

John Shultis

Consuming Nature: The Uneasy Relationship Between Technology, Outdoor Recreation and Protected Areas

Our culture has seldom been inclined to confront the profound changes that accompany technological innovation. Like a carrot prompting a cart horse, technology entices us forward in a way that keeps us from noticing much about the road ahead, each offering results in such a slight movement that by the time we realize we are far from home, no serious re-examination of our fate seems possible.

— Attributed to J. Robert Oppenheimer, *Ethics for New Life Forms*

Introduction

Humans have always displayed contradictory attitudes towards technology. For over a century, our literature and films have contained dire warnings about the power of our technological creations. From Shelley's *Frankenstein* to Orwell's *Big Brother* and Kubrick's HAL in "2001: A Space Odyssey," artists of all persuasions have used the potentially macabre consequences of technology to titillate and terrify their audiences.

Similar conflicting attitudes between humans and technology can be found in the parks, outdoor recreation and tourism field. Indeed, it could not be otherwise: these recreational experiences, activities and institutions cannot escape the cultural milieu from which they emanate (Foresta 1984). This is a critical point: the uneasy alliance between technology, outdoor recreation, and protected areas outlined in this paper is a reflection of a far deeper and complex relationship between humans and their technology. As such, there are no easy answers, and it appears that the issue of technology will

act as a magnet of contention for recreation managers. That is, recreationists and recreation managers will be both attracted and repelled by the recreation technology that affects the outdoor recreation experience and recreation management in both a positive and negative manner.

The purpose of this paper is to outline past and present relationships between technology, outdoor recreation, and protected areas, highlight the potential impacts of technology on the outdoor recreation experience and park management, and suggest future trends in this Byzantine relationship. The link be-

tween technology and consumerism in outdoor recreation and parks is outlined.

Historical Relationships between Technology, Outdoor Recreation and Protected Areas

Despite the continued (and flawed) conception of parks as primordial landscapes relatively untouched by human activity, there is a strong, often-forgotten relationship between protected areas and human technology. The rise of Romanticism and Transcendentalism—generated in large part from the widespread social and environmental impacts of the technology which created the Industrial Revolution—laid the foundations for the creation of first urban, then national parks. More specifically, without the technological innovation of the railroad, and the critical support of railroad barons, it is unlikely that early North American national parks such as Yellowstone and Yosemite in the USA and Banff and Glacier in Canada would have been legislated (Nash 1982; Shultis 1995; Runte 1997).

The ability of Henry Ford's assembly line to create affordable automobiles had even greater implications for parks (Quin 1997). Even John Muir, the most strident supporter of wilderness and national parks, grudgingly agreed that keeping the newfangled automobile out of the parks would be counterproductive. In retrospect, Muir and other supporters of the automobile were correct: allowing automobiles into

parks directly led to increased public support for parks, a boom in outdoor recreation, and the creation of additional parks and park systems (e.g., state and provincial parks). The downside—and there are almost always unintended, negative consequences of new technology (Tenner 1996)—was increased congestion, conflicts, environmental impacts, and commercialization in the parks.

The degree to which outdoor recreation and protected areas have become commercialized is demonstrated by the now ubiquitous use of natural images and outdoor recreation activities to sell everything from cars to calendars and the related "corporatization" of municipal and public recreation agencies (Crompton 1998; Helmuth 1999; Juniu 2000; Schwartz 1998; Searle 2000; Stormann 2000). The use of outdoor recreation and wilderness images in marketing has proven to be problematic, in that the messages contained within advertisements, both explicit and subliminal, are often antithetical to the low-impact practices espoused by park managers (Huffman 2000). Even more disturbing, there is empirical evidence that the commercial media's representation of nature leads to a devalued emotional attachment to the land, particularly in local settings (Levi and Kocher 1999). This finding supports McKibben's warning that, through the hubris of advanced technology,

we have killed off nature—that world entirely independent of us which was

here before we arrived and which encircled and supported our human society.... Instead of being a category like God—something beyond our control—it is now a category like the defense budget or the minimum wage, a problem we must work out. This in itself changes its meaning completely, and changes our reaction to it (McKibben 1989, 96, 210; see also Sack 1992).

A closely related economic and social force of the twentieth century, consumerism, has also had indelible impacts on the outdoor recreation experience, and thus park management. Falk (1994, 94) identifies three related characteristics of the consumer society: “(a) the *constitution of desire* exceeding the “necessary,” (b) the *limitlessness* of the desire and (c) the endless longing for the *new*” (italics in original). Our consumption patterns now directly relate to the way in which we measure our happiness and quality of life. In addition, our economy has become largely dependent upon this upwardly spiraling consumption of material goods. Perhaps most importantly for park managers, consumerism has led to the creation of politically active consumer groups, many of which now wield considerable economic and political power. For example, in the field of outdoor recreation, groups supporting the increased presence of ATVs (all-terrain vehicles) and other motorized vehicles in wilderness and parklands have become an increasingly powerful force in legislation and policy development. In response, The Wilderness Society

(2000) recently listed unregulated ATV use as the most important issues facing parks and wilderness in the year 2000.

Consumerism has become rampant among many recreationists. A recent newspaper article suggests that “money, leisure time, and an appreciation for the finer things in life have turned the Great Outdoors into just one more place to enjoy a latte” (Florio 2000, 1): rather than “communing” with nature, people are now “consuming” with nature (see also Hasselstrom 1994). Ewert and Shultis (1999) essentially make the same point, suggesting that while most recreationists use technology to visit the backcountry, an increasing number visit the backcountry to use their technology (cf. Hill and McLean 1999). Again, the key point here is that outdoor recreation and parks are culturally defined, and thus cannot escape the so-called tyranny of consumerism that either curses or blesses contemporary society, depending on one’s perspective.

Contemporary Issues and Attitudes

While park and outdoor recreation managers have been reacting to an influx of technology since the birth of the national park systems in the mid-to-late nineteenth century, the battle lines seem to be drawing ever closer at the dawn of the twenty-first century (Petersen and Harmon 1993; Shultis 2000). This increasing concern over technology among outdoor recreationists seems related to:

(a) the accelerating rate of technological innovations affecting outdoor recreation and the speed at which they enter the mass market; (b) the increasing amount and level of social (e.g., conflict, crowding, and displacement) and environmental (e.g., increased erosion and disturbance of wildlife) impacts created by these accumulating technologies; and (c) the impact that this synergy of new technologies may be having on the outdoor recreation experience and thus (d) the very structure and cultural roles of parks and nature itself. Some of the major impacts of technology and the implications of these impacts are reviewed in Table 1.

For example, new forms of transportation—e.g., personal watercraft (jet skis), snowmobiles, and mountain bikes—have greatly increased the number of distinct types of recreationists who must share outdoor recreation areas with growing numbers of visitors. Recreation managers are forced to deal with the disparate requirements and demands of specialized user groups, as each new technology-based activity creates a clientele with distinct motivations, attitudes, values, and desired setting and management attributes (Bryan 1977; Bryan 2000). As a result:

The number and diversity of visitors to natural areas are increasing. Conflict is an inevitable result of these pressures: not all desired experiences are possible, not every stakeholder [i.e., consumer] will be satisfied, and some will certainly lose out. Issues of social equity, power,

and politics will increasingly dominate recreation (Hull 2000, 58).

Hull's warning about the social and political ramifications of technology is echoed by Volti (1995, 22), who notes that "technologies do not stand or fall on their intrinsic merits. The decision to develop and deploy a new technology is often shaped by the distribution of power in society." The proliferation of user groups, often enabled and defined by technology, has helped propel recreation managers into the age of the special-interest group, a pluralistic and post-modern world in which a multitude of consumer-based groups actively lobby governments to enact legislation and policy that reflect their collective point of view. Managers are thus forced to adjudicate between competing special-interest groups wielding considerable, though differing levels of economic and political power. This is an excellent example of what Weil and Rosen (1997) term "technoStress": the individual and societal costs of dealing with the consequences of technology.

The impact of "technoStress" on park management and the outdoor recreationist is hard to underestimate. The (good?) old days, where canvas tents and tinned goods were considered lightweight, where wool and cotton were the only available fabrics, now seem like ancient history. Innovations only a few decades old, such as nylon, fiberglass, freeze-dried foods, and plastic are now considered "traditional" camping

equipment (see Anonymous 2000b). The impact of these synthetic fabrics and materials was particularly revolutionary, and, like the automobile before it, propelled outdoor recreation and implications for park managers.

Table 1. Categories of technological impacts: Impacts and implications for park managers. Source: Adapted from Ewert and Shultis (1999).

Category	Examples	Impacts	Major Implications / Issues
Access / Transportation	Automobiles, airplanes, ATVs, snowmobiles, jet skis, mountain bikes, helicopters, BASE jumping	Increased use and type of users, recreation conflicts, human-natural environment interactions (e.g., wildlife)	Managers need to deal with increasing conflicts, carrying capacity issues, environmental impacts, infrastructure development, and a more diverse set of recreationists (e.g., experience levels)
Comfort	Synthetic fabrics, plastics, internal-frame packs, light-weight tents	Longer visits, increased use, expanded use (e.g., by families, the less fit, the elderly), increased desire for facilities	Increased attention to carrying capacity, environmental impacts, search and rescue, visitor demands for amenities (e.g., showers, etc.)
Safety	Synthetic fabrics, stronger materials, more effective means of protection (e.g., climbing aids, non-collapsible kayaks)	Longer and more remote visitation, recreation during the “shoulder periods” (e.g., winter); a general “pushing back” of the perceived margin of safety, more risk-taking activities	Incongruence between the type of situation (i.e., level of danger) and the skills and experience of the individual; expectation that “experiences” will be low risk
Communication	Radio, cellular and digital phones, GIS, GPS, datalink watches, “Palm” computers	More rapid linkages to other groups; expectation that remote backcountry tripping can stay “connected” to outside world	Increased safety and planning capability; expectations that information and ability to “connect in” will be available (e.g., park radio frequencies, avalanche warnings at the site, etc.); more demand for search and rescue
Information	Television, satellite TV, Internet	Increased awareness, use and appreciation, more informed public, increased options and opportunities	Primarily external-driven messages: managers will be forced to respond to images portrayed by commercial interests and provide their own

			information in a variety of formats
--	--	--	-------------------------------------

tion activities and areas into the mass market. In addition, they had (and continue to have) enormous implications for recreational use patterns (e.g., frequency and length of trips, distance traveled per trip) and, perhaps most importantly, for the experiential component of outdoor recreation activities (e.g., safety, comfort) and their social and environmental impacts (Ewert and Shultis 1999). Among the many new technologies that may challenge park managers in the near future include folding mountain bikes and “all-terrain” in-line skates and skateboards (Anonymous 1999). The Internet and virtual reality programs will also change the way in which we perceive, visit, and experience protected areas.

Declining budgets have wreaked havoc on the ability of land management agencies to deal with the potential impact of new technologies. For example, the director of the U.S. Bureau of Land Management (BLM) noted that “improved technologies mean people can now travel into areas that were once inaccessible” and admitted that “BLM planning, staffing and budgets have not kept pace with the need to manage these activities and reduce the impacts to the natural systems” (Bureau of Land Management 2000a, unpaginated; see also Wilkinson 1999a). In addition, our inability to predict future

technological innovations or their impacts make these decisions even more problematic for outdoor recreation managers (Wilkinson 1999b). To this end, Section 4.1.4 of Parks Canada policy maintains:

As new or modified forms of outdoor recreation emerge, each will be assessed for its appropriateness nationally before consideration in the park management planning process. Individual park management plans will then specify the types and ranges of both new and existing appropriate outdoor recreation activities and their supporting facilities. Parks Canada will also periodically review its national directives to ensure that new forms of outdoor recreation are adequately considered.

While this proactive stance is laudable, and often lacking in other agencies, the current lack of appropriate levels of funding, personnel, and research capacity in Parks Canada (Searle 2000), which prevents them from dealing with these issues, makes the assurances ring a little hollow.

The aforementioned societal ambivalence towards technology is easily found among park and other outdoor recreation managers. At one end of the spectrum are those who wholeheartedly embrace all forms of new technology in outdoor recreation areas. Douglass comes out firmly on this side in his discussion of cellular phones in the backcountry:

New technologies are here and they should be welcomed by managers instead of being viewed as annoyances. Those areas, such as Baxter State Park in Maine, that have responded to the new technology by banning it are wrong-minded. Certainly, there is some slight annoyance from hearing people talk on the telephone in what some might consider to be an inappropriate setting. Much of the anti-cellular phone arguments reflects resistance to change and even envy of new concepts of open space enjoyment. The technology ... presents great opportunities for people to visit and enjoy outdoor settings more safely (Douglass 2000, 348).

It is interesting that Douglass' rationale for supporting cellular phones in backcountry location are equivalent to those used on behalf of automobiles in the early 1900s. It appears that for many recreation professionals (and recreationists), public use is still the highest function of protected areas. Searle (2000) suggests that this is the primary position and argument in Parks Canada, despite legislation that clearly recognizes the supremacy of the preservation (as opposed to use) function. Similar concerns have been expressed about the U.S. National Park Service (NPS) (Wilkinson 1999a).

At the other end of the technology spectrum are those like Baxter State Park Director Buzz Caverly, who, despite opposition from a variety of pro-and anti-development groups, has created strict regulations in the park. Not only are cellular phones

restricted, but radios, televisions, portable tape decks, outboard motors, and pets are also prohibited in this park (Austin 1996).

But Caverly is by no means alone. Restrictions on recreation technology have been increasing throughout protected areas, with NPS recently banning snowmobiles and jet skis in many, though not all, national park units (National Park Service 2000a; National Park Service 2000b). Many other parks disallow specific activities such as BASE jumping (parachuting off cliffs), slack lining (a combination of rock climbing and bungee jumping) and mountain biking either throughout parks or in specific areas of a park. BLM, typically seen as the USA's most pro-ATV federal land-managing agency, has recently agreed to review its policies on ATVs (Bureau of Land Management 2000); previously, it had ignored presidential directives from the 1970s to better study and regulate the impact of these technologies in their jurisdictions.

These conflicting attitudes towards technology are also found among recreationists. Perhaps the most revealing place to examine recreationists' attitudes to technology is within the many popular magazines dedicated to this user group. Magazines such as *Backpacker* and *Sierra* clearly display paradoxical attitudes towards technology. On one hand, the newest recreation-related technologies are extolled by the numerous companies advertising throughout these magazines, and the maga-

zines have come to rely upon advertising revenues. Regular editorial columns display the newest "gear," normally in a non-critical manner which ignores their potential social or environmental impacts. On the other hand, occasional articles bemoan the current state of the "technological wilderness," profile anti-technology recreationists, or romanticize about the wilderness experience in the "good old days" before zippers, chain saws, Gore-Tex, and satellite phones (e.g., McGivney 1996; McGivney 1999; Anonymous 2000c; Greenwald 2000; Tilton 2000).

Despite these inconsistencies among both recreationists and managers, however, the overall trend seems clear. While there are powerful opponents, outdoor recreation agencies have become increasingly willing (or, more correctly, willing to be convinced by external lobby groups) to alter policy to limit the use or impact of technology. Consumer-group opponents will likely continue to focus their arguments on the need to increase the public's use and support of parks and the importance of increased visitor safety, while supporters of restrictions will point to the social and environmental impacts of unregulated technologies in the backcountry. It seems likely, given (1) the related trend of agencies to emphasize preservation rather than use functions of parks, (2) the increasing social and environmental impacts within parks, and (3) the increasing rarity of relatively un-

modified landscapes outside of park systems, that these restrictions will continue to escalate in the near future.

These restrictions will be welcomed by environmental and anti-technology groups such as the Les Miserables Primitives and the Society of Primitive Technology in the USA. These groups are the vanguard of a growing "Neo-Luddite" movement (named after a nineteenth-century group who eschewed the technology that forced them from their jobs during the Industrial Revolution) centered in the USA (Hill and McLean 1999). These and like-minded groups will be pitted against pro-technology groups who rely upon consumerism and groups who believe in the primacy of use in the ever-present preservation-versus-use debate.

A contemporary example of this debate can be seen in the current battle over the continuation of the Recreation Fee Demonstration Program. Originally embraced by a wide range of interest groups, proponents (largely representing pro-ATV interests and so-called wise use groups) are now battling with environmental and non-mechanized recreation groups to dismantle this program. It has become a controversial, divisive issue among park and wilderness agencies (McManus 1999; Paige 1999; Watson and Herath 1999; Collins 2000; Woodside 2000). Perhaps the final winner of this battle will serve as an indicator of the speed at which technology will be restricted

in the near future, in that it will demonstrate the current power of commercial/consumerism and preservation/environmental interests within land agencies and the wider society.

Discussion and Conclusion

Technology has proven to be a double-edged sword for outdoor recreation and protected area managers. Technological advances have greatly facilitated public recreation in protected areas by improving access, transportation, safety, comfort and information on parks. The resulting increases in park use have heightened social concern and appreciation for the natural environment and protected areas (or vice versa). However, technology also has changed how individuals perceive nature and pursue outdoor recreation. Increased participation rates have not only served to generate additional technological innovations, but may also have led to increased consumerism in protected areas. For many recreationists, the “psychological focus of the leisure activity actually becomes the technology itself (particularly its acquisition and use) rather than the activity” (Hill and McLean 1999, 16).

The limited empirical evidence available suggests that the increasing use of technology in outdoor recreation will have fundamental effects on the emotional relationship between humans and the natural environment, resulting in a lessened emotional attachment to the land, espe-

cially in local areas. This may be critical to our future relationship to the land: Aldo Leopold strongly argued that local attachment to landscape is the most critical need for the long-term conservation of healthy ecosystems (1999).

This paper has emphasized that recreationists, managers, and the general public will continue to have conflicting attitudes towards the use of technology in outdoor recreation areas. In the short term, until social attitudes and values towards consumerism and commercialization in protected areas change, managers will find it difficult to place restrictions on technology in protected areas: in their own best interests, pro-technology consumer groups and their industry backers will attempt to block such efforts.

Managers must do a better job at firing the hearts of recreationists to participate in a debate over the purpose of protected areas and the appropriateness of specific technologies within these areas. Organizations supporting parks must also help generate and contribute to these difficult discussions. The battle for high-quality recreational experiences and protected areas may rely on these groups' ability to prove Oppenheimer wrong: while humans have been loathe to reflect upon the impacts of technology in the past, perhaps a better understanding of the severity of technology's ramifications in protected areas will convince us to initiate such a process.

References

- Anonymous. 1999. Technology in wheel time. *Design News* 54:15, 72-76.
- . 2000a. British government criticized for the handling of Canadian GM seed scare. *Canadian Press*, 3 August.
- . 2000b. The ultimate gear list: A simple way to make sure you remember everything. *Backpacker* 28:2, 144.
- . 2000c. The “perfect” trip. *Backpacker* 28:8, 11-12.
- Austin, P. 1996. Paradise or private club? *Backpacker* 24:7, 52-56, 58, 136.
- Bryan, H. 1977. Leisure value systems and recreational specialization: The case of trout fishermen. *Journal of Leisure Research* 9, 174-187.
- . 2000. Recreation specialization revisited. *Journal of Leisure Research* 32:1, 18-21.
- Bureau of Land Management. 2000a. *BLM National OHV Strategy: Director's Letter*. <<http://www.blm.gov/ohv/directorsletter.htm>>.
- . 2000b. *Bureau of Land Management National OHV Strategy*. <<http://www.blm.gov/ohv/ohvstrategy.htm>>.
- Crompton, J.L. 1998. Forces underlying the emergence of privatization in parks and recreation. *Journal of Parks and Recreation Administration* 16:2, 88-101.
- Collins, K. 2000. Access or excess? *National Parks* 74:7/8, 42-43.
- Douglass, R.W. 2000. *Forest Recreation*. Fifth ed. Prospect Heights, Ill.: Waveland Press.
- Ewert, A., and J.D. Shultis. 1999. Technology and backcountry recreation: Boon to recreation or bust for management? *Journal of Physical Education, Dance and Recreation* 70:8, 3-8, 11.
- Falk, P. 1994. *The Consuming Body*. Thousand Oaks, Calif.: Sage.
- Foresta, R.A. 1984. *America's National Parks and Their Keepers*. Washington, D.C.: Resources for the Future.
- Greenwald, J. 2000. The future of adventure. *Sierra* 85:1, 30-39.
- Hasselstrom, L.M. 1994. Camping ranches and gear junkies: New scourge of the West. Pp. 64-70 in *Discovered Country: Tourism and Survival in the American West*. S. Norris, ed. Albuquerque, N. M.: Stone Ladder Press.
- Helmuth, K. 1999. Smokey the Bear meets Paul Bunyan: Can protected areas survive dollar driven development in an age of economic totalism? Pp. 61-67 in *Protected Areas and the Bottom Line: Proceedings of the 1997 Conference of the Canadian Council on Ecological Areas*. J. Loo and M. Gorman, comps. Fredericton, N.B.: Natural Resources Canada, Canadian Forest Service, and Atlantic Forestry Centre.
- Hill, J., and D.C. McLean. 1999. Introduction: Possible, probable, or preferable future? *Journal of Physical Education, Dance and Recreation* 70:9, 15-17.
- Huffman, M.G. 2000. Popular culture information and outdoor recreation management: Allies or antagonists? Pp. 191-200 in *Diverse Challenges of our Times: People, Products, Places*. I.E. Schneider et al., eds. Tempe: Arizona State University.
- Hull, R.B. 2000. Moving beyond the romantic biases in natural areas recreation. *Journal of Leisure Research* 32:1, 54-57.
- Juniu, S. 2000. Downshifting: Regaining the essence of leisure. *Journal of Leisure Research* 32:1, 69-73.
- Leopold, A. 1999. *For the Health of the Land: Previously Unpublished Essays and Other Writings*. J.B. Callicott and E.T. Freyfogle, eds. Washington, D.C., and Covelo, Calif.: Island Press.
- Levi, D., and S. Kocher. 1999. Virtual nature: The future effects of information technology on our relationship to nature. *Environment and Behavior* 31:2, 203-226.
- McGivney, A. 1996. Trading Gore-Tex for buckskin. *Backpacker* 24:5, 16-17.
- . 1999. The wisdom of Abo Dude. *Backpacker* 27:7, 46-49, 52, 54, 127-127.

- McKibben, B. 1989. *The End of Nature*. New York: Anchor Books.
- McManus, R. 1999. Land of the fee. *Sierra* 84:6, 22-23.
- Nash, R. 1982. *Wilderness and the American Mind*. 3rd ed. New Haven, Conn.: Yale University Press.
- National Park Service. 2000a. Press release: National Park Service limits personal watercraft use. 27 March. <<http://165.83.219.72/release/Detail.cfm?ID=22>>.
- National Park Service. 2000b. Press release: National Park Service puts the brake on escalating. 28 April. <<http://165.83.219.72/release/Detail.cfm?ID=32>>.
- Paige, S. 1999. Blazing the money trail. *Backpacker* 27:4, 85-86, 174-177.
- Petersen, M., and D. Harmon. 1993. Wilderness management: The effect of new expectations and technologies. *Journal of Forestry* 91:2, 10-14.
- Quin, R. 1997. A vicious circle: Automobiles and the national parks. Pp. 55-58 in *Making Protection Work: Proceedings of the Ninth Conference on Research and Resource Management in Parks and on Public Lands*. D. Harmon, ed. Hancock, Mich.: George Wright Society.
- Runte, A. 1997. *National Parks: The American Experience*. 3rd ed. Lincoln and London: University of Nebraska Press.
- Sack, R.D. 1992. *Place, Modernity, and the Consumer's World: A Regional Framework for Geographical Analysis*. Baltimore: Johns Hopkins University Press.
- Schwartz, M.H., ed. 1998. Special issue: "The Business Connection." *The George Wright Forum* 15:1.
- Searle, R. 2000. *Phantom Parks: The Struggle to Save Canada's National Parks*. Toronto: Key Porter Books.
- Shultis, J.D. 1995. Improving the wilderness: Common factors in creating national parks and equivalent reserves during the nineteenth century. *Forest and Conservation History* 39:3, 121-129.
- Shultis, J.D. 2000. Gearheads and Golems: Technology and wilderness recreation in the twentieth century. *International Journal of Wilderness* 6:2, 17-18.
- Stormann, W.F. 2000. The death of the Olmstedian vision of public space. *Journal of Leisure Research* 32:1, 166-170.
- Tenner, E. 1996. *Why Things Bite Back: Technology and the Revenge of Unintended Consequences*. New York: Knopf.
- Tilton, B. 2000. Old-time vittles. *Backpacker* 28:8, 37, 39, 41, 43.
- Volti, R. 1995. *Society and Technological Change*. 3rd ed. New York: St. Martin's Press.
- Watson, A.E., and G. Herath. 1999. Research implications of the theme issues "Recreation fees and pricing issues in the public sector" (Journal of Park and Recreation Administration) and "Societal response to recreation fees on public lands" (Journal of Leisure Research). *Journal of Leisure Research* 31:3, 325-334.
- Weil, M.M., and L.D. Rosen. 1997. *TechnoStress: Coping with Technology @Work @ Home @ Play*. New York: John Wiley and Sons.
- The Wilderness Society. 2000. Fifteen most endangered wild lands 2000: Protecting America's wildlands. <<http://www.wilderness.org/newsroom/15most/index.htm>>.
- Wilkinson, T. 1999a. Promised land. *National Parks* 73:9/10, 22-25.
- . 1999b. Caught in a free fall. *National Parks* 73:7/8, 26-29.
- Woodside, C. 2000. Fee foes get creative. *Backpacker* 28:8, 15.

John Shultis, Resource Recreation and Tourism Program, University of Northern British Columbia, 3333 University Way, Prince George, British Columbia, Canada V2N 4Z9; shultis@unbc.ca