ENVIRONMENTAL PSYCHOLOGY: MAN AND HIS PHYSICAL SETTING

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31 User Concepts of Wilderness and Their Implications for Resource Management

Robert C. Lucas

USER CONCEPTS OF WILDERNESS

The view of resources as physically defined entities has been effectively criticized, and in its place a view of resources as objects culturally perceived as useful has been advanced (see Zimmerman, 1951).

This view has now been widely accepted, but, for many topics, its use has not involved much change in research methods. Most often the use of the cultural perception concept has only involved recognizing technology's role in redefining resources—uranium, taconite, aspen pulpwood, and so on. However, the impact of a culturally defined concept of resources on the study of recreational resources is more substantial. Recreational resources can scarcely be studied except in perceptual terms. This is particularly true of a resource so elusive and subjective as wilderness.

What is a recreational resource and, particularly, what is wilderness? Planners, researchers, legislators, and administrators have struggled with these questions. They have made assumptions, often unconsciously, about user concepts and perceptions as they have defined resources. Their definitions aim at objectivity and permanency, and yet most of our ideas about scenery and wilderness are young and changeable.

A little over a century ago concepts of wilderness and scenery were nearly the opposite of today's (Lowenthal, 1962). The New England wilderness was described as hideous and desolate (Nash, 1963). Mountains and wild landscapes were detested, and Niagara Falls was called "hideous, outrageous, terrible" (Huth, 1957). The attractive landscapes were soft, fertile lands, improved by human husbandry—in Europe especially those with ancient historical associations (Lowenthal, 1962). Gardens were formal—geometric and architectural. The French Voyageurs in the 18th century called part of the present Minnesota-Ontario border "le beau pays"—the beautiful country. But "le beau pays" was not the modern rocky canoe country. It was farther west, part of a glacial lake plain, level, often open, and reminiscent of farmland (Olson, 1963).

Changing religious, philosophical, and scientific ideas, and perhaps also changes in the appearance of the humanized landscape influenced this reversal. The reversal is so complete now that when I asked one of my university classes which landscape they preferred—rolling southern Minnesota farmland or Wyoming's Grand Tetons—they laughed.

The view of wilderness as a resource in its own right, rather than as land to be developed, was probably also tied to the "closing of the frontier" and ideas, such as historian Frederick Jackson Turner's, that the frontier had shaped American character. Increasing urbanization likely also contributed to the re-evaluation of the wilderness. More and more city people were cut off from former contacts with the land, and may have felt a loss of continuity and security.

Among the first appeals for public action to set aside wilderness was one made by George Catlin, the painter of Indians, in 1833; another by Thoreau followed shortly thereafter (Huth, 1957). George Perkins Marsh made a similar plea later (Marsh, 1882). The first park reservations, Yosemite and Yellowstone, probably owe much to these ideas. The act establishing Yellowstone stated that the Secretary of Interior should "Provide for the preservation from injury or spoilation, of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition." This seems to contain the germ of the wilderness idea, but not unequivocally. There is no indication that these parks were to have large roadless areas, in particular.

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The Adirondack Forest Preserve in New York was established and the words "forever wild" were applied to it in law in 1885, but the original purpose was more to prevent timber exploitation than to preserve wilderness as a positive good (Thompson, 1963).

Specific wilderness reservations seem only about a generation old. Aldo Leopold, Arthur Carhart, and Robert Marshall all had a hand in the designation of national forest wilderness areas. Three areas were established in the 1920s, but almost all of the present wilderness came with a rush in the 1930s. Now there are over 80 areas and close to 15 million acres, most in the West. Regulations have shifted and numerous wilderness bills seek to further formalize the wilderness, especially in national forests and national parks.

AN EXAMPLE OF USER CONCEPTS

All of the national forest wilderness is defined by a line on a map. But does this correspond to what the public sees as "the wilderness?" And what is the visitors' "wilderness" like?

The answers to these questions were sought by the Lake States Forest Experiment Station in a study of the Quetico-Superior Area in 1960–61.[1] Half of the Quetico-Superior is in Minnesota—the Boundary Waters Canoe Area of the Superior National Forest. This is the only large Forest Service wilderness-type area in the eastern half of the country. The other half is in Ontario-Quetico Provincial Park. Together they form a rocky, rolling, lake-studded forest land about as big as Yellowstone National Park—3,000 square miles. It is often called simply, "the canoe country," but motorboat travel is almost as common as canoeing.

Besides its almost unique eastern location, the Quetico-Superior is unique in combining logging and primitive recreation. All of Quetico Park and two-thirds of the Boundary Waters Canoe Area are open to timber harvest except in zones around lakes, streams, and portage trails. Because of limited markets there is very little cutting in Quetico, but about 15 percent of the Boundary Waters Canoe Area has been logged or timber contracted for cutting since 1945.

The total Quetico-Superior study concerned itself with use distribution estimates, use projections, and recreational carrying capacity in an aesthetic, rather than physical, sense. As part of the carrying capacity investigation, the visitors' perception of wilderness was investigated.

Three aspects of wilderness perception were studied: the importance of the area's wilderness qualities as an attraction, the area considered wilderness, and the amounts and types of use considered appropriate in the wilderness. Almost 300 groups of visitors of all types were interviewed. The sample was randomly distributed across the area and throughout the summer season.

We found great differences in wilderness views. Groups differed on all three aspects studied. However, the variation was greatly reduced when visitors were classified on the basis of the type of recreation they were engaging in. People come to the area in substantial numbers to take canoe trips, stay in the resorts or summer cabins (most are just outside the area and the few inside are being removed), camp in roadside campgrounds around the designated area, or travel by boat and camp on the waterways. The major division, though, was between the canoeists and the others, almost all of whom used motorboats. This does not mean that type of recreation caused differences in perception. The type of recreation chosen stands rather as a fairly good summary expression of a cluster of motives and abilities —which in turn have been substantially influenced in many ways.

Wilderness was most important as an attraction for canoeists (Table 31-1). Sample groups were asked, "Does this area (defined on a map) have some characteristics which caused you to come here rather than some other vacation region?" All answers were remote" were classified as wilderness qualities. This is not a direct measure of appeal, but it is thought to serve as an index of wilderness' relative importance to visitors.

[1] This section of the study is reported in considerable detail in a forthcoming publication by the Lake States Forest Experiment Station, *The Recreational Capacity of the Quetico-Superior*.

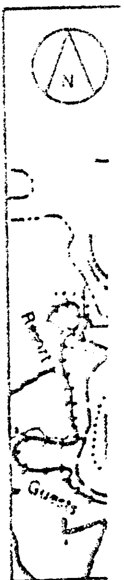

Table 31-1 Percent of Parties Citing Wilderness Qualities as a Basis for Choice of the Area

Type of recreationist	Number of sample groups	Percent citing wilderness qualities
CANOEISTS:	84	71
Paddlers	63	75
Motorized	21	62
OTHERS:	196	40
Auto campers	86	49
Boat campers	23	35
Resort guests	57	39
Private cabin users	21	10
Day use	9	33

The differences between types were significant at the .005 level tested by chi-square.

Canoeists, especially those not using outboard motors, cited some wilderness quality about twice as often as most other types of visitors. Car campers were next highest in their interest in wilderness. It may be significant that only half of the car campers used boats, compared to almost 100 percent of the other types.

The canoeists saw a much smaller area as wilderness than did other types of visitors (Figure 31-1). All sample groups were asked first where they had been (most interviews were with parties just completing their visits, and all were near the end of the stay). Later they were asked, "Do you feel that you are in 'the wilderness' now? Where did members of your group feel 'the wilderness' began?" The question seemed to be accepted as reasonable and relevant almost without exception—there were no "don't know" answers. Wilderness was not defined, and respondents did not ask for definitions. Answers ranged from a few "never reached the wilderness" replies to a few who placed wilderness gateways in central Minnesota, over 100 miles back down the road. The information on areas visited by sample groups was combined with their wilderness threshold to produce a "wilderness vote" for each area (lake, stretch of river, or section of highway). These "votes," or wilder- recorded and adjectives such as "primitive, uncivilized, rugged, wild, uncommercialized, ness/nonwilderness classifications, were aggregated for each area. There were 48 ratings for the most-used lake, and only one for many lightly used places. The aggre-

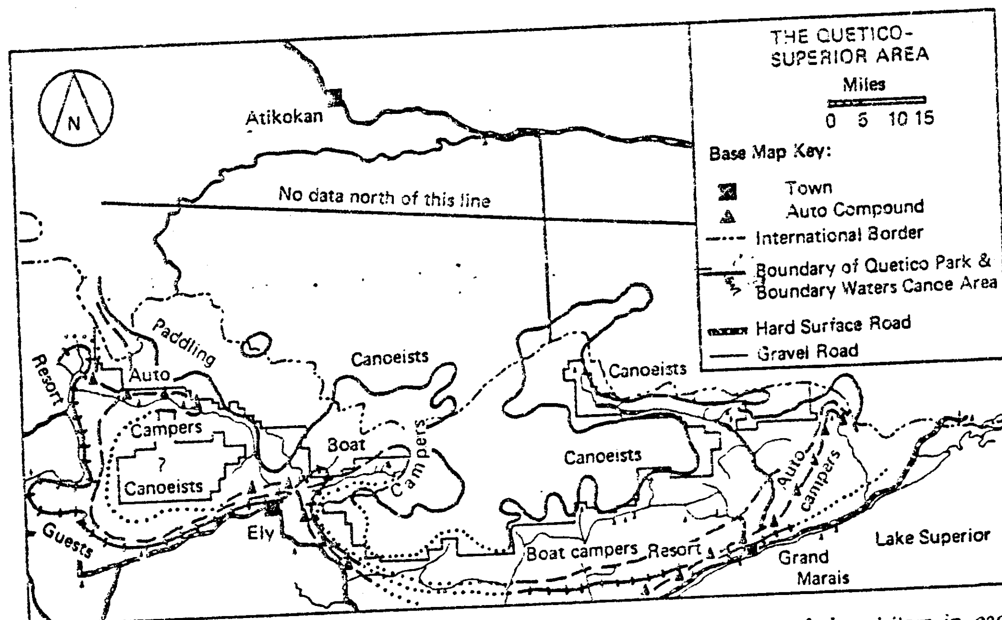

Figure 31–1. The area considered wilderness by at least 50 percent of the visitors in each of the four major user types. The area in the interior—that is, away from the roads and generally to the north of the line for each user type—was rated as "wilderness" by 50 to 100 percent of the visitors of that type reaching the area. The dotted portions of the lines indicate data were lacking, and subjective estimates have been made, based on 1960 data.

gated votes were then mapped for each major type of use.

The area considered wilderness by the paddling canoeists was smaller than the established area in Minnesota. This was true even for the area only 10 percent classed as wilderness. Only one small area outside the canoe area was included, although a substantial area outside Quetico Park was included.

Sufficient data were available for maps of three other user types—auto campers, boat campers, and resort guests. All three maps were essentially the same. These visitors—largely motorboaters—saw a large wilderness, including about as much land around the canoe area as the canoe area itself (Figure 31-1).

What are the characteristics of these differing wildernesses? In general, canoeists were more sensitive to other uses and to developments than boaters. The canoeists excluded roads, but the boaters did not. These roads varied in standards; many sections were narrow, winding, hilly, and gravelled. A very few were the same but asphalt paved, and some were paved, 50-mile-an-hour roads but with billboards and developments very limited. Boaters usually excluded the small towns and felt the wilderness began a few miles down the road. All sorts of roads seemed included in the boaters' wilderness, although a substantial number mentioned "the end of the blacktop" as the beginning of their wilderness and a little over half objected to straightening and paving roads when directly asked.

Recreational use seemed particularly important in influencing the canoeists' wilderness image. Heavily used areas were much less often considered wilderness. The most heavily used lake (over half of all canoeists started their trips there) was classed as nonwilderness by all 23 canoeist groups sampled there. The Spearman rank correlation coefficient between season-long use for each area and percent of paddling groups considering that area wilderness was −0.42. Parties were asked if they had been bothered by crowding on the waterways; 34 percent of the canoeists said, "Yes."

Boaters tolerated much heavier use. Only 8 percent reported that they were bothered by crowding on the water, but wilderness perception still dwindled with increasing visitors. The rank correlation of use and wilderness ratings for boaters was −0.37.

The type of use encountered was critical for canoeists but much less so for boaters. Canoeists felt strongly that motorboats were inappropriate in a wilderness. Almost two-thirds reported that they disliked meeting boats. Perhaps even more revealing, the canoeists' wilderness ratings for lakes with comparable total numbers of visitors were two or three times as high where boats were absent. Boaters actually preferred meeting canoeists to fellow motorboaters, but the difference was not great.

Remoteness—distance from the access point or end of the road—did not have any apparent effect on wilderness perception. This was contrary to expectations. Lakes were grouped as follows: first lakes reached from accesses, second, third, fourth, and fifth. Light use was associated with just as high a wilderness vote on first or second lakes as on fourth or fifth. Rank order correlation coefficients of use and wilderness rating were not significantly different for the five classes of remoteness.

The unique logging (the only important commodity use) seemed less detracting than heavy or inappropriate recreational use. There was little awareness of timber cutting in the area. In total, about 12 percent of the visitors reported noticing evidence of logging in or around the area. Some of this observation was logging truck traffic outside the area's boundaries. About 4 percent objected to what they saw—or one-third of those noticing cutting. But much of the area is not being logged now, and use is heaviest away from logging areas. It is possible use is light because of logging, but most people did not know there was any cutting. Furthermore unlogged southern parts of the canoe area were lightly used as was the south central logged area (use showed a strong northward orientation). Groups sampled near logging had noticed it in 46 percent of the cases, and 13 percent (less than one-third) found it objectionable. Canoeists observed logging less often than boaters, but found it more objectionable (about half of those encountering logging disliked it).

In summary, it appears that visitors do have rather clear wilderness perceptions,

that variation in perception is large, but that much variation is associated with type of recreation chosen.

A similar study was made in Ontario's Algonquin Provincial Park in 1963 (Priddle). Algonquin is also a large lakeland reservation but is more heavily used, both for recreation and timber, than the Quetico-Superior. Canoeists and boaters differed in the same general ways, and wilderness ratings were lower, as would be expected from the heavier use. The parallel findings bolster confidence in the validity of the approach.

IMPLICATIONS FOR RESOURCE MANAGEMENT

User concepts alone are not a prescription for resource management. The analogy to the drawbacks in letting stockmen set their own grazing quotas on public lands has been pointed out (Burton & Kates, 1964). In fact, it would be impossible to give every recreationist what he says he wants at every time and place. Some desires conflict. Some wishes, if met now, would affect the resource so that the wishes could not be met in the future. Some people may want technically impossible conditions, such as continuous sunshine. Outdoor recreation is not a free good, obviously, and its allocation is an economic problem in the broadest sense of the term.

User concepts are an essential part of recreation resource management, however. To play this role, user concepts need to be interpreted in the light of long-term goals, other demands, and feasibility or costs. The identification and definition of desirable outdoor recreation settings are where the sort of user concepts I have illustrated become most useful. If it is assumed that the goal of recreation resource management is to provide a range of opportunities among which people may choose as freely as possible, then there are other pieces in the puzzle. Information is needed on relative demand for and value of different opportunities now and in the future. With knowledge of demand and user concepts of desirable resource—size of area, and type and intensity of recreational and nonrecreational use, in particular—needs could be established and weighed against other demands for the same resources. In this sort of over-all resource allocation, other approaches seem needed, but user concepts of resources and, specifically, wilderness may be useful in allocation of resources between competing forms of recreation, and in assessing possibilities of integrating some nonrecreational uses.

The findings reported for the Quetico-Superior and generally confirmed in Algonquin Park imply that wilderness is not just one segment of this range of opportunities. There are different wildernesses. The dichotomy, which the various wilderness bills would perpetrate, between wilderness in one class and all other land in another class, may be unfortunate. A variety of wilderness recreation settings, in terms of ease of access and facilities, degree of restriction of nonrecreational uses, and limits on type and amount of recreational use, seems to be implied.

This does not necessarily mean the present wilderness areas should be converted into various sorts of semiwilderness. The maintenance of variety would seem to include a need for relatively undisturbed wilderness at one end of the range, and reducing this area seems dubious in view of projections of demand for wilderness-type recreation. All the evidence seems to point toward a greater relative growth in wilderness recreation than for recreation in general. The early projections by Marion Clawson imply this in the much higher projected increases in demand for resource-based areas (Clawson, 1959). The projections made for ORRRC (Outdoor Recreation Resources Review Commission) show wilderness use increasing more than eightfold by the year 2000 compared to less than a threefold increase for all outdoor recreation and a fourfold growth for camping in general.[2] (These projects are from different ORRRC study reports using somewhat different projection methods, and comparabil-

[2] Wilderness use projections are from University of California Wildland Research Center, *Wilderness and Recreation—A Report on Resources, Values, and Problems* (Outdoor Recreation Resources Review Commission Study Report 3), Washington, D.C., 1962, p. 236. Other projections are from Outdoor Recreation Resources Review Commission, *Outdoor Recreation for America*, Washington, D.C., 1962, pp. 46, 220.

ity is not complete.) Official Forest Service use estimates from 1946 to 1963 also showed wilderness use climbing most rapidly —in terms of man-days, the best measure of use, twice as fast as all other recreational use.[3]

If these trends and projections have any validity, and if there are truly "diminishing returns" in increasing use of the wilderness, as the data seem to show, a serious problem lies ahead. Rationing recreational use, accepting lower quality experiences, or expanding wilderness would be possible responses, singly or in many combinations.

User wilderness concepts are relevant to all three possible responses. User concepts make possible evaluation of rationing recreational use in terms of at least some measure of its effect on the quality of the use. Expansion might be considered, at least in part, in terms of adding various types of semiwilderness. This is probably much more feasible than establishing more strictly wilderness areas, and might actually produce more satisfaction for more people at less cost to society.

Some of the semiwilderness might serve as a buffer zone for existing wilderness. If some types of users are less attracted by wilderness, as is true of motorboaters in the canoe area, and if these groups also see a large wilderness outside the heart of the wild country, it might be possible to provide what they are seeking in an outer zone of semiwilderness, and exclude them from stricter wilderness. This sort of separation could reduce conflict between incompatible uses, increase wilderness core capacity, and thus reduce the need for rationing use. In fact, for the less demanding visitors (boaters in the canoe area), who accept heavier use, rationing in the buffer zone might be avoided for a long time.

Other semiwilderness might be based on the recognition that escape from mechanized recreation and crowds of people is more important in some users' concepts of wilderness than are pre-Columbian ecological conditions, and could be zoned for primitive recreation while allowing some logging, grazing, and dams.

There may be considerable scope for improving the integration of commodity uses and primitive recreation in both kinds of semiwilderness. Logging is probably most critical. Screening and scheduling cutting could probably reduce exposure to logging greatly, and education might reduce the reaction to exposure. New logging technology might also reduce the prominence of cuttings on the landscape. Helicopters could eliminate or reduce roads, for example. Slash could be chipped. Cutting could also be modified to increase recreational benefits. For example, in some forest types a proportion of trees that would normally be harvested might be left to soften the scene, and clear-cut blocks might be smaller or more irregularly shaped than is usual. All of these modifications carry costs, but they would probably cost less than foregoing all commodity uses and they might increase total recreational returns substantially. Do we have the ingenuity to really explore the possibilities of this sort of multiple use?

The idea of various classes of wilderness and semiwilderness is not new. Robert Marshall, the founder of the Wilderness Society, proposed two classes of land—primeval and wilderness—in 1933 (Marshall, 1933). What he called "wilderness" would have provided an opportunity for primitive unmechanized recreation, but this land also would have been carefully logged, grazed, and so on. Semiwilderness, in addition to wilderness, has been suggested more recently by the Outdoor Recreation Resources Review Commission, the University of California Research Center in the ORRRC Study Report dealing with wilderness, and by Arthur Carhart (1961) in a recreational land use planning monograph.

What may be at least partly new is empirical support for an old idea. Also, the study of user perception of wilderness may provide a new approach to implementing wilderness variety.

Putting the idea of varied wilderness into practice effectively, however, would require

[3] Wilderness man-days increased from 406,000 in 1946 to 2,751,900 in 1963—a 578 percent increase. Total man-days use of all other national forest areas grew from 33,200,000 to 123,750,000 in the same period—a 272 percent increase.

more knowledge than we now have. More understanding would be needed in the Quetico-Superior to define boundaries between zones and set use and development standards for the zones. The relation of recreational use to wilderness quality should be defined, and I believe it could be. Other areas with differing landscapes and types of use would need new research, but the same framework may apply. The paddling purist in the canoe country may be comparable to the backpacker in the mountains. The pack-string hunter may be somewhat comparable to the motor canoe fisherman, and the jeep and scooter driver to the boat camper. There probably are some important differences, also. Possible routes of travel may be more concentrated, and more distant areas visible, than on the Canadian Shield.

Greater diversity in wilderness management will demand a good deal of planning and administrative effort, but maintaining the status quo may lead to even more complicated problems.

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32 Life Styles and Urban Space

Anselm Strauss

The spatial complexity and the social diversity of any city are linked in exceedingly subtle ways. An examination of such connections will force confrontation of a very thorny problem: how are the various urban social worlds related to specified spaces, areas, and streets of a city?

Technical sociological interest in this kind of inquiry dates back to the studies of Robert Park (1925) and "the Chicago school" of urban research. Chicago's ethnic diversity was so striking, and the spatial dispersal of these populations over the face of the city was so marked, that the Chicago sociologists evolved a series of studies of ethnic (and other) worlds located in urban space. They invented a corresponding set of terms to link space and social structure.[1] The point was, as Park said, that "In the course of time every section and quarter of the city takes on something of the character and qualities of its inhabitants. Each separate part of the city is inevitably stained with the peculiar sentiments of its population."

This kind of sociological inquiry had its roots in two kinds of tradition: one was scientific—the biological study of ecological communities; the other was popular—the colorful journalistic accounts of urban social worlds. (Park himself had been a journalist before he became a professor.) Journalistic exploration of the city, as presented in full-length book form, goes back at least to mid-nineteenth century, somewhat before the full tide of urban reform. Reform itself brought countless investigations of the less palatable

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[1] "Natural area" was one such concept: "Natural areas" were areas produced without planning by the natural course of laying down railroads, parks, boulevards, and by the topographical features of the city. Communities often tended to be coterminous with the boundaries of natural areas (see Park, 1925).