintegration), one goes alone for a period of time, and one accepts the strain of fasting and sleeplessness. In a deeper way, of course, there is a very deep, profound, and meaningful cognitive framework and structure, one opens to a supportive group or community, the earth, and its creatures, and foregoing food and sleep in the service of self-liberation is a deeper way of caring for oneself.

Nevertheless, wilderness experiences such as these offer something like a controlled spiritual emergency with some of the risks and many of the potential benefits of a radical spiritual opening. This also suggests the importance of the post-trip reintegration phase.

- E. **Wilderness experiences promote a shift from built structures (the shell of the ego-self) to fundamental structures (essence) through the process of mirroring.** (I am now a little suspicious of the concept of mirroring because it assumes a duality between person and environment. There is a more basic unity, Being, out of which both arise or co-emerge. Maybe co-emergence is a better notion than mirroring.)
1. **Built structures** are those arising from human efforts or influences. In the environment they might include fences, roads, air conditioning, political boundaries, and clock time. In the internal world, built structures might include social roles, cognitive-perceptual patterns, identifications, self-images; in short, ego, personality, or "the small self." Both external and internal built structures must be developed, built, and maintained.
 2. **Fundamental structures** are those that exist prior to or beyond human actions. In the environment these include landforms and ecosystem patterns, weather, and the rhythms of day and night. Internal fundamental structures include archetypes, aspects and dimensions of essence or true nature, qualities related to the Buddha families, and other intrinsic,

unconditional qualities; in short, the human spirit or “the greater Self.” Direct experiences of these structures are the peak or mystical experiences (CF, Jung). (Note that the distinction between internal and external in regard to fundamental structures is a soft distinction and even the concept of structure begins to lose its meaning.)

3. Wilderness experiences put us in intimate contact with fundamental structures in the external environment and mirror, evoke, support, and are co-emergent with the fundamental structures within us. They do not mirror our artificial structures. Being in close contact with external fundamental structures brings us in closer contact with internal fundamental structures. Exposure to external fundamental structures leads to greater contact with internal fundamental structures. CF, Kaplan & Talbot’s concepts of “eternal processes,” “a real world,” and “enduring natural rhythms.” Also, Snyder’s “perennial images.” Charles Tart has described a systems approach with multiple levels of feedback which supports this idea of mirroring or co-emergence.
 4. This also helps show how one who is in touch with her/his fundamental internal structures (Essence, Being, etc.), sees the beauty and richness of nature everywhere. Access to internal fundamental structures leads to greater access to external fundamental structures. This room, this city is natural in this sense and it is really just as wild. This is the deeper mystical insight about the true nature of nature, and it eventually leads to deconstructing the distinctions between built and fundamental and between internal and external. (Snyder: “Bear is walking down the city streets.”)
- F. Nature, enchantment, and the antidote to a overly-rationalized world (in the sense used by Max Weber). Mitchell draws on Weber for a sociological analysis of “the mountain experience.” He argues that mountaineering gives “a sense of belonging to a unified, animated, spiritually encompassing world” (p. 212). “Mountaineering, for a time, enchants the world and gives meaning to the climber’s place within it” (p. 215). I would expand much of his analysis to other kinds of intensive nature experiences, although the element of risk is more salient in mountaineering. Wilderness experiences trigger the sense that the world is enchanted, alive, whole, and meaningful. By realizing our part in nature, we also come to feel more enchanted, alive, whole, and meaningful. Wilderness fosters the sense that we are each unique and individual and, at the same time, part of the larger whole.
- G. Need to reconsider the duality of Person and Place. The psychological benefits of nature are usually framed in dualistic terms: nature affects human experience. A transpersonal view questions the assumption of nature (as one thing) affecting human experience (as another thing)? Or could we speak of a more primary category, Being, of which Person and Place are two aspects. Similarly, are people drawn to Sacred Places because of something about the place or something about the people (expectations, associations, social practices)? A

deconstruction of the question reveals the same assumption of duality. Perhaps “sacred” is in the transaction. We start in relation, in non-duality, and out of this non-duality arise person and place. And the closer one’s experience is to this fundamental non-duality, the greater the sense of the Sacred. This is one of the fundamental insights of Ecopsychology (Roszak), Deep Ecology (Devall & Sessions), and Transpersonal Ecology (Fox).

In a transpersonal analysis, it is also important that we not confuse nature (as the natural world relatively unaffected by human intervention) and Nature (as spirit or the ultimate ground of being). Wilber (in *Sex, Ecology, and Spirituality*) has addressed this problem, as have I in my article in *The Humanistic Psychologist*. The point is that both human and nature are expressions of the same source, Nature. In terms of mental health, realizing this, whether through nature experiences or other means, realizing this promotes psychological benefits. Jung: “The fact is that the approach to the numinous [i.e., the ground of being, essence, or True Nature] is the real therapy and inasmuch as you attain to the numinous experiences you are released from the curse of pathology” (1973, *Letters*, p. 377).

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