Aldo Leopold

Wilderness as a Form of Land Use (1925)

FROM THE EARLIEST TIMES one of the principal criteria of civilization has been the ability to conquer the wilderness and convert it to economic use. To deny the validity of this criterion would be to deny history. But because the conquest of wilderness has produced beneficial reactions on social, political, and economic development, we have set up, more or less unconsciously, the converse assumption that the ultimate social, political, and economic development will be produced by conquering the wilderness entirely—that is, by eliminating it from our environment.

My purpose is to challenge the validity of such an assumption and to show how it is inconsistent with certain cultural ideas which we regard as most distinctly American.

Our system of land use is full of phenomena which are sound as tendencies but become unsound as ultimates. It is sound for a city to grow but unsound for it to cover its entire site with buildings. It was sound to cut down our forests but unsound to run out of wood. It was sound to expand our agriculture, but unsound to allow the momentum of that expansion to result in the present overproduction. To multiply examples of an obvious truth would be tedious. The question, in brief, is whether the benefits of wilderness-conquest will extend to ultimate wilderness-elimination.

The question is new because in America the point of elimination has only recently appeared upon the horizon of foreseeable events. During our four centuries of wilderness-conquest the possibility of disappearance has been too remote to register in the national consciousness. Hence we have no mental language in which to discuss the matter. We must first set up some ideas and definitions.

WHAT IS A WILDERNESS AREA?

The term wilderness, as here used, means a wild, roadless area where those who are so inclined may enjoy primitive modes of travel and subsistence, such as exploration trips by pack-train or canoe.

The first idea is that wilderness is a resource, not only in the physical sense of the raw materials it contains, but also in the sense of a distinctive environment which may, if rightly used, yield certain social values. Such a conception ought not to be difficult, because we have lately learned to think of other forms of land use in the same way. We no longer think of a municipal golf links, for instance, as merely soil and grass.

The second idea is that the value of wilderness varies enormously with location. As with other resources, it is impossible to dissociate value from location. There are wilderness areas in Siberia which are probably very similar in character to parts of our Lake states, but their value to us is negligible, compared with what the value of a similar area in the Lake states would be, just as the value of a golf links would be negligible if located so as to be out of reach of golfers.

The third idea is that wilderness, in the sense of an environment as distinguished from a quantity of physical materials, lies somewhere between the class of non-reproducible resources like minerals, and the reproducible resources like forests. It does not disappear proportionately to use, as minerals do, because we can conceive of a wild area which, if properly administered, could be traveled indefinitely and still be as good as ever. On the other hand, wilderness certainly cannot be built at will, like a city park or a tennis court. If we should tear down improvements already made in order to build a wilderness, not only would the cost be prohibitive, but the result would probably be highly dissatisfying. Neither can a wilderness be grown like timber, because it is something more than trees. The practical point is that if we want wilderness, we must foresee our

want and preserve the proper areas against the encroachment of inimical uses.

Fourth, wilderness exists in all degrees, from the little accidental wild spot at the head of a ravine in a Corn Belt woodlot to vast expanses of virgin country—

> Where nameless men by nameless rivers wander
> And in strange valleys die strange deaths alone.

What degree of wilderness, then, are we discussing? The answer is, *all degrees*. Wilderness is a relative condition. As a form of land use it cannot be a rigid entity of unchanging content, exclusive of all other forms. On the contrary, it must be a flexible thing, accommodating itself to other forms and blending with them in that highly localized give-and-take scheme of land-planning which employs the criterion of "highest use." By skilfully adjusting one use to another, the land planner builds a balanced whole without undue sacrifice of any function, and thus attains a maximum net utility of land.

Just as the application of the park idea in civic planning varies in degree from the provision of a public bench on a street corner to the establishment of a municipal forest playground as large as the city itself, so should the application of the wilderness idea vary in degree from the wild, roadless spot of a few acres left in the rougher parts of public forest devoted to timber-growing, to wild, roadless regions approaching in size a whole national forest or a whole national park. For it is not to be supposed that a public wilderness area is a new kind of public land reservation, distinct from public forests and public parks. It is rather a new kind of land-dedication within our system of public forests and parks, to be duly correlated with dedications to the other uses which that system is already obligated to accommodate.

Lastly, to round out our definitions, let us exclude from practical consideration any degree of wilderness so absolute as to forbid reasonable protection. It would be idle to discuss wilderness areas if they are to be left subject to destruction by forest fires, or wide open to abuse. Experience has demonstrated, however, that a very modest and unobtrusive framework of trails, telephone line and lookout stations will suffice for protective purposes. Such improvements do not destroy the wild flavor of the area, and are necessary if it is to be kept in usable condition.

WILDERNESS AREAS IN A BALANCED LAND SYSTEM

What kind of case, then, can be made for wilderness as a form of land use?

To preserve any land in a wild condition is, of course, a reversal of economic tendency, but that fact alone should not condemn the proposal. A study of the history of land utilization shows that good use is largely a matter of good balance—of wise adjustment between opposing tendencies. The modern movements toward diversified crops and live stock on the farm, conservation of eroding soils, forestry, range management, game management, public parks—all these are attempts to balance opposing tendencies that have swung out of counterpoise.

One noteworthy thing about good balance is the nature of the opposing tendencies. In its more utilitarian aspect, as seen in modern agriculture, the needed adjustment is between economic uses. But in the public park movement the adjustment is between an economic use, on the one hand, and a purely social use on the other. Yet, after a century of actual experience, even the most rigid economic determinists have ceased to challenge the wisdom of a reasonable reversal of economic tendency in favor of public parks.

I submit that the wilderness is a parallel case. The parallelism is not yet generally recognized because we do not yet conceive of the wilderness environment as a resource. The accessible supply has heretofore been unlimited, like the supply of air-power, or tide-power, or sunsets, and we do not recognize anything as a resource until the demand becomes commensurable with the supply.

Now after three centuries of overabundance, and before we have even realized that we are dealing with a non-reproducible resource, we have come to the end of our pioneer environment and are about to push its remnants into the Pacific. For three centuries that environment has determined the character of our development; it may, in fact, be said that, coupled with the character of our racial stocks, it is the very stuff America is made of. Shall we now exterminate this thing that made us American?

Ouspensky says that, biologically speaking, the determining characteristic of rational beings is that their evolution is self-directed. John Burroughs cites the opposite example of the potato bug, which, blindly obedient to the law of increase, exterminates the potato and thereby exterminates itself. Which are we?

WHAT THE WILDERNESS HAS CONTRIBUTED TO AMERICAN CULTURE

Our wilderness environment cannot, of course, be preserved on any considerable scale as an economic fact. But, like many other receding economic facts, it can be preserved for the ends of sport. But what is the justification of sport, as the word is here used?

Physical combat between men, for instance, for unnumbered centuries was an economic fact. When it disappeared as such, a sound instinct led us to preserve it in the form of athletic sports and games. Physical combat between men and beasts since first the flight of years began was an economic fact, but when it disappeared as such, the instinct of the race led us to hunt and fish for sport. The transition of these tests of skill from an economic to a social basis has in no way destroyed their efficacy as human experiences—in fact, the change may be regarded in some respects as an improvement.

Football requires the same kind of back-bone as battle but avoids its moral and physical retrogressions. Hunting for sport in its highest form is an improvement on hunting for food in that there has been added, to the test of skill, an ethical code which the hunter formulates for himself and must often execute without the moral support of bystanders.

In these cases the surviving sport is actually an improvement on the receding economic fact. Public wilderness areas are essentially a means for allowing the more virile and primitive forms of outdoor recreation to survive the receding economic fact of pioneering. These forms should survive because they likewise are an improvement on pioneering itself.

There is little question that many of the attributes most distinctive of America and Americans are the impress of the wilderness and the life that accompanied it. If we have any such thing as an American culture (and I think we have), its distinguishing marks are a certain vigorous individualism combined with ability to organize, a certain intellectual curiosity bent to practical ends, a lack of subservience to stiff social forms, and an intolerance of drones, all of which are the distinctive characteristics of successful pioneers. These, if anything, are the indigenous part of our Americanism, the qualities that set it apart as a new rather than an imitative contribution to civilization. Many observers see these qualities not only bred into our people, but built into our institutions. Is it not a bit beside the point

for us to be so solicitous about preserving those institutions without giving so much as a thought to preserving the environment which produced them and which may now be one of our effective means of keeping them alive?

WILDERNESS LOCATIONS

But the proposal to establish wilderness areas is idle unless acted on before the wilderness has disappeared. Just what is the present status of wilderness remnants in the United States?

Large areas of half a million acres and upward are disappearing very rapidly, not so much by reason of economic need, as by extension of motor roads. Smaller areas are still relatively abundant in the mountainous parts of the country, and will so continue for a long time.

The disappearance of large areas is illustrated by the following instance: In 1910 there were six roadless regions in Arizona and New Mexico, ranging in size from half a million to a million acres, where the finest type of mountain wilderness pack trips could be enjoyed. Today roads have eliminated all but one area of about half a million acres.

In California there were seven large areas ten years ago, but today there are only two left unmotorized.

In the Lake states no large unmotorized playgrounds remain. The motor launch, as well as the motor road, is rapidly wiping out the remnants of canoe.country.

In the Northwest large roadless areas are still relatively numerous. The land plans of the Forest Service call for exclusion of roads from several areas of moderate size.

Unless the present attempts to preserve such areas are greatly strengthened and extended, however, it may be predicted with certainty that, except in the Northwest, all of the large areas already in public ownership will be invaded by motors in another decade.

In selecting areas for retention as wilderness, the vital factor of location must be more decisively recognized. A few areas in the national forests of Idaho or Montana are better than none, but, after all, they will be of limited usefulness to the citizen of Chicago or New Orleans who has a great desire but a small purse and a short vacation. Wild areas in the poor lands of the Ozarks and the Lake states would be within his reach. For the great urban

populations concentrated on the Atlantic seaboards, wild areas in both ends of the Appalachians would be especially valuable.

Are the remaining large wilderness areas disappearing so rapidly because they contain agricultural lands suitable for settlement? No; most of them are entirely devoid of either existing or potential agriculture. Is it because they contain timber which should be cut? It is true that some of them do contain valuable timber, and in a few cases this fact is leading to a legitimate extension of logging operations; but in most of the remaining wilderness the timber is either too thin and scattered for exploitation, or else the topography is too difficult for the timber alone to carry the cost of roads or railroads. In view of the general belief that lumber is being overproduced in relation to the growing scarcity of stumpage, and will probably so continue for several decades, the sacrifice of wilderness for timber can hardly be justified on grounds of necessity.

Generally speaking, it is not timber, and certainly not agriculture, which is causing the decimation of wilderness areas, but rather the desire to attract tourists. The accumulated momentum of the good-roads movement constitutes a mighty force, which, skilfully manipulated by every little mountain village possessed of a chamber of commerce and a desire to become a metropolis, is bringing about the extension of motor roads into every remaining bit of wild country, whether or not there is economic justification for the extension.

Our remaining wild lands are wild because they are poor. But this poverty does not deter the booster from building expensive roads through them as bait for motor tourists.

I am not without admiration for this spirit of enterprise in backwoods villages, nor am I attempting a censorious pose toward the subsidization of their ambitions from the public treasuries; nor yet am I asserting that the resulting roads are devoid of any economic utility. I do maintain, (1) that such extensions of our road systems into the wilderness are seldom yielding a return sufficient to amortize the public investment; (2) that even where they do yield such a return, their construction is not necessarily in the public interest, any more than obtaining an economic return from the last vacant lot in a parkless city would be in the public interest. On the contrary, the public interest demands the careful planning of a system of wilderness areas and the permanent reversal of the ordinary economic process within their borders.

To be sure, to the extent that the motor-tourist business is the cause of invasion of these wilderness playgrounds, one kind of recreational use is merely substituted for another. But this substitution is a vitally serious matter from the point of view of good balance. It is just as unwise to devote 100% of the recreational resources of our public parks and forests to motorists as it would be to devote 100% of our city parks to merry-go-rounds. It would be just as unreasonable to ask the aged to indorse a park with only swings and trapezes, or the children a park with only benches, or the motorists a park with only bridlepaths, as to ask the wilderness recreationist to indorse a universal priority for motor roads. Yet that is what our land plans—or rather lack of them—are now doing; and so sacred is our dogma of "development" that there is no effective protest. The inexorable molding of the individual American to a standardized pattern in his economic activities makes all the more undesirable this unnecessary standardization of his recreational tastes.

PRACTICAL ASPECTS OF ESTABLISHING WILDERNESS AREAS

Public wilderness playgrounds differ from all other public areas in that both their establishment and maintenance would entail very low costs. The wilderness is the one kind of public land that requires no improvements. To be sure, a simple system of fire protection and administrative patrol would be required, but the cost would not exceed two or three cents per acre per year. Even that would not usually be a new cost, since the greater part of the needed areas are already under administration in the rougher parts of the national forests and parks. The action needed is the permanent differentiation of a suitable system of wild areas within our national park and forest system.

In regions such as the Lake states, where the public domain has largely disappeared, lands would have to be purchased; but that will have to be done, in any event, to round out our park and forest system. In such cases a lesser degree of wilderness may have to suffice, the only ordinary utilities practicable to exclude being cottages, hotels, roads, and motor boats.

The retention of certain wild areas in both national forests and national parks will introduce a healthy variety into the wilderness idea itself, the forest areas serving as public hunting grounds, the park areas as public

wild-life sanctuaries, and both kinds as public playgrounds in which the wilderness environments and modes of travel may be preserved and enjoyed.

THE CULTURAL VALUE OF WILDERNESS

Are these things worth preserving? This is the vital question. I cannot give an unbiased answer. I can only picture the day that is almost upon us when canoe travel will consist in paddling in the noisy wake of a motor launch and portaging through the back yard of a summer cottage. When that day comes, canoe travel will be dead, and dead, too, will be a part of our Americanism. Joliet and LaSalle will be words in a book, Champlain will be a blue spot on a map, and canoes will be merely things of wood and canvas, with a connotation of white duck pants and bathing "beauties."

The day is almost upon us when a pack-train must wind its way up a graveled highway and turn out its bell-mare in the pasture of a summer hotel. When that day comes the pack-train will be dead, the diamond hitch will be merely rope, and Kit Carson and Jim Bridger will be names in a history lesson. Rendezvous will be French for "date," and Forty-Nine will be the number preceding fifty. And thenceforth the march of empire will be a matter of gasoline and four-wheel brakes.

European outdoor recreation is largely devoid of the thing that wilderness areas would be the means of preserving in this country. Europeans do not camp, cook, or pack in the woods for pleasure. They hunt and fish when they can afford it, but their hunting and fishing is merely hunting and fishing, staged in a setting of ready-made hunting lodges, elaborate fare, and hired beaters. The whole thing carries the atmosphere of a picnic rather than that of a pack trip. The test of skill is confined almost entirely to the act of killing, itself. Its value as a human experience is reduced accordingly.

There is a strong movement in this country to preserve the distinctive democracy of our field sports by preserving free hunting and fishing, as distinguished from the European condition of commercialized hunting and fishing privileges. Public shooting grounds and organized cooperative relations between sportsmen and landowners are the means proposed for keeping these sports within reach of the American of moderate means. Free hunting and fishing is a most worthy objective, but it deals with only

one of the two distinctive characteristics of American sport. The other characteristic is that our test of skill is primarily the act of living in the open, and only secondarily the act of killing game. It is to preserve this primary characteristic that public wilderness playgrounds are necessary.

Herbert Hoover aptly says that there is no point in increasing the average American's leisure by perfecting the organization of industry, if the expansion of industry is allowed to destroy the recreational resources on which leisure may be beneficially employed. Surely the wilderness is one of the most valuable of these resources, and surely the building of unproductive roads in the wrong places at public expense is one of the least valuable of industries. If we are unable to steer the Juggernaut of our own prosperity, then surely there is an impotence in our vaunted Americanism that augurs ill for our future. The self-directed evolution of rational beings does not apply to us until we become collectively, as well as individually, rational and self-directing.

Wilderness as a form of land use is, of course, premised on a qualitative conception of progress. It is premised on the assumption that enlarging the range of individual experience is as important as enlarging the number of individuals; that the expansion of commerce is a means, not an end; that the environment of the American pioneers had values of its own, and was not merely a punishment which they endured in order that we might ride in motors. It is premised on the assumption that the rocks and rills and templed hills of this America are something more than economic materials, and should not be dedicated exclusively to economic use.

The vanguard of American thought on the use of land has already recognized all this, in theory. Are we too poor in spirit, in pocket, or in idle acres to recognize it likewise in fact?