

FOREST OUTINGS

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FOREST OUTINGS



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*“The national forests are the people’s soil,
and the crops are theirs.”*

ST. JOE NATIONAL FOREST, IDAHO.



FOREST OUTINGS

BY THIRTY FORESTERS

Edited by
RUSSELL LORD

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE 1940

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A Foreword

WHETHER it is a garden, a farm, or a forest, any piece of land yielding crops may also yield repose and joy. So it is with the millions of acres of our national forests. The pleasures these forests may give the people is the theme of this book.

For the first white settlers of America the woods lay just beyond the fields or out the door. So it was with woods and other natural wild country all the way to the Pacific. Solitude in a land of marvelous beauty, with clean and shining rivers and an abundance of wildlife, was our natural pioneer heritage as we moved west.

Wherever modern men go civilization follows and crowds them. Often men are driven into unnatural pursuits and actions not good for the land. This account that 30 foresters have written takes you all over our country and shows you the natural wealth and beauty which still is ours. But it also shows many places where men in ignorance, haste, and covetousness have wronged and hurt their country. We see now that there is a new conquest to be undertaken, a new kind of pioneering to be done, a healing reconstruction from the ground up. It would be no true Forest Service publication if it did not sound this call. The men of this Service have been preaching and practicing conservation for more than a third of a century.

I sometimes think we need more than ever, now, to refresh our spirits and renew our aims in the solitude of beautiful natural places. There is a natural completeness about outdoor occupations which we who have been forced indoors and penned in cities lack and miss. A man in a desk chair with his feet on a rug and his eye on a wall or ceiling all day long is a man

in some part cut off from real life and the eternal sources of renewal. There is something strangely restoring about work or play that is done with an eye to the sky and with foot to earth.

We are many of us cut off now in our present way of life from a direct and continuous association with the soil and weather of a given country locality, but I think we are probably forming a stronger feeling for our country as a whole. We can travel now, fast and far, and we do travel. Overseas wars will probably impel us to travel in, and to discover, our own country even more. Millions of us already are finding simple refreshment on these great Federal properties, the national forests. I hope that millions of other forest guests will come. They may be sure of their welcome.

HENRY A. WALLACE, *Secretary of Agriculture.*

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Acknowledgment

THIS was planned as a book of 32 parts, with each separate part or chapter signed by its author or authors. The arrangement was found unsuitable. The problems of using the national forests as places of rest and of human renewal, and at the same time administering a long-span program of ground-line conservation, are essentially coordinate. All the special fields of interest overlap and interlink.

It was determined, then, to call in an editor from outside the Forest Service, to have him travel and live for a while on the national forests, and then reorganize the manuscript—writing, here and there, his own sequences of narrative and interpretation—from an outside point of view. This has been my principal occupation for the past year.

Even were this note of acknowledgment to be extended chapter-length, it still would fail to give adequate credit, by name, to the many professional foresters, afield and in Washington, who have written and then have helped to edit this book. The very men who wrote most of the initial draft, and who thus would have received the most credit in chapter bylines, were the first to urge that the chapters be merged, and that the chapter bylines be killed. Nowhere, I think, except in what we now have in this country of a college-trained Civil Service, will you find so many skilled and articulate people willing, even eager, to forego personal credit, to sink their personal identities in a common effort.

The names of the 30 authors are listed alphabetically. All save 2 are staff men of the United States Forest Service. Althea Dobbins is a free-lance writer. The late Robert Marshall, when chief of Recreation and Lands for the Forest Service, sent her forth to observe forest visitors and report. She wrote *Guests of the Forests*, chapter 3. Marshall's personal contributions to the manuscript include the sweeping inventory of the forests as pleasure grounds in the first chapter, practically all of the wilderness chapter (5), and most of the discussion of forest recreation for low-income groups which now is threaded through the closing chapters.

Bevier Show wrote the concluding sections of chapter 2, *Americans Need*

Outings, and contributed largely to the ensuing account of a boom in recreation out from town. Robert Monahan, I. T. Yarnall, and Floyd Horton drafted the winter sports chapter (7). Elers Koch made the chief contribution to the chapters considering conflicts between timber management and public pleasure. The chapter on miners (12) is John Spencer's. Lyle Watts, H. L. Shantz, and John Hatton made the leading contributions as to game. All illustrations were selected from the official Forest Service photograph collection developed from contributions by forester-photographers throughout the Service.

For editorial aid and guidance I owe grateful acknowledgment to 10 or more of the authors; but to C. M. Granger, R. F. Hammatt, and A. K. Thurmond, especially.

R. L.

Thorn Meadow, Harford County, Md.

January 1, 1940.

Part One

EYE TO THE SKY,
FOOT TO EARTH



F-308555

*What is it worth to this family to have a quiet road up the mountain
and a place within easy-driving distance where they can take it easy?*

ISLAND LAKE CAMP,
SHOSHONE NATIONAL FOREST, WYO.



Your Forest Land

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people, and not for the temporary benefit of individuals or companies. All the resources of forest reserves are for use, and this use must be brought about in a thoroughly prompt and business-like manner, under such restrictions only as will insure the permanence of these resources. Where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good for the greatest number in the long run.

James Wilson, Secretary of Agriculture, in a letter establishing policy, February 1, 1905.

THE NATIONAL FORESTS of the United States of America embrace 176 million acres. That is nearly one-tenth of all our land. This land belongs to the people. It is their vast estate, and the United States Forest Service is charged to administer all its resources and uses in such ways as will increase the wealth and happiness of the people not only during the present year and century but also for all time to come.

An acre of land is about the size of a football field—the gridiron, proper. Our total national population at present stands at around 130 million. So each citizen's share in our national forest land—if you want to figure it that way—comes to about an acre and one-third. An acre and one-third is about as big as a football field, entire, with room for side lines, a press stand, grandstands, and dressing quarters.

To think of our national forests in terms of per capita shares or tracts, is invigorating; for all those many acres do, indeed, belong to all the people. "This land," as William Atherton DuPuy says in his book, *The Nation's Forests* (1938), "is ours though we live in a tenement and never see a chipmunk along a rotting log, or live on the prairie and never hear the wind

sighing through the tall pine trees, or live on a water front where the odor of fish is more to be expected than that of honeysuckle. . . . Out there in the forest, along with the land belonging to the rest of the multitude, it is serving a very important purpose indeed. In fact, it is serving a number of purposes.”

The national forests are the people’s soil, and the crops are theirs. And it is no less stimulating to think of all this sparsely peopled land, the vast extent and stretch of 176 million acres, as a common heritage, not to be divided, pieced out in bits, but administered for the general benefit and pleasure.

This is the Forest Service’s job, on 161 different national forests, no two alike. If all these forests could be grouped at our eastern coast, northward, they would cover all New England, plus all of the Middle Atlantic States, plus all of North Carolina, Ohio, Indiana, Illinois, and Kentucky.

Actually, our national forests sprawl in scattered stretches from the palms of Puerto Rico to Alaskan spruce-hemlock, and lie within or across the borders of 36 different States, in the Territory of Alaska, and Puerto Rico.

IMMENSE AND VARIOUS, rich and poor, these sweeping Federal properties range from sea level to elevations exceeding 14,000 feet. They include all kinds of country and all kinds of cover. On some cut-over lands and on desert or near-desert stretches, charred stumps or grass, cactus or crouching shrubs are the only vegetation. Such country does not look like the general idea of a forest, but it all comes under that sweeping term, and is managed under long-run principles of restoration and use.

On greater areas the timber is of an infinite variety. The dense, dark fir-hemlock stands of the Pacific Northwest, the uniform open pine of the southeastern coastal plain, the varied, colorful mixed pine, fir, and cedar of the Sierras, the complex hardwoods of the Appalachians, the low chaparral of the Southwest, the towering redwoods of the California Coast, the juniper and piñon woodland of the Great Basin, the hardwood second growth of the Lake States, the oak-pine forests of the Ozarks—all these and other distinctive types of cover come within the scope of the term “forest.” So, too, of the open parks within the spruce-lodgepole pine forest of the

Rockies, the scattered stunted white-bark and foxtail pine of timber line in the Cascade and Sierra Ranges, the mountain meadows, the granite peaks rising like treeless islands set within the forest. The lakes and streams, too, are a part of the forest. Our national forests, then, are a kind of country of their own sort, greatly varied, but distinct from developed farm lands and from an urban environment.

This forest domain is managed under a highly decentralized administrative scheme, with national headquarters in the Department of Agriculture, in Washington. It is an over-all system of management with each forest officer, be he ranger, supervisor, or regional forester, singly responsible for a large stretch of public land. In this system the multiple-use principle of management is followed, each area producing timber, water, forage, wildlife, and other forest values, all at the same time, each resource being developed according to its relative importance. Only a small part of the national-forest area is devoted exclusively to one single purpose.

Thus the ranger manages his ranger district in a forest. A ranger's responsibilities in this day of fast and easier transportation may include 500,000 acres or better, a whole forest in itself. A forest supervisor manages a forest or occasionally a group of forests—like the four national forests of Florida, with a gross area of 1,600,000 acres. Supervisor headquarters for these four forests, all lying within the State's boundaries, is at Tallahassee, Fla. Regional headquarters, supervising the national forests of 10 Southern States and of Puerto Rico, is in Atlanta, Ga.

There are 10 Forest Service regions, named by geographical divisions and numbered from 1 to 10; but the 161 national forests are not numbered; they bear names. And almost innumerable ranger stations, springs, camps, pleasure grounds, and peaks within the forests bear names, native names that announce our history and tradition: Big Prairie, Upper Ford, Sun River, Poncha, Teton Pass, Crested Butte, Horsethief Canyon, Frying Pan, Bear Ears, Sleepy Cat, Star Valley, Shoshone Canyon, Snake River, Skull Valley, Tonto Basin, Thunder Mountain, Snake Creek, Joe's Valley, Granddaddy Lakes, Goosenest, Hayfork, Wind River, Packwood, Deerfield, Gunflint, Jackson Hole, Little Bayou, Dead Indian—these are but a few of

the names of ranger stations, camps, trails, mountains, creeks, tower look-outs, and side camps on the Forest Service maps.

As for the forests, their names however prosaically listed make a song or chant of the past and of the hopes of this country and its people. It is too bad that Thomas Wolfe, the young American writer who so rejoiced in American place names and rolled them forth in his novels with such sweep and gusto, did not come upon a Forest Service directory before he died. Perhaps Pare Lorentz, who made a poem of American river names in the sound-track accompaniment of his talking film, *The River*, will some day make a name poem of our forests. For even in the plainest prose the names of the national forests are beautiful. To call but a few:

On the island of Puerto Rico the Caribbean National Forest; the Ocala and the Choctawhatchee, in Florida. In South Carolina the Francis Marion. In North Carolina the Nantahala, and in Alabama the Black Warrior. In Georgia the Chattahoochee, and in Tennessee the Cherokee. In West Virginia the Monongahela, in Virginia the Jefferson and the George Washington. In Pennsylvania the Allegheny. And the White Mountain Forest of New Hampshire, and the Green Mountain Forest of Vermont.

Passing west: The Wayne Purchase Unit of Ohio. In Michigan the Manistee. In Illinois the Shawnee. The Hawkeye Purchase Unit of Iowa. In Minnesota the Chippewa, and the Chequamegon in Wisconsin.

Then the Prairie States Forestry Project covering parts of Kansas, Nebraska, the Dakotas, Oklahoma, and Texas. The Black Hills and Harney Forests of South Dakota. The Ouachita and the Ozark of Arkansas.

In the Colorado Rockies the Arapaho, the Grand Mesa, the Gunnison, the Pike, the San Isabel, the White River, the Uncompahgre. And up in Wyoming the Bighorn, the Medicine Bow, the Shoshone, the Washakie.

The Apache, the Coronado, the Crook, and the Prescott of Arizona. In New Mexico the Carson, the Cibola, the Gila, the Lincoln, the Santa Fe. The Caribou and the Challis, the Payette, the Sawtooth, and the Minidoka of southern Idaho. In Utah the Fishlake, the Manti, the Uinta, the Powell; and the Teton in Wyoming.

In Montana the Absaroka, the Beaverhead, the Bitterroot; and the Deerlodge and the Flathead and the Gallatin. Also in Montana are the

Lewis and Clark National Forest and the Custer. In northern Idaho are the Clearwater, the Coeur D'Alene, the Nezperce, the St. Joe.

Then again over great mountains to the coast. To the south in California the Angeles, the Cleveland, and Los Padres. More to the north and inland the Sequoia, the Eldorado, the Klamath, the Shasta, the Tahoe. In Oregon the Fremont, the Malheur, the Mount Hood, the Rogue River, the Umatilla. In the State of Washington the Chelan, the Columbia, the Mount Baker, the Wenatchee, and many others.

Alaska is Region 10. It has two great national forests, the Chugach and the Tongass, with headquarters at Juneau.

Thus incompletely we have called the roll of our national forests and are ready now to see what is being done with them.¹

SOME OF THE CROPS . . . To conserve and increase all the values that any given piece of land, be it an acre of farm woodland privately owned or a 2-million-acre national forest, may yield, it is generally unnecessary to withdraw the land entirely from human use. Now and then the Forest Service takes over a piece of country so completely racked by headlong private exploitation as to seem for the time being completely useless. The timber has been hacked to rotting stumps and the land burned over. The brush cover is gone. The grass is gone. Much of the soil is gone. There is no game. The streams are foul and muddy. Such scenery as remains cries to Heaven of heedless greed and ruin.

On such scattered areas there may be nothing to do at first but bar for a while all further material cropping, let the worn land rest, coax back vegetation—grass, brush, trees—to resume its ancient work of clothing wounded earth, healing it, and holding the soil together. Lumbering is out for years to come. Pasturing is out. Hunting and fishing are out for the time being. But as the land heals, and takes on something of its former beauty, certain measured uses may be allowed.

One of the first uses possible may be for human recreation. This worn area may be nothing much to look at, as yet, but still it may be the most

¹ A complete list of such forests, their location, and areas is appended on page 289, Appendix.

restful-looking piece of open country for miles around. And it is coming back; that is something. People will come for picnics, or for an hour or so of quiet and fresh air. Even a greening, protected strip of cut-over or burnt-out land in the midst of great areas so laid desolate offers, as it heals, a spot for human outings and a certain degree of rest and seclusion. But care must be taken quietly to manage and distribute recreational use so that people, playing and resting, do not destroy the returning cover.

Most national forest land is now in a far more thrifty and flourishing condition than are the cut-over areas lately taken over. Most of it can be used and is used for a number of purposes at a time. The essence of sound forest management for the long pull is not hoarding, not a grudging withholding, but wise use. Most forest or range land rightly managed can be made to yield useful crops perpetually. Under such a developing system of management material crops of the national forests returned \$4,903,376 to the Treasury of the United States in the fiscal year 1939. Of this money \$1,215,925 was returned, by law, to the States.

To name all of the forest, range, and desert products which entered into this reckoning would make a list that would run on for pages, even in the smallest type. Lumber, of course, stood high on the list, and grass, making meat through pasturage, returned hundreds of thousands of dollars in grazing fees. Cordwood for fuel and pulpwood for the making of paper and of fabrics, choice hardwoods to be sliced into veneers or carved into the keels of yachts or modeled into airplane propellers, turpentine and naval stores and valuable plastics and chemicals, Christmas trees, palms for Palm Sunday, curiously shaped stones from the desert, ferns from the forest floor to dress up the floral bouquets of matron, working girl, and debutante—these were among the items useful or ornamental taken and sold from your national forests last year.

Beyond such items are products whereon it is impossible to set an adequate value in dollars and cents. What value could arbitrarily be assigned the cold mountain water brought down from high, forested ranges to make scorched valleys blossom and to make life possible in the towns and cities of our arid West and Southwest? Snatched from the clouds at the crests, eased down through canopies of trees and grass, this water is the very lifeblood of

that civilization. No one could really put a price tag on this water that would mean anything.

And how could any price put upon American soil, that well-managed woodland and grassland binds and withholds from washing and blowing, from death by erosion, be adequate? For a stabilized topsoil, well-aerated and rich in organic remains, is the thin film of life by which all men and civilizations live or die.

OTHER FOREST VALUES defy price analysis. But they are actual values. They make changes for the better in the ultimate crop of any country. The ultimate crop is the spirit of the people there.

Here for example is a family—any family—with a home in one of the desert towns or cities of Arizona or the interior valleys of California. Day-time summer temperatures here go to 120°, and 90° F. or hotter at bedtime is not altogether unusual at the height of summer. “You can fry eggs on the bedsprings,” the people say.

What is it worth to this family to have a quiet road up the mountain and a place within easy driving distance where they can take it easy under giant trees, amid summer temperatures that range from a crisp 60° to a mildly warming 80° F. at noon, and swim in clean mountain water, and find relief from the terrific heat? In many places, ranging from humid Puerto Rico to the western peaks above the great American Dust Bowl, forest recreation becomes a downright physical necessity for the great mass of the people who ordinarily cannot afford to buy a change of air, or send the women and children away for the hot season, as well-to-do people can. And even the reasonably well-to-do, in such places, are glad to have camps or cottage permits, let cheaply but with no title, on forest land up the mountain, and send their families there, and drive up to be with them nights and week ends.

NOW CONSIDER WILDLIFE the country over. What price good fishing, good hunting, for food and for sport? What price, for the naturalist or nature lover, the sight of renewed wild herds of elk and deer and bison and antelope grazing and roaming, or beavers working? What price a continuing return of songbirds and game birds to our North American earth and sky?

The restoration of abounding native stocks of wildlife in the forests, on upland range, in the water, by the water, and on the water is a most important part of the multiple-use policy under which the national forests are operated. In many parts of our country where the game had been starved and shot almost into extinction, where the waters had been fished out, and where no birds sang, wildlife is coming back now, and fishing is getting good again.

Much remains to be done toward a fuller repopulation and a proper protection of native wildlife. The United States Department of Agriculture is but one of many agencies, public and private, that are taking the necessary first steps, more or less together, to restore to the extent possible under modern conditions the wildlife which was so highly important in America's past.

Game can come back fast: In some places deer have so multiplied as to become a sort of animal weed, wandering. They are devouring herbage and cover, inducing soil erosion, starving to death. Upward of 5 million deer were abroad in this land at the time of the last governmental wildlife census covering all lands, in August 1939. In some places the hunting season and bag limit have been extended, considerably, in order to keep the deer from wrecking what is left of cover crops and soil.

This fact raises differences of thought and emotion, highly pitched. Those who delight in the sight of deer, poised, quivering, or leaping for cover, and press a camera trigger, or make notes, cry protest against carnage. Those who tremble with pleasure, or "buck fever," then steady themselves, and press gun triggers, respond to instincts no less primitive or deep seated, differently. The only point to be made here, in opening, is that both sorts of men, and groups of men, experience at the moment wild deer are sighted a healing sense of freedom and rapture, a split second of primal delight. The pressures and constraints of civilization fall from their minds and backs; they are almost as free, for a few quick breaths, as the deer they note, photograph, or kill.

The pleasures that the national forests can offer the people are widely various. They are simple pleasures, in the main. The aim is to keep them simple, inexpensive, and as nearly as possible accessible to all. There are

plenty of complex and clamorous amusements available to most people outside the forests. The forests offer a wide variety of retreats from strain and tension, with a chosen degree of solitude.

THE MAIN IDEA of those who have to plan recreational use for the forests, is to fit their plan into the guiding policy of multiple-use, and to keep things natural. That is not as easy as one might think. Millions of Americans have lately discovered the national forests as a natural retreat and playground. On summer week ends and holidays, especially, the people in their millions have learned (as one sardonic western forest officer expressed it) "to take to the open road in a closed car and return to the breast of Nature and litter it up with banana peels and beer cans."

This remark may sound a shade inhospitable. Such, really, was not the mood of this forester, still in his forties. He started work with the Forest Service at a time when, if a party wanted recreation, they simply went out into the forest and made a fire and caught some fish, and cooked them, and slept in a throw-down camp. Then automobiles were invented and were made cheap, and the thundering human herd on rubber tires entered the forest to rest and play.

You could not let them make fires now, at random. Many would be careless, and the fires would spread, destroying timber, destroying cover, incinerating perhaps ten or a dozen of these carefree forest visitors themselves. Fireplaces, camp or picnic tables, pure piped water, and sanitary toilet facilities had now to be provided; yet things had to be kept natural, or as natural as possible, lest the visiting throng destroy the very beauty and simplicity and quietude toward which with a deep and restless yearning they swarmed.

All this was somewhat bewildering to old-time Forest Service men who knew about trees and sheep and game and cattle, and knew what to do about overgrazing, but who had never been trained to handle an overload of humans, unobtrusively. They have learned. Now they "salt down" as cattlemen say, attractive and secluded byspaces, so that people will spread out in their outings, and not stomp the cover bare at some one central glade. Where denudation of the cover does take place, and soil erosion

follows, foresters now shut that camp or picnic site off for a while, give it time to heal, and "rotate" the picnic or camp sites, whenever possible, to some place else.

Some of the best recreational-use planning has been done not at Washington, and not at the regional and supervisor offices, but by rangers on the ground. And many of the best jobs of welcoming people to the forest, spreading them out, and letting them have a good time in the way of their own choice, quietly, have been done by sardonic, old-time forest officers such as the one just quoted.

No one who loves the woods and the lone places can long remain inhospitable or out of sympathy with people who today throng to the woods, the shores, the lakes, and the heights of mountains on our national forests. In somewhat lonely settings these visitors may be embarrassed or awkward, at first. Certain of them may make a great deal of noise, on their own, and turn radios on full blast to make themselves feel more at home, and prove it. But generally the jitterbug phase of their return to nature soon wears off, and they seek quieter amusements, more on their own. Their need and hunger for natural things, for simple, earthy, normal satisfactions, is so urgent, so deep-seated, and so evident, that even when they spit down canyons in their exuberance and see how much of The Star-Spangled Banner they can sing before it hits; even when they perform the tenderfoot trick of rolling great stones down sheer mountainsides, dangerously; even when they complain that a one-way pack and motor trail to a mountain-top is out-of-date and should be at least a three-lane highway, paved, oiled, and sleek, you cannot for long feel cynical about these robust nature lovers, or remain unfriendly toward even the rowdiest, the noisiest, the most self-conscious. They are lost children coming home.

But they are often problem children; and the job of planning recreational use on the public forests and fitting it into other uses is difficult at times, and always fascinating.

FOR PURPOSES OF SIMPLE PLEASURE the national forests of our States and territorial possessions offer everything that unsettled land can offer anywhere on earth. They include nearly any combination that can occur in

nature from the edge of deserts to loftiest summits of wind-swept rock or snow. There are the hot, dry woodlands of piñon and juniper which grow in sun-baked soil and the cool, moist, alpine forests and meadows which during most of the year are saturated with the snow and rain and mist of mountaintops. There are the abused cut-over lands purchased by the Government for the sake of restoring them to productivity, and virgin forests as untouched by commercial use as before the days of Columbus. In the Southeast, the Southwest, and the Black Hills, are forests so devoid of water bodies as to require artificial lakes and reservoirs, and in northern Minnesota and Wisconsin are forests with so many thousands of lakes that no one has ever counted them all.

Our forests include waterfalls, dry mesas, and turbulent rivers. They include timberland, range land, rock land, and desert land, all mixed together and overlapping in a pattern of endless change. Our national forests include within their boundaries almost three-quarters of the timberland in public ownership. They contain from tens of thousands to millions of acres of practically every important forest type, including the redwood.

Let us look at a few of them in early summer; for when school lets out, from then until Labor Day, that is when our forests receive the most visitors. The "peak load," foresters call it, or the "heaviest use" by pent-up citizens seeking natural recreation, comes the country over when youngsters are out of school.

On the upper slopes of the White Mountains in New Hampshire the red spruce and balsam grow in dense stands and keep the ground cool and shady even in the hottest weather. The alpine asters and goldenrods, the Indian pokeweed, the goldthread, and the sphagnum moss are fresh and untrampled. Through the forests young streams splash wildly over granite boulders as they tumble on the first leap of their journey to the sea.

In Pennsylvania the foliage of the hemlock-hardwood stands is a mixture of dark-green needles and bright-green leaves. The larger trees display a pleasing variety of patterns. The hemlocks are brown, with shallow grooves in their fibrous bark; the maples deeply grooved and tan; the black cherry trees, red-brown and lustrous, with their horizontal bark scars; the beeches a smooth, hard grey, spotted with the black conks and healed-over branch

scars. On the floor of the forest are the twinflower and woodsorrel and lady-slipper and saxifrage.

The hardwoods in the coves of the southern Appalachians grow higher than any other hardwoods on the continent. Here the straight boles of the tulip poplars rise more than 100 feet without limbs and jut up far above the surrounding oaks. In the small openings of the forest grow dense clumps of laurel and azalea which in May and June blossom forth in brilliant orange and pink and cardinal.

Between the innumerable bodies of water which cover northern Minnesota are varied forests. The sandy places are clad with white and red pines. The white pine has short, delicate, light-green needles. The foliage of red pine is long, coarse, and dark green. As you come off the lakes and start to portage through these pine forests, the trail leads into an unknown world of exciting mystery. Spruce and balsam grow in the moister places, and among them the tundra vegetation of labrador tea and pitcherplant and sheep laurel. Wherever forests have been burned in the past hundred years you see hillsides covered with aspen. These aspens turn a quivering, brilliant yellow in the fall.

Throughout the interior West, from the Black Hills to the eastern Cascades and from New Mexico to the western foothills of the Sierras, are beautiful forests of ponderosa pine, covering millions of acres. The mature tree trunks appear almost orange color in the bright sunlight of this western region. Darker-colored Douglas firs grow among the pines and lend variety to the landscape, and the ground is gay and bright with green forage. The forest here is invitingly open and parklike, almost without underbrush.

In northern Idaho, the western white pine dominates the forests. For more than 175 feet it rises tall and straight, and for half of this reach, or more, it is free from any branches. Beneath it grow the cedar and hemlock, dense-crowned trees. The limbs extend almost to the ground and cast a deep shade on a forest floor carpeted with delicate woodferns, twinflowers, gold-thread, and wild ginger. Scattered throughout these stands is the western larch with bark that is sometimes a foot thick, and needles that turn pure gold when touched by the frost.

All through the Rocky Mountains, from Canada to southern Colorado,

the lodgepole pine forests cover millions of acres. These trees are slim and straight. Often they grow so densely together that you have to fight your way through them. In mixture with the lodgepole pine you see Douglas fir and the true fir. The ground cover is of sedges and grasses of many kinds, together with the bright-blue lupine, brilliant orange tiger lily, and many other cheerful flowers.

The giant forests of western Washington and Oregon are majestic and solemn. They are like vast cathedrals, out of doors. Here are lands of perpetual shadow formed by the dense crowns of Douglas fir and Sitka spruce, which grow more than 250 feet tall, and of the shorter hemlocks, cedars, and white firs. Their branches are draped with long, hanging tree moss which gives to the surroundings a veiled appearance. On the floor of the forest only the most shade-enduring vegetation can live, but this includes ferns which frequently grow waist high. Such forests convey the feeling of the everlastingness of life. Here stand all ages and sizes of trees, from the over-mature giants, 5, 10, or even 15 feet in diameter, to the current year's seedling which is less than an inch tall, but sprouts hopefully on the disintegrating, moss-covered remains of some ancient specimen that had tumbled long before Columbus came.

The alpine forests of many high western mountain ranges are lighter, brighter, and more cheerful. Here the trees are scattered and stunted from a lifetime of battling against the cold and wind of high altitudes. And strewn between the throngs of battling trees are alpine meadows, carpeted with fresh green grass and a gay profusion of many-colored flowers, but recently born after a hard winter of dormancy under snowdrifts unbelievably deep.

These in general are elder woodlands, our more primitive forests, such as remain. Recreation on the national forests is by no means confined today to the primeval setting.

NEW WOODS AND WAYS . . . Millions of acres of vigorously growing younger stands which have followed fire and logging, millions of acres of meadows and browse lands where people come for relaxation and adventure, have been opened to the public within the last few years.

New ways of public entry have been opened to old forests, and new.

These roads have been planned and made to give more comfortable access to the forests, yet not intrude unduly. They offer to the tourist a great variety of picturesque driving possibilities. The Mount Hood Loop Road in Oregon, first following along the mighty Columbia River, then swirling upward to circle this beautiful volcanic summit; the Galena Summit Road in Idaho, switchbacking up to and down from this lofty pass; the Mogollon Rim Drive, skirting for miles along the top of massive Arizona Cliffs; the Evans Notch Road, leading in graceful curves among the rugged hardwood slopes of the White Mountains—these are a few of the new main roads into great new forests, or into older forests, tended and renewed. And thousands of miles of new trails have been built, mainly by CCC boys, into the forests, for the people's use. They vary from easy footways over level or rolling country to steep trails scaling rocky summits far above timber line. These trails are marked with arrow pointers, plainly; back to comfort and civilization; on to somewhat lonely natural wonders, beauty spots, or heights.

But you have to make the journey on your own leg and lung power and learn again in some measure how to take care of yourself in far places, with no corner drug store near, and with the unpredictable beat of the weather on you, if you really want to return for a while to nature.



F-321029

*. . . Virgin forests as untouched by commercial
use as before the days of Columbus.*

COLUMBIA NATIONAL FOREST, WASH.

Americans Need Outings



“The New World”: at a time of tremendous pressure and distress, that phrase rang through Europe to lift the hearts of the defeated, restless, and dissatisfied. It aroused hope of romantic adventure and of sudden riches in gold and furs. But those who came to settle here found that pioneering must be paid for in sweat, blood, and strange diseases, in the suffering of long, slow toil.

They paid that price, and the heritage they leave us is rather bitter—a rich land racked and mismanaged, with huge accumulations of goods and wealth, yet with millions of our people deprived and helpless. Today we again have a situation like that in Europe 300 or 400 years ago. In some ways I believe it is far more significant. We have millions of people with good bodies and minds who cannot get jobs. They are just as good people as those who left Europe for America 300 years ago. They are looking for another new world.

Henry A. Wallace, New Frontiers, 1934.

WHEN THIS LAND WAS NEW and open for the taking, the amount of work that had to be done barehanded or with the rudest of tools was staggering. Need never drove harder than on the first English seeding-ground of occupation. “He that will not work shall not eat,” wrote Capt. John Smith in that fearful “starving time” at Jamestown; and it is recorded that toil remained a virtue of necessity during those first winters on Massachusetts and Virginia shores.

But something far more enduring than driving physical need entered into the minds and hearts of these new American inhabitants. For here were people seeking freedom, and this gave a spiritual lift and push to the march of occupation, exalting it. Here vast wealth lay almost at the door of every settler, wealth in the raw. The extent of it seemed endless. The race was to

the strong. And although the price was toil, the reward of toil was the prospect of independence, freedom—the right to stand on your own legs on your land, owned free and clear; the right to look all men who differed with you in the eye, and tell them where to go.

That was the dream. But with so much virgin country to be developed, and so few hands to do the work, idleness seemed sinful. It was only by the hardest of labors, long endured, that a man without capital, and his wife and children, could stand free. So pioneer Americans all but deified constant toil as a means of freedom, as a means of attaining security and dignity; and they lived, in the main, scorning ease.

THE SCORN OF EASE was never as intense southward, in all likelihood, as it was among stern and rock-bound Pilgrims facing west. Nor did natural circumstances in the South enforce, until many years had passed, the thrift and care which we associate with New England. New England soil, as one student of geography and its relation to history has in effect observed, was only to be taken and held by patient husbandry; but the warmer and more opulent South lay open to ravishment right away.

Tobacco, soon introduced there, brought money rolling in from overseas. It multiplied negro slavery, but it lightened the lot of the white proprietors. Tobacco was a cash crop, but it was a clean-tilled row crop that punished land. Washington ordered tobacco off the soil of Mount Vernon when he saw what it was doing to his fields. Chop, crop, and get on West continued, however, in the face of his warnings, and Jefferson's, and Patrick Henry's. For many years it remained the prevailing mode of development and progress.

Cotton also levelled great forests, ripped up pleasant grasslands, and assumed an all but absolute sovereignty over some of the best land in the United States. It was also a cash crop, and year after year cotton also exposed Southerners' land to the weather, let the weather whip their film of sustenance, their topsoil, out from under them. So year after year the fields of our southern coastal slopes ran off into the Atlantic Ocean.

This set going a definite human drain. The South, by fairly constant emigration, has contributed flesh, blood, and many of its more adven-

turous human spirits to the North and West. This drain has accelerated in recent years. Gerald Johnson, interpreting statistical tables compiled by Howard Odum of the University of North Carolina, estimates that the exodus of Southerners, considered in point of quantity alone, has exceeded 3½ million; and that to rear, school, and then lose this many men and women to other parts of our country, cost Southerners at least 17½ billion dollars.

ON THINNED SOIL, HEALING, the South is now coming back. Safer methods of cultivation are developing fast, and being adopted. Healing pine and hardwood are being permitted and encouraged to reforest the worst-torn, cropped-out areas. Second-growth and some surviving virgin timber are being brought under management and cropped with a view to permanent security, pleasure, and gain.

Grassland is coming back, too, but on the most-croded areas forests must be the mainstay for centuries to come. For although nearly all the topsoil there is gone, there are many trees which can feed on subsoil and flourish. And trees bring up through their roots and trunks and limbs and foliage mineral and organic nutrients that are below the reach of lesser plants, slowly rebuilding topsoil with the years. Within the present century more than 11 millions of acres of national forests have been established in the South alone, and the State forests there now exceed 254,000 acres.

The South is coming back; but you will find little of the lavish old plantation atmosphere, the gay outdoor court life, or the soireés which attended King Cotton at the height of his reign. For the New South is a land of hard work and of rather grim and steadfast purposes. Most of its people are engaged in the tiring, unromantic business of actual long-time reconstruction from the ground up. The tourist business brings in money, and so is welcome. But the thud of the tractor, the plod of working gangs and work mules, the rising whirl of new and diversified factories, and of a great woods industry—these are sounds that seem more important to the South than banjo music now.

WORK—AND ESCAPE . . . It is a common observation among the people of older countries that Americans work like mad, play like mad, and do

not know the value of leisure. There is some truth to that. Surely we work like mad, many of us, and take a strange, perverted pride in it. The remark of a farm wife, "Overwork is the most dangerous form of American intemperance," suggests habits certainly not confined to excesses of weary, stumbling toil afield. Great executives and lesser ambitious officers and clerks of our greatest city business firms send out for a sandwich and milk shake, then nibble at their desks as they dictate, push buttons, grab at phones, bark, and display—in excessive and sometimes hysterical form all day long and after the electric lights are lit—good old 100-percent pioneer American drive, pep, and spizzerinctum.

Then these businessmen clump wearily to their feet, all possibility of a sane and collected judgment long since dulled. No hay hand bragging at the fifth beer of inhuman feats of overexertion under the blazing sun of a Montana harvest is prouder than the wan slave of business, be he the president of the company or a file clerk, who is the last man out of such an office for the day. The last man out turns out the lights. That is his privilege, and an omen.

And not unusually these hired men crawl home through traffic by car, bus, or subway laden with bulging brief cases and portfolio; more work. They snap at their dinners and their families and perform further lonely prodigies of toil. And when such excesses drive them, as happens fairly often, to alcoholic frivolities, to the divorce courts, and to the waiting rooms of highly specialized doctors, these tired businessmen are very sorry and somber about it. Then, if they are wise, the doctors advise them to seek escape, to take to the woods, to strike out into the wilderness and get away from it all.

THE GREAT OUTING . . . The days of our pioneering are not ended. But our simple and brutal concepts of pioneering are changing. We no longer look at it as altogether doleful or as a matter for long-faced lamentation. Why should we, for in a manner of speaking the whole American settlement from coast to coast was an adventure, a grandiose outing, a burst of escape from overcrowded, overdriven civilizations that were not working any too well in Europe.

It was rough work, especially hard on the women, who like things convenient, orderly, dainty. But in most males there is a rough streak. They find relief in rough clothes, rough food, rough ways; in telling rude jokes, and letting the whiskers grow; in pigging it, as campers say, with an unabashed and primitive abandon. And such a life seems all the more satisfying to rude males if it is spiced with danger enough to permit a certain amount of strut and heroics. There is evidence that a great many of our American male progenitors and not a few of their women had in their more exalted moments a grand time. The life was hard, but you felt that you were doing something special on your own power; and it kept you out of doors.

Our frontier forebears had so much of nature all around them, and hammering at them, that they did not go into rhapsodies at sunsets. They made no undying lyrics, as did pale Shelley confined in London recalling the flight of a lark. They did not sentimentalize or often speak of such beauty and wonder, any more than most forest workers and farmers do today. But the woods and unspoiled natural places lay just beyond their fields or over their doorsills, and their work was generally such as took them outdoors alone through all the changing seasons.

They were there on business, but even if the work and their conscience drove them, the virgin beauty and wonder surrounded them and worked its spell. They were there on their own, as the saying goes, and they could imagine themselves free. The men who conquered the wilderness did not hate it. Outdoor escape was inseparably a part of their pioneering. We who follow come honestly by our love and yearning for outdoor recreation. The wide outdoors is in our blood, and we need the healing shelter of woodland.

Any open country will do for an outing. But in our forest land there remains something virile, yet mysterious, something that exerts a special pull upon a people still steeped in pioneer traditions. In woodland we still feel a bracing sense of uncertainty, a hint of danger. Actually it does not require a two-gun man or an athlete to sojourn in the forest. Yet a man goes into deep woods with some hesitation as to his ability to cope with what he may find there, whereas even a billionaire centenarian confidently



F-350162

Men seek escape. They yearn to get away from it all.

WISEMAN'S VIEW PISGAH NATIONAL FOREST, N. C.

totters out on a golf course. To Americans the forests mean adventure. In many places, the forests still are primitive enough to provide adventure, and this adds to the charm.

In a personal letter, Rex King, of the Forest Service, at work in the Southwest, lately sought to express in words the compulsion which led him years ago to leave New York, his native city, and take work in a natural wilderness. "As a boy," he recalls, "there was a sort of legend, a promised land, that we used to hear of, we fellows who lived in New York. It was 'The North Woods.' I don't remember that anyone ever stopped to wonder just where the North Woods was located, but it was somewhere a long way off. It was a place where there were lots of trees and rivers and lakes, where one could live a long time without seeing people, and there were many birds and animals. We were old enough to know that there were no longer any Indians abroad—that there were no dangerous animals, but there was still the expectancy of adventure. Even today that term 'North Woods' brings to my mind something which I have never found in reality, although I have looked for it pretty well over the United States.

"It seems to have meant something of a remnant of those things which our ancestors had experienced—breadth, freedom, great spaces, fragrant air, clear water, and perhaps just lonesomeness."

"I WANT OUT" is a Pennsylvania-German expression that is also heard occasionally in parts of Ohio, Indiana, and other States settled by pioneers who came in from Pennsylvania over the Cumberland Gap. They use it as a definite literal statement of purpose, to bus conductors, for instance. Also, upon occasion, they say, "I want up," "I want down," and "I want in." But: "I want out," is the sentence which rings now with its stark directness and urgency in the mind of anyone considering the growing pains of demand upon forest recreational resources in the United States.

There are times when we all want out, and times when the fret and strain of modern life are such that this want becomes no mere whim, but a dominating necessity. We all rebel at times against the regimentation that commerce and fashion and custom, far more than our Government, impose. And if our inherited sense of personal rebellion can be diverted and

soothed by wearing a dirty shirt, tramping lonely trails, and going without shaving or tinting our fingernails for a day or so—well, that would seem a rather harmless way of trying to get another revolution out of our systems.

Modern life and urban life in particular enforces insistent and incapable discipline upon the individual. Social customs, job, family, the group, and the church all demand compliance to codes. Many of these rules are irksome. Some of them run counter to human nature. Often man is forced into a pattern of behavior that makes him an indistinguishable member of a band. This may tend in the course of time to subdue his pride and his sense of importance.

A man must learn to live with himself before living with others. He feels that this loss of the sense of an individual significance is not good, either for himself or for society, and he gropes for means to recapture what he has lost.

Many forms of urban entertainment enable a man “to get out of himself,” and often they allow him to identify himself vicariously, by feats of personal imagination, with heroic or striking and successful personalities. The theatre, the movie, athletic sports and spectacles, romantic novels, and group organizations momentarily may restore his esteem of himself. But vicarious participation in the triumphs of others cannot for most natures forever be a substitute for active participation and actual personal triumphs.

So there are a large group of games and activities possible in urban environment designed to give modern man a chance to excel in himself. He may play at golf, at tennis, at cards, at squash, at swimming and fancy diving. But in all these pursuits, he is hopelessly outclassed by the publicized expert.

The more active of all such games afford needed physical exercise, and a momentary psychic relief. But there remains still the need to get out of the city, to “fall out” of ranks, as army sergeants command, if only for a day or two, or even for an hour’s drive in the car. The urgency of this need is evident to anyone who has to drive in week-end traffic around our greater cities. Even where the gas fumes, billboards, and hot-dog stands are thickest, the people in their millions seek a change of scene and air. Modern man most desperately seeks escape. He drives hard, when no policeman is near,

to get out of his daily routine; he will break speed laws and jump red lights to recapture the chance to relax. And in city and country alike people have need of variety, of mixing work and play, of seeing and doing new things, of gratifying curiosity, of personal adventure.

REST AND CHANGE . . . Physicians, psychiatrists, and others dealing with human ills generally recognize this. "Rest and change" was perhaps the most frequent prescription of wise family doctors, general practitioners, years before they or their patients learned to speak in terms of psychiatry. And even now when we have a whole new set of words to describe physical and mental fatigue and spiritual exhaustion, the cure in many cases is just as simple. And each year the cure becomes more nearly impossible for many poor and driven people.

When body and mind are run-down to the verge of prostration, when nothing as yet is organically wrong with that mind or body, the most skilled and candid of physicians recognize that they can do little for the patient beyond inducing a slackening of tension and activity, then aiding or allowing Nature to heal the hurt. "Rest and change" is still a standing prescription, and "Try and get it!" remains a common American response.

It is generally true that Americans, rich and poor, are learning to be their own doctors in this particular, so far as they may. As naturally as ailing or wounded animals crawl off from the pack to recover, we are learning to quit wounding environments for the time and to seek such relaxation and change as our means allow. To a considerable number of Americans not very rich, a summer vacation on farms taking boarders, or at "camps" with names like Kare-Free¹ in the Catskills, allow for a while a slowed-down tempo, a chance to rest and recover.

Ocean or lake beaches nearer to great cities and the job receive enormous crowds of young and old. This is emphatically true of New York's

¹ The imagined but factually accurate scene of Arthur Kober's beautiful and tender comedy, "Having Wonderful Time." Kare-Free has a high-powered recreational director and frequent dances and vaudeville as an extra added attraction; but that is not its main attraction for the shop girls and garment workers of New York City who come to the North Woods for a breath of woodland air, rest and romance, year after year.



F-366206

*What the national forests have to offer, above all else,
is space—space and stillness.*

BLUE PARADISE LAKE,
GALLATIN NATIONAL FOREST, MONT.

commercial playgrounds during the hottest weather, from Independence Day to Labor Day. During heat waves the beach at Coney Island photographed from a 'plane resembles nothing so much as a vast anthill swarming. In point of recreational use this beach probably carries the heaviest load in the Nation.

Local police complain that the thousands of tottering children customarily taken up as lost, and at nightfall generally reclaimed by their parents, were not really lost at all, but were mainly turned loose to be lost for the day by overdriven parents. The New York papers customarily carry air photos of the thickest of these heat-wave swarms in the Sunday rotogravure sections, and no news account by a trained metropolitan reporter omits as a sort of key to the extent of the exodus the number of "lost" children picked up and tended for the day by the Coney Island police.

It is plain that such mass outings, while valuable, leave something to be desired. The incessant pressures of urban time schedules, of space restrictions, the noise and the huddle of a metropolitan existence still beat at the mind and cramp the spirit amid these tangled beach throngs. The beach at Coney Island on a hot Sunday provides air, sun, and ocean enough for all, but certainly it is not an ideal place to recover a lost sense of personal significance or find new elbowroom for the ego. And it is one of the sights of New York City to see these sunburned, tense, and jaded pleasure seekers pouring back into town at the end of their day in the open. The poorest of them pack the tube and subway trains, pushing and stomping. They are tired to the point where they can almost sleep standing. At the ferries the automobiles of somewhat more solvent citizens stand jammed in line for miles, crawling, stopping, waiting; sometimes they have to wait for hours to get the car on a ferry. Their auto horns keep up a constant caterwauling of agitation and protest all through the night. There is a great crying of weary children and a great slapping of weary children for crying.

Now these people know from experience, most of them, what their day at the shore will cost them in money and in discomfort, but they keep on going again and again. Nothing could more plainly testify that outdoor recreation is a driving human need. These driven people are simply trying to get all they can of it within their means and scope.

With the need as it is, with great public pleasure grounds open to the people, it becomes a matter of common-sense policy to see that public recreational facilities do not simply duplicate existing commercial facilities, but provide values that a private resort, be it Coney Island or Newport, generally cannot provide. This is especially true of recreation on the national forests.

What the national forests have to offer, above all else, is space—space and stillness. Rich people can buy this, in some measure. But only the very favored few are in a position to buy themselves enough of it in the form of suburban or country estates, country club privileges, membership in exclusive shore communities, and so on. Only about 1 percent of our city people, at most, are rich enough to buy enough space and stillness to satisfy that need in themselves, their families, and their friends. If this is a reasonable estimate, it follows that 99 percent of the outdoor recreation problem of our city people cannot be solved by the individual efforts of the persons immediately concerned.

Outdoor recreation for urban populations has become, then, a problem that seldom, if ever, can be expected to solve itself. Only 1 percent of ocean and Great Lake shores, for instance, remains open to the public.

The need for public playgrounds—using the term in the larger sense—has been recognized in this country since the early settlers began to build up city communities. The public “common” so characteristic of New England cities was one of our earliest gestures in recognition of the need for setting aside ample space for simple recreation. City parks were another step toward sustaining simple natural values out of doors. It is now the recognized job of many a city government to provide play space for its citizens. It is held a matter of civic pride that such playgrounds should so far as possible preserve beautiful natural settings. And of late, with continually greater willingness, Government is accepting the task of devising and furnishing effective outlets for the innate craving of its citizens for outdoor exercise, relaxation, and refreshment. The job of general recreation is gradually being accorded the same basic importance as that of general education. It has become a public responsibility, recognized alike by county, State, and Federal Governments.

REFUGE is provided for fish and game; why not for people? Refugees from the strains, the disillusionments, and the personal indignities imposed by a regimented commercial order of life in cities, towns, and on farms are seeking by the millions the healing refuge of our remaining undeveloped places. The people are thronging upon the more than 15 million acres in State parks, forests, or forest parks; upon 9½ million acres of national parks; upon 176 million acres of national forests, the country over. Conditions, circumstances, and opportunities are so various among these public properties that different types of administration seem wise and necessary, and increased demands raise questions of recreation administration which concern State foresters, members of the National Park Service, and the United States Forest Service alike.

The results most likely to follow, were the process allowed to increase and accelerate absolutely undirected and ungoverned, would be simply an old story repeated. Rushing, seeking to get away from it all, people tend to take it all back with them, and so clutter up, maim, or destroy the natural beauty, quietude, and freedom they impulsively seek.

In a manner of speaking, then, the problem comprises the whole problem of civilization. Here are a people sick at heart in the main of jungle drumbeat to swingtime poured into their homes, day and night, under guise of recreation over that magical modern instrument of instant communication, the radio. We are sick of noise, bewilderment, confusion; of the imitative, step-it-up technique by which so many of our magazines, talking pictures, tabloids, comic strips, books, and advertisements seek to divert and comfort us. So we pack the car, pile in the family, hit out for the woods—with a pile of magazines on the back seat, and the radio blaring full tilt.

Society may move to restore what it has destroyed or maimed. But to impose strict supervision upon Americans seeking national-forest outings—to herd them, however tactfully—is to thwart the very spirit of the adventure, to slap down any developing spirit of rest and sense of freedom. The wish and impulse of the Forest Service is simply to turn all these millions of forest visitors loose, to govern or regiment them not at all. But experience shows that on more heavily used recreation areas some rules are necessary.



F-351726

Refuge is provided for fish and game; why not for people?

SELWAY-BITTERROOT WILDERNESS AREA,
LOLO NATIONAL FOREST, IDAHO.

It is quite a problem. Even so, when it comes to national-forest recreation the Jeffersonian tenet that "the best government is the least government" still stands.

OBJECTIVES . . . The first objective is to provide a natural and simple environment. This calls for such simple and human administration as will encourage individual enjoyment of the forms of recreation natural to the forest; as will maintain as much as possible of the native simplicity of the forest; as will avoid man-made refinements not required for the protection of the health, safety, and reasonable convenience of users, or for the protection of the forest property.

A second objective of national-forest policy is to provide graded steps through which the individual may progressively educate himself from enjoyment of mass forms of forest recreation toward the capacity to enjoy those demanding greater skill, more self-reliance, and a true love of the wild. Most men or women previously unacquainted with the forest in its natural state would experience discomfort and fear, and might even be in serious danger if moved in a single step from the accustomed city to the unaccustomed wilderness. But if progressively they may experience the urbanized forest park, the large forest campground, the small camping group, the overnight or week-end hike, and so gain a sense of confidence in their own resourcefulness and lose the fear of wild country, then the final step is simple and natural.

A third major objective is protection of the resource against the added hazards introduced by recreational use. Protection of forest land involves not only extension of the customary protective machinery against fire and other enemies of the forest, but also the institution of administrative measures needed to prevent the destruction of recreational values.

The values to be defended are not only quantitative values, such as size and density of timber stands; but qualitative also. Each forest type has its individual scenic possibilities, variety of vegetation, contrasts between open and closed forests, patterns of color, ever-varying natural composition of the scene. These combine to produce a composite quality, ranging from the uninteresting and monotonous to the wild and majestic, and all in basic contrast to the environment in which most people live.



F-381094

The first objective is to provide a natural and simple environment.

CLEAR SPRINGS RECREATIONAL AREA,
HOMOCHITTO NATIONAL FOREST, MISS.

And there are other aspects of the forest even less obvious, little known, but vastly important. Viewed at a given moment in its natural state, any forest appears fixed, unchanging, static. But the status of the moment is the end result of an age-long conflict of each class, type, species, and individual form of vegetation with the whole environment of soil, temperature, moisture; of each species and individual with the exact environment of particular spots in the whole; between neighboring individuals to capture growing space, light, moisture; between every rooted tree or plant and such parasitic and destructive biotic forms as fungi, mistletoe, and insects that draw life from the life of the plant; and finally with the catastrophic forces—lightning, wind, fire, flood—that may annihilate individuals, species, or whole forest societies.

This process of struggle and competition is never ceasing, though usually invisible. It is as fervently and ruthlessly fought as the most savage of human wars. In it, individuals, species, and whole forest societies win or lose often on relatively trivial and insignificant changes in the alignment of forces. Slightly more or less moisture, an increase of tree-killing insects, the deposition of silt by a flood; any one or all of these may have a decisive effect on the changing tides of battle. Inwardly the forest is powerfully dynamic, never static.

Modern man in general is a timid adventurer outside of his accustomed haunts. The very young may hunt or elude wild Indians in city parks in fearless imitation of grown-up Indian fighters, but the great number of adults who lack any personal experience in the friendly forest of today have a deeply founded suspicion based upon the forest's ancient hostility to man. The only way in which these inexperienced urbanites may overcome this suspicion and learn the values native to the forest, a feeling of safety in it, a capacity to enjoy it, is by gradual adventuring for pleasure.

As the frontiers pushed westward, as the forest was subjugated, as order, safety, and the rule of law were established, as men escaped from the never-ending labor of the pioneer and acquired leisure and means, forest recreation began its growth. First, hunting and fishing for sport rather than sustenance. Later, the festival, the camping party, the picnic as a brief escape from the congestion of the city or the chores of the farm. Still later,

mountain climbing as a sport, nature study, and winter sports; and last of all, enjoyment of the wilderness—from which America had so recently been wrought.

Today, Americans in general exhibit a restless interest in forest hunting, fishing, camping, picnicking, mountain climbing, hiking, nonprofessional study of wildlife and geology, nonprofessional collecting, riding, swimming, boating, exploring the wilderness, cross-country skiing, snowshoeing, and auto touring.

The range of the list suggests that no one of these diversions is in any real sense in competition with the other. The dyed-in-the-wool deep-sea fisherman may well have a lofty scorn for those anglers whose delight is to beguile 10-inch trout from a willow-shaded brook. The devotee of ocean swimming quite possibly regards the wilderness lover as mildly, if harmlessly, insane. The confirmed deer hunter, accustomed to arduous work in following his favorite sport, may recognize with broad charity but little interest that the, to him, passive and purposeless sport of boating does have an appeal to many.

Yet all these forms of recreation, when practiced in the forest, have common characteristics. Like the forest, they are in sharp outward contrast to the usual environments of life—as different from them as the electric stove in the steam-heated city apartment is from the open campfire at the edge of the lake. They have the inner aspect of naturalness, freshness, simplicity, cleanliness, and a more or less primitive quality, in equally sharp contrast to the artificiality, monotony, elaborateness, and sophistication of the city.

All these things belong to the forest. They are in tone with it and inseparable from it. They remove man from the dominance of artificial patterns and schedules and bring relaxation and leisure. There he need encounter no time clocks to punch, no trains to catch, no jostling, no elbowing, no narrow walls and fetid air, no split-second dashing from one pressure task to the next. Forest outings offer full play for a while to any choice of occupation. Humans may seek adventure in their own way and on their own terms—hunt, shin up a mountain, or loaf—and thereby capture a sense of freedom personally. They are removed from the necessity to meet business

engagements, to keep books, to write letters, to tend a machine, to keep house. They can live for the moment on their own. They can wear the clothes of their choice, eat when they please, loaf or work, go exploring, or go to sleep, undisturbed. They may catch the largest fish, build the best campfire, bake the tastiest Dutch-oven bread, climb the highest mountain, or discover the most breath-taking view. They have the chance to regain physical and mental tone; to achieve satisfying, wholly personal proof of their abilities and prowess; to recapture a sense of their own personal significance, and to rest.



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*Men take their vacations far from home where the trout jump
and the mountain trails lead away to the peaks above timber line.*

PACKWOOD LAKE, COLUMBIA NATIONAL FOREST, WASH.



Guests of the Forests

. . . There is nothing so much alive and yet so quiet as a woodland; and a pair of people, swinging past in canoes, feel very small and bustling by comparison.

I wish our way had always lain among woods. Trees are the most civil society.

Robert Louis Stevenson, An Inland Voyage

EACH YEAR THEY COME, more and more of them, seeking the lost far places where time is stilled and care forgotten in the long stillness. In our West you will most often find them and most widely scattered; for the West is closer, both in point of time and miles, to its natural outdoor sources than is most of the East.

Outdoor recreation—"going up the mountain"—is a recognized natural part of the general life out there. From the country of the Rockies to the Pacific Ocean there is scarcely a town that does not lie within rather easy driving distance of a national park or forest. Families can pack the youngsters into a car and drive out to the nearest campground for a picnic supper. The men fish or play or loaf and the children swim or romp while the shadows grow long. Then when night falls and the stars come out, they gather around the campfire and sing or play games or talk until it is time to go home.

In the West they know better than easterners know, as a rule, how to take care of themselves in the open. They are closer to the time when they had to, on their own. But East or West, wherever you find them, they are pretty much the same people that you meet next door, across the street, or anywhere in this country that you travel.

From out on the sweltering plains of the Rocky Mountain front come dusty farmers driving a hundred miles or more with a tent strapped on the back of the car. They climb to the cool greenness of the Black Hills or the wind-swept slopes of the Big Horns and spend the week end or perhaps just Sunday. Sunburnt farmers of the Idaho wheatfields and sturdy mill hands take to the hills with their families, club members pack up for a Sunday outing in the forests where they practice their hobby and play games and take life easy. Store hands and drug clerks, firemen, and policemen go into the woods where the nights are cool.

Men take their vacations far from home where the trout jump and the mountain trails lead away to the peaks above timber line. Families drive from Denver west over the divides to the spruce-rimmed lakes high on the mesa country. If time is short, they will drive all night with the children asleep in the back seat. Adventurers pitch camp and pack into the wilderness where only a trail or a blaze shows the path of man.

Youngsters working early or late shifts at the mills get to the nearest lake to swim and laze in the sun. Small boys pack a bit of canvas and a few cans of beans and eagerly make their way to the nearest water hole where they fish and swim and explore to their heart's content.

To go as a forest guest, yourself, with a car or pack train and tentage; to see and talk with many different people out there enjoying themselves; to forget, or to forget to mention official connection and interest in the spectacle—that is the only way really to understand what forest recreation is in this modern time and age. The notes which follow were so obtained. They are sketches of actual people—candid shots of camper guests at actual sites on national-forest land.

YOUNG COUPLE FROM SPOKANE . . . Here the northern Rockies stretch like long fingers into northern Idaho. Between the tree-covered slopes of these ranges lies Priest Lake, 20 miles long, on the Kaniksu National Forest. Only one shore of this lake is accessible by road and on this side lie the free campgrounds where this young couple from Spokane were spending their 2 weeks' vacation.

All afternoon they lay stretched out on the wide white beach in the heat of

a July sun. Their bodies were tanned, their eyes shaded with dark glasses, their elbows propped upon towels as they read. They had a little wire-haired terrier named Susan. Every now and then Susan besought attention. The man would rise and throw a stick out in the water for her to chase. His name was Ralph. He was an engineer. His wife, Ann, worked in a Spokane library and they were taking their vacations together.

Ann stretched lazily and sat up. She brushed the sand off her bathing suit and threw a pebble at her husband.

"What say to taking a plunge and then making tracks for supper? I'm hungry." She looked out over the lake. It lay clear and rippling. The far shore hung in a blue haze with the mountains rising deeper blue beyond. Voices floated up from the resort down the beach, and far out over the water a motorboat droned.

Ralph sat up. "Gee, but I'll hate to leave this place and go back to work. What's the idea of working, anyway, when you can live like this?" he said.

They swam far out, then back.

"Beat you up the bank," she called as she ran up the path to their tent. Ralph laughed and picked up the things on the beach. The shadows stretched out to the water but the sand still felt warm. He could just see the ridge of the tent between the scrub growth and firs at the top of the bank.

They ate on the rough log table. The smoke of the supper fire curled lazily up through the trees. After they had washed the dishes they went for a walk on the beach. The lake was quiet with early evening stillness. The mountains were purple now, rising peak on peak into the blue. The moon came up, painting the world with silver.

They swam again, lazily breaking the path of the moon. When they came in, Ralph built a fire of driftwood on the beach and toasted marshmallows. Ann was sleepy. She lay wrapped in a blanket with her head on Ralph's lap, watching the flames, and Susan, the dog, curled up by her knees. Once in a great while a car shuttled down the camp road behind them. Little waves lapped on their boat drawn up on the beach, and the wood fire crackled. "It sure is nice here," he said.

FAMILY AND FISHERMAN . . . As you drive south in the lower western corner of Montana, the country changes from the wide flat brown valleys between steep black mountains around Bozeman to the choppy, green-timbered country of the Gallatin National Forest. A campground lies just off the road, deep in the mountain crotch cut by the tumbling Gallatin River. Here the sun comes late in the morning and drops early over the Spanish Peaks which rise to 10,000 feet, 11,000 on the west. It is an open grassy place, fringed with bushes and tall spruces and firs.

Two brown tents were pitched under the trees by the stream at one end. It was cool and quiet under the trees. The early afternoon sun made gold splashes on the pine needles on the ground, and the tops of the spruces showed silvery against the brilliant china blue and white sky.

Down at the other end of the campground stood another tent half in the sun, half in the trees. Here the bank was open, grass covered, and the river flattened out, running shallow over the rocks.

Two little girls sat playing on the bank. Nancy, the smaller, sat with her chubby short legs stuck out in front of her. Her bright-pink bathing suit was smudged in front where she occasionally wiped her hands. With one little finger she traced the slow path of a beetle in the dirt. Every now and then Joan covered it with dust and Nancy gurgled, watching the bug's frantic efforts to throw it off. Their neatly combed heads, each with a little hair ribbon, were bent in earnest observation. A few feet off their mother, Mrs. Walters, sat on a log sunning herself. Her full, plain face was flushed. Gingerly she felt her shoulders.

"Joan," she called, "Will you come put some of this sun-tan oil on my back?"

The child hopped up and went over to her mother. At the camp table nearby Ed. Walters relaxed in the shade, a magazine propped up in front of him, a half-amused smile on his lips.

"There, that's enough." His wife took the bottle and screwed the top on thoughtfully.

"Swell article you oughta read in here," he told her. She smiled absent-mindedly and went toward the tent.

"What you up to now?" he asked.

"We've got to have some meat for supper and I thought I'd send Mama a card. It's Saturday already, we've been here almost a week and I haven't written her once. How would you like some more of that hamburger for supper?"

"Yea, sure. Anything you get's okeh." He squinted his eyes at Nancy sitting in the bright sunlight. She looked up at him and dimpled. He went over and picked her up.

"You're a cute one," he said. "And you're gonna be 4 years old tomorrow. Hurray!" He set her down inside the tent.

"Someone needing a dress, mother, and maybe a clean face."

Now it was late afternoon, towards dusk. A fisherman moved upstream until he stood opposite them. He was a tall man, strong, lithe. His body leaned against the swiftly moving water. Walters and his children sat carefully on the edge of the bank on the grass watching absorbedly.

The fisherman worked easily. While they watched, he caught two fish. Each time he looked over at them sitting on the bank and waved. The children clapped their hands and hunched their shoulders. Then he lost his fly, so he ran in his reel and came over.

"Hello. My name's Carlson, Chris Carlson." He shook hands with Walters.

"How's that?" He showed the children the dozen trout in his basket.

"Me, I'm not much good at this fish catching myself," Walters said, and laughed apologetically. "You must be an expert."

Chris replied in a soft drawling voice. "Well, soon as spring comes along I git the itch so bad I can't set still. So I hit the road. I've fished pret' near everything 'tween here and Vegas."

"As a matter of fact," he went on, "my dad taught me to fish when I was a kid of 4 an' I've jest been fishin' ever since. Been up and down this stream 'bout 4 years now."

"You're lucky to be able to take so much time doing it," Walters said.

Chris scratched a match on the table and lit a cigarette. "Sellin'," he replied, looking over the match at Walters, his blue eyes steady, narrowed against the smoke. "Sellin' ladies' dresses and men's and ladies' suits.

The trouble with us guys," he said, getting up, "is that as soon as we git some dough we jest have to lay off an' go fishin' or somethin' like that. We'd make more money than anyone else if we jest kept sellin'."

He hitched up his pants. "We've camped right down there; friend of mine an' his wife an' another guy. Those other two tents are ours." He pointed down the campground. "Come down an' see us," he said.

Chris sauntered down towards his camp. He remembered his fish and cut through to the shore. Down on the rocks another fisherman was cleaning his catch. He looked up when Chris walked toward him.

"Hello, there, you bum. Any luck?"

Chris showed him the 12 rainbows.

"Good. They'll be better eating than some of these. Let's get supper." He leaned over and picked up the fish.

Chris laughed and climbed up the bank. The other followed and they went along the path to their camp.

The sun had gone down but it was still light. After supper Chris took his rod and basket and went off to the stream. Up in the bend there was a place where the water ran deeper and quieter. Slowly he walked out. Nice, that first feel of water pushing on your legs; oughta get some good ones here.

Now down the river a woman has ceased for a while a visit with these friendly forest neighbors and herself was fishing fast water. The clouds were saffron colored, smoky on the edges. The water was black save where it caught the light of the sky and turned to liquid mercury and gold running on the surface. She liked this, being alone out here. She cast and recast far out over the water, smooth save where the eddies caught it and sucked it down in little swirls.

She felt the line tighten, then the reel sang out. The silver arc of a rainbow flashed. She played with it, bringing it in closer with each run and leaned down, scooping the trout in her net. Carefully she removed the hook and dropped the fish in the basket. Again the line whipped out and nicked the water. Slowly she took up the slack as it floated back toward her. Suddenly it stiffened. She braced herself quickly and let the reel spin.

"Gosh," she muttered, working hard to bring the fish in closer.

It was abreast of her now. She only could see it when it broke the water, leaping and bucking. The line pulled too taut. She let it out a bit, and the fish ran hard for the far shore. Suddenly the line went limp. All fishermen know that feeling, but she kept hoping as she wound in. Only the frayed leader swung out of the water, and somewhere among the dark rocks a rainbow nursed the fly.

She caught three more and then her luck ran out. The light was going over the mountains. You could hardly see the edges of the streams. Everything had grown fuzzy in the half light. She wound in the reel and snapped the lock. Then she picked her way across the stream. Down by the Walters' site she could see the council fire going and the children dancing around it and singing. Some of their friends had come out from Bozeman for the evening. She went over and joined the party; and the next day moved on.

A SINGLE LADY TAKING NOTES, she traveled on alone; and later, despairing of conveying direct human impressions without candid and forthright use of the first person singular, she wrote as a forest reporter to her Chief in Washington:

You know the St. Joe Forest of Northern Idaho. The camp sites run along one side of a broad grass field and the river swings out on the far side close to the trees. This has become a favorite picnic place for the farmers nearby and the mill hands of the Potlatch Lumber Company. About 30 log tables and stoves are scattered irregularly in the cool shade under the pines. I pitched camp here Saturday evening. The only other campers were a family from Potlatch at a site nearby.

Sunday I woke slowly. The sun was up and the mosquitoes were buzzing. I heard the deep rolling laughter of sturdy men and intermittent thuds of heavy objects dropping on the duff. I opened my eyes and looked around. My watch said only 5 o'clock. Not far away stood a big open truck and men, most of them very young, were unloading ice cream and beer kegs. Others were driving stakes.

"Look there, those folks may wanna sleep," one of them said. "Too bad. Guess they just can't!"

Low voices and laughter. They surely were enjoying being up at this early hour. They lit a fire in the camp stove near me and put on big kettles to boil. Sleep was impossible so I lazily watched them and looked up through the trees at the sky. Then I got up.

I went over to investigate the possibilities of getting some breakfast cooked on the crowded stove. I was met with great friendliness and the offer of anything they had.

“Don’t know whether you like liquor or not, lady, but here’s some if you care to sample it.” One of them proffered a bottle. I politely refused and cooked my oatmeal and cocoa while they moved around me.

“We’re putting up stands to hand out this beer and stuff at, an’ there’ll be hot dogs and sandwiches. Don’t forget it, if you git hungry,” one offered.

“You know the Potlatch Lumber Company?” another asked.

I nodded.

“Well, that’s us. That is, the mill is divided up into divisions accordin’ to what the work is an’ there’s a safety contest. Whatever division doesn’t have an accident for 2 months gits 25 bucks. Us an’ another division have gone 2 months now and we’re just clubbin’ together so’s to have more stuff. Our families’ll come out here for the day.”

Another truck came in and stopped a way off. That was the other division. They started doing the same things that the first one had. They were all very friendly. I was just about to put on the eggs when I was confronted with a strawberry ice-cream cone. It was impossible in the face of such hospitality to refuse. They would not take no for an answer.

“Anything we have that you’d like, be sure an’ ask fur it.”

One of the men looked up from his work at me.

“You know, it’s nice here. We play softball on the field out there.”

More cars started to come. All day the cattle-guards at the entrance rang and the dust rose over the meadow until it hung like a yellow mist in the sunlight. The woods were alive with people. The kids started eating the minute they got there and ran circles around the picnickers. As the sun grew hot, people broke away and went swimming down the river.

They shifted about. Little groups formed here and there, then broke up and new groups formed. They walked about in two’s and three’s under the

trees in the filtered sunshine, eating, talking, laughing noisily. The thick layer of pine needles muted footfalls. In three or four places men played horseshoes, slow and easy, punctuated with ribald jests.

"Hello, sister," I was greeted as I sat down on a log and watched a game.

"Lo."

"Your buddy left you all alone?"

I grinned, but decided not to say anything. He soon went ambling off with a pretty high school girl who blinked her eyes at him. People came and watched the game, then moved on. Adolescents moved about self-consciously on their long, young legs.

After lunch some of the energetic youths of my prebreakfast acquaintance organized games. They had prizes and they went around trying to herd everyone out on the field. Full of food and lazy in the midday heat, they were sluggish.

"Come on, everybody."

"Come on out to the field; we're gonna have some races."

"Here's your chance to show how good you are."

They drifted slowly out into the white sunlight. Already an improvised game of softball was going on in one corner.

There were relay races for 7- to 10-year-olds, boys, then girls. There were races for the older ones. There were three-legged races. There was a race for the women to sew buttons on the men's shirts. The final event was an old-fashioned tug-of-war, which nearly ended in a fight.

A lot of them went swimming again. The general tempo quieted down, fatigue encroached. The chocolate-smeared children were hauled off by their parents, some crying. Many were already asleep on the ground. Others flopped down where they were. Their limp, shapeless figures sprawled in the sun with the abandon of the sleeper. The sharp clink of horseshoes on metal stake rang under the trees.

As the sun tipped the trees in the west the campground came to life. The children woke up and started careening around. People got up stiffly from the ground. They stood around and yawned, slowly orienting themselves.

One by one cars started leaving for home. As the shadows grew long across the field, the crowd flattened out. People moved through the trees, wearily

picking up scattered belongings. Slowly the dust settled in the twilight. Smoke rose from supper fires where some had decided to stay longer. Someone built a fire in the council ring. They sat around it and sang in the gathering darkness.

ANACONDA, the copper town, lies in a burnt, sweltering valley. The rows of paintless little houses that creep up the hill to the mill belie the bright activity of the main street. Towering over the city stands the giant smelter smokestack, belching yellow smoke over the bare, brown hills nearby. Saturday afternoon the streets are full of cars and people streaming down the hill from the mill. The air is hot and smells of acrid fumes from the plant.

Twenty miles to the west lies the Deerlodge National Forest, with Echo Lake and the cool recesses of the forest to which these people can escape. Many families drive out for picnicking and camping, but the majority of users are the young people who run up there for some fun and privacy in the out of doors.

The campground road makes a loop on the hill, circled by camp sites. There are more than a dozen sites here and they were almost filled. Sunlight was caught in the treetops, throwing green into the water. At one of the camp sites two girls, both young, had a fire going and some cooking pans standing by. They wore bathing suits. Their names, they said, were Jen and Sue. They were getting supper for "a coupla fellows," Jim and Bill, who were going to drive up to Deerlodge after their day's work in Anaconda. A third girl, named Bett, had brought Jen and Sue up in her car and was swimming. But Bett would be back. Harry, her fellow, was coming too.

"That's them," said Jen. A very old car, minus fenders, top, and rear seat, stalled at the bottom of the hill, by the lake. Two of the men got out and "rocked" her. "You have to do that; the starter just gets on dead center, or something, Jim says," said Jen.

The old car roared into life. The two men who had rocked her—as one would rock a cradle if the cradle were big as a car and had rusty springs—piled in. Youth came roaring and snorting into camp to join the

ladies. They drew up with a flourish, slammed on brakes, slid a little, and Jim, at the wheel, shouted:

"Get a load of that! Jen's picked a nutsy place right by the water. What ya cookin'?" He pushed an old slouch hat to the back of his head. Then, "Hi ya, gals! How ya fixed?" he drawled.

Jen looked up from the fire and grinned.

"Lo," she replied dispassionately and pushed brown curls out of her eyes.

"Where's Bett?" the biggest man of the three asked mildly. This was Harry.

"Swimming," said Sue. "See you there," said Harry. The men chugged the car over to the Boy Scout shack down the beach, to dress.

"Let's go," said Jen, "We can cook after dark." Leaving the fire to burn itself out on the open hearth and the half-cooked grub to cool, we went down to the swimming pier.

Bett was there. I was introduced. We sat and talked until the men came.

The purr of a motorboat drifted across the lake. We lay in our bathing suits on the dock. Bett complained:

"Gee, those kids are taking a long time."

Sue grunted and turned over. "These boards are gettin' into my bones. Wish they'd hurry."

Jen squinted her little nose and looked up at the sun. "Jim was cute last night, wasn't he?"

Sue cocked an eye up at her. "Thinkin' of marryin' him?"

"Naw, I'm not that crazy about any of the kids in town." She carefully observed a long crimson fingernail. "After school this year ma says I kin go to Salt Lake City an' learn to be a nurse. Then I dunno what'll happen." She sat down on the edge of the dock and put on her bathing cap. "I'm goin' in. Who's comin'?"

But then the men arrived. "Hi ya, kid!" . . . "Hello, there you mermaids!" . . . "Hello, yerself, an' what time do you think it is, anyway?"

"Well, here we are. Hold everything!"

"What a bunch of palookas," said Jen, scornfully, and yelped as Jim pinched her, then giggled and dove. He dove after her.

But I was the first one in. Six is company, seven a crowd. I figured that I had gone at this point as far as is proper in examination of the recreational attitudes of such decent, friendly, and bewildered youngsters. "See you later," I called and swam back to my camp.

The other two couples took quite a while at their kidding, roughhousing, and loud talk before they too plunged into the stilled expanse of that beautiful lake and swam together quietly.

Next day was Sunday. Outside the girls' tent Jen, the first one up, gave a final stir to a smoldering can of beans, then stuck her head into the tent and hollered:

"Hey! the fellas want us to eat with 'em. Let's take the beans and tomatoes up. They got coffee."

She struggled with her straight hair in the small hand mirror.

"Nuts! Why wasn't I born with curly hair?" She put on a sweater. "Those guys oughta be dressed by now. Let's go up."

Sue got up sleepily and started to dress. "Me'n Bill had another battle last night," she said.

"What's eatin' Bill, anyway?" asked Jen. "Can't he stand his job?"

"Oh, the job's okeh. But it ain't getting us anywhere."

"You're telling me!" said Jen. "Come on; let's eat."

They swam again, twice, and hiked that day. The camp was full now. Every overnight site and every picnic table was taken. Night came on. The holiday crowd grew quiet, each little group busy around its own stove. Occasionally the rhythmic crack of a wood chopper snapped through the dusk. Then the stars came out and the boys and girls drifted down to the council fireplace on the beach.

Bill and Jim carried in driftwood.

"Say, Harry, this stuff's wet. Git that can of kerosene we washed the engine in. That'll make it go."

"Okeh. C'mon, Bett. Let's go." Bett leaped to her feet. She started. He rose and followed. Cries from the crowd at the council fire. One man cried, "Take it away, sister!"

Jen spoke more sternly: "Listen, you! Don't go into any clinches. We want that juice here before we freeze."

Everybody laughed. Bett looked up at Bill. The firelight accented the hollows at her cheekbones, the hollows under her eyes, marks of long hours at the mill. She cocked a saucy brow and winked. "Don't worry. We'll get your old kerosene."

Laughter rang out. They soon were back. The fire leaped high. Other campers drifted down to the warmth of the fire and the people.

Bill still was moody. He kept jumping up from Sue's side and piling more wood on the fire. Sue's eyes followed his every movement. She sought to reclaim him:

"Guess what, Bill?"

"What?"

"We brought the vic!"

"Say, that's somethin'. That's what we'll do. After this, we'll take it over to the Boy Scouts' shack and dance."

She nodded.

Someone started to sing: "I've been working on the railroad, all the live-long day." . . . Most of them took up the song. But Bill was silent and so was Sue. They sat on logs up front in the small council-fire amphitheater, close to the fire. The fire cast yellow light inside the foremost ring and a deep leaping shadow back from there. The families withdrew as the evening deepened. Children grew cold and cried to be taken in. Parents grew cold and were glad to creep under wool and canvas with their young. Only four of us, blanketed like Indians, remained at the council fire when Sue and Bill left it.

"Well, what are we sittin' here for?" Bill asked abruptly.

Sue put her hand on his arm. She told him in a whisper to "remember what we said."

He muttered something.

"Bill, don't be like that! Look, I got to finish school! I got to! This one year more and it'll be all over and then I'll get a job and we'll be all set."

"Sure, I know. You're all right, kid!" he said.

"Come on. Let's go in, Bill. It's cold out here. Come on. Let's go in and dance."

THE WESTERN Colorado mountains push up between the clear spruce-rimmed lakes of the White River National Forest. A single road runs deep into the forest and dead-ends at Trappers' Lake. The road ends in a big turn-around ringed with camp sites.

I parked the car and got out. It was Sunday of Labor Day week end. There were many other cars parked here and all of the prepared camp sites were taken except one. I must have stood there looking around quite awhile when I was hailed:

"Hey there, young lady, kin I help you?"

I turned. An old-timer stood scratching his tousled white head and smiling. I walked over to where he stood.

"Can't make up my mind where to hang my tent."

He rubbed his hand down his bristly chin. "You be goin' to have trouble gittin' dry wood too. Hev ya got any with you?"

I shook my head.

"Well, I tell you what. See, I'm cookin' for these two guys from Denver. They're off fishin' now. You eat supper with us, then you won' have to think about wood. How's that?"

"Just the three of you?"

"Yep, an' don' worry about the other two; they'd be glad to hev you."

"Fine! I'll put the tent up over across the road there."

"Yeah, you do thet now, an' you come back when you're finished."

I put up the tent and got my bed out. The ground was covered with pine needles and my boots made little circles of water where I stepped. When I was finished, I went across the road to Steve, the old-timer.

"Here, Miss, will you stir this while I go git some more wood?"

People were still coming down the road from the lake. One couple, a man and his wife, stopped and talked to Steve about fishing.

"Nice folks," he said, coming back with the wood. "An ole fireman an' his wife from Salida, up here for a vacation."

We sat down at the table to peel potatoes. Steve went on. "He's got diabetes an's gotta be mighty careful. You oughta take a look at their tent, Miss. Nice little stove, big double bed, an' even a lantern. Snug as anything. They're not like those two camped down there next to you," he

pointed. "I've been watchin' 'em an' they don' never seem to say much to each other. Jist act glum."

Every now and then someone coming back from the lake passed in the dusk and called "hello" to Steve. He got up and put the potatoes on the fire.

"Those guys oughta be comin' back soon. One of 'em's got a lot of money, Barney we call 'im. Al, the other one's jist a friend of his. They like to git away, but they don' like the dirty work so I come along an' pitch camp an' cook for 'em. You'll like Barney."

We could see the flickering light of the other fires around. A tall, heavy man pushed into the circle of light around our fire. It was Barney, and Al, slight and wiry, followed. They grinned at me and kidded Steve. Barney sat his big frame down on the bench and sighed; he was tired. He pulled his long rubber boots off slowly and his eyes twinkled at me across the fire. They hadn't had much luck fishing and were thinking of leaving in the morning.

"Thick as thieves up the stream at the head of the lake," said Al. "Catchin' each other's lines instead of fish."

I tried to find out what business Barney was in but he kidded me, saying that he was a sheepherder. I asked him how he liked roughing it in the woods.

"It's all right. This campin' racket, comin' out here 'n' sleeping, cold 'n' gettin' wet; just a way of gettin' a change. That's all it is. It's just something different."

Steve scowled over his coffee cup. "No life for an old guy like me, goin' on 74."

Barney smiled. "Not like the good old days when you were running the crack trains out of Denver, eh, Steve? He was the best engineer on the line, Miss."

"But we didn' have it soft like this when I was young. We took a train or a stage as far as it would go an' then packed in, where there weren't any dudes muckin' aroun'."

We washed up and the men sat around and smoked and talked awhile. Then Barney and Al went up to their tent to bed. Steve and I moved over and sat on some big logs by the fire. It was colder and quiet except for the wind in the pine tops and the stream falling close by.



F-166691

*You oughta take a look at their tent . . . Nice little stove,
big double bed, an' even a lantern. Snug as anything.*

LEWIS AND CLARK NATIONAL FOREST, MONT.

"Nice, settin' aroun' a fire, ain't it?" He grinned at me and rubbed his hands near the blaze. "I like havin' women aroun', too. Gives ya nice feelin'. Lonely settin' aroun' alone." He looked through the branches up at the stars. They fascinated him. He talked awhile about the universes of stars beyond those we could see, about how there must be some plan for them all and how it gave him a religion. I asked him about Barney.

"Naw, he ain't no sheepherder. Never teched a sheep in his life, don't think. He's in business, made a pile of money. He's got what it takes to make the women look at him, too. Some guy. He's been married twice."

I felt sleepy and got up to go. He said to be sure and come over and use his fire again in the morning. I thanked him and left, feeling my way around the puddles in the road in the dark. The bed was warm and the night lay heavy and still.

MOST national-forest campgrounds are off the beaten track, deep in the mountains, but some lie close to the highways where the stream curves away or the road dips in a glade. These are unlike the other campgrounds. Here life is transient. This is but a brief stop on the way and one does not often get acquainted with one's neighbors. People slam in at 5 in the evening, pitch camp, eat and turn in, and are off pounding the roads at the crack of dawn.

There are a few like this on the road from Cody into Yellowstone National Park. I stopped at Pahaska campground, which lies in a bend of the north fork of the Shoshone. Cotton clouds towed their lumbering shadows over the mountains and all day the long yellow sightseeing buses from Cody churned the dust in their roaring climb.

The long strip of camp sites was deserted when I got there at 10:30 in the morning, except for a couple of temporarily abandoned trailers that looked like chickens standing on one leg with their eyes shut. The tall cottonwoods were silver in the sunlight.

Lunch time came and cars started dropping out of the stream on the road, dropping down to the quiet eddy of the campground—cars from Wyoming, cars from South Dakota, cars from Ohio, Nebraska, California. Another trailer came in. The people sat in tight little groups. If there were

children, some of them wandered over to the water, but the minute lunch was over, they were whisked away in the car, back on the road; and once again I had the place to myself.

During the afternoon the owners of the deserted trailers came back. They had been sightseeing in the park. They sat around and talked and rested. They were at home on the road—time was their privilege.

From about 5 on, every now and then a car turned off the road and slipped down to the campground. Quickly they would pitch camp and eat supper. They were tired and quiet. A young German boy and girl from Boston camped on one side of me. They wore heavy boots and their bare, knobby knees stuck out under their shorts. On the other side were two couples from Ohio. They rolled out their blankets on the ground. If it had rained, they would have slept in their car. But it didn't rain although the lightning played in the mountains. Instead, the moon came out and made patterns under the trees and just before I fell asleep, I saw another car come in. The occupants ate quickly in the glare of their headlights, quietly, and turned in.

When I woke next morning, it was very early. The sun had not yet reached the valley. The mist spiraled over the stream. The Ohio people were leaving. The running engine of their car had wakened me. Others were stirring. I lay lazily, half awake, watching them pack up and leave. By 9:30 only the trailers were left and the German boy and girl. They were busy writing postcards on their log table. Then they left, too.

From coast to coast there are thousands like these, on the go. Some like to keep moving, they are restless; but there are others, too, who like to run away and be quiet in some bit of high, timbered land near the sky.

OTHERS . . . And so they come, these guests of our forests, in their thousands and hundreds of thousands, and rest for awhile, most of them. Foresters sent afield not assigned especially to explore the joys, the troubles, the tangled life lines of the forest visitors (as the girl reporter just quoted was) also hear their stories. Even more than in Pullman smokers, turkish baths, and beauty parlors, there seems to be something in natural and primitive surroundings which leads joyous, troubled, or beaten wanderers in the modern

wilderness to let down their back hair, as the saying goes, to relax, to impart.

No forester, whatever be his special mission afield—to cruise timber, to audit staff accounts, to check equipment, to trail wood thieves, firebugs, fake “miners,” game hogs, or to examine the effects of human ministrations upon returning forest cover—no present-day forester, however specialized his training and interests, can entirely put out of mind the very human and pressing problem of natural recreation as he goes about his job today.

This, on the whole, has been an excellent thing for the Forest Service. Direct contact with the public on outings maintains a direct human approach. There are instances, even, of some of the most technical of foresters, out on specialized scientific research, accepting a friendly cup of coffee at a lone campfire and departing hours afterwards a little embarrassed at the thought of all they themselves contributed to the campfire confessional.

Part Two

KINDS OF OUTINGS

So for one the wet sail arching through the rainbow round
the bow,

And for one the creak of snowshoes on the crust;

And for one the lakeside lilies where the bull moose waits
the cow,

And for one the mule train coughing in the dust.

Who hath smelt wood smoke at twilight? Who hath heard
the birch log burning?

Who is quick to read the noises of the night?

Let him follow with the others for the Young Men's feet are
turning

To the camps of proved desire and known delight.

*Rudyard Kipling,
The Feet of The Young Men,
from Five Nations, 1903*



F-27900 A. F-350104

City people can get out into the country now far more easily with 30 or 60 horsepower propelling them at the governed pressure of a restless foot.

PIKE NATIONAL FOREST, COLO.
PISGAH NATIONAL FOREST, N. C.



A Brief History

Trees give peace to the souls of men—*Nora Waln, Reaching For The Stars, 1939.*

TO SEEK LONE PLACES for purposes of meditation or diversion is for the most part a civilized idea. The idea does not generally occur to most people of races and nations in the primitive stages of their development, and the idealistic religious significance which many tribes and races have attached to trees does not as a rule attend the very first struggling stages of human history.

Only when life has become more settled, more complex, more ritualized; only as civilizations ripen do we find record of Confucius writing of China's spiritual commentaries in the friendly solitude of sacred groves of trees, or of Una guarding the woods of the Pharaohs and finding solace there.

Primitive man was as much a part of the forest as the trees and grass and wild animals. He fought the wolf and bear for his life. He captured game and fish that he might live. From the trees he wrested shelter and fuel. Storms, flood, and fire threatened his life. He lived precariously in the forest because he had to.

To medieval and to early modern men of the western world, even after cities had grown great, the forest was still an unfriendly, threatening background, an enemy. Deep woods were something to be ventured into, not enjoyed. Outcasts from society fled to the forest and lived as part of it, as had primitive man. On the wilderness early mankind depended for necessary game, fish, and vegetable products. It was mainly a source of primitive survival to be conquered, not of civilized pleasure, to be conserved.

This modern age was well under way before the forest had been subjugated enough to make it a place for sport or pleasure. The King's forest, reserved and protected for the sport of monarch and nobility, was perhaps the earliest scene of forest recreation. But hunting was a distinctive prerogative of royalty, denied with force and punished by death to the commoner. Hunting by the nobility was strongly utilitarian, for animal husbandry did not then produce meat in quantity. Hunting, too, gave a stage, a theatre on which nobility might display the warrior's virtues. The rituals and forms, the specialized language, the trappings of the royal hunt in the middle and early modern ages were, like those of their contemporary institution of chivalry, designed as a theatrical back drop against which individual prowess might be paraded. The fair, the festival, the fiesta were the earliest uses of the forest by the common man for pleasure. Venturing in the mass from the crowded security of walled city into the spaciousness of the outdoors, the individual found opportunity with relative safety for outlets denied him in his accustomed life. The festival was only in part native to the forest, but it is historically of some importance as the original form of mass recreation out of doors.

Here in America as the virgin forests were subjugated, as order, safety, and the rule of law were established, as white men, escaping in some part from the never-ending labor of the pioneer, acquired means and leisure, natural outdoor recreation began to exert appeal. First came hunting and fishing for sport rather than sustenance; and later, the festival, the camping party, the picnic as a brief escape from the congestion of the city or the endless chores of the farms.

The Indians really had a fairly satisfying American civilization working long before we came. It grew variously and slowly from this soil and weather. It included (among the Iroquois) such devices as women's suffrage and a league to enforce peace. These first Americans worshipped the omnipotence of natural forces and were governed by natural laws. Their widely various systems of government were never completely worked out or final. In many ways the discipline and punishments imposed were savage and unreasonable. But what of ours?

Wild Indians, as we call them, did not have to drive themselves hard

all day long and beg jobs or stand in line for a hand-out or relief. They did not have to do such things merely to fill their stomachs, to support their hearts, to clothe and shelter from the weather themselves and their young. They had learned as a race long before we came here to carry themselves with a certain natural freedom, to govern themselves in respect to codes of individual dignity. It is one of the ironies of American history that the idea of relaxation, sport, and release from care, along with worship in the open, was rather widely and generally practiced among the Indians that we whites set out with such ferocious zeal to dispossess and civilize.

Indians, then, were the first users of our forests and wide spaces for developing purposes of civilized recreation. Small family groups or even whole tribes moved from one section of the forests to another with the seasons to pick berries, to fish, to gather wild rice, or to hunt wild game; and while they were on such outings they would often combine sports and diversions with the practical job of getting enough to eat.

Even in recent years on the Columbia National Forest in southern Washington as many as 1,500 Indians from 9 different tribes have gathered at the Twin Buttes tribal grounds to pick and dry wild huckleberries and at the same time enjoy horse racing and other native games. This has been an annual event "since the days of my grandfather's grandfather," one old chief said. The Crow Indians hold annual games and conclaves. In the Southwest, the Indians often have dances and fiestas.

The whites were for the most part a shrewd, dry, earthy, practical people engaged in soil-bound occupations. For 300 years they pushed ever westward through forests and over plains and mountains, seeking new lands, new wealth, new homes. Such pioneer diversions as there were did not separate people but drew them together. They worked alone. They had their social fun together. They hunted and fished, not altogether for pastime but often in deadly earnest for food, and their methods were more notable for death-dealing than for sporting qualities.

Forest use by the white man for general recreation dates, naturally, earlier in the East than in the West. By 1803 recreation travel in the forest areas now embraced in the White Mountain National Forest became so heavy as to warrant the building of a pleasure resort near Crawford Notch,

and the first summit house on Mount Washington was erected in 1824. In those early years of the nineteenth century numerous hiking clubs were formed in New England. Early records and historical writings of the great Southwest, of California, and the other Western States tell of many people seeking relief from the tropical summer heat of the valleys in the adjoining forests and mountains. There they fished, hunted, or simply rested in the cool shade of the woods and beside lakes or streams.

BRIGHAM YOUNG'S PIC-NIC . . . Among the more interesting of early accounts of recreational use is one from the records of the Mormon Church in Utah. The Mormon pioneers arrived in Salt Lake Valley on July 24, 1847, and it is recorded in their Journal History, a daily record of their activities, that on August 21 of that year a party climbed Twin Peaks, lying between Big and Little Cottonwood Canyons on what is now the Wasatch National Forest.

Again on July 18, 1856, Brigham Young, president of the Mormon Church, issued the following invitation, and a copy of it was printed in the local Deseret News:

Pic-nic Party at the Headwaters of Big Cottonwood

President Brigham Young respectfully invites and family to attend
a Pic-nic Party at the Lake in Big Cottonwood on

THURSDAY, 24th of JULY

You will be required to start from the city very early on Wednesday morning, as no one will be permitted, after 2 o'clock P. M. on the 23rd, to pass the first mill about 4 miles up the canyon.

All persons are forbidden to make or kindle fires at any place in the canyon, except on the campground.

Salt Lake City, July 18, 1856.

Four hundred and fifty people attended this picnic. These records also note that campfires must be "all well put out" and that special roads were built to reach the recreational area.

SCATTERED BEGINNINGS of recreational use on lands now embraced in the national forests had increased considerably by the time the actual setting

aside of these forest reservations was begun in 1891. Large areas of western forest lands in the Rockies, the Sierras, the Cascades and lesser mountain ranges soon were included in what were then called the forest reserves. In 1897 laws were passed for their administration. In 1905 they were transferred from the Department of Interior and placed under jurisdiction of the Department of Agriculture and provision was made to use the resources inherent in the lands in accordance with the broadest concept of conservation—wise use of all the resources in the interests of all the people.

In 1907 the name was changed from “forest reserve” to “national forest.” This was done to avoid any implication that the resources were locked up, not for use.

Lands immediately adjacent to settlements or within them had been set aside for the recreation of the people, very much earlier, as far back as colonial days. The Battery and Bowling Green in New York date from about 1621. Boston Common was bought by the city fathers in 1634. Five parks were laid out by William Penn in the early days of Philadelphia. The areas so reserved were for common pasturage, for play, for social gatherings, and were to be protected against destruction by the selfish few.

It appears then that even under the stern compulsions of our early colonial days these provisions for play as well as for work held the element of public responsibility. The subsequent development of municipal, county, State, and Federal parks and forests throws rich and varied sidelights on our advancing civilization.

The story of our municipal parks alone is an account of endless brave attempts to provide rural peace and beauty for city people, of the progressive development of concentrated mass use, of the progressive urbanization of the parks into amusement and playground centers, and often of the eventual overwhelming of the park or forest by the city.

Frederick Law Olmsted, still remembered for his pioneer work in laying out Central Park in New York City in 1853 and for subsequent work in other cities, considered that a true park was “a place where the urban inhabitants can, to the fullest extent, obtain the genuine recreation coming from the peaceful enjoyment of an idealized rural landscape in rest-giving contrast to their wonted existence amidst the city’s turmoil.”

He did excellent work, but most city parks today must of necessity fail to meet his definition. The city-park movement has had to concentrate on children's playgrounds, on neighborhood parks and playfields of rather ugly facilities, with professional and semiprofessional leadership furnished for playground games.

This has necessarily changed the character of some of the earlier city parks planned by Olmsted and other pioneer national planners. If Olmsted could see Central Park in New York City now on a hot Sunday, the spectacle of our progress might sadden him.

You cannot bring the country into the city and keep things countrified. But city people can get out into the country now far more easily with 30 or 90 horsepower propelling them at the governed pressure of a restless foot. So now the cities are making parks and human refuges out from town. Robert Moses, of Mayor La Guardia's administration in New York City, fighting to give the people there a little more natural relief, is fighting for something really needed.

Reconsider this simple statistic: Only about 1 percent of all our vast ocean shore line and Great Lakes shore line is publicly owned. All the rest is hedged with signs, actual or implicit: Keep Out—Or Pay. Much the same thing is generally true inland, of all the little lake shores, bayous, fishing streams, and the more accessible pleasure groves surviving.

Denver, Colo.; Phoenix, Ariz.; and Fort Worth, Tex., now manage forest parks for their citizens. Boston, Mass.; Cleveland, Ohio; and 294 other American municipalities even in 1935, at the last general count available, reported 514 parks with 129,941 acres outside their city limits.

TOWN, COUNTY, AND CITY FORESTS . . . One of the earliest town forests was that of Danville, N. H., set aside in 1760, and managed by the parsonage committee. For a century and a half it has been a successful venture, furnishing both forest products and income. Other New England towns had town forests; they are a characteristic feature of public forestry in the Northeast, and the idea has spread somewhat, until now there are some 1,500 community forests throughout the United States. Usually they are small forests set aside to protect town water supplies, provide opportunity for construc-

tive use of relief labor, furnish fuel wood for the town's relief cases, and building materials for municipal projects. They are locally important for recreation as well but are not likely to provide important outing areas for people living in the greater cities.

Of more recent origin are a number of forest municipal camps on public lands, often on the national forests. Los Angeles, Berkeley, and Sacramento, Calif., have established such camps. County parks and forests are a development of recent years. As municipalities, even the largest and wealthiest, were compelled to reach farther and farther to obtain land at an endurable cost, they ventured more and more into the area of primary concern to county government, and the park or forest project became naturally a county affair. There was also the thought that the cost might thus equitably be distributed among all the people seeking recreation there.

Essex County, N. J., started its system of parks in 1895. A neighboring county, Hudson, began a similar system in 1902. These were the pioneers. Farther west Milwaukee County, Wis., started in 1910; Cook and DuPage Counties, Ill., in 1913. The total area in such parks and groves now exceeds 100,000 acres in more than 400 different tracts. And some of the great cities—those in which the county is overshadowed by the city—have formed metropolitan district parks. New York, Chicago, Philadelphia, Detroit, and Los Angeles, for instance, seek thus to achieve larger units of planning. They try to protect the spaciousness and natural beauty of the site, but it is uphill work, in view of the human load which generally must be carried by readily accessible public woodland.

The effort is to provide, as the Milwaukee County Park Commission states, a place “to get away from the harshness and crude lines and noises of the town . . . to return frequently to the soil again for invigoration and refreshment.”

Most of these places are godsend but it is virtually impossible to maintain within or at the edge of a great city anything approaching naturalness and spaciousness. The reasons are plain. Nearness to the city generally means high-priced land and this means small, pinched-off pleasure grounds. Pressure of demand means intensive development and this calls for forms of amusement that will handle large numbers of people to the acre. Development creates further use, and here we enter upon a mounting spiral of

intensification and congestion. The horns of the dilemma are familiar and evident: First, such parks or forests must generally be readily accessible to obtain popular political support and to be usable. Second, their very proximity tends to defeat their stated purpose.

STATE PARKS grew first from a patriotic wish to preserve historical places of the American Revolution. Washington's headquarters at Newburgh on the Hudson, acquired in 1849, and Valley Forge were the first State parks of importance. From the standpoint of forest recreation the Yosemite Valley and the Mariposa Grove of Big Trees, ceded from the public domain by act of Congress in 1864, are important. Passed during the throes of the Civil War, and at a time when the national philosophy was that all the public domain should be passed to private ownership rapidly and under the most liberal terms possible, this act provides evidence of a dawning change of sentiment.

The Yosemite Valley had been discovered by Capt. Joseph Reddeford Walker in the spring of 1851. The next decade brought growing and none too scrupulous use, and the location of several private claims in the valley. It was a jewel of a place, and the desirability of defending it in its own natural setting for the common enjoyment became plain. In 1864 the efforts of "various gentlemen of fortune, of taste, of refinement," led Senator Conness to obtain the act granting the Valley and the Big Trees to the State of California. These natural wonders were to be managed by a commission, and the thought was that such beauty should be held and developed for public use, resort, and recreation, and should be inalienable.

Almost at once the commissioners had trouble. They had trouble getting funds to care for the growing crowds. The unfortunate results of toll-road permits which they had to grant because of lack of public money made more trouble, and the growing encroachments of destructive sheep grazing on the surrounding unmanaged public domain (the State park was only 56 square miles in area) presented still another problem. John Muir, a great naturalist, led a movement to create a national park surrounding Yosemite State Park. Congress did so by an act of October 1, 1890—another legal landmark in the conservation movement.

All sorts of reasons seem to have entered: The commissioners' headaches; the zeal of that prophet of Nature, John Muir; and the thought that since all America was apparently out to see this lovely piece of primitive country, and stomp all over it, the whole country, not just California, ought to take over recreational administration of the area, and foot the bill.

Conflicts in jurisdiction also entered; and the net of it was that in 1905 California re-ceded its State rights as to the Yosemite Valley natural attractions to the care and management of the Federal Government. Meanwhile the original pattern of State parks to preserve historic places was gradually being extended. Mackinac Island and Fort Mackinac (formerly Fort Michilimackinac) were set aside in 1885. In 1889 Massachusetts set aside seven different properties. As early as 1867 New York State moved to recapture into public ownership and prevent further defacement of the lands adjoining its supreme natural wonder, Niagara Falls. This was finally accomplished in 1887. The Niagara State Reservation was New York's first State park. Also, as early as 1873, New York pioneered in the practice of holding tax-reverted lands for forest and parks. Of the some 1,600,000 acres of land included in State parks in the United States in 1938, New York had about 189,000 acres. These figures do not include lands in State forests. In point of vitality, effectiveness, and self-sufficiency, the State-park movement in New York has been exceptionally successful.

Younger States also have developed effective programs. To the west it is mainly an intelligent effort to fit State parks and forests into inclusive principles of democratic use. The California State-park program is a conspicuous attempt to fit a State-park system into the whole set-up of public forests and parks of all kinds, and to make the State parks not only a worthy system in themselves, but also a working part of the whole system of public recreational lands.

Most of the other States now have State parks or State forests. They are of varying types, managed by differing kinds of State agencies. The emphasis in most States is toward furnishing reasonably but not closely accessible opportunities—for city people in particular—to enjoy forest or beach recreation. But a thinning down of natural qualities by progressive dilution with mass amusements is nearly everywhere discernible.

STATE FORESTS are generally more extensive in area and less intensively developed than State parks, which are usually small protected areas of natural beauty. Problems of recreational use and resource management in State forests and national forests are similar.

Public parks, whether local, State, or national, are as a rule devoted exclusively to recreational use. Commodity utilization of timber, grass, minerals, game, and water is not allowed. This is the single-use principle. Public forests, on the other hand, generally allow managed use of commercial timber, forage, water, and mineral resources, with recreation accorded its proper place. And individual uses, including recreation, are given exclusive place on limited areas. This is the principle of multiple use.

State forests antedate national forests. In State forests operated for multiple use there are now some 13½ million acres. In the Lakes States, where large areas of cut-over and once wrecked forest land have been acquired by the States through tax forfeiture, State forests are especially important. The New England States, New York, and Pennsylvania are also well represented with State forests; and in the West—Idaho, Montana, and Washington have moved toward consolidating through exchange with the Federal Government the remnants of their grant lands. Nation-wide, almost 750 different State forest units are scattered over 39 States. These units average much smaller than national forests or national parks do, but many of them are strategically located close to large population centers.

East and West, to speak generally, State forests receive less attention as places of recreation than do State parks; but many of the State forests have high local value as pleasure places. Almost universally the States have opened these forests and their facilities to the public. Approximately 28 million persons visited these State forests in the last year for which figures are available, but it seems likely that still heavier loads of forest visitors will come as time goes on.

Concentrations of people, whether in cities or in open forest country, bring problems that are not easily solved. As a result of the more intensive recreational use of the lands under their direction, State foresters find themselves faced with situations comparable to those on national forests. Even with the combined efforts of the Civilian Conservation Corps and the State forestry

departments, the States have not been able to provide adequate facilities. The influx of visitors into the State forests has taxed the ingenuity of State forestry organizations, most of which are small. But most State foresters have met the challenge to the limit of their resources, and plan a continued expansion.

DIFFERENCES as to recreational equipment and methods in parks and on forests, region by region, may be found on examination to arise in part from varying circumstances—different kinds of country, cover, soil, weather; but above all, from different degrees of demand or pressure exerted by the people on available recreational areas, the per-acre recreational load. The national forests are a vast stage on which escaping millions seek in their own way to play their own parts. The national parks are natural galleries around natural centers of attraction. They surround and preserve something definite for our people to go to and see. The most gorgeous parts of the Grand Canyon and of the Yosemite Valley are in national parks. So is the Mammoth Cave of Kentucky; and in Kentucky, too, a national historical park enshrines a primitive national memorial—the rude log cabin in which Abraham Lincoln was born.

The genesis of the national-park movement was nonutilitarian and patriotic in the highest sense. An exceptional streak of national idealism amid an age of ruthless raiding led that group of Californians, viewing the Yosemite and the Big Trees, to realize that the best use of such gems was nonproductive in the strictly practical sense. It was 26 years, however, before the Yosemite State Park became a national park; so most writers on the subject say that the movement began on March 1, 1872, with an act of Congress creating a Yellowstone National Park. The pioneers here were the members of the Webster-Doane expedition of 1870, a most unusual group. They saw in the Yellowstone a supreme natural wonder which should be kept unimpaired and unspoiled for public enjoyment—"a public park or pleasuring ground for the benefit and enjoyment of the people"—and moved toward, "the preservation from injury and spoilation of all timber, mineral deposits, natural curiosities and wonders, and for their retention in their natural condition."

There are 27 national parks now. They cover some $9\frac{1}{2}$ million of our acres. Beyond that on more than 125 other scattered sites, totalling $11\frac{1}{2}$ million acres, the National Park Service guards and displays archaeological and historic landmarks like the Aztec Indian ruins, pioneer forts, the Lewis and Clark caverns in Montana, battlefields, military cemeteries and monuments. It also cares for the beautifully designed and tended parks which surround the Washington Monument, the Lincoln Memorial, the White House, and Government buildings in Washington, D. C.

In all, the National Park Service, with a permanent, seasonal, and temporary personnel of 3,500, now administers for the public use and pleasure something under 21 million acres. Public use is heavy; in the 1939 travel year $15\frac{1}{2}$ million persons are reported to have visited all the various units administered by the Park Service. This may not seem an especially heavy use until you stop to consider that park crowds tend in the very nature of their outings to cluster around the more accessible centers of attraction that the park or the special site displays.

Because no general charge of admission is made, national-forest visitors are not accurately tallied. On most of the forests the recreational load is widely dispersed. It is estimated that some 32 million persons visited or passed through the 176 million acres of national forests in 1938. More than half of them were simply people driving through on business or pleasure bent. Nearly half of them were not to the same degree forest transients. They stopped to picnic, camp, hunt, hike, or simply to rest. As is true in the parks, these round-number tabulations are made in terms of "visits." In these numbers the same person may be several times or many times counted. "Repeaters," the foresters call them, these people who have found something that they seek out in quiet places and who keep coming back.

With a permanent and seasonal personnel of 5,000, more than 4,600 of whom work afield, the Forest Service plays willing host to all these millions—the venturing newcomers young and old, the repeaters, the weather-hardened veterans of the hunt and of woodlore—dispersed over the greater part of 176 million acres, from year to year. With the same force the Forest Service also administers timber, forage, wildlife, and other resources of the national forests.



F-331232

*Dude ranchers frequently trek their customers
out through wilderness areas.*

SPANISH PEAKS WILD AREA,
GALLATIN NATIONAL FOREST, MONT.



The Wild

The wind blew up from the river, fresh and mysterious, against my face. The air was alive with the faint odor of juniper. Far, far away, beyond the river, beyond the canyons, beyond countless miles of mesa, so far away that they were sometimes mountains of earth and sometimes mountains of an ancient, dried-out moon, rose a snow-covered divide that seemed to bound the universe. Between me and this dimmest outpost of the senses was not the faintest trace of the disturbances of man; nothing, in fact, except nature, immensity, and peace.

Robert Marshall, Nature Magazine, April 1937.

WILDERNESS TRIPS provide under conditions of some hardship a return at once serene and bracing to America's far past. These explorations of the primitive vary widely in respect to the rigors imposed. Dude ranchers frequently trek their customers out through wilderness areas nowadays, with cowboy guides to keep watch upon them with a sort of rough tenderness and bed them down on inflated, rubber mattresses at night.

But often dude ranch trips, where the dudes are hardier, are very much tougher than that. The job, indeed, is sometimes to hold down robust businessmen who want to push over mountains and engage mountain lions barehanded—to keep them from needless dangers and accidents.

In the summer of 1938 with three companions the late Robert Marshall, of the United States Forest Service, attempted to climb Mount Doonerak in Alaska, something no one had ever tried. Much the same unusual weather that stirred up the New England hurricane was breeding there in the far Northwest late that August. Rain and flood beat at the party for days and weeks on end. Mount Doonerak is yet to be climbed. Cast under ice in the floodwater wreck of a 30-foot open boat, returning, these wilderness ad-

venturers were miraculously lucky to escape with their lives. They salvaged some provisions from the wreckage, made packs, and walked in a hundred miles or so, over the roughest sort of country, in 3 days. On their 29-day outing they encountered 27 days of rain. Yet all of them swore they would not have traded those 29 days for a year of humdrum life back home. Besought by more sheltered spirits to explain the charm of it all, Marshall issued a personal memorandum, in part as follows:

“Of course, all this is completely useless. No human being except myself and my partners will be happier nor will the world be a bit better off because of our exploration and mountaineering. There seems, however, no reason why we should not be as much entitled to the fun of this exploration as anyone else. And it is relatively inexpensive. The entire expedition cost less than the cheapest new car, than a vacation trip to Europe. Consequently, if the adventure was useless, it was also relatively harmless; but from an emotional standpoint it was the top of the universe!”

The wilderness is vanishing but it has as yet to vanish completely from the face of this continent, and there is an increasing insistence that the remaining wilderness be not blindly entered and subjugated to the pursuits of civilization, but kept as it is.

When it comes to determining the precise degree in which such areas should be held inviolate, sentiment varies. In a region where the pioneer urge to open up new country still burns high, one recent correspondent argued for a “gradual and measured introduction of roads and resort facilities” into a number of wilderness areas there. And to this a responding wilderness enthusiast replied at once in a ringing letter beginning: “There can be no such thing as a gradual and measured ravishment!”

The extent to which emotions essentially patriotic and in a sense religious must enter into decision of wilderness use or disuse may be gaged in some part by reading the “platform” of The Wilderness Society, organized at Washington, D. C., early in 1935.

“PRIMITIVE AMERICA is vanishing with appalling rapidity. Scarcely a month passes in which some highway does not invade an area which since the beginning of time had known only natural modes of travel; or some last

remaining virgin timber tract is not shattered by the construction of some irrigation project into an expanding and contracting mud flat; or some quiet glade hitherto disturbed only by birds and insects and wind in the trees, does not bark out the merits of a patented nostrum or the mushiness of 'Cocktails for Two.' Such invasions are progressing everywhere so rapidly that unless fought as ardently as they are pressed there will soon be nothing left of those wilderness characteristics which make undisturbed nature the most glorious experience in the world to many people.

"We recognize frankly that the majority of Americans do not as yet care for these values of undisturbed nature as much as for mechanically disturbed nature. We are willing that they should have opened to them the bulk of the 1,800,000,000 acres of outdoor America, including most of the superlative scenic features in the country which have already been made accessible to motorists.

"All we desire to save from invasion is that extremely minor fraction of outdoor America which yet remains free from mechanical sights and sounds and smells. We do hold that those few areas which have thus far escaped man-made influences must be preserved in their natural condition, unless it can be clearly demonstrated that some other use is of compelling value."

Exclusionists among wilderness lovers would bar "motor roads, radios except for fire protection, railroads, cog roads, funiculars, cableways, etc." They would severely limit "graded trails, ski trails, footbridges, cabins and shelters, sheep and cattle grazing, fences." "Power lines, water-power developments, irrigation projects, and logging operations" they would prohibit entirely. "Airplanes, motorboats, telephones, lookout and ranger cabins should be permitted only when they are necessary for fire protection or emergency."

As to erosion and insect control, erosion control "should be permitted in areas where it is necessary to undo the effects of faulty land use"; and insect control "should be permitted only when it is necessary to save the wilderness forests from destruction. Endemic insect attacks occurring in the wilderness should not be disturbed."

But even in this it is evident that some concessions to modern civilization are contemplated. If wilderness areas bordering civilization are given over



F-354935

Primitive America is vanishing with appalling rapidity.

MOUNT HOOD NATIONAL FOREST, OREG.

entirely to a laissez-faire policy of inaction, with no human intervention, planning, or management whatsoever, then fire, insect infestation, or excesses of erosion initiated perhaps by unnatural processes outside the area may destroy them. The paradox is plain.

A section of the National Resources Board 1934 report on recreational land use, prepared by the National Park Service, presents with a calculated breadth and simplicity the present dilemma on the remaining primeval spots and the larger expanse of wilderness amid our State and national patchwork of private land, parks, and forest today. Briefly to quote:

“Under the increasing pressure of motor travel, control of road building becomes an important factor in the preservation of primeval areas. However, only one motorist in hundreds ventures a mile from his car; the rest are amply content with the road and the museums, lectures, and pleasures of developed centers. For the few, the trail and the primeval; for the many, the points of concentration and comfort.

“By sacrifices of small areas sufficient to house, interest, and entertain the masses, vast areas are preserved to the student—for today and for generations to come. However elaborate our road system to the parks and between them may become, the roads within need be only few. Thus is met the problem of preserving our national parks while we also use and enjoy them . . .

“Man’s success is largely determined by his knowledge and ability to make use of natural laws. The best places for scientists to learn first hand of nature’s laws are found where nature’s laws still operate undisturbed by man . . . We can afford to be careless with those things which are easily replaced, but those which can never be replaced must have special protection and care . . . Fairness to those who have similar rights to ours, but who will live 100 years from now, demands that we save intact some of primeval America . . .

“Though in general a hands-off policy will best care for a primeval area, a *management policy to retain the primeval is necessary*. It is still a question as to how far we may safely go in providing artificial protection against fire.¹ Fire

¹ On a number of scattered wilderness and more developed forest stretches, ranging from Florida to the Cascades, more fires are set by lightning than from any man-made cause. Over the country as a whole, however, man causes more forest fires than lightning.

control nearly always demands additional trails, telephone lines, and look-out towers. The provision of this equipment furnishes a means of fire protection but at the same time brings in man-made control as against natural control."

ZONES OF WILDERNESS . . . It was about 15 years ago that the first national forest wilderness area was set aside. Today, of 70 of the Nation's established or proposed wilderness areas of 100,000 acres or more, 52 are on the national forests. And 11 out of 13 of those containing 500,000 acres or more are entirely or chiefly on national-forest land. Natural conditions here in many places reasonably compare with general conditions at the time of the Louisiana Purchase.

Today, too, the Forest Service recognizes some 19 different types of areas where recreation has dominant or exclusive importance. The first five and the eighth of these classifications as listed here stress, in varying degree, the preservation of wilderness values:

A "wilderness area" must be designated by the Secretary of Agriculture, and must remain content with primitive transportation and habitation. It is defended against roads, resorts, organization camps, summer homes, and commercial logging. It may not be modified or eliminated except by order of the Secretary, and then only after public notice and a 90-day period within which public hearings shall be held if there is a demand for them. The smallest area recognized as a forest wilderness is 100,000 acres, and its boundaries must be at least one-half mile back from any road.

A "wild area" is a small wilderness area of less than 100,000 acres, but of at least 5,000 acres.

A "virgin area" is 5,000 acres or more on which there has been virtually no disturbance of the natural vegetation. A "natural area" is set aside to preserve special botanical values, but is not large enough to qualify as a virgin area. A "geological area" is set aside to preserve features of the formation and structure of special interest to students. An "archeological area" is set aside to preserve material evidence of aboriginal American peoples, and an "historical area" preserves interesting evidences of the life and activities of people who have lived since the advent of the whites on this continent.

A "scenic area" is a spot of extraordinary beauty, requiring special preservation. All of such spots are relatively small. Forest wildernesses are much larger.

Because of the necessity of fire control, forest wilderness areas and the smaller wild areas are equipped with lookout towers and telephone lines. With the development of radio, telephone systems are becoming less important. Simple trails are permitted, not differing greatly from the Indian trails that were the highways of the forest before the white man came. These are built primarily for fire protection. They also help to bring safely into the wilderness some who would not otherwise venture that far back.

Here and there sizable areas will in the future be set aside as trailless wildernesses where those who dare may enjoy the adventure of finding their own way.

OFF THE TRAIL you are on your own. Goodbye to the endless repetition which machinery imposes; goodbye to a life where the same events are certain to be repeated, to the world where you know exactly what lies down the street or around the corner.

Here is a new world, clean and shining; a new life! Mustering all your knowledge of woodsmanship, you may be seeking blazes along the dim trail which winds among the ancient hemlocks and cedars on the slopes of the Selway Mountains; you may be searching the alpine meadows of the lofty Absarokas for the old, crumbling cairn which marks the only route of descent through the encircling rimrock; you may be trying to guess whether the channel you are following through the dense fir of Lac La Croix is leading toward your destination or merely to the foot of some dead-end bay; or you may be climbing some trailless ridge among the Maroon Bells of Colorado and conjecturing on what world lies beyond the Continental Divide. Such experiences are dominated by a jaunty feeling of uncertainty.

The experienced wilderness traveler faces uncertainty calmly, with confidence and an exultant spirit. He walks alertly, the master of his destiny. Skillfully he packs his food and bedding on a horse or carries it on his own strong back. He carries some food, but eats the better by whipping mountain



F-191212

You are on your own.

MOUNT BAKER NATIONAL FOREST, WASH.

waters rich in fish. He can ride or walk 40 miles a day with ease and elation in his hardihood. He is at home in the wild.

There are certain natures and characters that, however highly developed and admirable, simply do not rise to the exacting requirements of wilderness conditions. Partly it is the altitude; high elevations exert a depressing effect on some people. But it is also the endless expanse and grandeur of the scene. That is often too much for them; it makes them feel like ants crawling, tiny, insignificant; it depresses a fellow, they say. On a long trip such people often wearily count the hours and miles. When at length they come down the last divide, back into civilization, and behold neatly clad sportsmen following little white balls around a beautifully tended golf course, they all but weep for joy.

There are other people, unused at first to the wilderness, who react favorably to it; who since their first trip have reentered it, more on their own. It is simply a question of one man's meat; no ethical or moral judgments enter, and this should be made plain. There are others, even among foresters, who can make their way to fishing streams and glades no farther from a highway than to dim the purr of tires and the sound of voices, and feel or imagine with greater comfort that they are at least a million miles from everything.

It is really important, for reasons both of public safety and of effective forest administration, that nothing said here by wilderness lovers be taken as a dare to urge more forest visitors beyond the trails, beyond their capacities or tasks as woodsmen and explorers.

"Take it easy. Test yourself," those experienced in the wilderness advise. See how much of utter isolation you really like, want, and can take. The old-time frontiersman, you must remember, took all the time he was growing up to fit himself for long hikes beyond the trails. And even then, many brave men and women found in untrod lonely spots no necessary satisfaction, and stuck close to the trails.

It is, to speak quite seriously, no fun to be lost in the woods. Some people who go through the experience and come out of it are never quite the same afterwards, and even with the entire personnel of the forest out day and night on search parties, the unprepared wilderness adventurer is not always

found alive. This is especially true of mountain climbers, and of skiers or other winter sportsmen, often youngsters, who strike off and attempt slopes beyond their powers.

For those who are fit, the still new world lies open and offers escape. The man who fishes one of the remote lakelets of the high Uintas may not catch any bigger trout or any better fighters than the one who fishes a heavily stocked river from the highway bridge, but he catches them in an unaltered setting and this adds to his joy. The man who packs into the heart of the Gila Wilderness for his hunting may not shoot any bigger deer than the man who knocks them down from near the highway, but he pursues the game in a world where he can still feel like a Kit Carson or a Daniel Boone. The man who climbs the trail up Agness Creek to the crest of the Cascade Mountains may not see any more jagged peaks than along the Stevens Pass Highway, but the environment from which he sees them exhibits no sign of civilization save the dead ashes of a few old campfires and the simple trail which has changed but little since it was tramped out centuries before by the feet of Indians.

Time is of no consequence in an environment that has been developing through an unbroken chain of natural sequences for millions of years. A man or woman camping among the remote peaks of the High Sierras or on the source streams of the Flathead River finds no jarring sight or sound, no discordant clash with instinctive feeling of oneness with eternal and natural values. Nor does he in that vast Quetico-Superior country that lies astride the Minnesota-Ontario international boundary. This latter country has been described as embracing the most usable, beautiful, and primitive canoe waters left in the United States, with an endless variety of woods, rocky shores, mountains, and lakes. It is less than 24 hours' travel from Chicago, less than 12 hours' from Minneapolis. But except for the airplane—sole rival of the canoe—lakes and rivers provide the main avenues of travel within the bulk of its millions of acres.

The Quetico-Superior area includes thousands of crystal-clear lakes and hundreds of miles of forest-fringed streams up which canoes of French *coureurs du bois* once knifed their westward way. Here the canoeist-camper, who has outfitted at a trading post on the fringe of the wilderness, may

cruise for weeks through labyrinthian waterways without retracing his course. Waterfalls will fascinate him. Native game will watch him as he glides along. Cut off from civilization, he pitches his tent where night overtakes him . . . cuts his own wood . . . catches fish . . . cooks his own meals . . . becomes one with nature.

Some 900,000 of these acres within the Superior National Forest have been formally dedicated by the Forest Service as a primitive or roadless area. And following years of hard work by the Quetico-Superior Council, the Quetico-Superior Committee, appointed by the President in 1934, has recommended creation here of an international wilderness sanctuary and peace memorial to the Canadians and Americans who fought side by side in the World War.

To close this chapter with a more definite and personal description of what men seek beyond the farthest established campsite, the late Robert Marshall, quoted at the opening of this chapter, wrote the following account of one of his recent forest wilderness trips:

UP FROM WIND RIVER.—The horses were waiting at Dickenson Park. Here the dirt road ended. Here the wilderness began. Beyond were the Wind River Mountains without a single road in an expanse more than 100 miles long and averaging 20 miles wide. It was a primitive land where all travel was by substantially pioneer methods which were used before white men had ever invaded this Shoshone country in Wyoming.

We saddled and started climbing through lodgepole pine which made us duck constantly to avoid being scalped by overhanging branches. Toward the top of the mountain the pine gave way to spruce and fir, and a little later we were out on the open divide. To the west lay the promised land with wild, mysterious summits stretching as far as the eye could reach along the backbone of the Wind River Range.

Directly below was a basin with 10 fresh-looking lakes surrounded by dark green timber and backed by rocky peaks. Look as closely as we could, there was not the slightest evidence of man's activity. We started down the west slope toward this wilderness basin. At many places the mountain was so steep we had to lead our horses. One time we got rimrocked and

had to climb back several hundred feet. That was where Cap took his big tumble when a ledge split off, but although he was 60 years old, it left him with no more serious injury than a badly barked shin.

Finally we reached the valley floor. It took only a short time to pitch camp in a bright meadow, and since the afternoon was still early, we set out on varying occupations. A couple of fellows sat around the meadow, loafing and enjoying the sunlight. Four enthusiastic fishermen started to whip nearby waters which had not been fished for a year.

Meanwhile, I started climbing afoot to the uppermost lake in the basin. When finally, after skirting two lower lakelets and following a series of great cascades, I reached this remote water, it seemed as if I were far beyond the zone of human penetration. There were no faintest sounds, no dimmest sights, to give even a hint of civilization—just rocky shores and a scattering of wind-swept trees, and in the background, the pinnacle of Mount Chauvenet.

We broke camp early next morning and after cutting across country a short distance, came to a good trail leading southwest. Since we were the first party of the year to go over the trail, we had to stop frequently to saw out windfalls. The scenery was unexciting but lovely, with lodgepole pine and spruce and green grass and many showy flowers of early summer. Our trail, which had started on a level, began to get steeper. After awhile we abandoned it and headed our horses up an open slope until finally we reached the top of a nameless summit. Below us were several snow-fed lakes, clear and blue and deep. Back of them were the steel-gray summits of the Continental Divide which cut a sharp line of cleavage against the bright-blue sky. Northward a spectacular peak seemed to be on the verge of tumbling over to the east. The ranger said that it was Lizard Head and that it was so rugged that no one had ever succeeded in climbing it.

We ate our lunch, and then dropped back to the trail which we followed northward toward the headwaters of Popo Agie Creek. After 10 miles we reached a large meadow just below the overhanging Lizard Head where we established camp for the night. At the head of the meadow lay the Continental Divide—a granite range composed of what seemed unscalable peaks.

Next morning we started up the trailless green slopes from which Lizard Head rises like a gigantic pillar. We speculated on possible routes of ascent, but none of us was eager to try them. Halfway to the pass were two deep lakes entirely surrounded by rock slides. One could hear the continual roar of water splashing toward them from snowbanks melting rapidly under the hot July sun. When we looked around we saw, back of us, the jagged skyline of the Continental Divide.

The climb was steep but not difficult. We had hardly started the descent, however, when we were in trouble. The ground where the snow had but recently melted was like quicksand and three of the horses went down in rapid succession. It was nip and tuck as to whether we would save one of them, but a couple of our most skillful wranglers calmed him as he lay kicking frantically, and removed the pack.

Grave Lake is the most remote of the larger Wind River lakes. We followed a dim trail far back under the Continental Divide in order to reach its shores, from which we looked through a frame of white-bark pine into a crazy conglomeration of precipices jutting up at almost every conceivable angle. Wooded points extended into the lake and divided it into enchanting bays, while overhanging everything was the feeling of mystery which pervades the country at timber line. A sudden thunderstorm, driven across the lake by a furious wind, added to the feeling of being at the ends of the world. By the time we had followed the winding trail 5 miles to Washakie Lake, directly under symmetrical Washakie Peak, the storm had passed. A peculiar narrow peninsula extends nearly across the lake, dividing it into a main body of water 2 miles long, and an infinitely placid lagoon. On the latter we camped and watched the setting sun change the cloud-flecked sky into such a flaming crimson that it almost seemed alive.

The climb next morning to the Continental Divide was across snowbanks for half the way, even though it was mid-July. At Washakie Pass we stopped a moment to breathe, simultaneously, Atlantic and Pacific air. Then we descended on the west side to a creek with the morbid name of Skull, where we had our lunch. Thereafter we left the trail and rode our horses over a couple of mountains in order to obtain a better view of the surrounding topography and vegetation.

The camp that night was at a romantic location. In 1902, when the sheep were just beginning to penetrate this section of the West, the cattlemen who had been using that range for years took the law in their own hands. They captured a couple of sheep owners and tied them to trees. Then they drove their 2,000 sheep into a corral and slaughtered them before the frantic sheep owners' eyes. About the time the owners expected to share the fate of their flocks, they were untied, given swift kicks, and told to leave the country and never return. The old sheep bones from the massacre of a third of a century before still lay in the corral.

Next day we rode along just west of the Continental Divide for 25 miles. It was up one pass and down the other side, and up and down, and up and down again. We passed a myriad of small lakes sparkling in the intense sunlight of this high plateau land, 10,000 feet above the sea.

At the third pass of the day some of us left our horses and proceeded to climb Mount Baldy, from where we looked across to the highest summit in the Wind River Range. Directly in front of us were a half dozen peaks towering above 13,000 feet—Gannet, Fremont, Warren, Knife, Sacagawea, and Helen. They were so massive and substantial it almost seemed as if they constituted the boundaries of the earth.

We sat quietly, enjoying the view for more than an hour, until the chill which came with lengthening shadows reminded us what a poor place this would be to spend the night. We dropped down to a meadow where the remainder of our party had already established camp and had quickly caught their limit of trout from a nearby lake which no white man ever before had fished.

Next morning dawned sorrowfully enough as the last day of the expedition. I left the other members of the party and set out to walk as far north as I could that day and still return by dark to the end of civilization. Again, it was a case of up one pass and down on the other side, all day long over 36 of the most splendid miles a human being could know. There were continual alpine lakes among the rocks and meadows, continual stunted pine and spruce and fir. On every side were limitless climbing possibilities, including opportunities for that greatest of all mountaineering thrills, a first ascent.

It was peculiarly elating to stride along through the world above the 10,000-foot contour where an energy unknown at ordinary elevations seemed to be liberated. One felt like keeping on and on forever. However, I had set Green River Pass as the limit of what I could do and still reach road's end before dark. As I looked northward from the pass, it was pleasant to realize that the closest road across the range, after 2 days of steady travel northward, was yet 50 miles away.

I turned reluctantly and started back. It was just sunset when I reached the road above Fremont Lake, the outpost of civilization, the end of the primitive. It tied me into the world of modern life with all the cumulative marvels built by man's ingenuity from the dawn of time. Yet, as I took one last look into the Wind River Mountains where we had been buried for 6 glorious days, I had the feeling that all of man's ingenuity could not create anything to equal the world of the untamed wilderness.



F-238076

There are hillsides which are suited for no forms of intensive use except summer homes.

PISGAH NATIONAL FOREST, N. C.



Camps

During 1938 more than 30 million visits were made to national forests. Excluding sight-seers and those simply passing through, approximately 14½ million of these visits were by people who stopped on the forests for recreation.

Many forest visitors stop at hotels, summer resorts, and dude ranches. Others go to summer homes built under special-use permits. But most national-forest visitors head for campgrounds equipped with fireplaces, pure water, and simple but sanitary conveniences. There are now more than 3,500 of these developed campgrounds in the national-forest system. The CCC has been a big factor in developing campgrounds, and roads and trails leading to them.

Annual Report of the Chief, Forest Service, 1938.

BY A CLEAR FAR CREEK on the Choctawhatchee National Forest in Florida is a small clearing which seems at first sight to contain nothing humanly useful. But there is a camp here.

It is a poor but beautiful forest, the Choctawhatchee—pine, scrub oak, and palmetto growing mainly in deep sand. On occasional strands of hammock land which reach out into the still, bright waters of Choctawhatchee Bay and its dreaming bayous, there remains good timber—virgin stands of straight, clear pine, wide-spaced. But most of the forest was pretty badly cut-over and turpented-out while in private ownership. Since it became Government property it is healing, but at the same time it must yield sustenance for a resident or nearby population of some 1,500 persons. At present it yields a fearfully thin living, largely because of the thinness of the soil.

It is in dry, not in wet, weather on the Choctawhatchee that your wheels get to spinning and your car slides and stalls. The soil of Camp Pinchot, the original ranger station of the forest, for instance, is so coarse and thin, so

like the beach, that a grass,¹ native to the Manchurian Desert, was planted to provide a binding cover there. The loose-sand roads of the forest are not certainly passable for cars and for fire-fighting equipment unless clay is hauled in and mixed with the sand as a binder. At most of the fire towers and at the present ranger station, there are native-ornamental plantings, and some of the forest guards have subsistence gardens, to the end that they may eat. But the gardens and plantings are literally "made," on soil or muck hauled in by the truckload with CCC labor, and mixed as topsoil with the sand. A recent survey on the Choctawhatchee Forest shows that the white man who makes \$550 a year there, or the black man who makes \$425, makes more than the average.

All this has a bearing on the recreational facilities we shall find in that apparently useless clearing on the creekbank when, in a moment, we return to it. Campgrounds of the Forest Service may seem at first glance somewhat standardized the country over, but there are endless differences between them. No two of them are alike, any more than two trees are alike; for like the trees, national-forest campgrounds are the growth of a given soil, shaped by the immediate native background, and often modified in their form and structure by immediate need.

Here on the western Florida Gulf Coast what have the forest dwellers left by which to live? Timber, yes, and better timber is coming back under selective management. This takes time, and never again, in all likelihood, will this stretch of country support so many people as during the great timber-cutting era here. Naval stores, yes, but except on the national forest that is a diminished resource, decidedly; and under the generally prevailing methods of overbleeding the pines, many of the native turpentine operators are killing off what is left.

Fishing, possibly; the Gulf and bayous are said to be teeming with fish, but the relatively few residents who follow the water seem to be getting about all of the small living there is in salt-water fishing for this forest population now. Sport fishing may be improved, however; lakes have been stocked. Later, there may be call for guides to take sportsmen

¹ Manila grass, *Zoysia matrella*.

to these fresh-water lakes, just as there are guides and skippers to take out Gulf fishing parties in summer weather now.

The more closely you examine the situation, allowing everything possible in the way of an improvement of agriculture on a sound base, allowing everything that may soon be expected in the development of forest industries utilizing wood pulp, the more plainly it appears that the principal usefulness of this forest for the next many years, and the main support of its people, will be recreation based on scenic beauty, its generally agreeable climate, and its game resources. Game, it appears, will be especially important.

There is rather brisk summer-tourist business here now along the western Florida Gulf Coast. It is mainly an exodus of middle-class people seeking relief from the dense, humid heat of summer in the interior country immediately to the north and west. Over on this low shore Gulf breezes keep moving most of the summer and the summer nights are generally cool. Visitors attracted by the Gulf winds probably bring more money to the residents of this forest and of the towns adjoining than all their other products combined. But such money blows in only during the summer vacation season, in any quantity; from May to October, in the main. During the rest of the year most tourists push on southeast to the warmer, steadier sunshine and the great human swarms of Florida's peninsula beach resorts: St. Petersburg, Sarasota, Palm Beach, and Miami, particularly.

In point of outdoor sunbaths and the rather gaudy diversions of the Florida beaches, this more northern and western Gulf Coast country cannot compete as a winter playground with peninsular Florida as a whole. It now attracts a sparse scattering of hardier winter refugees from overcongestion and mounting prices on the peninsula; that is about all. And yet the bayou country of the Choctawhatchee and its environs has, for some, winter attractions which are incomparable. It has a bracing, swiftly changing winter climate, springlike to a northerner, much like Maryland's April and early May. It has openness, and space, and a relative solitude to offer. To the naturalist it offers for pleasure or study an amazing range of hardy vegetation, and on both its placid shores and wide, shining waters, a returning wealth of wildlife.

Wildlife; that is the Choctawhatchee's great natural crop, and the main

hope of its residents for the future. The game has been protected, with short open seasons of specified shooting, mainly in the off-peak season of vacation usage. Game population is being built up to a point where more liberal limits, especially in winter, may be allowed. Ducks now are thick on its bayous, and generally so tame that one can get to within a stone's throw of them to take their pictures. Deer have increased to a point where soon a lifting of present limits will be required to sustain a natural balanced husbandry on this forest. Coveys of quail are multiplying, too; in some places they are so tame that they can be seen running and darting across openings, and vying for food with the lean, sharp-snouted razorback hogs still left to range freely by their owners on this forest and in its adjacent poverty-stricken towns.

If one is not by nature a hunter (and the man who writes this note of comment is not), the prospect of the Choctawhatchee becoming soon an important and fruitful hunting ground, with an augmented income coming more steadily all year round to its needy forest residents and townsfolk, will exert no overpowering emotional appeal. One might prefer, emotionally, to keep it as it more or less is, a refuge, forever. But practical considerations enter and enter most urgently, and it is conceivable that in many places like this, with schools (especially the schools of the Negro residents) and hospitals and diets and living standards as they are, hunting will have to be fostered and encouraged to add to the food supply, but principally to bring in tourist money. Native stocks of people are more important to preserve than game. And with proper management, both kinds of native stocks may be better sustained.

"Look at that," says a forest officer, disgustedly, seeing crude barrels of naval stores drained from overdriven trees, bumping in big trucks out of private lands within the forest. "Draining their lifeblood away!" Later, down on the firm sand of a beautiful point of beach, with woods behind it, he points with delight to the sharply cut tracks of a big buck; and, "That's going to be their main living, the folks on this forest!" he says.

HUNTING CAMP . . . It is natural, then, that when foresters on the Choctawhatchee think of recreation, they think first of all in terms of hunting,

and it is natural that the first developments toward forest recreation here were inexpensive, simple hunting shelters. They make them better now than they did at first. For at first they had no landscape and structural architects to guide them, no appropriations whatsoever for materials, and no relief labor to do the work. This shelter in a clearing by the creekbank, just completed, was planned by a Harvard graduate in landscape architecture, traveling out from the Tallahassee office over all the Florida forests, and the local ranger saw to the actual construction of the job. It is a good job. It fits into the scene so completely that a visitor is well into the clearing before he sees it. And when he does see it, he feels at once that it is all right there; it belongs.

Built of native timber by CCC labor, this shelter cost under \$50, and is so well and plainly constructed that the ranger figures there will be no appreciable depreciation (short of fire or acts of vandalism) in its usefulness to the public for the next 20 years or so. An adaptation of the Adirondack type of open-front lean-to (no longer widely favored on most forests with harsh climates), this low, dark-colored building is just about wide and deep enough that six tall men may sleep in it if they all manage to turn over at the same time. Before its open front is a fire mound, hip high, made of logs and sand. Hunters are encouraged to build their fires on this mound.

The wooden lean-to, a fire mound, a convenient toilet, a shallow-well pump, a rack of firewood raised from the ground is all there is to this hunting camp, and it has been getting plenty of use. If more sportsmen show up than the camp can carry, the others simply make throw-down beds and build pit fires nearby. This is permitted on the Choctawhatchee by the simple procedure of getting a campfire permit from the ranger.

There has been some doubt among Florida foresters whether to install at these small and isolated hunting shelters a combination bulletin board and folding field desk, an all but standard piece of equipment at larger Forest Service camps. Experience shows that many passing users of these hunters' shelters do not like to register. They see some catch in it, or they are not in the registering mood. They sign fantastic names and enter in the register remarks often amusing but not always quotable in the presence of ladies.

No sooner were these hunting camps set up, however, in the remoter

depths of the Florida forests than a secondary use for them developed, as picnic spots. Floridians are great picnickers. In recognition of this urge the Service has prepared beautiful and rather modern forest picnic grounds on all four Florida forests. The one at Little Bayou, near Fort Walton on the Choctawhatchee, is a natural jewel of a picnic spot, accessible by paved road, yet removed from traffic, with a multitude of individual sites so scattered as to allow individual or group seclusion. It is rather heavily used in the hot season. In the summer the hunting camps are not in use, and the picnic parties make their resolute ways there, plowing surging cars through the deep sand.

So now at many of these small camps the foresters are also rearing sizable but inconspicuous rustic shelters, stoutly roofed, but open all around. These structures, too, are built from the native materials of the forest and designed in accord with the immediate forest background and need. They serve as crowd umbrellas. The picnickers take shelter under them during the abrupt torrential rains. Even a small roof gives women, especially, a measure of comfort when the sky opens and rivers fall from the heavens with thunder and lightning whipping and crackling around.

All this is intended seriously to suggest that while equipment and method must accord with a definite policy of forest recreational management, individual adaptations within the limits of policy are permitted and even encouraged, region by region, forest by forest, and by camp—afield.² This is both necessary and desirable. Every ranger district is different. The ranger there is expected to know policy, and he is credited also, as he gains experience in the Service, with a close working knowledge of that soil, its cover, its weather, and its people. If he proves to lack in any important particular, another ranger takes his post. And so it is right up through the decentralized administrative structure of the Forest Service, in respect to recreation management, timber management, range management, water management, fire control, and everything else. The man on the ground is put there to administer policy, but is given his head as to the details of management, in the main.

In the planning and administration of forest camp sites, the need of a considerable individual leeway enters constantly. The reasons have already

²The latest and more concise statement of this policy is appended on page 287, Appendix.

been suggested. There are some 3,800 different forest camp sites already established on the national forests, and more are being opened fast in response to need. You have seen in the description just given one of the newest, the simplest, the least complete in the sand-and-bayou semiwilderness of western Florida. Have a look now, 1,500 miles or so to the north and east, at one of the largest, and perhaps the hardest to handle of all the Forest Service's free public campgrounds—Dolly Copp Forest Camp in northern New Hampshire.

DOLLY COPP FOREST CAMP was a commercial resort of the summer-rooming-house type long before forest reserves were created, and long before these were renamed national forests and foresters were charged to administer them for multiple use. But Dolly Copp knew a hundred years ago what multiple use was when it came to mountain air and forest recreation, and getting a living out of that ground at the same time. A pioneer White Mountain woman, she was pioneer also in one of our greatest national industries, the outdoor recreation business. She was a feminist, too. The story of her life is an oft-told legend among White Mountain people today and the facts appear to be well established.

If Mrs. Copp could come back and retrace her way up Pinkham Notch now, she would marvel at our progress. Hard black roads, beautifully graded, strike up nearly every major notch in the White Mountain barrier now. This mountain borderland between Maine and New Hampshire has become one of the most heavily used resort regions in the world. The White Mountain National Forest embraces more than 708,000 acres in Maine and New Hampshire. The 37 State parks and 113 State forest units, ranging in size from 2 to 6,000 acres, run the total area of publicly administered pleasure ground in New Hampshire up to more than 775,000 acres.

But this protected and managed acreage, larger than the entire State of Rhode Island, is by no means a solid, unbroken strip of mountain country. The State forests and parks, with their 11 developed fresh-water bathing beaches, their 15 camp sites, their 19 picnic places, are rather widely scattered. And the White Mountain National Forest, with its 17 developed forest camps and picnic grounds for motor travelers, and its 308 miles of

scenic highway, protected from billboards and other commercial encroachments, is widely and generally broken into by private holdings.

As you drive up through that gorgeous mountain country now, up through Franconia Notch, Pinkham Notch, the climbing highways descend at rather frequent intervals to the aesthetic level of U. S. Highway No. 1, between the cities of Baltimore and Washington, say—at its worst. Billboards and hot-dog stands; playful little signs that shriek for you to GO SLOW, else you miss some of Auntie Bessie's Yum-Yum-Yum Cookin'; wayside tourist cabins with names like Dew-Kum-Inn, and Little Rhody—there they are.

Some of the newer cabin camps are quite decent and comely. Some of the private resorts have manifestly tried to follow the practice of the forest in keeping signs keyed down to a quiet tone. On stretches of road traversing private land, here and there, the commercial babble, the blatant aiming at one's eye, pawing at one's arm and purse, has been individually recognized as an indecency, in such a site, and has been somewhat moderated. But too many stretches of mountain road that traverse private land here toward the most majestic heights of the White Mountains in staid New England, are rimmed with shouting greed, shameless ballyhoo, and a desperate ugliness and confusion.

If this were a more cheerful desecration, it might be easier to understand. But it is, for all its clamor, cheerless, insincere—shame-faced. It is a sad desecration. Most of the private-resort proprietors, native and transient, great and small, do not really want to carry on like this in order to make a living here in the mountains. You can talk with them and find that out, easily.

Forget it for the moment; put it out of mind. It's too bad that cut-throat competition and the introduction of more decent standards of outdoor recreation should arouse such fierce growing pains in what begins to be our greatest industry, but the result in the end may be beneficial, and the industry will survive. The growth will come from its sounder parts. The pirates and panderers are killing their part of the game, anyway, themselves. Americans are rather patient suckers in the mass, but not eternally so, only for a while.

Let us, as many of them are doing, drive on. The car, climbing rapidly the smooth upswinging road, passes a portal post quietly announcing reentrance to the White Mountain National Forest. The racket subsides. Peace falls again on the eye, ear, and spirit. The road climbs smoothly on now through still woods, clean and beautiful. And it may be that what you take for primeval forest far extending is really only an undisturbed roadside or buffer strip. For this national forest, like all 161 of them, is subject to multiple use. A considerable native population that does not draw directly on the tourist trade must keep right on making a living here—lumbering, woods farming, stacking and shipping pulpwood; or gathering wild ferns, shipped and stored on ice, to provide a natural frame for the hothouse flowers which many other workers in the urban floral trade make a living selling, all through the winter. The products of the national forests are widely diversified. The problem is to see that one use does not get in the way of the other and spoil the resource. These roadside or buffer strips are designed to preserve the scenic value of the resource, and even to enhance it in places. Here and there where the view is especially gorgeous, landscape architects have selected and CCC boys have opened vistas through the woods, and the traveler may look across countless miles upon great ranges seemingly undisturbed.

The 17 developed camp sites on this forest take various form from the nature of their location and are of widely varied sizes, according to the expected use load. Some of them far off the main beaten roads provide only from 6 to a dozen sets, each secluded from the other, around some protected water source, with some sort of jointly used toilet facilities, unobtrusive in design, nearby. A set is a parking place for a car, with tent room, a large open-air fireplace with a cooking grate, and a combination outdoor dining- and living-room table, with fixed benches. These tables vary greatly on both camp and picnic grounds the country over, and the set or outdoor apartment is variously arranged around them, as furniture is in rooms of various shapes.

In all, the Forest Service has installed 23,000 overnight camp sets on its 161 different forests, and 30,000 picnic sets with no special provision for overnight camping. This sort of camping is more or less only a pro-

tracted picnic anyway, so it is practical to throw the figures together, and say that on the 161 national forests there are now some 53,000 free outdoor recreational sets, not nearly enough to supply the thronging demand.

These 17 national-forest camps in New Hampshire offer 2,000 sets, between them; and of this number Dolly Copp Forest Camp, alone, has 1,000. Dolly Copp, at the height of its season, is probably the least peaceful national-forest camp in the whole country, yet people keep flocking there and liking it more and more. The camp population from June to September runs around 74,000 for the season. The problem of its administration is fairly comparable with that of the administration of a boom town, and when the more or less resident throng is swelled by holiday transients, squirming for a swim or a day's outing, the scene and situation are not entirely idyllic. Last year's (1938) Labor Day crowd at Dolly Copp totaled 2,600—a peak. "It was like Coney Island without the chute the chutes," says the resident forest guard.

But here as elsewhere, Labor Day usually brings the peak load. There is no time of the year more gracious and wondrous than the fall months here in the White Mountains. September and October bring, to be sure, their bursts of chilly rain, but most of the time the air and sunlight are sparkling clear, and the colors of the foliage are indescribably beautiful with the brilliant reds and yellows in the intervalles contrasted with the fresh white snow on the upper slopes. The maximum coloration, in point of brilliance, comes generally during the first week of October. Special tours are formed then to view the height of the spectacle. But to many the best time to be here is after that, with the colors dimming, hazily, and the tourist-load on these mountains so thinned and scattered as to be hardly noticeable. There are, moreover, practical considerations to support the choice of a late-fall vacation. The rates of resorts are generally lower, and the free camps are uncrowded. In many places they are almost unoccupied from Labor Day until winter sets in.

THREE PARTIES . . . Of the three parties lingering at Dolly Copp Forest Camp this sharp September evening, one has tentage, one has a combination tent-and-trailer outfit, and one has it rigged to sleep in the back of the

car. The last is unusual, but the practice is increasing. Trailers, too, are somewhat out of the ordinary at Dolly Copp, and at mountain camps everywhere; the real trailer swarm is found generally on flatter lands and along straighter roads, as in Florida. Most forests elsewhere report a general diminution of trailer outfits during the past few years.

The man with his bed in the back of his car is a retired blacksmith from New Mexico. He travels alone, and has been traveling so, and camping, for the better part of 5 years now. A leathery, taciturn, but entirely friendly citizen, 48 years old, he spends his summers north, in New England and the north woods of the middle country; generally has a whirl at Florida and, returning, camps for the late winter and early spring on the desert of his home State, New Mexico. "I've got a little money in the sock," he says. "Nobody looks to me for a living. So it just occurred to me that I didn't have to work any more and could travel around and see the country. It's a good life. I like it." He carries a small tarpaulin to shelter his dunnage, outside the car; and strings this up as a shelter in hot weather. But his home is the car. Its interior arrangement makes even a Pullman berth seem wasteful of space. The gun rack, for instance, lets down under the bed at night; and his whole camp is as neat and handy as a good wife's kitchen.

The tented party is a mother and three sons, aged 8, 11, and 16. They are from Virginia, and are just completing a swing that took them to the Southwest, California, the Northwest, and East again by northern routes.

These are rather well-to-do people, one gathers; the mother has traveled abroad; her accent is cultivated. The boys are all as friendly as can be, but a certain well-bred aloofness tempers personal disclosures at first. This diminishes as evening falls and the fire burns higher. Father, you learn, is at his business back in Richmond. He and Mother wanted their boys to see their own country, the great West especially, this summer; and this was the way it could be done. "Really, you know," says the mother, "it's amazing! One can't imagine! Such size, and vigor, and friendliness, and so inexpensive, if you stay at camps." "A fellow doesn't know what the United States is until he gets over the mountains," says the 16-year-old son.

The three camping parties are bunched together; their shelters almost touch, at the very center of great, bare, Dolly Copp Forest Camp. "It's

friendlier that way," says the stout, earnest woman of 50-odd, traveling with her 18-year-old boy. "We camped up in the edge of the woods when we came here. The camp was so full then. But when the crowd went, we moved down here."

The arrangement of the shelters is rather more than an instinctive huddle. Such grouping enables these campers to share cooking fires and trade little chores with each other, daytimes. But at night they make separate fires and sit apart, as a rule.

This third party, the mother and nearly grown son, are from Los Angeles; or that, at least, was their last point of fixed abode, while the boy finished high school there. His father is an Army engineer on duty in China, but due to retire on retirement pay in the autumn of 1939. The whole family lived in China for a while, but conditions did not favor that arrangement, so the boy and his mother returned to the States. He did well in science and in high-school journalism, and was through with high school at 16, but not well. "He had grown too fast and burned his nerves, he worked so hard in school," his mother says. "I was worried about him. And he didn't know what he wanted to go on and do."

"All I knew was, I wanted to get outdoors and stay out," says the boy. "And Mother, she likes that, too."

So his mother closed their little curio shop with its gay-colored umbrella, which is a colorful part of their camp equipment now. She paints and sells china and small decorations. The boy built a short two-wheeled trailer, and fixed it skillfully, so that the china and painting materials could be packed. They took to the road together, 2 years ago last August. They have been about everywhere in this country since then. The boy has gained 15 pounds, and is strong and self-reliant. He and his mother have camped in forests and parks from the Grand Canyon to Canada, from Florida to Mexico. The boy had developed a definite talent for sketching. He likes to sketch wildlife, especially. He knows what he wants to do now—forestry. He and his mother are stopping at different colleges on this swing, looking them over, getting ready to set up a home again, where the head of the house will join them, while the boy goes on through college. They are not quite sure yet what school it will be. They are going to have another look at various colleges

on their way south this year to the Ocala Forest in Florida, where there is a winter trailer camp.

Having heard all this the forester gives them a note, penciled on a page from his notebook, to his former university teacher of forest conservation and agricultural journalism. "You see! I knew you'd find help when the time came!" the mother exclaims.

SUMMER HOMES . . . Many families who come to the forests for vacations want greater permanency, greater comfort, and more isolation than campgrounds offer. The Forest Service has for years issued permits giving individuals exclusive temporary rights to build summer homes on small tracts of public land. The sites, in the main, are carefully selected. The permittees are required to comply with approved building plans, with permit conditions, and to see that all developments are suitable to the forest. Few people can afford a summer home in the forest, and the exclusive use of land for home sites is not, as a rule, allowed to compete with other forms of recreational use. Campgrounds, picnic grounds, and other developed areas for use of the general public usually require fairly level ground, and there are often hillsides suited for no forms of intensive use except summer homes.

Holders of summer-home permits are encouraged to form cooperative associations. These associations, whether in groups or scattered, can provide community docks, boathouses, water systems, telephone and power services, and buildings for community meetings, which the individual could not afford. Permittee cooperatives cooperate in such matters as watchman services, delivery of supplies, and fire protection. Associations also afford a medium through which forest users can advise the Forest Service of their needs and by round-table discussion arrive at an amicable solution of common problems.

SEELEY LAKE lies 50 miles from Missoula, Mont., in the Lolo National Forest. It is a small lake, $\frac{1}{2}$ mile wide and 2 miles long, located in a wide, timbered valley surrounded by high peaks of the Swan and Mission Mountains. Around this attractive forest lake has grown a recreational center



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*People from distant States sometimes come up to the camp
for a day or week's outing in tent or trailer.*

SEELEY LAKE CAMPGROUND,
LOLO NATIONAL FOREST, MONT.

typical of hundreds of others around lakes, along streams, and in forested valleys on national forests.

Many families, mostly from Missoula, have spent their summers here for more than 20 years. These people are a representative cross section of western town doctors, lawyers, university professors, businessmen, and their wives and children. Perhaps 30 summer cabins, modest structures and simply furnished, have been built on selected locations near the lake, all under permit from the Forest Service. As soon as school is out in June, the people move in and often do not return to the city until the end of vacation. The youngsters swim, boat, fish, ride, and explore together, while the older people fish or putter about, or just relax. There are no formal social duties to attend, no obligations to pay, just visit or receive company as they wish.

On a fine point of land jutting into the lake is a large public campground set in a forest of old tamaracks. Fireplaces, tables, and benches are available for picnicking or overnight camping. People from distant States sometimes come up to the camp for a day or week's outing in tent or trailer camps; mostly the forest campground serves people from the nearby valleys. There is an organization camp, used all summer by the Boy Scouts, Campfire Girls, or other groups. Across the lake is a hotel under permit from the Forest Service, and at the end of the lake, on private land, is a store and cabin camp which also provides dancing for those who desire it.

Some of the summer cottagers keep saddle horses for riding on the forest roads and over the back-country trails. Occasionally more ambitious trips are made; once each summer a 2 or 3 weeks' fishing and exploring expedition is taken into the high peaks of the Mission Mountains or to the far reaches of the Flathead and Sun River Wilderness Areas. The boys, and even a few of the girls, learn to throw the diamond hitch and to care for themselves and their horses on the trail. When the duck season opens in the fall, several of the cottage owners return to hunt migrating wild fowl on the string of small lakes extending up the valley. In midwinter, after the snow is plowed out of the road, gay parties drive up from town for a few days of skiing and other winter sports.

DEVELOPMENTS . . . The origin of the national-forest movement in this country goes back to the third quarter of the nineteenth century. Concern over destruction of watershed and commercial forest values by uncontrolled, ruthless private exploitation, and the recognized evils of wholesale, deliberate, and easy passing of the public domain to private ownership, led finally to passage of the act of March 3, 1891, authorizing that the "President of the United States may, from time to time, set apart and reserve, . . . in any part of the public lands wholly or in part covered with timber or undergrowth, whether of commercial value or not, as public reservations. . . ." This act was clarified and amended by the act of June 4, 1897, which gave a very broad grant of power to the Secretary "to make such rules and regulations and establish such services as will insure the objects of such reservations, namely to regulate their occupancy and use, and to preserve the forests thereon from destruction."

Early national-forest objectives and management were necessarily utilitarian, attuned to the needs of the time. No one could have foreseen then the place which recreation was later to take. The western national forests were established in regions yet in the pioneer state of development. For a good many years the pressure of work, coupled with slowness of travel and lack of accessibility, resulted in but a small volume of recreational use, and that for the most part local.

Some idea of how fast the thing grew may be gained from notes lately gathered on the Apache National Forest—some 1,700,000 acres of mountains above desert, of which about a million acres are in New Mexico, and the remainder in Arizona. It is thought that the Coronado Expedition crossed this forest. Mexican settlement of the country did not begin until about 1872, and after that there came Mormon pioneering, but hardly anyone went there for pleasure prior to 1900.

As a national forest, the Apache is 41 years old. There are 350 miles of trout streams on it, and a considerable abundance of deer, elk, antelopes, bears, mountain lions, wildcats, squirrels, and turkeys.

Hunters sometimes entered the Apache, but the first recorded tourist dates from May 1, 1912. Down the road from New Mexico that morning came a Mr. Baker driving the first automobile ever seen in Springerville.

Amid general excitement he purchased gasoline (50 cents a gallon), had his lunch, inquired of roads, adjusted his duster, and started on his way, but not before he had signed the register at a local mercantile company. By 1919, cars were no longer an oddity. More than 6,000 were registered in Arizona alone, and travelers, the business people reported, "came from everywhere and were destined for every place." State highway flow maps indicate that well over 30,000 "foreign" and some 45,000 Arizona cars pass each year through Springerville now.

Visitors to the Apache Forest exceed 50,000 annually. Of these, some 35,000 are "en routers," passing through. Of the total, about 1 in 10 lingers long enough to enjoy the scenery, the climate, or the stillness; and slightly fewer than 1 in 10, around 4,000, stay an average of 7 days, fishing, hunting, or camping. There are now 17 camp and picnic sites on the forest, 230 miles of forest highway, and another 400 miles of forest development roads.³

What happened on the Apache happened as rapidly, or even more rapidly, and with much higher concentrations of use, on many other forests. And as more and more people came, an important change developed—important from the standpoint of forest administration.

Virgin lands for recreation were no longer near at hand. More and more people seeking wilderness lands turned toward the national forests wherein, in many parts of the West, are the only remaining wild areas. And the character of the forest visitors and their habits changed rapidly. The capable, resourceful, outdoor-pioneer type soon was outnumbered by men and women with less woods experience. Accustomed to more urban surroundings, the newcomers were much less woodswise; they did not so much delight in roughing it. This change did not take place in 1 or 2 years, but the rate of change was so great and the increase in volume of use was so large that recreation, as a forest use, began to require special facilities and assume the status of a major activity on the national forests much more rapidly than had been anticipated.

³ Forest highways are built primarily for the use of people living in and adjacent to the national forests, or as part of the general highway system. Forest development roads are built primarily to facilitate use of the forest resource and for the use of forest administrative and protective forces.

Data for the years 1905 to 1914 are not available for all national-forest regions, but the North Pacific Region in 1909 reported 45,000 recreation visits to its forests and the Rocky Mountain Region reported 115,000 the same year. It is interesting to compare these figures with the 1,507,000 and 1,785,000 visits, respectively, made to the same forest areas for recreation in 1938.

In 1911 Congress passed the Weeks Law which authorized the Secretary of Agriculture to purchase lands necessary to protect the watersheds of navigable streams. Shortly after that date, the purchase of lands and the establishment of national-forest areas was initiated in Eastern States. Since these purchase units were close to centers of population, they were used for recreation from the first.

The early use of the forests in all portions of the country by city people required some attention by forest officers. Every visitor increased the fire risk and in areas of concentrated use sanitation soon became a problem. The policies evolved to safeguard the forests from fire and to protect the public health were simple—public use of the forest areas was free with the fewest possible restrictions. Early practices consisted principally of a simple request: Visitors were asked to “leave a clean camp and a dead fire.”

Forest rangers took time to clear inflammable material from around heavily used camp spots and to build crude rock fireplaces. They erected toilets and dug garbage pits whenever materials could be obtained. They developed and fenced sources of water supply for campers. They made and put up signs to guide people and caution them about care with fire. Congress made no appropriations for such special needs for many years but ingenious rangers fashioned camp stoves and fireplaces of rock, tin cans, and scrap iron; tables, toilets, and garbage pit covers were made from lumber scraps and wooden boxes; and crude signs were painted and displayed on rough-hewn shakes. Many of these earlier improvements were raw looking and some of them were clearly out of place in the forest environment, but they filled a real need.

At first, most of the field force was beyond its depth on questions of recreational planning. They needed help by the time the specialists came along. The demands the field now makes on the specialists' time and energy give

constant proof of it. But there are fairly constant and natural differences between the way a ranger, for instance, looks at a camp or picnic ground and the way a landscape architect looks at it. This question of swings, sand boxes, and seesaws for the children is a case in point. These child coops are ugly; they look out of place in most forest backgrounds; and they are especially ugly and especially out of place when, as generally happens, the forest officers install the sort that are made of metal—the standard equipment seen on so many city playgrounds. But, as the rangers and forest guards insist, people come to the woods to get some rest, and what rest does a mother get if she's retrieving her young every whipstitch from running off, getting lost, and from possible encounters with rattlesnakes and wild animals?

When a 5-year-old child was lost and killed on a New Mexico forest one winter, practically every officer on the forest pointed out that this might not have happened if the children had been given a safe place to play on that forest site, while their parents rested. All right, then, says the landscape specialist, have your swings and seesaws if you must. But make them of native materials, not of galvanized pipe but of timbers. Some forests have done this, but there is no known way to make such swings as permanently strong, as little likely to break and hurt somebody after the wear and tear sets in. And the architect must also consider, the resident foresters point out, that such swings are often used by boisterous adults, a couple of 200-pounders at a time, maybe, standing on them, swinging like fury, there in the woods. So iron-framed swing brackets and chains for rope are still one of the ugly urban refinements permitted on many forest camp picnic sites. Playgrounds are set off as remotely as is consistent with safety, however, and hedged with native vegetation to preserve the forest atmosphere.

Most of the refinements which have been brought into forest recreational sites and structures are far more comely. There has been a vast improvement in this particular during recent years. Until about 1914, administration of the recreational use of the national forests had been wholly in the hands of the field force. The effort was still so small and so scattered that the need for a national policy was not evident. In 1915 the first preliminary study was made by a member of the Chief Forester's office. In 1916, Frank

A. Waugh, professor of landscape architecture of Massachusetts State College, was retained to make a comprehensive survey and report.

Public demand was analyzed. Plans were made for several important areas, such as the Mount Hood region in Oregon. In an effort to improve hunting and fishing, the first game refuges were established, and efforts to restock fishing streams were launched.

Then came the World War, and all activities not absolutely necessary to protect the forests from fire and for the production of wood, minerals, meat, wool, and leather were curtailed. Many foresters enlisted in the American Expeditionary Forces' forestry regiments and other branches. For 3 years, which were exceptionally bad forest-fire years, a greatly reduced field organization did the best it could on our national forests. Little or no attention was paid to recreation until 1920.

THE RUSH OUTDOORS . . . That was when it really started, after the World War. Prior to our joining the conflict, the San Francisco Fair of 1915 and a vigorous promotion of national parks, at their outset, had stirred perceptibly stronger tides of travel westward; but these tides lapsed as eyes strained eastward and all thoughts turned to the battle fronts overseas. Then came post-war "normalcy," and the boom. Most people were relatively prosperous. They were restless. Millions of them now had cars and the rapid extension of highways constantly widened the domestic-travel horizon.

Curtailed foreign travel also helped to swell the throng. During the World War and for several years after, pleasure travel to Europe was very light. Many Americans were for the first time persuaded to look to their own country for vacation-travel opportunities. And this impulse was heightened by a vigorous domestic-travel propaganda: "See America First."

A rather definite measure of the post-war American rush to the open spaces may be had from national park attendance statistics. The present park system was consolidated on a Federal basis in 1916. At the outset, annual attendance ran approximately 350,000. By 1919, it was three-quarters of a million; by 1921, more than a million. In 1926, it was close

to 2 million; by 1932, park attendance exceeded 3 million; and in 1939, nearly 7 million people visited the national parks. The figures do not, of course, include the visitors to national monuments, national historical parks, and other miscellaneous areas administered by the National Park Service.

Comparable figures show that in 22 years, attendance in national parks increased nearly 20 times while the acreage was not quite doubled. On the national forests it increased more than 10 times, or from 3 million to 32 million. Apparently the major factors in growth of use in both national parks and national forests were neither advertising nor provision of facilities—or the absence of either—but rather the enormous expansion of all forms of travel, based on increased national wealth and leisure and on autos and good roads.

This mushroom growth in attendance brought consequences and problems that had not been clearly foreseen. The terrific concentration of use in such restricted areas as the floor of the Yosemite, on Mount Rainier, and in upper Geyser Basin in Yellowstone caused serious overuse of camping areas, extension of roads in a not always successful attempt to spread use, and the development of grave mass-policing problems.

Foresters have been having the same trouble, but not, generally, as intensely. With a growth from some 4½ million visits in 1924 to 14½ million visits (exclusive of transients and sightseers) in 1938, parts of the forests have developed centers of very heavy use. Where there has been but a limited area of usable land near a great city, where only a single mountain lake is available to a large population, and in comparable cases, concentration problems have developed, differing only in degree from those on some of the national parks.

The tendency of crowds to attract crowds has not been offset entirely by attempts to divert them to new areas. The administration of the use has not been completely simple nor wholly successful.

Public use of national-forest campgrounds has reached such tremendous proportions in recent years as to create many new administrative problems. Supervision becomes each year more necessary, not only to prevent misuse, vandalism, and misconduct, but also to regulate the flow and distribution of the tide of campers.

Many people who discover the free camp sites incline to stake claim to them, in the traditional American manner. They tend to squat on or occupy campgrounds for unreasonably long periods. The Forest Service has had to establish time limits on occupancy of camp spots at crowded areas. But no set limits are enforced until pressure of demand requires it.

The fuel problem becomes each year more troubling. Fuel wood soon gets scarce around a much-used site. There are still forest areas where dead limbs and sticks to supply camping requirements may be picked up by the users. In others, the Forest Service follows the practice of dragging in fuel logs for campers. It is usually possible to do this with the campground-maintenance crews, without great expense. Snags and sound down material are a nuisance and in places a fire hazard. Their removal for such use is a sound measure of forest sanitation.

QUESTIONS . . . But often it is hard to find the time or the help. And to drag in a fuel log for chopping and then put the forest visitors out of mind, so far as firewood goes, is not always practical. The ax is a tool with which citizens of our elder and more urban parts, particularly, have lost acquaintance. They make a fine, bold slash (the spirit of the woodsman still lives in them) but naturally they are inept. It takes time to learn to chop wood right. City people are likely to hack up their shins, and the cut may be serious. This is especially true if the ax is chained to a tree with rather a short tether. No one can really chop wood with a tethered ax. Even amateurs soon learn to break the chain and some of them take the ax home with them, as a souvenir, perhaps. The fuel question in forest camps is really a problem.

Where, for various reasons, no cut wood is provided; where camp sites heavily used have led to a scarcity; or where free wood, freely cut and served, has led only to excessive use and thievery, vandalism increases. Only 1 guest of the forests in 10,000, perhaps, goes in for this sort of personal expression, but the total damage, the country over, mounts up. For something to burn in the fire, living trees on the site are hacked down, and tables and benches and parts of shelters are chopped into firewood and burned. This seems to happen most often on desert or semidesert camp sites. The policy here is to

supervise camp sites more closely (with fixed forest guards, whenever that is possible), and to encourage the use of portable stoves that burn kerosene for camp cooking.

Difficulties of making sanitation keep pace with increasing use, on peak-load holidays especially, have been suggested. The problem is actual, and not to be dismissed with a snicker. On the heaviest used camps of New England, chemical toilets are generally preferred, not because they are any better than flush toilets, but because flush toilets so often literally get jammed up and overflow during the holiday overload. And at the close of such a day or days on the most heavily used sites, as has also been indicated, the job of cleaning up and incinerating the scattered garbage on many a camp or picnic set is rather like cleaning up a little slum.

Finally, there is the pure-water problem, and the question of opening more new swimming places. Should this be done? Chlorinated reservoirs are not as yet necessary at most forest camps, bacterial tests show, but there is a real prospect that at certain places both drinking and bathing water may soon have to be chlorinated in order to be safe.

This looks to the future. What of swimming places now? There are some 70,000 miles of fishing streams on the national forests, with countless swimming holes. There are countless lakes, bayous, and a considerable stretch of gulf or ocean shore. Consider the problem of bathing in inland waters only, for the moment; and consider particularly, the urge of the people to visit and plunge, in some number, into most of the new ponds, lakes, and reservoirs being created on the national forests and off of them, all as a part of a sweeping soil-, water-, and game-conservation program, the country over.

In dry-land country, where the reservoirs are not as a rule replenished with running water all year round, this urge to bathe and swim in clear, deep water seems instinctive, almost frantic; you cannot keep them out of it. And some of the new lakes and reservoirs into which they plunge so gladly, in desert New Mexico and Arizona for instance, have a foul, fungous smell to their stagnant waters in the dry season.

It is natural that eastern, humid forests should welcome swimmers, in general, and seek to provide dressing quarters and at least a part-time life-



F-370786

The great mass of them are fine, decent people, enormously grateful for any little thing that can be done for their safety and comfort.

PINE CREST RESORT, STANISLAUS NATIONAL FOREST, CALIF.

guard furnished by the CCC. It is natural that the far western forests should contribute to any discussion of a general policy on this problem hearty wishes to keep the facilities as simple as possible.

For see what it involves, anywhere, East or West, the development and maintenance of some modern equivalent to the old swimming hole in a public forest: It is not just a matter of keeping the water sanitary. If you are going to concentrate bathing or swimming at some ordinarily safe place, rather than let people scatter and try it almost anywhere, you must provide some decent shelters where men and women may put on their own (or rented and sterilized) bathing suits; and where they can reassume civilized garb with a decent degree of supervised separation afterwards. Present appropriations do not allow for this at most of the many natural watering places on our national forests or for trained and watchful lifeguards to rescue people from drowning.

The easy way, on paper, is simply to close the new watering places to swimming. But to post signs does not really close these watering places, and it is a question whether safer places should be posted: Keep Out. The people, especially the wilder youngsters, don't keep out, and a certain number of them drown each year.

But this, and many other questions which affect the life, limb, and spirit of Americans seeking outings must be met. The need behind this increasing rush into the open is actual and urgent. It must be met, and governed, in some degree. The hard times which followed the lush times of the early 1920's did not notably reduce the pressure on outdoor recreational sites and facilities. In many places, where such recreation was cheap or was free, the load increased. Distressed farmers and tradesmen from the middle country and High Plains bought more gas from many a filling station on the main routes to the Rockies and the Coast in the lean early thirties than ever before.

The plain truth is that forest recreational facilities have been extended under the push of a constant, driving, increasing demand. This has been done mainly by the willing aid of relief labor. Much has been done but it falls far short of meeting the peak loads and the immediate prospect of an increasing human use. The recreational plant or equipment is overextended in point of existing appropriations and in point of the time required of the

existing personnel for this one aspect of modern forest management, but it falls far short of satisfying rapidly growing demand.

Most of the existing campground developments on the national forests have been made during the 5 years since the CCC and other emergency projects began in 1933. Here is a short list of the principal installations to date:

Stoves, grates, cooking and heating fireplaces, and barbecue pits . . .	21, 196
Campground toilets of all types	7, 673
Garbage cans, pits, and trash incinerators	11, 255
Campground tables and benches	31, 603
Springs, wells, reservoirs, and pipe-line systems	2, 859
Amphitheatres (seating capacity 11,565)	46
Campfire circles	1, 783
Buildings and shelters of all kinds	1, 093
Automobile parking areas, car capacity	48, 553

At present the total number of developed camp and picnic grounds, large and small, in all of the national forests is 3,819. These will accommodate 240,000 persons at one time, but they do not carry present seasonal loads, which in the 1938 season amounted to just under 11,000,000 visits. On Sundays and holidays, many campgrounds are hopelessly overcrowded.

Development of additional campgrounds and the installation of necessary facilities are urgently needed to keep pace with the annual increase in use. If campground use should double or perhaps treble within the next 10 years, as now seems probable, either large numbers of campers will have to be turned away, inadequately served, or the campground-improvement program must be expanded.

The original charge of the Forest Service was simple and strictly practical. New needs have arisen to press hard and broaden the concept of what national forests can and must yield, from the standpoint of "the greatest good for the greatest number in the long run," on a hard-boiled and thrifty basis—multiple use.

Our national forests still report to the people largely in terms of cash income. They are producing units. These increasing recreational tides do bring in some revenue from charges for special services, but it is the barest dribble to the forests' funds, direct. Tourists and campers bring money, and money badly needed in the main, into a multitude of communities roundabout; but little or nothing that a forest officer can enter on the

credit side of his accounts. Recreation falls mainly on the cost side in forest bookkeeping, and the entire amount available for recreational use on the whole White Mountain Forest in 1938, for instance, was \$25,530.

It is by no means the general disposition of professional foresters to hold out their hats for more money to be used for a more elaborate extension of public recreational structures and facilities. Most of them would rather see things kept plain. Foresters in general do not yearn to go any deeper into this socialized recreational business; but the push is on, strongly, plainly, not so much in lobbies, or in the organs of public opinion, or in Congress and the State legislatures, as in an actual pressing swarm of the people, themselves.

It is only in part a question of planning and preparing for forest guests who are coming; it is more immediately a struggle to care for the throng of guests at hand. To regard wrecked cover distastefully, to push wearily out night after night hunting lost campers, to observe the nuisances that occasional parties (even of college youngsters) commit on Government property and equipment, and to think savage things about "the dear public" as foresters occasionally do, solves nothing. These are the people's forests. They need and have the right to use them for their pleasure. Foresters make them welcome, and are really glad to have them come.

And not one forest guest in a thousand abuses the privilege wantonly. The great mass of them are fine, decent people, enormously grateful for any little thing that can be done for their safety and comfort. Most of them, as a later chapter will show, fall within the lower income brackets. The public forests offer the only chance for many of them to get some change and rest. And it is conceivable that the restoration of health and spirit which forest outings visibly produce will be worth as much to the Nation in the end as all the material national-forest crops.

Present facilities are in most places crucially inadequate; and by the most conservative of forecasts, based on attendance charts, projected recreational use of the national forests seems certain to double, at least, within the next 10 years.



F-360887

It is as if you were in another world—sharp, clean, exciting, robust.

ALTA BASIN, WASATCH NATIONAL FOREST, UTAH



Winter Sports

But, jovial and ruddy as winter sports are, they have a side which is more or less lacking in the sports of summer . . . They have a lonely side, a still reflective side, which, for some of us, adds immeasurably to their charm.

Walter Prichard Eaton, Winter Sports Verse, 1919.

A WORLD-WIDE DRIVE to get out and play in the snow first became evident, social historians may note, in troubled Europe following the shock and dissolutions of the World War, 1914–1918.

Children, of course, have always made snow men and coasted, and so have a few of their elders. But adult winter sports in the past had principally to do with going places—sleighing, snowshoeing, climbing mountains, mushing along behind a dog team. The pleasure derived was incidental, a byproduct of the journey, for grown-up people, as a rule.

It becomes almost tiresome now, by spring, the square mileage of winter-sports pictures that city-pent people see in the papers, and the acreage of bare skin, of both sexes, displayed in the news pictures, still and moving, all winter long. Actually not much skiing is done naked, or nearly naked, except by ardent health fans or for publicity “shots.” But the lighter, less burdensome garments worn now by winter sportsmen and sports-women, and the way in which they get wind and sun burned in winter, do suggest an important and healthy advance in civilized living habits.

All this has played a part in the amazing burst of publicity that has pushed winter sports along so fast, both here and abroad. In some countries the publicity has been dictatorial in origin, put out by the Strong Man to advance the general health, ruggedness, and spirit. Here with us growth in popularity of winter sports has resulted from years of effort by

officers and members of skiing and other outdoor sportsmen's organizations. More recently commercial interests have joined in the push. But everywhere the thing has proceeded in the thought that here is something that millions need and want, and the results have been to the good, in the main.

Much that is filmed and printed of winter sports in this country plays up naturally from the sports-page angle, professional performances. From the resort standpoint, there is a tendency also to surround skiing, as golf, polo, and horseback riding have been surrounded, with an exclusive aura, to smother its development in snob appeal. This is short-sighted and ridiculous. There is nothing essentially expensive about winter sports—nothing exclusive.

It is good, this general spurt of escape from the stuffy and weary prison of overheated houses and head colds by Americans still young, and not so young. It marks, in a way, a break with the past, this discovery that the sun shines also in winter and that the most exhilarating of experiences may be enjoyed in brisk weather, outdoors. For thousands, this discovery has meant a break in that dulling annual hibernation which even open-country Americans have tended to indulge in from the first. The speed with which general participation in winter sports is increasing may be judged from a pleased announcement by sports tradesmen early in 1939.

In 1935 Americans spent for skis and snowshoes \$417,000. Last year, 1938, they spent \$3,000,000 for skis, \$6,000,000 for ski clothes, and \$15,000,000 for transportation to and lodging at winter playgrounds, private and public.

From the Appalachians near the Atlantic, across the Lake States, through the Rockies, and westward to the Cascade Range and the Sierras above the Pacific, each winter week end now brings a colorful throng of enthusiasts to white playgrounds. Probably no other form of outdoor recreation offers a wider range of appeal. The small boy with home-made sled or barrel-stave skis has as much fun as the expert with his carefully chosen equipment. Not everyone can learn to ski jump, or should try to, but nearly all can find exhilarating play in simpler ways. There is coasting. Not only the very young can coast, anyone can; on anything from the short easy slope where the youngsters slide "belly-buster" to the long steep toboggan run.

There is snowshoeing. On snowshoes one can get off the beaten track and enjoy the white solitude and the ever-changing sparkle of winter forest landscape. The photographer and the wildlife observer may enter new worlds of beauty walking on "webs." Skating, mountain climbing, cross-country trips on skis or snowshoes, sleighing, skijoring, rides behind a dog team—all have a place in winter sports. And the stout, plain, colorful clothes that have come into use by both men and women for winter sports add vastly to the vivacity and pleasure of the experience. It is as if you were in another world—sharp, clean, exciting, robust.

Winter sports have an origin in necessity. Man made the first snowshoes, skis, and sleds to aid him in needful travel across snow-covered country for winter food. The use of skis antedates written history. The most primitive snowshoe was probably woven of reeds. It is thought to have originated in the Altai Mountains of Central Asia. In the United States the first over-the-snow travel was on rackets or webs fabricated by the Indians.

Scandinavian settlers in Minnesota seem to have used skis as early as 1840. One of the first written descriptions of the use of skis in America, however, is that of Rev. John L. Dyer, who mentions the use of Norwegian "snowshoes" from 9 to 11 feet long. He used them to carry the mail in Colorado in 1861 and 1862. A little earlier, about 1856, John A. (Snowshoe) Thompson also carried the mail by ski from Placerville to Carson Valley in the Sierras.

FOR SHEER SPORT . . . The first American skiers for pleasure only, it seems, were Norwegians, Finns, and Swedes, who migrated to New England and the Great Lakes country as woodsmen and found the snow and terrain suitable for their native sport. This led to organization of the first ski clubs in the 1880's in New Hampshire and Minnesota. Sondre Nordheim and Turjus Hemmesveit introduced ski jumping. In about 1890 a ski jump was built at Frederic, Wis. In 1887 the Ishpeming Ski Club of Michigan organized the first formal jumping tournament in the United States. The National Ski Association was organized in 1904 at Ishpeming, Mich. In the Northeast the sport was promoted by colleges and outdoor organizations, notably the Dartmouth Outing Club, as well as through the efforts of resorts featuring winter sports as a part of an all-year recreation program.



F-359868

Each week end when snow conditions favored, more people came.

TUCKERMAN RAVINE, MOUNT WASHINGTON,
WHITE MOUNTAIN NATIONAL FOREST, N. H.

As early as 1886 the Appalachian Mountain Club of Boston organized snowshoe excursions into the White Mountains. This club encouraged snowshoeing "not only as an exercise, but more especially as a help in mountaineering." Later the Sierra Club in California, the Mazamas in Oregon, the Mountaineers in Washington, and the Wasatch Mountain Club in Utah, did the same.

The early Scandinavian-Americans skied as they had at home, standing straight. They darted down the virgin slopes of this continent erectly with wings that they carved from the woods on their feet. They started our present boom of pleasure skiing.

It was an Austrian-American, a later pioneer, still hale and active, who made the discovery which more than any other so multiplies ski trains, ski schools, ski trails, and ski sales in this land today. His name is Hannes Schneider. He got the idea that man can fly better, faster, farther over the snow if he crouches. He made of skiing a beautiful and exciting art—the ultimate, probably in point of swift, personally controlled, flying manoeuvres with no other engine than the human body, and no other control board than the individual mind and nervous system.

UPHILL . . . By a natural coincidence, most of the developing centers of skiing and of other winter sports in this country are on or near the national forests. The first charge of the Forest Service was to protect watersheds, and this is uphill work. The work of ruling water run-off must start at the mountain crests. If you will turn to the map of the United States (opposite page 288) which shows the location of the national forests, you will be able roughly to locate the loftiest parts of the Allegheny barrier, the Continental Divide and the Coast Range by the general grouping of the national forests there.

The same power that moves the raindrop downward is the propelling force of thousands of pleasure seekers, winging down mountainsides today. National forests and winter sports have been a natural combination from the first. The places most favored are generally the highest, where snow seasons are long and where there are likely to be more open slopes. Skis and webs, sleds, and toboggans are no new things to forest officers. They have used them for timber cruising, and in making wildlife estimates and snow

surveys, and in other administrative duties ever since the Forest Service was organized.

And so when the boom in winter sports began, forest officers in general gladly welcomed returning winter visitors. Here was something a man could put his heart into more completely than meeting the often querulous complaint of picnickers as to firewood. These youngsters strode forth as if they owned the earth; they were hard and woodsworthy, most of them. They asked no odds and uttered no complaints. Here were men, and adventurers. And it surely livened things up there on the mountain in the wintertime to have them coming in.

Each week end when snow conditions favored, more people came. Interest increased. Winter carnivals became popular. These stimulated local business and encouraged more people to turn out. Soon many came who lived outside the snow belt. Skiing (cross country, downhill, slalom, and jumping), ice hockey, tobogganing, snowshoeing, and various combinations of ice and snow sports were taking thousands up mountains that hitherto were all but forsaken in winter, by the beginning of the present decade.

The innkeepers rejoiced. Resorts, always handicapped by the brevity of the summer season in mountainous and northern locations, began no longer to stand idle all the long months of winter as property depreciation mounted and taxes continued. Heating systems were enlarged, winter quarters were remodeled, the lone winter guard was replaced by a score of employees, and many a new resort especially designed and operated for winter vacationists was built in areas favored by a long snow season.

Throughout the country now the approach of cold weather brings to thousands a lift of the heart, a stir of the energies, more generally associated with the coming of spring. Outdoor clubs look to the condition of their ski jumps or install ski tows. Resorts, department stores, railroads, and winter-sports shows begin building up an early season interest. The young army of enthusiasts overhaul their equipment and prepare themselves. Many who were spectators at a winter carnival or on some sports area the year before enroll in preseason schools and are instructed on so-called dry courses. Great arguments as to equipment, techniques, and the proper kind of ski wax arise.

Because of the many different points where winter sportsmen may enter or leave the forests, and because of the limited personnel available to keep watch over them, only estimates of the extent of winter use of national forests now are possible. But winter sports visits exceeded 1¼ million, most certainly, in 1938. Nine-tenths of this use was on 50 of the 130 forests. These 50 forests lie in 5 States, and the distribution of the winter-sports use ran approximately thus:

On 17 forests in California 639,000 visits; on 7 in Washington 106,000; on 14 in Colorado 110,000; on 13 in Oregon 140,000; and on 11 forests in Utah 88,000.

For the West the total reached 1,182,764. New Hampshire's White Mountain Forest received 69,000 visits. All other national forests, including those of Alaska, took care of around 43,000 among them. And nearly everywhere, where latitude or altitude permit, there is evidence that winter use is not only mounting, but soaring.

FACILITIES . . . All this has led to a reenaction, rapidly, of the dilemmas presented when people first began coming on to the national forests to picnic and to camp. At first forest officers could say, God bless them, and leave them alone. Then less skilled visitors came, and in greater numbers; and soon they had to consider making some rules and providing facilities.

To plan, rear, and maintain winter-sports facilities sufficient to meet the demand presents an administrative problem of considerable magnitude. The first lone winter adventurer gloried in his self-reliance; but an increasing army of novices congregating in favored areas cannot be allowed to freeze, get lost, or break their necks, regardless. Fortunately, the sports most enjoyed by the great mass of winter visitors require only simple facilities, and if these are wisely planned they do not measurably mar the forest atmosphere.

One essential on a winter-sports area is to get the crowds up the mountain and down again, with reasonable safety, after private means of conveyance have gone as far as they can. Formerly, the people came to the forest in special cars chartered by an outdoor club to be shunted off the main line at a winter resort. Now week-end or holiday "snow trains," often running in several sections directly from metropolitan centers, are needed



F-344595

*Most winter sports parties
come to the mountain in their own cars.*

STANISLAUS NATIONAL FOREST, CALIF.

to get the crowds to the snow country. "Snow buses" and "snow planes" are more recent developments operating to some extent in both the East and West.

Most winter sports parties come to the mountain, and part way up the mountain, in their own cars. This calls for keeping roads up the mountain open, whatever the weather; for sizable parking places, cleared of snow accumulations, somewhere near the pleasure slopes and heights; and for further measures of crowd convenience and sanitation.

The push of late years to extend and maintain national-forest and State highways for year-round use has been a major influence in extending winter sports. Foresters selecting winter-sports areas give preference to places that can be reached over roads that are plowed for other purposes. Where this can be done, there is no greatly increased cost of maintenance. But the pressure of demand by winter sportsmen is sometimes such that roads never before kept open all winter are now snow-plowed regularly, and resident families who used to be snowed in most of the winter now can run down into town whenever they please—thanks to the winter sportsmen.

Another development that follows the penetration of active Americans to mountain playgrounds, over sanded and plowed roads, is a following throng of motorists, some spectators, others just motoring—driving up the mountain and down again in winter, as they do in summer, just to be more or less out of doors and moving. Motoring promises, on some such forests, to become in point of participating persons, the leading winter sport there, just as now it is generally the leading summer forest sport.

As the fall winds sharpen on many a forested mountain, the forest guards set border markers, stakes 20 feet high or higher, to mark the winding shoulders of tortuous mountain roads. These stakes serve to guide the tractors that push the snow plows or bulldozers as the snows fall, drift, and deepen, all winter long. Occasionally a marker is covered entirely, but 20 feet is generally tall enough to stand above the snow and guide the plows. By such means the highway to beautiful Timberline Lodge, for instance, a Forest Service resort on the Mount Hood National Forest in Oregon, is kept open for winter sportsmen, their followers, and the local people, all winter long. The construction and year-round maintenance



F-359327

*Ski trails must be carefully planned and developed,
with many things considered.*

DEER PARK SKI AREA,
FORMERLY IN OLYMPIC NATIONAL FOREST, WASH.

of this beautifully graded highway with its wide spaces for turn-off and for parking, has brought untold pleasure to many thousands of persons.

DOWNHILL TRAILS . . . Skiing is the main sport at Timberline Lodge. Ski-crowd facilities cost something, too. There must be a diversity of facilities to meet varying degrees of skill and interest. Pioneer skiers were able to take things as they found them, in the main. They used logging roads for downhill runs, and tote roads, horse trails, or hiking trails for cross-country travel. In the East, carriage roads leading to popular summits and horse trails constructed to haul material to fire lookouts provided challenging grades and turns. In the West, naturally open slopes, both above and below tree line, and areas selectively logged furnished suitable terrain.

This remains true, of course, of the mountain slopes in many parts of the West, and artificial improvements there are generally unnecessary. On the densely forested slopes of the Northeast ski-trail construction and maintenance is more necessary, expensive, and difficult.

Ski trails must be carefully planned and developed, with many things considered—logical termini, exposure to wind and sun, the risk of accelerating soil erosion. Beyond that, one must consider the trails; do they deface the mountain? And beyond that are questions about bridges, warming shelters, and considerations of sport and safety. What should be the maximum, minimum, and prevailing grade, the frequency and degree of turns on trails, and the total length? Here are problems that have to be solved on no fixed scale, for a novice trail after heavy use and fluctuating temperature may become difficult to the intermediate skier, and heavy snows may make an expert trail safe even for beginners.

Trails “stiff” enough to excite and satisfy the average skier most of the time, and yet not to break too many bones of beginners—that is the only possible formula, admittedly inexact, very largely a matter of personal judgment or opinion. Laying out ski trails, foresters generally temper the run with constant thought of the novice. There are so many novices and that number, happily, is increasing all the time.

Cross-country skiing is becoming more popular. Each year there are more

older skiers whose original interest in competitive skiing turns toward less arduous forms. Ski touring requires clearly marked routes of varying grade through areas of scenic interest and shelters in the "high country."

Cross-country skiing without trails on the snow fields and glaciers in the national forests of the West and of Alaska provides high adventure. But only a few are up to it. Trails with shelters are sufficiently dangerous for most people, and especially for those who have passed their physical prime. And still in increasing numbers unprepared people seek untracked snow in the high country previously known to them only during summer travel, if then. With the possibilities of incurring serious injury or meeting sudden storms in the many truly remote places in the national forests, skiing under such conditions may become extremely hazardous and must be done at the individual's risk. This dispersion from concentration areas is a trend of growing importance. It is hard to say how to handle it. A good many people are getting hurt, and a few are smashed to death, or frozen.

WARMING SHELTERS are more than a public convenience; they are a necessity. They range from primitive, three-sided lean-tos built primarily for summer use and providing little more than a windbreak, to Mount Hood's Timberline Lodge in Oregon where the entire lower floor, known as the ski lobby, is maintained for the free use of winter-sports visitors. Intermediate structures are of various sizes and types to meet local needs and are frequently used in other seasons as well. Such buildings are located where they will give the greatest public service and are designed to harmonize with the landscape. They are constructed to meet the exacting demands of cold-weather use and heavy snow load. In some buildings, only shelter, sanitation facilities, and first-aid equipment are provided. The more extensive structures to furnish other daytime public services, such as refreshments, are usually operated under special-use permit, frequently issued to a local nonprofit organization chiefly interested in furnishing such services as a public convenience.

The problem of furnishing adequate overnight accommodations is being met, in some part, by arrangements which vary with local circumstances. In the Eastern forests such accommodations are usually found sufficiently

near at hand on private lands, but in several instances the Forest Service has built "high country cabins" equipped with stoves, fireplaces, and bunks for overnight use. In the West, where the distances between winter-sports centers and communities are greater, some sleeping accommodations have been provided on national-forest lands.

Public interest requires that the winter-sports areas be adequately supplied with miscellaneous facilities—directional and informational—and that entrance signs be adapted to winter conditions. Skiers, particularly, are interested in the length, grade, classification, and objectives of unfamiliar trails. Visitors must be warned of general and specific hazards. Snow gages at various elevations are of special interest. Routes marked for winter use are needed by snowshoe and mountain-climbing groups. Loop circuits for dog-sled trips and snow-banked chutes for tobogganing help to round out any well-developed winter-sports area. Ice-covered lakes and ponds naturally clear of snow are ideal for skating, but most national forests are too heavily blanketed with snow to justify the necessary clearing and scraping. Bobsled runs are not provided by the Forest Service because of the abnormally high construction and maintenance costs for the relatively small number who use them.

Skiing, tobogganing, and winter mountaineering must be recognized as presenting greater risk of accident than most other forms of forest recreation. At points of greatest danger the Forest Service has installed caches of first-aid supplies and equipment for public use in case of emergency. On many forests local chapters of the American Red Cross, winter-sports clubs, and other groups, such as the National Ski Patrol, have cooperated in furnishing medical supplies, first-aid treatment, and instruction. Injuries are increasing. Only complete observance of ski-trail etiquette, a greater interest in controlled skiing, and a widespread recognition by individuals of their personal limitations and responsibilities will bring about improvement.

JUMPS AND TOWS . . . Ski jumps on the national forests vary from natural "take-offs" formed by wind-blown cornices to major ski jumps with artificial towers and graded landing hills. The more elaborate jump is usually constructed and operated by local ski clubs. The Forest Service issues special-



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At points of greater danger the Forest Service has installed caches of first-aid supplies and equipment for public use in case of emergency.

TUCKERMAN RAVINE,
WHITE MOUNTAIN NATIONAL FOREST, N. H.

use permits when satisfactory sites on privately owned land cannot be found. This is particularly true in the West where much of the higher land surrounding communities actively interested in this form of winter sports is on the national forests. In the East, there are generally plenty of natural sites for ski jumps on privately held land. Nowhere has the Forest Service, itself, undertaken to develop spectacular ski jumping or to promote tournaments. Tournaments are all right, but they should be conducted with private money. The equipment costs too much; it is used too short a time each year; and the personnel and maintenance cost runs too high to justify the Service setting up winter-sports hippodromes on its mountain sides.

To keep things simple, and as safe as possible; to give people a chance to slide and leap and exercise, themselves, rather than simply to stamp, hover around fires, and watch experts do so—that is the aim and policy. But people in general in this day of the motor do not like to walk uphill, and the sport of dashing down the mountain need not always now be paid for by the toil of trudging up. All the richer resorts have ski tows, and on many forests, from New Hampshire to Oregon, the not-so-rich are developing and installing ski tows of their own.

A ski tow, in effect, is a low-slung cable coil turned by a motor. An engine out of the oldest of cars can keep a simple ski tow going, barring breakdowns. The skiers take hold of the lower sag of the cable, and up the mountain side they go. Some of the ski tow outfits installed by little local sports clubs on the national forests are as much an expression of native genius and inventiveness as were the first car trailers. They do not cost much; they give a great deal of pleasure—both in their construction and in their use. But it must be admitted that none of them is beautiful, or harmonious with the forest atmosphere.

The revolving cable loop propelled by a discarded automobile engine soon becomes, in richer resorts country, an apparatus refined with chair lifts. It will be interesting to see how long it takes to bring in overstuffed leather chairs. The present policy of the Forest Service is to permit local clubs to install simple tow rigs, and some few permits have been issued to special-use commercial operators who agree to erect their equipment in inconspicuous locations. As an ingenious and effective supplement for fixed



F-344899

*The skiers take hold of the lower sag of the cable,
and up the mountainside they go.*

BERTHOUD PASS,
ARAPAHO NATIONAL FOREST, COLO.

tows, an over-the-snow tractor or "sno-motor," which plods uphill towing a spacious sled, has been developed and demonstrated by the Forest Service, and the idea is making headway. These are not permanent installations; that is another good thing about them. If the particular winter-sports area under development does not last, the tractors can waddle on to another area the winter following, and work there. In any event, the rig is free to get out and do all sorts of useful work elsewhere both during and between the snow seasons.

LIFE AND LIMB . . . As a people, we love speed—thrill, dash, zip. We are not in general a cautious people. Examine our record as motorists—the slaughter is awful. In most States you have to be examined and licensed to drive a car now; but any daring idiot, young or old, can put on a pair of new skis, be towed to some precipitous mountain height, shut his eyes, take a dare, and take off.

Deep snow is softer, by far, than a paved highway, and the general concentration of ski traffic on our national forests still is such that smash-ups usually involve only one person at a time. To dare, on one's own power only, a broken bone or so is not a bad idea, entirely; often it leads to releases more satisfying and less permanently damaging than sassing the boss and getting fired.

But forest officers have many other things to do than take down the mountain the physically wounded who could not wait to learn on practice slopes and courses; who want to do what the newsreel showed, right away.

"Take it easy, at the start," is an experienced forest officer's advice. "Feel your way along. Don't take dares—your own, or any one else's—until you feel sure that you can run the course triumphantly. Get the feel of the thing gradually. Before you step off cliffs with wings on your feet, learn how to use those wings. Stay on the practice slopes, away from all the spectators. Never mind if the boys who have had 2 years of it call them nursery slopes. It is the second-year crowd who crack up most often and hardest. Take the counsel of the older skiers. Take it slow and easy at first and enjoy yourself."

Part Three

KEEPING THINGS NATURAL

The day is almost upon us when canoe travel will consist in paddling up 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. . . . The day is almost upon us when a pack train must wind its way up a gravelled 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 a rope and Kit Carson and Jim Bridger will be names in a history lesson.

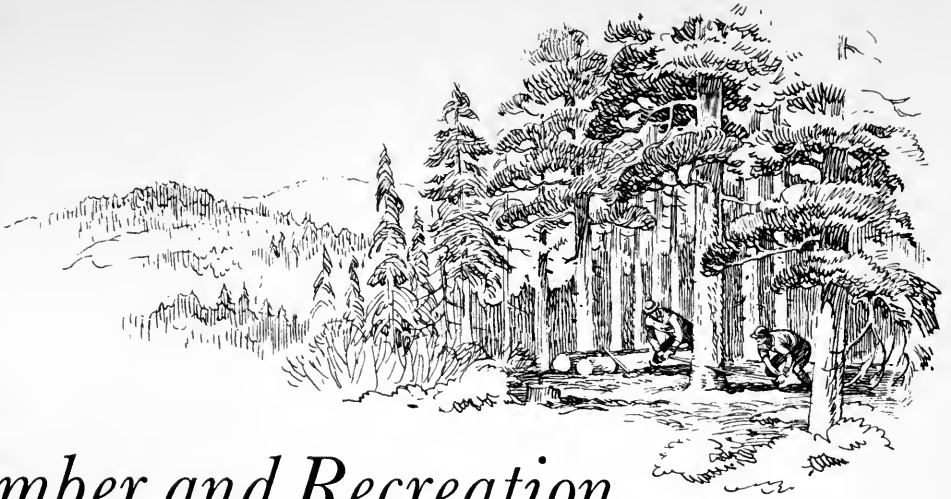
Aldo Leopold, in American Forests and Forest Life. October 1925.



F-365172

*There is no compelling ultimate reason why this industry
has to gut its sources, leave them dead.*

LAND CUT-OVER UNDER PRIVATE OWNERSHIP,
ST. JOE NATIONAL FOREST, IDAHO.



Timber and Recreation

The tree speaks: "Ye who pass and would raise your hand against me, hearken ere you harm me! I am the heat of your hearth on cold winter nights; the friendly shade screening you from the summer sun; my fruits are refreshing draughts, quenching your thirst as you journey on.

"I am the beam that holds your house, the board of your table, the bed on which you lie, and the timber that builds your boat. I am the handle of your hoe, the door of your homestead, the wood of your cradle, and the shell of your coffin. I am the bread of kindness, and the flower of beauty."

From a sign in the park of a European city.

OUR COUNTRY NEEDS TIMBER, even in this age of steel. We need timber not only for the most obvious uses—for houses, barns, railroad ties, furniture, boxes, fence posts, firewood; but also for a developing variety of chemical woods products, thoroughly modern. For plastics, films, lacquers, cellophane, newspapers, wrapping paper; for the finest grades of writing paper, and ammunition; for naval stores, distillates, dyestuffs, rayons, and for thousands of other products that modern chemistry is developing from tree cellulose as a base, we are going to need and to use forests more and more.

When Jamestown was founded, we had about 820 million acres of forests in the continental United States. We have about 630 million acres classified as forest land today; of the 176 million acres in national forests, 134 million acres are forest land. Vast as they are, our national forests comprise less than one-fourth of the remaining forest land.

The total area classified as forest land, private and public, is bigger than

all our country east of the Mississippi River. But the Forest Service figures that nearly 1 acre in 4—168 million out of 630 million acres—is useless as commercial timberland. Thrown together, this 168 million acres would more than blanket all of Maine plus all of New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Maryland, West Virginia, and Ohio.

Yet often this noncommercial forest land, of which more than 4 acres out of every 10 is in public ownership, if sensibly handled can serve most usefully in protected watersheds to reduce damage by floods and erosion, to clear up muddy streams, to restore depleted and impaired water resources, to conserve and multiply remaining wildlife, and to afford recreation.

Hunters go wherever the game can be legally shot. They tramp across cut-over lands as freely as through unlogged forests, across reforested fields as readily as over native mountain meadows. Fishermen try their luck in almost every sizeable stream which has any fish and in all but a few of the most remote lakes. They, too, generally concentrate especially near roads and population centers, so that the streams in these vicinities are often completely fished out. Nevertheless, a-fishing they go wherever there is water enough to wet their lines.

And so it is, in a measure, with motorists, picnickers, and campers. The country 'round about may be skinned bare and unattractive. The forest scene may present no sylvan aspect whatsoever—only denuded mountainsides and fish-depleted streams left after a recent heavy burn, or dense dry brush fields, or the clear-cut pulpwood operations of New England, or the dredged-up wastes in the lower reaches of streams on the Tahoe and Eldorado National Forests in California. But fishermen come to enjoy the poor fishing on streams in some of the ugly burns. Energetic walkers sometimes include the brush fields in cross-country hikes. Hunters look for deer in the cut-over New England pulp lands, and curious tourists drive the rough roads by the Tahoe tailings to see how gold is gathered from the leavings. Such use is welcomed for whatever pleasure it can bring, but it will not materially affect the land planning of stricken areas now included in the national forests.

Where there is no timber, recreational use and forest industries naturally

do not conflict. But many restless people throng where timber is best. There are often roads there, to get the timber out; and these roads get broader and harder each year, speaking generally, as more and more timber is moved by truck.

Lumbering operations and recreational use conflict measurably in many places, and they conflict most seriously in places where it is impossible for the local people to live without logging and the attendant industries.

Sawmills, planing mills, remanufacturing plants, furniture and other factories, together with the forests supplying them, had, in "normal" times, a capital value estimated at 10 billion dollars. The woods industry is pretty well on its back now, especially at the source of supply. But in 1929 it contributed about 3 billion of the 80-billion-dollar national income, and in normal times it supports some 6 million people, their homes, churches, and schools.

There is no compelling ultimate reason why this industry has to gut its sources, leave them dead. If rather simple sustained-yield measures, plainly demonstrated on private lands here and there and on the national forests, were to spread in practice much faster than they are now spreading, there is no reason why our remaining forests may not provide refillable reservoirs of materials, employment, and sustenance for more than twice as many people as they do now.

Such possibilities, and the risk of another final surge of despoliation, apply especially to the South, where technological imponderables enter fast into a changing picture. The South, as has been noted, boomed and spread in the main on cotton. Then healing pine marched into vast washed-out cotton lands. It used to be thought that the pitch in these southern pines made them useless for the better grades of paper pulp and for rayon. Thanks to pioneer researches of the Forest Products Laboratory and to those of a great Georgian, the late Charles H. Herty, this now appears untrue.

In consequence, new mills and big money are rushing into the South; and pulpwood towns northward, in Canada and from Maine to the West Coast, are beginning to feel economic pressure from the South's rapidly expanding pulp and paper industry.

The southern agrarian poets and writers who worry about the South's



F-363611

The forest must be cropped rather than mined.

SOUTHERN KRAFT CORPORATION LANDS,
CALHOUN COUNTY, ARK.

commercial eagerness to forget wage standards, which forces chambers of commerce to forget taxes; to forget almost anything except a dire need to attract tourists, industries, and pay rolls; and to go industrial full-tilt—these southern agrarians really have something to worry about in the recent expansion of the South's paper industry. So have State and Federal forest administrators, from ranger to Chief of the United States Forest Service, from fire warden to State forester.

In all the Southern States together, 18 new pulp and paper mills were established or projected between January 1, 1936, and June 1, 1939. These made a total of 51. These mills alone may require 4 to 5 million cords of rough wood annually. But even though annual forest growth in the South of all species and all sizes exceeds total annual drain by 7 million cords, the picture is none too rosy. Old-growth and saw-timber stands are in general understocked. But from analyses made in many forest-survey units of some 6 to 10 million acres each, it is known that forest growing stock in the South generally can be built up; that annual increment can be doubled, at least.

Nature, prodigal as she is, must be aided by man before southern forests as a whole can double their present growth. Fortunately, most of the things man must do are obvious and rather simple. Adequate fire protection must be provided. The forest must be cropped rather than mined. Growing stock must be built up. And these things must be done on all forest lands, no matter who owns them.

Among the new concerns that have come in so rapidly to take southern pulpwood some are following admirable forestry methods, but many others are not. Certain of the larger companies have made hopeful starts toward sustained-forest use, but others exhibit again, in varying measure, the same reckless methods by which so many million acres of forest land have been laid waste. Unless such companies or corporations, including sawmills and other forest industries, can be brought to see the waste and suffering they are creating, and quickly, it may be for great stretches of the Southland the same old story repeated; and this time it may be an even sadder story.

If, on the other hand, these industries are developed on the basis of

sound forest practices, they may prove a continuing support for a much higher standard of living than now prevails.

NORTH AND SOUTH, EAST AND WEST, national forests must demonstrate the best ways to recreate a sustained source of income for all those millions of our people who live by commercial woods products. Human recreation has to be meshed or fitted in with this and with other forest uses.

With about one-sixth of the commercially useful acreage, the national forests contain one-third of the Nation's saw timber. The very existence of many established communities depends now on the assurance of continuing supplies of this Government timber, which can often be combined with private timberlands for joint sustained-yield management, to provide continuing supplies for permanent wood-using industries.

In many such places the claim of the hunter or vacationist, and the claim of the woods industries upon the national forests clash. Can both interests be served? In large part, yes; but it takes intelligent planning, sound coordination, and some yielding on both—and all—sides.

Few will claim that timber operations, however judiciously conducted, enhance woodland charm. The most complete sanctuary inheres in the natural state. From the far corners of the world people come to see and absorb the unimaginable majesty of the Pacific groves. A man would be indeed lacking in sensibility who could stand in the midst of the giant tulip poplars and white oaks of a virgin Appalachian cove or the towering, many-centuries-old trees of a primeval Douglas fir forest in Oregon and not feel it sacrilege to lay ax to a single one of them.

Yet timber is needed; harvest must come, and must inevitably destroy some of the beauty and interest of the forest. But though the larger and older trees are taken, all is not lost, by any means. The young forests that succeed their harvested forebears may also be beautiful. The vigor, the push of the trees toward the sky, and the promise of things to come may capture the imagination and enchant the eye.

The actual result is a compromise, some sort of a reconciliation, with civilization. It may be made a happy compromise. And the commercial and aesthetic aspects may be in some part segregated, each from each.

PRIORITIES . . . Foresters establish for any given area a planned priority of use. Here, they say, lumbering shall be the dominant activity; here lumbering and grazing shall be codominant; and here is where the pleasure seekers may have first claim. It is all tentative; they know that, but it is earth-born of need.

The typical national forest is not a solidly timbered area. Topographic and soil variations break it into a complex pattern of valley, plateau, mountaintop, canyon, stream, and lake. The vegetative cover may be heavy timber, second growth, subalpine or scrub forest, grass, or brush. Within this pattern, the commercial timber productive area may make up approximately 50 percent of the whole. This is distributed variously, sometimes in large solid blocks, but often in belts and stringers up the stream valleys.

The various classes of land are in general so intermingled, as nature has laid them down, that management must treat them as one harmonious whole, giving each portion the use or uses which it best serves, whether it be timber production, grazing, or recreation, or, as is usually the case, a combination of several uses. No one use can be planned without consideration of the others.

Commercial timber does not on the average occupy more than half of the national-forest area. The possible conflict between timber cutting and recreation is at once limited to this extent. Actually the possibility of important conflict is much more sharply limited because the heavily concentrated forms of recreational use of the national forests involve a relatively small portion of the whole forest area. People drive the roads, fish the streams, and camp or picnic by the streamside or lakeside. Beyond this concentration, which is chiefly in the stream valleys, is the more general distribution of a smaller population of hunters, hikers, horseback riders, and berry pickers.

The important thing at present is to set up the necessary zones for special treatment. It is easy to cut a 500-year-old tree, but it takes a long time to restore it. The approximate average life of a coast Douglas fir is 600 years, a western white pine 350 years, a western larch 500 years, a white oak 350 years, a lodgepole pine 200 years, a ponderosa pine 500 years, a tulip poplar 250 years. The time involved in the life of such trees is so long that it is vital for ample areas of them to be preserved.



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*But though the larger and older trees are taken,
all is not lost, by any means.*

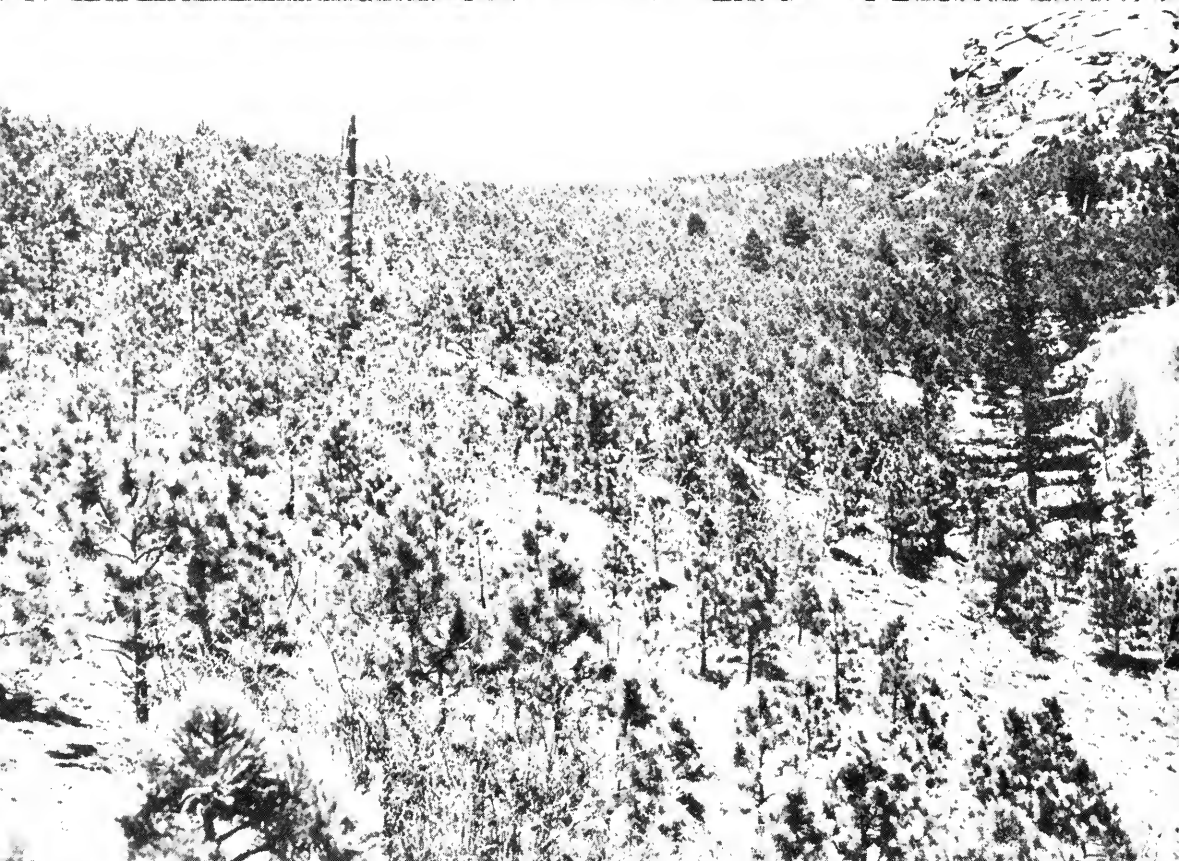
SELECTIVE CUTTING IN PONDEROSA PINE STAND,
MALHEUR NATIONAL FOREST, OREG.

Much of the feeling which has developed among nature lovers against timber cutting has been heightened by the pioneer form of timber liquidation on private lands. That, of course, usually is not forestry, practiced as long-time husbandry, at all.

SUSTAINED YIELD . . . For each type of commercial timber in the national forests, the Forest Service aims to develop techniques of management which will serve to renew and reproduce the cut-over stand, and keep it continuously productive. This affords maximum opportunity for employment, and helps contribute to continuity and stability of dependent communities. These methods vary, and all problems have not yet been solved. But recreational values are naturally best preserved by the methods which least disturb the forest cover.

The ponderosa pine type is the most widespread of the important western timber types. It is normally an uneven-aged forest, and adapts itself to a system of partial cutting at intervals of 20 to 50 years, each operation taking out the oldest trees. With the development of truck transportation, the tendency has been for cutting to become even lighter than in the past, the first cutting sometimes removing not more than 30 to 40 percent of the volume, causing very little break in the forest cover and little reduction in the general recreational value of the forest. This system of cutting is now in effect over large areas in the national forests.

The west coast Douglas fir type offers a more difficult problem in maintaining scenic values. The old-growth timber occurs in very heavy stands and the trees are so large and so old that in the past the usual practice has been clear cutting, with reseedling accomplished through scattered seed trees or uncut blocks or strips. Within the last decade, however, powerful trucks and tractors have made selective logging physically possible. A few years ago information accumulated by research and administration indicated that, from the standpoint of economics as well as that of silviculture, it was possible to apply within some of the Douglas fir type a selective system modified to fit that type. This modified system is now adopted, as far as conditions and circumstances make it possible, in Douglas fir stands on the national forests. It is also being tried out on certain private holdings. Modi-



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*Artificial planting is a form of timber management
distinctly beneficial to recreational use.*

PIKE NATIONAL FOREST, COLO.

fication in past practice also included more effective screening of cut-over areas by roadside zones and other well-located uncut areas, and where clear cutting is necessary, a wider distribution of cutting areas.

The lodgepole pine, a predominant type in the Northern and Central Rocky Mountains, has been managed chiefly by some form of partial cutting. Vast lodgepole areas cut over for railroad ties and mine timbers in the last 30 years bear evidence that areas logged by forestry methods may still be green and attractive. Such areas are today commonly used for recreation.

The various hardwood types that occur in the eastern and southern national forests are generally well adapted to selective cutting, although, as in all types, there are portions of the stand in which clear cutting may be the best form of silviculture. Very heavy recreational use takes place on many hardwood stands that have been selectively logged.

On the other hand, the red spruce and balsam fir forests growing on the upper slopes of the eastern mountains usually require some form of clear cutting because any reserved trees of these shallow-rooted species are peculiarly subject to wind-throw. Clear-cut areas in this type are followed by excellent reproduction, provided fires are kept out, but scenically they are unattractive until the new stand is well along. Consequently, in the spruce slope type either recreation values must be sacrificed for considerable periods or commodity values given up altogether.

Methods of disposing of logging slash have an important bearing on forest appearance after logging operations. The continuing tendency to reduce the intensity of cutting on national forests results in a decrease in the amount of slash.

Artificial planting is a form of timber management distinctly beneficial to recreational use. Hundreds of thousands of acres of unsightly old burns have been restored to a green forest cover through national-forest-planting activities. In 1938 alone, 154,000 acres, an area four times the size of the District of Columbia, were planted on the national forests.

In various parts of the United States one finds convincing proof that timber cutting and recreation may go hand in hand. Most of the heavily used recreational areas of the Lake States have been cut over, but people there have made some headway toward restoration in the past few years.

New England is a region of heavy recreational use. Much of this use is in areas where the original forest long ago gave way to second- or third- or fourth-growth stands. There are countless little wood-using plants getting raw material from the same forests that millions of people frequent for pleasure. And the reconciliation of the demands of millions of forest visitors with the harvesting of successive timber crops in northern New Hampshire is, perhaps, the best example of the multiple-use form of national forest management. The cut of timber from the White Mountain National Forest this year will represent about \$52,000, of which 25 percent or \$13,000 will be returned, in lieu of taxes, to the counties in which national forest land is located. The forest has paid more than \$192,000 to the States of New Hampshire and Maine.

Simultaneously, the recreation business has grown to be one of New Hampshire's most profitable sources of revenue. As early as 1935 returns reached the impressive total of \$75,000,000, of which \$18,000,000 is estimated to have come from the White Mountain area.

Thus, public management may reconcile divergent interests and uses and deliver, from forest and wild lands generally, "the greatest good to the greatest number of people in the long run."

The ponderosa pine stands in the Black Hills of South Dakota have been cut by forestry methods for more than 30 years, yet thousands of people visit this area each summer and delight in the beauty of the growing forest. The overmature trees are gone, but the many near-mature trees and saplings which have remained after selective logging furnish refreshing shade and beauty to people from the Great Plains who visit these cut-over forests for their vacations, and dash out amid lightning bursts, in thundergusts, to let the spilled, whipped rain beat upon them, a release from drought and deprivation, a renewal—hope.



F-308625

*There are many who like to see flocks and herds on the open range,
and count it a part of the pleasure of their outing.*

BEAR VALLEY,
PAYETTE NATIONAL FOREST, IDAHO.



Herds and Humans

Pastoral pursuits have always constituted one of the principal occupations of the human race. Early history would be deprived of some of its most interesting chapters if we were to eliminate from them the many references to flocks and herds and shepherds, and kine or cattle.

In our own West, and especially in its arid, semiarid, and mountainous portions, grazing is still and probably always will be of great importance to people who live there.

Here the shepherd and his sheep, his tepee and his faithful dog, and the contented grazing of well-bred cattle portray important uses of mountain pastures and forest ranges. But they also provide scenes that lend pleasure and romance to mountain travel.

John H. Hatton, in an unpublished manuscript.

GRASS-MADE MEAT and wool are part of a great and needed industry in this country. National-forest land must help to support this industry in the future, as in the past. The Forest Service began allotting national-forest ranges, in place of earlier and unorganized use, some 30 years ago. So grazing antedates recreation as a major national-forest use. It is still a major phase of national-forest use in the West, where large numbers of stockmen depend on national-forest pasturage for summer range.

More than 1½ million cattle and horses and 9 million sheep and goats find forage for a part of each year on the national forests. Twenty-six thousand families are directly or indirectly dependent on these ranges for their livelihood, and on nearby lowland ranges stockmen have invested about \$200,000,000 in ranch properties which would be far less valuable without national-forest summer range.

Southern and eastern national forests do not occupy an important place

in the livestock industry; they are not adapted by nature to the use of domestic stock on an open-range basis as in the West. Comparatively few livestock are permitted on them. So herds and humans rarely get in each other's way back East, and the same thing holds true over the greater part of the national-forest area, for less than half the total area is now grazed by domestic stock.

Moreover, the Forest Service closes entirely to grazing certain virgin, natural, and other special types of areas having definite recreational appeal; and of the 14 million acres of wilderness areas, 6 million are not grazed by domestic livestock or are used so slightly that essentially primitive conditions of vegetation can easily be maintained.

There are many who like to see flocks and herds on the open range and count it a part of the pleasure of their outing. To them the sight of a band of sheep scattered over a distant hillside, or of a lone camp wagon silhouetted against the evening sky is pleasing. It seems a part of the romance of the West. The dude ranches, many of which are located in or near the western national forests, came into existence largely because of this desire of the vacationist to share in what is left of the picturesque life of the range.

But livestock and forest guests frequently get in each other's way in the more accessible areas along roads and highways. People seek these spots for recreation and, as might be expected, find that many of these easily reached lands have long been grazed. Yet it is often possible to avoid discord by planning more carefully the developments for recreational use.

For example, if the grazing use of a very large area should be wholly dependent on a relatively small water source, the location of a campground or group of summer homes around this spring or lake would necessitate the abandonment of grazing over the entire area. With a little advance planning, however, the recreational concentration undoubtedly could be placed elsewhere and the smaller amount of water needed for recreational use obtained by wells or improvement of springs. Similarly, on many roadside or near-roadside areas the recreational use often justifies the fencing of the campground against livestock. The fences are usually hidden so campers have no feeling of being "shut-in." The cattle-guard entrance is made to merge attractively into the surrounding scene. Plans must also be

made to avoid concentration of hunters around the more important stock-watering places. "Accessibility" is not a static condition, and sudden changes in accessibility of national-forest areas through road construction bring with them an obligation to foresee possible conflicts in land use and to do the advance planning necessary.

Stock driveways needed to get stock to back country, often through areas closed to grazing, are sore spots in coordination of forest recreation and grazing that are not always easily healed. Often these driveways have been in use several decades. They naturally follow the easiest routes of travel. The roads built later have in many instances paralleled them. And now that the campers and tourists are following the roads, the stock driveways, because of the dust and trampled vegetation for which livestock are responsible, are destructive to the recreational value of such areas. Whenever recreation is a sufficiently important land use, one solution to this particular problem is to change the location of the driveways if at all possible. Where relocating the driveway is not feasible, recreation must adapt itself to the situation or be diverted to other areas. In recent years the use of motor-trucks to move livestock to and from the national-forest ranges has lessened the driveway problem to some extent, but driveways will probably always be needed for the movement of livestock to and from roadless areas.

When changes in location of driveways are made, the new routes avoid stream courses and the regularly used recreational roads and trails. So far as possible, these new driveways are along ridge tops, where damage to vegetation is less severe than in the valleys. More than 750 miles of new stock driveways were constructed by the Forest Service in the 5-year period 1933-37. The stockmen have been able to use these less convenient driveways, but such changes are often difficult and frequently very expensive. Further progress in solving this problem will require patience and understanding on the part of both the stockmen and the people on pleasure bent.

GRAZING AND RECREATION . . . A problem that has appeared in some places is to provide ample forage for saddle horses and pack stock used on horseback trips through the mountains. As such trips become more popular, it will be necessary in certain localities to plan grazing so as to leave more



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*And now that campers and tourists are following the roads,
stock driveways are destructive to the recreational value of such areas.*

LOLO NATIONAL FOREST, MONT.

feed than has so far been left for visitors' pack and saddle stock. This may involve changes in grazing allotments, or it may be necessary to defer regular grazing until after the recreational season.

In contrast to these relatively small areas, there are a few rather large areas suitable for grazing on which recreational use is so great and so obviously the pre-eminent land use that grazing of domestic livestock must be entirely excluded. On the Pike National Forest in Colorado, for instance, the forests near Colorado Springs are frequented by so many vacationists that the people alone tend to wear out the grass by "milling around" over the lower slopes of Pikes Peak. And on Los Padres National Forest near Los Angeles, so much land is needed for concentrated forest recreational use that, over large areas, livestock is not grazed.

There are other large areas of "back country" from which small groups of enthusiastic recreationists sometimes insist that absolutely all grazing of domestic livestock be excluded, although the number of forest visitors affected is small. The objections of these small groups are centered not so much in the physical damage that might be done by livestock, but more in a strong and very sincere feeling that the primitive qualities of the national forests are destroyed by the mere presence of sheep and cattle even though the animals may be miles away and unseen. It would seem, however, that with the complete absence of livestock from nearly 100,000 acres of concentrated recreational use, from 6,000,000 out of 14,000,000 acres of wilderness, and from more than 85,000,000 additional acres, it is not necessary to jeopardize an important industry by entirely excluding grazing from the less than half of the national forest area which remains.

In the past undesirably heavy concentrations of livestock near routes of recreational travel have resulted from salting cattle near roads and trails. This was unobjectionable in the days before the people began to use the national forests in large numbers. For the most part it has now been eliminated by establishing salting grounds elsewhere.

The bedding of sheep night after night in one place leaves unsightly scars on the landscape, and depletes the nearby range. And the bedding of sheep near campgrounds interferes with the fullest enjoyment of camper guests. These difficulties were anticipated years ago, and on the national

forests administrative efforts have for years been directed toward eliminating them. Approved range-management practices prevent the bedding of sheep near campgrounds and picnic areas, and Forest Service bedding rules are intended to preserve vegetation by prohibiting the use of the same bed ground for more than 3 nights. Bedding out—bedding wherever night overtakes the herd—is a common practice which results in only a 1-night use of each bed ground.

Overuse of range by livestock not only interferes with full enjoyment by forest visitors and detracts from the natural attractiveness of forest landscape, but also damages the soil and forage. The practice of the Forest Service, therefore, is to make such adjustments as are necessary to bring use of ranges into balance with forage production. Since World War times, when many forest ranges were stocked beyond capacity in the interests of maximum meat production, reductions in numbers of stock on national-forest ranges total 839,000 cattle and 2,854,000 sheep, or 37½ percent of the cattle and 33½ percent of the sheep previously allowed on national-forest ranges. Since some of these ranges are still overstocked, further reductions are necessary.

TAMED VS. WILDLIFE . . . The Forest Service policy is to so restrict grazing by domestic livestock that enough forage will be left for reasonable numbers of wildlife, and especially for such big-game animals as deer and elk. But certain practical difficulties stand in the way. Winter range is a controlling factor in big-game populations. Many national forests contain no areas suitable for winter range, or very few. Many winter ranges of former years have been absorbed in agricultural developments. Big-game animals which use summer range in the higher portions of the Cascades, the Sierras, and the Rocky Mountains, for example, are forced by deep snow to seek low-lying winter ranges outside the national forests. The forage on these lower ranges is often privately owned and fully utilized by livestock.

Other difficulties include State game laws which do not permit removal of game in excess of the feed supply; public sentiment unfavorable to the extension of hunting seasons to serve that purpose; or failure of hunters to do so in open seasons. Any one of these may allow big-game herds to in-

crease beyond the capacity of available ranges, and to starve to death in alarming numbers. The deer herd of the Kaibab Plateau in Arizona, the Northern Yellowstone elk herd, and the South Fork herd in the Flathead National Forest in Montana are notable examples of uncontrolled increase in herds which, even after exclusion of livestock from large areas, resulted in destruction of the forage resource and decimation of the animals by starvation.

The other side of the picture is more encouraging. Because the feeding habits of the different animals are often such that vegetation left untouched by one is eaten by another, there is almost always room for a rather large population of big-game animals on most properly stocked livestock ranges. Moreover, more than half of the national-forest area is not used by domestic stock, and these lands provide much feed for wildlife. Included within this total are some 3,000,000 acres of national-forest lands which might be used by domestic stock but which have been closed to such use. These special areas include the more important of the few winter ranges on western national forests, and some summer ranges that are especially needed by wildlife.

On the whole, competition between domestic stock and big game for forage on the national forests is not great. Where such competition does occur there is only one sensible solution, and that lies in joint action by the responsible agencies. The Forest Service is responsible for administration and protection of the land and its resources, while the State game commissions are actively engaged in the administration of the State game laws. These agencies, acting jointly, and in cooperation with stockmen and sportsmen, should be able to work out sensible adjustments.



F-238977

All ease and peace vanished. The holiday was spoiled.

HALF MOON FIRE,
FLATHEAD NATIONAL FOREST, MONT.

Fire



More than 72,200 national forest acres were burned over in the calendar year 1937. Some 500 acres burned to every 1,000,000 acres protected. Losses of area have never before been held to so low a total. But the 1937 fire season from the standpoint of loss of life was disastrous. . . .

Fifteen heroic CCC boys met horrible deaths in the Blackwater fire. Thirty-eight others were injured but recovered. The tragedy was due to an unforeseeable combination of sudden changes of weather which deprived crews of what should normally have been a nearby safety zone. . . . The 1937 honor roll of men who died on far-flung national forest fire lines numbers 20. . . . *Report of Ferdinand Silcox, Chief of the Forest Service, 1938.*

AN UNEASY FEELING hung over the little group of campers in the big cedar grove on the Priest River of Idaho. It was the first of August. The forest was tinder dry, and there were disquieting rumors of forest fires off to the west.

The wind increased and the rumors were confirmed. There came now a steady patter of twigs and pine needles falling on the tents. The campers drew together, excitedly talking. One of them pointed to a white cloud thrust over the timbered ridge to the west. It grew and ballooned into a cauliflowerlike thunderhead. "Fire!" cried a man, pointing. Other cries rose: "The Freeman Lake fire has blown up." . . . "Strike tents!" . . . "Time to get out of here."

Down the road a siren sounded. Three motortrucks loaded with fire fighters thundered by. Smoke settled into the valley, cutting off all distant visibility. Ashes swept up by the great heat draft over the ridge commenced to fall among the cedars. Hastily each family group struck its tents, packed equipment. All ease and peace vanished. The holiday was spoiled. One by one, like startled rabbits, cars scampered out of the forest. By nightfall

the fire had swept across the river and the cedar grove camp was in ashes.

The trees themselves, their cool shade, their beauty, and the carpet of woodland plants on the ground, and the bird and animal life—all destroyed, and all in a few hours. Nothing remained save smoldering desolation—the skeletons of trees standing dead, a tangle of down logs, and the hot sun beating through to the blackened ground of an open burn. And dust, carbon dust, billions upon billions of minute floating carbon particles; this is all that remained of living trees, of vital forest cover. Products that might have kept unborn generations alive and at ease—dust in the air now, to be dead for centuries.

It is hard to put into words the premonitions that dampen the everyday working spirit, or the zest in seizing a carefree day in the open, when a forest fire gets going, creeping or leaping, anywhere within 10 miles or so. A sort of stoic panic grips all the people there, working and playing. It disrupts all planned and purposed work and disrupts outings. The fire may be so far away that no smoke is smelled or seen, but the telephone lines between the fire towers buzz; the forest staff is tense, strained; the air is charged with a sense of insecurity. Small animals and greater forms of forest wildlife begin to cross the trails and roads leeward. Whether they see such signs of the fire or not (generally forest visitors do not), a like impulse unsettles the holiday spirit of forest visitors.

In a bad fire season a pall of smoke settles over the whole country. In such a season the mountains may not be visible for weeks. All distant views are cut off; the major pleasure of being in the mountains is destroyed. The mere report of large fires burning is sufficient to curtail greatly the recreational travel into the threatened country and often wisely so, for large fires bring real danger. Through the course of the years many hundreds of people have suffered terrible death in forests aflame. Campers or travelers do well to keep out of the woods when large forest fires are burning.

The fire season, or the driest time of the year, comes at different months on different forests. In Montana, the greatest danger is in midsummer, when cover is tinderlike and lightning strikes most often. In Florida, the dry time is usually from February to April, before spring rains have greened the scrub oaks and the brush and forest ground cover. Foresters have a

saying that you do not have to consult records to gage the fire hazard on a given forest. All you have to do is look at the faces and listen to the talk of the ranger and forest guards. There is truth in this.

The Caribbean National Forest of Puerto Rico has practically no fire hazard. And of such is the reward for being on a tropical rain forest with 200 inches annual rainfall, foresters say there, relaxed and cheerful. Foresters working out from Missoula, Mont., seem by comparison in the summer season, gaunt, tense. There is little laughter among them. "You will not," says Evan W. Kelley, once a major in the A. E. F. and now regional forester in charge of fire control and other Forest Service activities in Montana and northern Idaho, "find West Slope forest officers gay. We are smothered by the work, by the menace, in the fire season. To feel it, come live here in the dry time, with the mountain storms spitting and crackling.

"This season (1938) we had 140 fires going on one 2,000,000-acre area at once. All of them were started by lightning. No special zones of risk; hits all over. The lightning starts duff and snag fires, and occasionally in a dry top of a living tree. Many are hard to find. Not a fire at first, just a creeping smolder. We've hunted for 4 days to find one, sometimes.

"We send out smoke chasers, working in from section lines, with compasses to run down fires reported by the fire towers. We send work crews out, strip the ground a rod or so apart, hunting the terrain for smoldering fires, as if we were looking for a lost child.

"And just when you think you've got them all, and can take a Sunday afternoon off, you get a day of high wind, low humidity, more lightning, and roaring fires to fight all over the mountains. It's a hard game to beat. It takes men with nerves of iron and bodies of steel," says Major Kelley, who adds that when his time comes to retire he is going "to put up a cabin in a swamp, a big one."

In one particular the fire situation on northwestern dry-land forests is less nerve racking than the situation on the forests of Florida, Georgia, Mississippi, and of other far Southern States. There is something impersonal about defending from destruction woodlands fired by lightning. A man can be rather fatalistic about it; he can fight and not be angry. In many parts of the far South, however, and in the most dangerous, the driest season, most



F-1055 A

Nothing remained save smoldering desolation—the skeletons of trees standing dead, a tangle of down logs, and the hot sun beating through to the blackened ground.

SIUSLAW NATIONAL FOREST, OREG.

of the forest fires are started, more or less deliberately, by human beings. The ignorance, the superstition, the voodoo notions which bring on this deliberate annual destruction of the South's remaining forest resources are hard to fight, or even to contemplate, calmly.

Anyone who has ever driven in March down through the piney woods, which make a straggling start on the eastern shore of Maryland, rim the coastal plain to Florida, and then turn and march west to Texas, will have seen the thing happening, all along the way. That is when the woods burners, white and black, go out and set fires. It is a regular part of their spring work.

Firing "greens up" the grass, the people there say. They say it kills rattlers, destroys the "germs" of pellagra and of tuberculosis and of infantile paralysis, rids the woods of chiggers and malaria. Probably, it does none of these things but the feeling that it does runs deep. What indiscriminate burning of the forest floor, or open range land, does is to cremate such living organic matter as remains in the upper topsoil. It burns out part of the land's richness. It makes the piece of soil less fertile and all the more likely to wash or blow away. The grass may look green and fresh at first, but its meat-producing values are not improved. It looks like a nice, clean job, maybe, for the first week or so, but the resulting growth is sparser, coarser, ranker.

To burn land off, time after time and right and left, is to hurt and perhaps destroy it. Yet every March as you travel southward in the piney woods, you see people setting grass fires and woods fires on hundreds and thousands of acres. Drive at night, and for miles you will see lands ablaze, untended. Smoke and carbon particles fill the air; the ground flames are as crawling snakes of fire; and here and there you will see them licking their way up tree trunks and flaming explosively in the canopy.

All along the way are educational signs placed there by State and national foresters, patiently reiterating established facts; **EVERYONE LOSES WHEN THE WOODS BURN . . . PREVENT FOREST FIRES—IT PAYS. . . .**

But still the people go out and set the woods and fields afire.

Partly, it is superstition; and there is a strand of racial memory intertwined which makes the thing hard to get at and change, for thus, by fire, our pioneer forebears cleared their farms from the wilderness, in the main. There is probably an even further throw-back: Man's instinctive hostility

to, and dread of, the jungle. There is also the primitive excitement which kindles in all of us the desire to see flame leap and run. Quite a few farmers and woodsmen who ordinarily pass as sane, confess to letting a brush fire get out of hand just to see if they can handle it afterward, just for the excitement, just for "the hell of it."

Others argue that to burn off the brush and weeds is to increase the game crop and the ease of the hunter in getting at it. Burning does make the forest more open for hunters, but as for increasing game, that is doubtful.

Any forest officer who has fought large fires can tell stories of deer, elk, and bear, and smaller wild game burned to death in a sudden sweep of flame, or limping pitifully around the edge of the fire with feet burned and fur scorched. Such great conflagrations as the big Idaho fires of 1910, sweeping 40 miles in a single day, must have wiped out practically all wildlife, large and small, over entire river drainages. After such a fire every pool in the streams is white with the upturned bellies of trout killed by ashes in the water.

"Fire," says Ira N. Gabrielson, Chief of the United States Biological Survey, in a special fire prevention number issued by American Forests, April 1939, "is not a temporary disaster. It burns the crop and it destroys the ability of the land to produce another.

"In 1937 a total of over 20,000,000 acres of wildlife habitat was blasted, scorched, and sterilized by forest fires in the United States. The figure does not include grass fires and marsh burns. If these fires killed only 1 bird or animal to each acre, that would mean a loss of 20,000,000 living creatures burned to death or suffocated in 1 year. But to obtain an estimate of the total loss we must multiply that figure by the number of years that will elapse before the habitat destroyed in 1937 has been restored and is ready once more to produce maximum crops of wildlife. . . .

"In all our plans for the conservative management of our lands for wildlife, we must recognize the fact that whether kindled in ignorance or maliciously or accidentally, forest fires and grass fires are deadly to wildlife."

TO BURN COVER IS TO BURN GAME, is a slogan that forest education and information workers have been considering in an appeal to the sporting

spirit. It is a true statement, but a little too condensed, too hard to follow, perhaps, for a really good slogan. IT'S BAD LUCK TO SET THE WOODS AFIRE is another slogan recently suggested by John P. Shea, a psychologist, speaking before the Southern Society of Philosophy and Psychology, at Chapel Hill, N. C. This has possibilities

Dr. Shea has made a special study for the Forest Service of man-made forest fires the country over. He finds an obscure, deep-seated feeling on the part of many that to set the woods afire cleans things up for a new start, puts down diseases and jungle menaces, and in general changes one's luck. "Popular attitudes, habits, folkways, morals, and resentments," wrote a reporter for Science Service, compressing the findings, last April, "are mainly responsible for the burning each year of 'enough timber to build a row of five-room frame houses 100 feet apart from New York to Atlanta.' " The investigators (James W. Curtis of Kentucky, and Harold F. Kaufman of Missouri collaborated) suggest six points of appeal:

1. *Legal*.—Stop burning the forests or you will be prosecuted.
2. *Economic*.—Better forests mean more jobs.
3. *Aesthetic*.—Why destroy beauty?
4. *Sentimental*.—Don't destroy the wildwood habitats of birds and beasts and the outdoor haunts for children.
5. *Sports and recreation*.—Keep fire out of the forests and enjoy better hunting, fishing, and recreation.
6. *Bad luck*.—Finally, inculcate manufactured superstitions to battle against disastrous ones causing fire setting.

"Could taboos be inculcated?" Dr. Shea asked his colleagues at the meeting. "Would ballads and folk songs, if such could be made to order, prove effective in correcting unsocial behavior patterns that are proving suicidal to the people of the South?"

BAD LUCK it is, indeed, when forests, grassland, or muckbeds burn; and the bad luck continues for years on end. A whole complex of natural factors is thrown with each successive burn still further out of joint. When over-drainage in the Florida Everglades dried muck soil to powder, and the powder was fired, and a million acres of it burned for weeks on end in the

spring of 1939, The New York Herald-Tribune dispatched to the scene a correspondent, John O'Reilly, who sent back an appalling estimate of disaster, not in terms of persons killed, but in terms of permanent, or an all-but-permanent, derangement of the natural water system, the soil, the wildlife, and the human resources. The United States could stand more of this sort of journalism, and less of the sort which, when great fires blazed on the mountains above Los Angeles last winter, yielded hardly a headline east of the Rockies. But when an unimportant tongue of the flame flicked toward Hollywood, "FILM STARS' HOMES MENACED," the city papers shouted from coast to coast.

Really, a great deal more than film stars' homes was menaced. The entire life and civilization of that western dry land depends on water. Denuded slopes do not yield usable water. Burnt-off, denuded watersheds become more menacing there each year.

Literally, and quite obviously, a curse is laid on soil repeatedly burnt over. Life, along with the soil and cover, becomes each year thinner, less robust, less rewarding, more hazardous.

There is nothing mysterious or other-worldly about the process. It is simply that you blast and disturb a natural continuity of growth and renewal—a marvelously delicate but enduring interplay of living forces which, undisturbed, keep a piece of land intact and rich, and the people it supports, secure.

"In a burned woodland," writes Hugh Bennett, Chief of the United States Soil Conservation Service, contributing to the same symposium, in *American Forests*, "the very structure of the soil is changed. Following the destruction of organic matter and beneficial bacteria by flames, the soft, crumblike surface that naturally prevails under a leaf mold gradually gives way to a harder, more compact condition. Pelting rains hasten the process along. By dislodging tiny soil particles and taking them into suspension along with charred plant debris, they produce a muddy kind of run-off that tends to seal over the ground surface and make it almost impervious to water. Naturally, this compacting action alone means a tremendous increase in the amount of run-off and the rate of erosion. When it is combined with the demolition of all protecting overgrowth, soil and water losses may be multiplied several thousand times over."

Controlled experiments started at Statesville, N. C., several years ago in a virgin forest area tell a graphic story that "links fire with floods and soil erosion." Dr. Bennett continues: "The ground cover on one woodland plat has been burned each year since 1932, with a blow torch; another and equal plat has been left in its original state. On both plats steel strips countersunk into the earth collect all run-off in measuring vats down the slope. After every heavy rain, the vat of the burned plat is heavy with water, dark with soil. Frequently the other vat is scarcely damp on the bottom. Over a 6-year period the burned plat has shed almost exactly 100 times as much water as the plat in virgin woods; soil losses have been more than 800 times as great."

Loss of timber by fire is appalling. The Tillamook fire of August 1933 killed $10\frac{1}{4}$ billion board feet of timber. Yet the New England hurricane felled a total of only $2\frac{1}{2}$ to 3 billion feet, of which about $1\frac{1}{2}$ billion board feet was salvageable timber. Tillamook's $10\frac{1}{4}$ billion board feet was nearly 3 times the cut of the whole West Coast in that year. The loss was in one of Oregon's finest timber stands. And, said the late F. A. Silcox, "Six years of direct employment for 14,000 men (with dependents, 70,000 people) went up in smoke, with loss of potential lumber values of 275 million dollars. This burnt timber would have built 1 million small homes."

It is known that, besides damaging mature timber, repeated fires kill reproduction, prevent certain age classes from reaching maturity, and result in a forest stand so understocked that it yields far less than it otherwise might. Bad luck, indeed! For more than 30 years the Forest Service has been announcing similar findings and warnings, but more progress has been made, speaking generally, in the technique of fighting forest and brush fires after they have started than in preventing them.

CERTAIN IDIOSYNCRASIES that still distinguish our pioneer American folklore and behavior in respect to fire and weather were strikingly exhibited during the fire season in the far South in the spring of 1939. First, of course, there was the Everglades burn-off, not only of vegetation and game, but of soil ominously burning, a million acres of rich soil burning, and casting a pall of soot over protected country 300 or even 400 miles away. This fire



F-349923

Society may move to restore what it has destroyed or maimed.

TREE PLANTING CREW,
COLUMBIA NATIONAL FOREST, WASH.

was on private land, for the most part, and there seems little doubt that it was set deliberately, at the outset, by the hand of man.

Three hundred miles away, by air line, floating particles of the burning Everglades made fire-tower observation on the Choctawhatchee National Forest difficult. On some days with a southeast wind, lookout towers were all but useless. CCC boys were then sent out on patrol through the woods to look for signs of fire, amid the smoke from the 'glades.

The Choctawhatchee is the national forest mentioned in the opening section of chapter 6 on camps; and the high fire hazard that obtains in that part of western Florida, just before it greens up for summer, was also noted. The ranger and his staff were determined to turn in a good fire record. On quiet days the ranger slipped out and set test fires in safe places, then hooked in a "portable" on the telephone line, to note if the towermen were on their toes. One lookout man who went on serenely describing a long dream he'd had the night before to another guard by telephone, with the smoke coming up within 2 miles of his lookout, was relieved at once and replaced by a man possessed of keener eyes, and not so dreamy. Everyone was alert now, and the fire organization was functioning with smooth efficiency.

Spring came late in 1939 to western Florida, and woods burners were somewhat later than usual in firing the woods. Drought burned hard, but even when fires began to be set outside the protective boundary the ranger, by great vigilance, managed to hold down losses within the forest borders to 3 acres. This was a fire started by a careless smoker, but all it took was 3 acres of some 309,000 acres, the forest area; the smallest loss, by far, ever recorded on the Choctawhatchee, up to mid-March.

Still it stayed dry, and that shroud of Everglade soot continued. Slowly soot rained down on the baked ground, and coated it. Dogs and other animals were dyed black to the hocks from the soot on that brittle cover. Every day the risk and the tension heightened. The ranger, fire dispatcher, and forest guards virtually gave up sleeping; 4 hours was more than they got, most nights. They were gaunt-eyed from strain and worry; and the guards in the towers drawled and swapped yarns no longer, but swore at each other sharply on the 'phone line connecting their towers to the ranger station and dispatcher.

"I got one on 69½. Look at her! She's a snake in the grass!"

The guard in another tower. "Keep your shirt on; that's a chimney glow. Ol' George Pratt's chimney, that's all."

First guard. "I'm gonna report it! Ranger said to report everything!"

Second guard. "Lissen now! Don't give way before the water comes. Let the ranger lay in tonight. He'll need it. [Pause] They tell me a lookout over on the De Soto got so worked up he called the dispatcher every time the moon rose."

First guard. "Ain't it never gonna rain?"

Second guard. "I sure hope that lady brings it!"

Then they laughed. The lady in question provided no end of cackling talk, and a needed comic relief of some sort, during the 1939 spring fire season in Florida, with the Everglades burning. She was a rain maker, a gentle soul beyond her middle years, who employed no apparatus more elaborate than her own person, and a fixed conviction that if she sat by a body of water long enough, even in the driest time, she somehow brought on rain.

She sat there by a lake in the drought, with photographers attending, and the news of her sitting held almost equal interest, to Floridians, with the European situation. Indeed, she made more talk than Europe made there, at the time. But it stayed dry, terribly dry; and every day the woods burners, seeking to hurry the greening, slipped out and set more fires. Most of them were set outside of the forest, to be blown in by a strong northeast wind; but fires were set inside the forest, too. Then came a March day with a high northeast wind, and no soot. Abruptly the fire dispatcher at the Jackson Ranger Station had 15 fires on his switchboard all at once; and in 3 days more than 2,000 acres on the Choctawhatchee Forest burned, about its annual average.

But now, at length, some rain fell, patchily, throughout Florida and to the west; not rain enough to put the 'glades fire out, but enough to dampen things a little, and give the forest guards and fire fighters some measure of relief. A forest inspector driving west from the Choctawhatchee at this juncture, to have a look at the situation on the De Soto, with headquarters at Jackson, Miss., read in the paper at Mobile, Ala., midway, that a Florida

city chamber of commerce was giving the lady rain maker a banquet for breaking the dry spell.

Next day on the way to Jackson, up through the De Soto National Forest, rain came so hard and fast that it stopped windshield wipers, halted most traffic for hours, and put out every outdoor fire for hundreds of miles around. Roads were washed out, torrents of debris from denuded hillsides boiled in the bottoms, rivers leaped from their banks; and some 30 miles southwest of Jackson, floodwater performed a feat of erosion so striking as to make news in the press throughout the land.

After dark, the middle span of a highway bridge ripped out. A truck came along doggedly, its headlights dimmed by continuing sheets of rain. Bluntly it plunged into the boiling, muddy river. The truck driver fought his way out of the water somehow back to the highway and tried to flag approaching cars. In all, 14 persons drowned—in 6 cars—from driving off the broken bridge into the floodwater regardless. Then the truck driver managed to stop one, and the other cars stopped behind it; and the ghoulis work of recovering the bodies began, with newsmen there in their numbers, taking flashlight pictures.

"Yours is a strange and violent country," said a foreign visitor to Jackson, reading the papers. In the street people talked low and mournfully, their heads hanging. And one man, with a cackling humor, half hysterical, told a group at a street corner, as ambulances streaked by with sirens wailing: "That lady in Florida had the stuff, all right. And a lot of people said she was a fake."

Much of this may seem out of order, but nothing in nature is utterly unrelated; and between forest fires, floods, and further catastrophes the relationship is pretty thoroughly established. The measures of loss vary widely, according to climate, and the extent and pitch of the watershed; but the inevitable relationship between the sort of voodooism that impels burning, and the sort of voodooism that leads chambers of commerce to give publicity banquets to rain makers becomes increasingly plain. The result in many places is a wasting and threatened land, neither pleasant nor promising to behold. Let us proceed with this inquiry a little further. The consequences affect forest recreation, most certainly. They bear as well on

other questions we must face if we are now to keep this land rich, comely, less worn and ugly; a good and pleasant land on which to make a life, and living, for all.

REVIEWING THE RECORD of 5 years, 1933–37, inclusive, Roy Headley, Chief of Fire Control, United States Forest Service, reflects:

“On the average, 172,000 forest fires a year, and 156,000 of these man-caused! An incredible fact. Everyone studying the subject comes sooner or later to a state of exasperated wonder.

“Not on the national forests where law enforcement has perhaps been more systematic, but for the country as a whole, *intentional* burners have the discredit of more than 42,000 fires in 1937. Thirteen million of the thirty-six million acres burned annually are chargeable to these intentional fires.¹ The trouble is mostly in the South but no section is wholly free from people who fire the woods because they want to.

“Intentional burners are not all alike in motive. A large number have economic reasons for burning. When no feed has been stored to carry cattle through the lean period of the year, they almost starve before the new grass comes in the spring. To burn off the old dead grass enables hungry cattle to get at the new growth a few days sooner. . . .

“Unemployment is responsible for many fires. Despite all precautions to avoid hiring men to fight fire who may have had anything to do with starting fires, some men will try this chance to earn a few dollars when no other job is to be had.”

The break-down of forest fire causes for the 5-year period, 1933–37, Headley continues, runs as shown in table 1.

TABLE 1.—*Causes of forest fires for the United States as a whole, 1933–37*

Cause	Per- cent	Number of fires	Cause	Per- cent	Number of fires
Incendiary	24.7	42,377	Unknown.	7.2	12,344
Smokers	24.4	41,857	Campers	6.3	10,778
Debris burning.	13.7	23,486	Railroads.	4.3	7,408
Miscellaneous	8.9	15,292	Lumbering.	1.8	3,049
Lightning.	8.7	14,932			

¹ 36 million acres is greater than the land area in Maine, New Hampshire, Massachusetts, and Vermont.

The preceding fire-cause list shows the situation on all our forest land, public and private, protected and unprotected. On the national forests of the United States, alone, the incendiary loss is much lower, the loss from fires started carelessly by smokers is about the same, and the number of fires set by lightning is, proportionately, much higher. The break-down is shown in table 2.

TABLE 2.—*Fire causes on national forest land, 1933-37*¹

Cause	Per- cent	Number of fires	Cause	Per- cent	Number of fires
Incendiary	11.9	1,347	Lightning.	38.6	4,349
Smokers	22.5	2,533	Campers	8.0	898
Debris burning	10.1	1,137	Railroads.	2.1	24
Miscellaneous	5.1	578	Lumbering	1.7	18

¹ The figures are stated in averages for the 5-year period.

“Because of the pyramiding human use of the woods for recreational and industrial purposes,” Headley concludes, “the need for a powerful counter-attack is necessary on accidental fires as well as on fires resulting from thoughtlessness, carelessness, and incendiarism. That our notorious fire-starting habits can be changed has been demonstrated on some of the older national forests in the East. Deep-rooted beliefs in woods burning and a full measure of thoughtlessness and carelessness in dense populations have been transformed into respect for the forest and effective fire-safety habits. These pioneering transformations have been slow, . . . but they prove that a whole nation of communities can be led to appreciate the forests and to hate fire with an effective hatred.”

“WE MUST EDUCATE, we must educate,” ran a sentence in the Fifth McGuffey Readers, “or we perish in our own prosperity!” As a simple example of elementary adult education seeking to outpace actual catastrophe, the present American attack on fire, flood, and soil destruction is of more than technical interest. Results thus far vary widely, from section to section. New England has a good fire record, but this was partly the result of a rather low fire hazard in the past. Driving in the White Mountains you will see tourist after tourist flip a burning cigarette butt out of the car window, without thought. You see this very rarely in California; for



F-233017

Visitors are asked to leave a clean camp and a dead fire.

TEJANO CANYON CAMPGROUND,
CIBOLA NATIONAL FOREST, N. MEX.

great fires there, one of which burned a sizable portion of Berkeley, the site of the State University, have served more than words or placards to make the people fire conscious. There are now millions of westerners who would not think of smoking in a car without an ash tray on which to smash out the stubs or the pipe heel; and to throw a match away without first breaking it, they say contemptuously, is a "tenderfoot trick."

There is imminent need suddenly to establish just such habit patterns along the track of the hurricane that swept across New England in September 1938. That blow smashed over some 14,000,000 acres. It left some 2½ billion board feet of timber in that part of the country in an indescribable swirl and tangle of loss and confusion, as wind-thrown timber, drying, rotting, on the ground.

"The heavy loss of life and the widespread damage to improved property," writes Dudley Harmon of the New England Council in *American Forests* forest-fire symposium, "claimed first attention. Then came realization that New England faced a greater danger from forest fire than at any time in its past."

It does, indeed; and the overwinter and spring effort to clear roadside zones, at least, of inflammable slash and debris, wherever the hurricane hit, has been heroic. Thirty-two CCC camps and WPA crews, aggregating 15,000 men, cutting and piling the down timber and whacking out safety strips or fire lines through larger areas of windfall. But the job is too big; it cannot be completed before the fall of 1940, at the earliest, and by then in only a few New England States. In many places New England's fire hazard throughout the dry summer and until snow flies again in the late fall, will be nothing less than terrifying. One live cigarette carelessly flicked away in New England's wounded woods for several summers to come may indeed, as Dudley Harmon says, take hold in tangled, dry debris and kindle "fires of tremendous intensity, so hot in places that fire fighters could not approach them; and if there happened to be several weeks of dry weather followed by high winds, fires might blow from one area of down timber to another, with imminent danger to all in their paths."

Visitors and hunters have been barred entirely from certain forest areas of the highest hazard in parts of New England. This will somewhat impede

recreational use on the forests; and many people will grumble, and some will break bounds. In all ways possible, however, the public must be warned and impressed with the danger, for it is literally impossible to change the fire habits of citizens in a humid area within a month or so; and if fires do break bounds in that debris, the result, over such ground as the flames race, could easily be such as would make even the hurricane itself seem a mild visitation, by comparison.

Foresters and woodsmen frequently argue whether opening up trails and roads into the woods, for recreational and commercial use, increases the fire loss, or reduces it. A thoroughgoing analysis of the record, made by Elers Koch and Lyle F. Watts for this report, shows that opening up forests generally increases the number of fires, but also greatly facilitates fighting the fires, putting them out more promptly and effectively, by modern methods.

On 6 western national forests, all existing records since 1924 indicate that campers learned to be about twice as careful with their campfires during the years in question.² Smokers' fires dropped from 2 to each 10,000 forest visitors to 1 such fire for each 10,000 persons visiting these forests. In view of the fact that far more people, both men and women, have the habit of smoking now than had the habit in 1924-27, the first period covered by this compilation, it appears that the long, slow educational drive against smokers' fires is taking effect. But it is a discouragingly slow business; and so many more people are using the forests now that, while they take about twice as much care with their smokes as they used to, the total number of forest fires carelessly started by smokers has actually increased since 1924.

² A complete tabulation of the data is appended on page 292, Appendix.



F-30573 A

When the men who came there to do business got there first.

NORTH FORK NOOKSACK RIVER,
MOUNT BAKER NATIONAL FOREST, WASH.

Water



They shall turn the rivers far away; the brooks of defense shall be emptied and dried up; . . . and everything sown by the brooks shall wither.

Isaiah 19, 6-7.

“TO RULE THE MOUNTAIN is to rule the river,” is a Chinese proverb more than 40 centuries old. And: “Mountains exhausted of forests are washed bare by torrents,” the ancient Chinese said.

Early in the present century Gifford Pinchot was shown before-and-after pictures of denudation and erosion in North China. The Chinese knew enough, it seems, to handle their land wisely; but they had not, as a people working under various pressures, been able to apply their wisdom. For here was a painting done in the fifteenth century, and here were photographs of the same scene taken in the twentieth century, some 500 years later. “The painting,” Walter C. Lowdermilk recalls, “showed a beautiful, populous and prosperous well-watered valley at the foot of forested mountains.” But he also recalls that “the photographs showed the mountains treeless, glaring, and sterile; the stream bed empty and dry; boulders and rocks from the mountains covering the fertile valley lands. The depopulated city had fallen in ruins.”

Gifford Pinchot took the pictures around to the White House and showed them to Theodore Roosevelt. President Roosevelt illustrated his message to Congress with those pictures and as a result the United States Forest Service was established.

Men grown gray in the Service recall that Pinchot, their first chief, showed the same pictures before congressional committees. Also, to drive home the role of cover in staying run-off, he carried to the hearings a plank,

a blanket, and a pitcher of water. Slanting the board, he poured water upon it, and immediately upon the floor below he had a flood. Then he covered the board with the blanket and again poured water, and this time the water soaked in and seeped down slowly.

The new-born Forest Service, dating from 1905, set out to make the American public erosion conscious at the time when most soil scientists, even in the Department of Agriculture, refused to believe in the menace or give credence to the warnings. Hugh Bennett in the Bureau of Soils at the time (he is Chief of the Soil Conservation Service now) already had raised his voice, crying warning especially against sheet erosion on farm land. But few believed him. The loss continued. Sheet erosion strips off tilled topsoil evenly, grain by grain, layer by layer, stealthily. It may leave no gullies, but it makes the soil thinner, poorer, all the time. Foresters did not know much about sheet erosion. It is rare in forests, but plain evidence was available even then that veritable avalanches of soil-wash and rock-wash from denuded high plains and mountains were bringing unutterable havoc upon the country below. So the foresters cried havoc; and with all the force of his vibrant voice and character, their great friend in the White House, Theodore Roosevelt, echoed the cry.

"To skin and exhaust the land," he proclaimed in 1907, "will result in undermining the days of our children, the very prosperity which we ought by right to hand down to them amplified and developed."

In 1908 President Roosevelt called a conference of Governors at the White House, to forward conservation. Dr. Thomas C. Chamberlin, a geologist at the University of Chicago, was there to talk to the governors and, through the press, to all the people.

"Soil production," he told them, "is very slow. I should be unwilling to name a mean rate of soil formation greater than 1 foot in 10,000 years. In the Orient there are large tracts almost absolutely bare of soil, on which stand ruins implying former flourishing populations. Other long-tilled lands bear similar testimony. It must be noted that more than loss of fertility is here menaced. It is the loss of the soil body itself, a loss almost beyond repair. When our soils are gone, we, too, must go unless we shall find some way to feed on raw rock, or its equivalent. . . .

“The key lies in due control of the water which falls on each acre . . . The highest crop values will usually be secured where the soil is made to absorb as much rainfall and snowfall as practicable. . . . This gives a minimum of wash to foul the streams, to spread over the bottom lands, to choke the reservoirs, to waste the water power, and to bar up the navigable rivers. *The solution of the problem . . . essentially solves the whole train of problems running from farm to river and from crop production to navigation.*”

CLEAN WATER has been a primary product of our national forests from the first. The economic uses of water rising in or flowing from the forests—water for municipal supplies, irrigation, power, mining—sometimes goes along harmoniously with use of the same water for recreation, but sometimes economic and recreation uses clash. Time was, of course, when our mountain headwaters were untouched by industry. The industrial use of water started in the bottoms. Then, as water sources became more put upon and injured, clusters of industrial structures climbed the streams. As these businesses clambered upstream, water was increasingly diverted, larger and more sprawling structures arose, and the landscape was altered, sometimes tragically, over wide areas.

If dams and power sites are designed and conducted by their owners with some thought of the rights of those who seek values from the forest other than power or salable products, the necessary conflicts between the industrial use of water and its recreational use are few. But when businessmen got there first in our industrial era and reared structures starkly utilitarian, and when they still insist such structures are more beautiful and rewarding than trees and untrammelled streams, then the conflict between a desire of business for stripped-down “improvements” and a popular impulse to return to the shelter of trees still living soon becomes plain.

Many industrial plants now operating on the forests display, in their clearings, and in the arrangement and architecture of their structures, an utter and arrogant disregard of good planning, and of decent landscape principles. Such stark designs may look all right as part of the urban pageant of man’s mighty progress on a wholly denuded mountainside out from, say, Pittsburgh. But they do not look at all right on our remaining forest land.

Compromises seem possible, without irrevocable loss. Business promoters, rural and urban, can have their power and products out of many mountain waters more quietly, without messing up what is left of our forest background. But first they must slow down a little in their driving stride, consult their own deepest interests and impulses, and listen to reason.

Business is business. Agreed. But ugliness is needless. It is generally possible to fit dams, powerhouses, and even transmission lines into the forest landscape without a widespread effect of disharmony, if care is taken in the landscaping; and if tree and shrub planting to screen and to tie structures into the landscape is undertaken immediately following the construction job. There is seldom need for any forest-industrial development spreading its structures, its construction scars, and other evidences of its being over a great acreage. Yet some industrial outfits persist in sprawling out in the public woods like giants barring use of the woods to the people. And some big operators persist in practices that are boorish, mean, and stupid.

Conflicts between private business and public pleasures that are the most difficult to adjust arise, as a rule, in places where exclusive rights or privileges were granted prior to the establishment of the national forests, or before the present surge favored simple outdoor recreation. The standard factory sign, "Keep Out Except on Business," does not appear on national forest areas so preempted, but the attitude of old-time operators toward the public who own these preempted parts of national forests remains, all too often, precisely that; and such operators show it in their operations.

They flood land without bothering to clear it of trees. The snags and debris under such water render it useless or dangerous for boating or swimming.

They manipulate actual water—shift actual water levels so abruptly as to throw out of adjustment natural communities of shore-line life, ranging from algae to man. And sometimes, in headlong conflict over rights, business operators have been known to exert such a drain as, in effect, to steal a lake and all the fish in it. They drain that lake, and all that lives in it and by it, right off our map and out of our future.

Such rugged practices show signs of abating. Even the most intrenched and resolute of old-timers are responding somewhat to a public resentment

each year more effectively expressed. Newer companies, out to make power or plastics or some other product of the woods and streams, incline now to ask how they can do business there without leaving the scene of their operations naked and barren.

The more enlightened concerns refrain from so raising or lowering actual water levels as to flood or drain, unnecessarily, forest pleasure grounds. And, once company reservoirs are established, they try to maintain a pleasant vacation environment by timing the use of water. Often they find it possible to time the heaviest draw-down with the lightest period of public recreational use. Thus they avoid revealing unsightly mudflats and debris-covered shores at the height of the vacation season when most people seek the woods and shores for beauty and consolation.

Not all companies are so considerate. Many a camping and picnic spot has been made useless or unattractive just at the time when the people needed it most. Later, after Labor Day, someone in the powerhouse may be told to throw the switch and restore the lake when few or none are there to share it.

SLUDGE AND POISON . . . Sludge from hydraulic and other mining operations on the forests, and pollution of the waters with manufacturing wastes, also maim or destroy woodland values. Here, again, the destruction is for the most part preventable.

Operators under permit in national forests can be required to install settling basins at their own expense. When operations are situated on private lands, however, the settling basins, if installed at all, may have to be constructed by the Government on national forest lands below the point of water use. Such installations now are made at public expense only if the recreational values so protected justify, and if no means exist under State laws or otherwise to enforce some other decent compromise for the moment.

It is generally possible to remove industrial waste, such as the residue of tanning and pulp industries, before discharging waste water into natural streams. Sewage disposal plants are also practicable. If damaging waste substances are eliminated from natural streams, the waterways retain their attractiveness and safety for camping and swimming, and fish are not poisoned.

In this day of chemical and engineering enlightenment, mankind does not have to destroy beauty, poison water, kill fish, and spread disease in order to have cities and factories. A special report, *Water Pollution in the United States*, submitted to the President by the National Resources Committee early in 1939, goes into these troubles, and the necessary cures, in detail, State by State.

Progress has been made, the committee finds, even since 1910, but, "in order to abate the most objectional pollution" within the next decade or two, an expenditure of at least 2 billion dollars will be necessary. Since most of the pollution comes from municipal sewage and some factory waste, the responsibility for the expenditure must fall largely on city governments and private concerns, "supplemented, perhaps," wrote President F. D. Roosevelt, reviewing the report in a foreword, "by a system of Federal grants-in-aid and loans organized with due regard for the integrated use of water resources and for a balanced Federal program for public works of all types."

Considering the constant contamination of water by towns with inadequate sewage systems, and the constant pollution of water by industrial wastes, the problem of keeping an increasing swarm of picnickers, campers, and tourists on the national forests from befouling water sources seems relatively slight.

Signs and instructions that stress the most elementary laws of sanitation, simple outdoor toilets and incinerators, and an indicated supply of drinking water known to be safe—these, in most places, are "improvements" enough. By such simple devices it has thus far been possible to admit millions of persons to enjoy the national forests with no widespread contamination and no evidence of serious pollution as yet.

WATER FOR PLEASURE . . . Man's oldest instincts draw him to the seashore, riverbank, and stream side. Few cities located far from surface water have grown from camps or settlements. Few campers, now as in the past, choose sites remote from water, if water is available. The flash and lap and tinkle of live water in sea or brook adds to the charm and serenity of the site, and gives the camper more quiet things to do: Fish, swim, boat, wade, or per-

haps just to sit there and gaze into limpid coolness. Of all the recreational resources of the national forests, water is surely the most valuable.

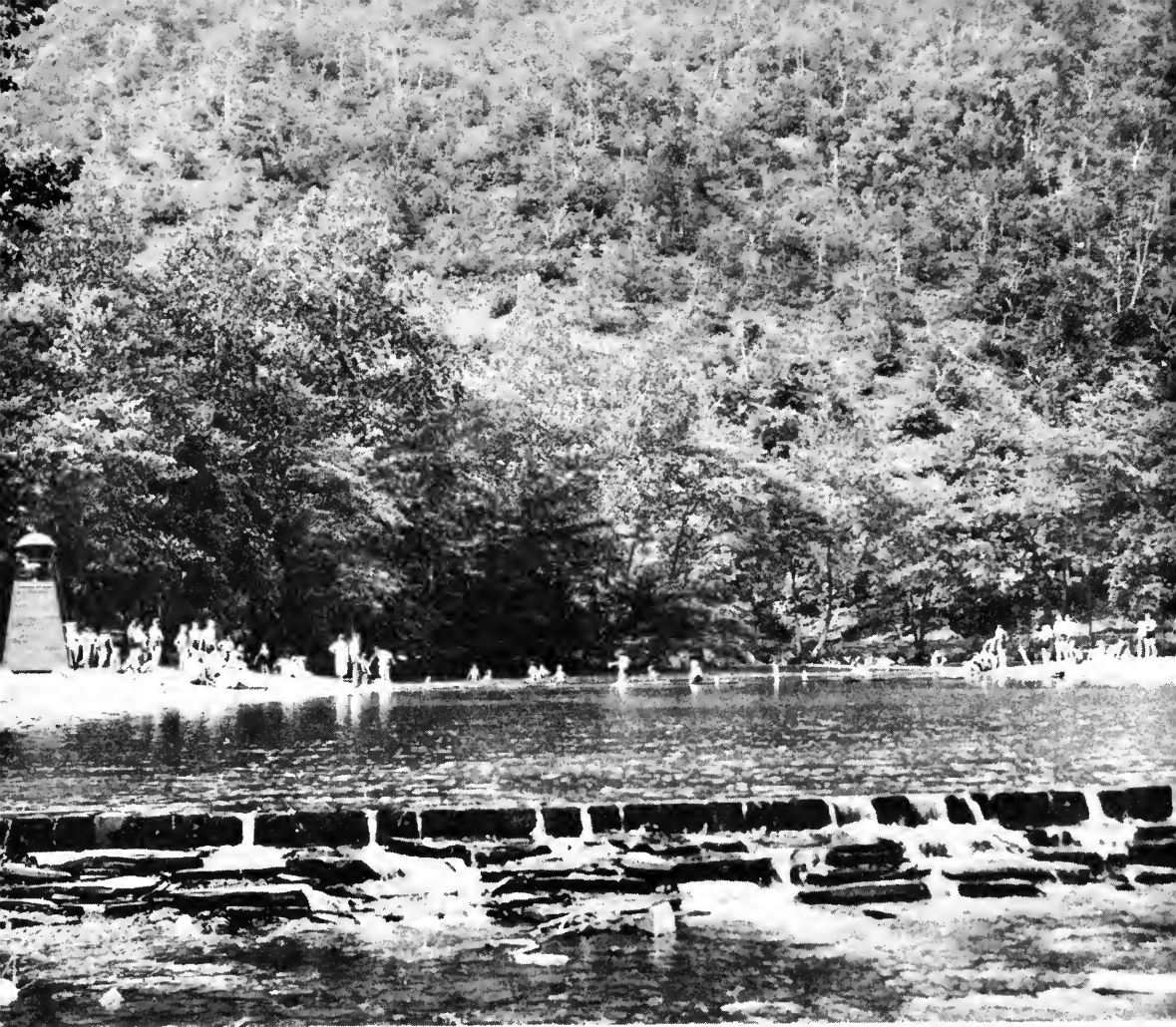
Of water most of the national forests still have plenty. A glance at a map of Minnesota and Wisconsin forests, for instance, discloses countless lakes and a veinlike network of thousands of small streams feeding successively larger and larger ones to form rivers. So it is even on drier forests westward. Four of the largest drainage systems of the country originate in the national forests of Colorado. To the northeast too, countless streams cascade down the slopes of the White Mountains.

In some of the Central States, in the Black Hills of South Dakota, and throughout the Southwest in general, natural water is not so abundant, or such as occurs naturally is not always useful for recreation. It is likely to be stilled and stagnant. Even where there is some flowing fresh water as in parts of the South, urban pollution often makes it unusable. Such forest areas face a real problem in developing and maintaining watering places for the public use and pleasure.

Then, too, much water on the national forests in general is no longer freely available to pleasure seekers, and public demand upon it increases rapidly. To help prevent pollution of drinking water, certain watersheds have been closed to recreational use. And the demand keeps rising to bar the general public from easy access to many lakes and streams. Private ownership of a key tract strategically situated may discourage or even prevent large numbers of people from finding and using for their pleasure the water and shore sites.

Despite all this, and despite other conflicts between the few and the many which have been suggested, much good water in the national forests still is open to the use of the people. And here and there, through recent land acquisitions and public construction, the amount of clean water useful for pleasure has been increased.

Some of the forest pools developed cost less than \$200. The construction is simple: A low dam of unobtrusive design, to deepen and perpetuate an existing swimming hole. To clear snags, rocks, and brush away is sometimes enough. But clay beaches, or silt beaches, are a bit miry. It is hard to swim and bask and come out clean. With relief labor it is often possible



F-325774

*A low dam of unobtrusive design, to deepen and perpetuate
an existing swimming hole.*

BLUE BEND FOREST CAMP,
MONONGAHELA NATIONAL FOREST, W. VA.

to truck in some sand, cheaply, and make a small clean beach by a clean pool or lake in the public forests.

The job becomes more expensive in drier climates where springs must be found and tapped to augment inflow. Sometimes the compromise works down to a wading pool for the youngsters. But even that is something to sit by and enjoy, if you are older, in hot, dry parts of the country.

Under pressure of an all but frantic demand and a quickly increasing use, many pleasure-water developments at forest camps and picnic spots have been pushed already beyond simple and sylvan proportions. This was sufficiently indicated in chapter 6. But no other pleasure development on the national forests has proved such a boon or aroused such universal approval, in terms of use, as the creation of lakes and pools in the dry or lakeless sections.

Consider, for example, a small lake development in a generally lakeless region: Cave Mountain, on the Jefferson National Forest, in Virginia. It is a made lake of 7 acres, with a neat, made crescent of sandy beach, and picnic sets ranged 'round about, under trees. On holidays this simple equipment provides recreation for more than 2,000 visitors. Again:

St. Charles dam in the San Isabel National Forest in southern Colorado is 90 feet high and 600 feet long. That begins to run into money. But this dam impounds a lake 35 acres in extent. It makes a forest lake that is available to a great prairie population and they throng eagerly to relax there during the long, hot summers.

Tensleep Dam on the Bighorn National Forest in Wyoming is only 26 feet high, but it creates a 274-acre lake in a generally lakeless region. Bismarck Dam on the Harney National Forest in the Black Hills of South Dakota produced a lake of 23 acres in a locality where recreational use is intense and water scarce, either for use or pleasure. Vesuvius Dam on the Wayne National Forest in southern Ohio, Shores Lake development on the Ozark National Forest in Arkansas, Pounds Hollow Dam on the Shawnee National Forest in Illinois—all are new midwestern watering places of the people.

Here and there, business interests have not only ceased to hinder, but have stepped in to help keep public watering places and the surrounding



F-361709

Fire, then flood.

BIG CREEK WATERSHED,
CABINET NATIONAL FOREST, IDAHO.

terrain as natural as possible. Thousands, for example, take advantage during summer heat of improvements developed at Lake Rabun, a large power lake on the Chattahoochee National Forest in the mountains of North Georgia. Here, with the cooperation of the power company, an attractive portion of the shore line has been developed for public use by the installation of a sand beach, boat dock, diving raft, and other facilities. The lake, which is 17 miles long, is clean and lovely, suited for purposes of restful contemplation, or for swimming, or boating, or fishing. Since it is one lake in a series of four, the water level is maintained without difficulty during the recreational-use period.

TO GUARD THE CRESTS and all the lands below against excessive run-off, properly managed forest cover offers the best protection known. "It's almost as if God made trees and brush to do this job!" says a forest officer who for years has been studying ways to make a far western forest deliver more gently to parched lowlands the most vital crop of those mountains—water.

The best sort of forest cover presents successive layers of resistance to rapid run-off. First, the treetops: Snow or rain, falling, is detained by the forest canopy, the roof of foliage. Here some of it clings and drips down gradually, but some clings so long that the sun sucks it back into the sky. Water losses upward from snow rapidly melting and evaporating on thick foliage may be considerable. On certain national-forest watersheds where the yield of delivered water is of crucial importance, as in Colorado, the characteristic canopy makes a roof so dense that much snow moisture returns to the clouds without touching the earth. Here systems of cuttings are definitely planned so as, in effect, to make holes in the forest roof and let more water directly down into thirsty soil.

Some water, of course, makes its way quietly down the limbs and the trunks of trees, and enters the ground that way. Other water dripping from the upper foliage is again detained by underbrush, which drips it in turn upon the litter and ground cover, the last conserving layer opposed to rapid run-off of water, and of soil.

In western regions that depend for their very life upon stored water

brought down from the mountains, snow reports are almost as carefully followed as are cotton reports in Memphis. "Next summer's rain," the dry-land people say when they lift their eyes and behold clean snow on the mountains. Up the mountains, all winter long, rangers are taking snow samples along trails laid out to touch points of representative precipitation. They travel on skis or snowshoes and take their samples with the thrust of a hollow tube. Machines have lately been acquired, on some forests, to measure and calibrate snowfall more easily, but much of the work still is done without technological improvements.

In any case, the total snowfall recorded does not, like rainfall, signify that that much water will be delivered upon thirsting ground for crops, for industrial use, or for city reservoirs. So much depends on the rate of thaw in the spring. If the melt is gradual, a big snow crop on the mountains is a blessed gift. But if the snow crop piles high and the melt comes abruptly, fiercely, it can play the very devil up there on the mountainsides and below.

"Water-drunk" is another phrase which passes as current, without need of a fuller explanation, among rural and urban dry-land contenders for mountain water brought down to dry lands. Water is the lifeblood of any region, and in semidesert or desert communities men know that. They dream of and fight over water rights with a fervor that more sheltered men in humid climates find hard to understand. The classic fable concerning Tantalus, who thirsted and could see water but couldn't get at it, has a special meaning nowadays to many a western American, concerned as to the continuance of a clean and ample water supply. Lawsuits over water rights in the general vicinity of Hollywood, for instance, greatly exceed in number and importance other court battles of the movie stars, but naturally receive as news much less attention. And it would, when you stop to think about it, be publicity altogether lacking in glamour.

Before closing this chapter on water, let us turn back briefly to the problems sketched in the previous chapter—fire. The relation between destruction of cover and calamitous bursts of run-off becomes each year more shockingly plain. Consider the reservoir now called Harding, in San Diego County, Calif. It was constructed in 1900. It did pretty well until 1926. Then fire got loose and burned off nearly all the cover on its watershed. Torrential rains

cut loose on the debris in February of 1927 and this reservoir all but filled with silt and boulders within a month.

On New Year's Day, 1934, newspapers the country over cried of ruin in the pleasant suburban communities of La Crescenta, Verdugo, Montrose, and La Canada, just north of Los Angeles. Torrents of water, mud, and boulders swept down from mountains killing 34 people and demolishing 400 homes. The disaster, wrote Charles J. Kraebel, reviewing causes, clearly indicated a "fatal sequence of mountain-denuding fires followed by rainfall of great intensity."

The slopes above Pickens Canyon, where some of the worst damage occurred, had good shrub and chaparral cover until late in 1933. But late in November, fire destroyed more than 5,000 acres in 3 days. In many places the fire was so hot as not only to wipe out vegetation but also to consume the surface litter. It left only a powdery ash. The ground cooled and lay waiting, utterly defenseless.

Then rains came. On this Verdugo watershed and on nearby similar watersheds, the Arroyo Seco, San Dimas, and Haines, it started to rain heavily, and with a remarkable uniformity of precipitation, early in the morning of December 30. All that day the rain slashed down, all that night, and all of the day and night following. In the last hour of the "old year" gage records show precipitation reached the peak. Nearly an inch of rain fell in that hour. Total rainfall during the 2-day storm ran between $11\frac{1}{4}$ and $12\frac{1}{2}$ inches throughout the foothill country just north of Los Angeles.

On the burned-off watershed, Kraebel estimates, floodwater stripped off and hurled down certainly no less than 50,000 tons of silt, rubble, and boulders from each square mile. The area in question was of about 19 square miles, nearly one-third burned over.

Nearby, an unburned 17-square-mile forest area, the San Dimas, lost and sent down during the same flood only about one-twentieth as much floodwater, and only about one-tenth of 1 percent as much erosional debris.

The San Dimas is an experimental forest, equipped to measure run-off under various types of cover and forest management. "Within the forest," Kraebel explains, "are six small watersheds, selected for their likeness in topography and vegetation, and varying in size from 35 to 100 acres. Weirs



F-362018

The water wiped them out. It wiped out roads, camp sites, resorts.

LYTLE CREEK,
SAN BERNARDINO NATIONAL FOREST, CALIF.

at the canyon mouths automatically record the stream flow while reservoirs catch the eroded material; recording gages strategically placed measure the rainfall intensity; and, distributed over the watersheds, more than 100 standard gages serve to secure for each storm the most accurate measure of precipitation ever attempted in a mountain area.”

Established in 1931, and set up to run as a 50-year experiment, this forest already has evidence to indicate that burned mountainsides can send down 20 times as much floodwater and 1,000 times as much silt and rubble as unburned mountainsides, properly covered. Ordinarily, research foresters do not like to announce tentative findings; they prefer to wait and verify. But the evidence at hand is plain, the situation is crucial, and every year brings further verification.

FIRE, THEN FLOOD; it happens again and again, and the demolition of recreational and all other living values is evident. In the same part of California, repeated fires over a number of years had a devastating effect on the soil-binding cover in the Tujunga Canyon. A flood burst down this canyon on March 2, 1938, and wiped out summer homes, built on both private land there and on national forest land under special permit, by the score. This demolition was especially distressing as many of these mountain cabins, put up in flush times as week-end places, were being occupied full time by families down on their luck. The water wiped them out. It wiped out roads, camp sites, resorts. It bit off steel bridges as a man might bite a doughnut. Recreation has been, in large part, forced out of this and other accessible “front canyons” now, because of the debris and because, with cover returning but slowly, there may be a recurrence of smashing floods.



F-255237

The satisfaction of trailing game through the snow-covered forest.

MULE DEER TRACKS,
FREMONT NATIONAL FOREST, OREG.



Game

The kings of England formerly had their forests to hold the king's game for sport or food, sometimes destroying villages to create or extend them; and I think they were impelled by a true instinct. Why should not we, who have renounced the king's authority, have our national preserves, where no villages need be destroyed, in which the bear and panther, and some even of the hunter race, may still exist, and not be "civilized off the face of the earth"—our own forests, not to hold the king's game merely, . . . but for inspiration and our own true recreation?

Henry D. Thoreau, The Maine Woods, 1864.

ZOO WITHOUT CAGES . . . The sight of a bear cuffing her cubs into hiding in the willows, the laugh of a loon on the lake at twilight, the whistle of the bull elk as he seeks his mate—these and a thousand other sights and sounds of the wild creatures enhance the charm of the forest. It is infinitely more pleasant to observe wildlife at large in natural surroundings than cooped or caged. The camera sportsman, the collector, the fisherman, the hunter, the Boy and Girl Scout, the Campfire Girl, the naturalist, the camper, and the sightseer—each finds in forest wildlife a special interest, and often the transition from mere observations to a closer study gives one a new interest, a new source of enjoyment.

At first we thrill just to hear the slap of the flat, broad tail of the beaver as he dives from sight. Later, however, when we explore the home and the dam he has built, we discover that the beaver is a prime conservationist, storing water for dry periods, and flooding a willow swamp to insure food for himself. The moose feeds on the forage growth thus stimulated, and the deer or elk, too, when snow is deep. Noting this, we begin to gain some understanding of the interdependence of all forest life, animate and inanimate.

Initial interest in deer may arise at the sight of them bounding gracefully away into a Wisconsin cedar swamp, white flags erect. As interest

grows we find that in winter the deer "yard" in these same swamps. When the snow deepens, they feed on the reproduction and lower branches of the trees. If their number becomes excessive, the trees are trimmed as high as the deer can reach, the future forest is damaged, the deer's own food supply is destroyed, and with the next hard winter many will starve.

Even the plump and timid rabbit may seriously disturb normal forest development. On some forest plantations only half of the trees set out have survived because rabbits have nibbled the tender tops. In such ways as these, the necessity for maintaining a sane relationship between numbers of game and their food supply for critical periods is dramatized in the forest, so that all with eyes may see.

By studying ecology you become more conscious of all the stir and drama of wildlife. Ecology considers relationships between all things living and seeking a living naturally. You will learn to look for moose in the willow bottoms, elk in the meadows, and mule deer in rocky openings. In much the same way as fishermen know—or think they know—the haunts of trout in a stream, the nature student learns the haunts of other living creatures. In many people the love for hunting or fishing as a sport is deeply rooted, and no other form of outdoor recreation will serve. The flash of a fish as it jumps for a moth or a fly, the exertion of wading a tumbling stream, the knowledge of trout feeding habits, the art of casting the line so that the fly drops on the water in just the right spot, the fight between man and fish as the line sings and the slim rod bends to the pull—these, as well as the crisp trout for supper, are the things for which the sportsman strives. The big-game hunter wants to match his skill and stamina against the cunning, speed, and acute native sense of the wild things. He wants the satisfaction of knowing in advance where an elk will pass, of trailing the game through the snow-covered forest, of placing the shot in a vital spot, and of dressing out the kill with simple tools.

Not only do our national forests include most of the species usually found in a wildlife census; they also have many kinds of animals, birds, and fish not commonly known. The alligator, found in some rivers and bayous on the Choctawhatchee National Forest in Florida, is a fascinating creature. The condor, for whose preservation a special sanctuary has been proclaimed on

Los Padres National Forest in California, is an almost extinct species of American vulture. The white-tailed Kaibab squirrel is found only north of the Colorado River on or near the Kaibab National Forest and Grand Canyon National Park in Arizona. The muskellunge, which once was found quite commonly in the waters of northern Wisconsin and Minnesota, has disappeared from many lakes but is now being restocked on national forests by fish planting, mainly in Wisconsin. On the Nantahala National Forest in North Carolina, and the Cherokee National Forest in Tennessee, and Los Padres National Forest in California are approximately 650 Russian wild boars introduced from Europe in 1910.

Among many other species, somewhat less rare but equally interesting, found on the national forests is the grizzly bear, once quite common in mountain and foothill areas of the West. This biggest of all bears in the continental United States has found competition with civilization particularly hard and has been reduced to less than 700 on the national forests.¹ It has disappeared completely from the national forests of South Dakota, Nevada, California, and Oregon, and is fairly safe from extinction only in parts of Montana, Idaho, Alaska, and Wyoming.

Moose, the largest of the deer family, has responded to protection fairly well, and has gradually increased in numbers. This once-plentiful animal, which usually restricts its range to the vicinity of wet meadows and shallow lakes and feeds quite largely on aquatic or marsh vegetation, is found on national forests in Montana, Idaho, Wyoming, and Minnesota. The 1939 census of game on national forests reported more than 6,675 head.

The mountain goat always has sought the rough high mountains for its home. In spite of the rigorous conditions under which it lives, the mountain goat is steadily increasing. The 12,420 animals reported in the census are divided among the national forests of 4 States. Washington, Idaho, and Montana furnish the home for almost all of them, but surprisingly enough, there are a few in South Dakota, transplanted there years ago.

Bighorn sheep survive under conditions that make increase in numbers a problem. Fortunately, the present estimated 8,530 are distributed on 55 national forests. The wide distribution gives assurance against loss by epidemics.

¹ NOTE: A wildlife census table is appended on page 291.



F-314076

You will learn to look for moose in the bottoms.

HOODOO LAKE,
LOLO NATIONAL FOREST, IDAHO.

The Roosevelt elk is another interesting species. Its original range probably covered a considerable part of the dense Pacific Coast forests and it is now found on 6 national forests in Oregon and in bands of various sizes in California and Washington, and in Alaska, where it was introduced; also there is a herd of 700 on Vancouver Island, B. C. Fortunately, this magnificent elk, with its remarkable protective coloring, is in little danger of extinction. It is estimated that there are close to 13,000 head at present.

Other big-game animals found more plentifully on national forests are perhaps as interesting as any of these. To most city folk the sight of a deer or a black bear is as thrilling as the sight of a moose or mountain goat. These are present in large numbers on many forests, even though, because of their natural ability to keep out of sight, they may seldom be seen. At least one species of deer is found on each of the 161 national forests, elk are found on 95, antelope on 35, and black or brown bear on 134. The best available data, admittedly only approximately correct, indicate that nearly 1,784,000 nonpredators among the big-game animals (deer, elk, moose, antelope, mountain sheep, mountain goat, and bear) use the national forests of continental United States for at least part of each year.

The smaller fur bearers are equally interesting. One marvels at the ingenuity of the beaver in constructing their strong dams. McKinley Kantor's story of "Bugle Ann" dramatized in motion pictures, depicts a form of forest recreation that appeals to the many fox hunters who hunt but do not kill. The sleek, slim body of a mink or a weasel or marten brings delight at each rare glimpse. The hunt for 'coon in the moonlight is a sport that appeals to many. Thus, the 1½ million fur bearers that inhabit the national forests are another wildlife resource of major importance to the forest visitor as well as to the trapper.

The so-called predators, most of which can also be called furbearers, are of special interest. The coyote slinking from sight into the brush on a hillside, or a quick glimpse of a wildcat, or a lynx, or mountain lion, is not soon to be forgotten. These animals, because they prey on domestic livestock or on other species of wildlife, are being reduced in numbers; yet they have a very definite place in game management and none of them should be exterminated. The wolves offer a real problem if their extinction is to be prevented.



F-371800

*At least one species of deer is found on
each of the 161 national forests.*

WHITE-TAILED DEER,
OTTAWA NATIONAL FOREST, MICH.

Obviously, they cannot be retained on ranges used by domestic livestock, but reasonable provision for their preservation elsewhere is desirable.

Upland birds and waterfowl are present in varying numbers according to locality and environment. The list includes band-tailed pigeons, many species of ducks and geese, several kinds of quail, mourning doves, several species of grouse, wild turkeys, and many others less well known to the hunter or the general public. The songbirds, hawks, owls, several kinds of jays, herons, the swan, and hundreds of other species inhabit national forests and deserve full consideration in the plans of management.

The fishing resource of the national forests consists of more than 70,000 miles of fishing streams and many thousands of natural and artificial lakes. The cold mountain lakes and clear, cold, fast-running streams of the West; the slower but important fishing streams of the Southern and Central States; the thousands of lakes and streams of the Lake States; the clear, cool brooks of New England—all are represented on the national forests. They provide the necessary habitat for a wide variety of fish and an opportunity for millions to enjoy themselves.

DECLINE AND RESTORATION . . . Early American explorers and pioneers beheld a remarkable profusion of wildlife at Plymouth Rock and the other eastern ports-to-be. As they moved west and settled the Ohio and Mississippi Valleys, the Lake States, the Great Plains, and California, they found the same profusion. Only in parts of Utah and Nevada, the heavily timbered country of north Idaho and eastern Montana, and a few other places was any scarcity of game noted by the pioneers. Lewis and Clark recorded surprise at the abundance of wildlife in most of the country crossed by their expedition from St. Louis to the Pacific. The Hudson's Bay Co., the Astors, and others built great fortunes from the exploitation of wildlife in the early days.

But as the frontiers were pushed westward, civilization and settlement claimed for the plow and for domesticated livestock more and more of the new land—most of it the choicest range for some species of wildlife. Many species whose former habitat was on the plains, in low-lying valleys, or in the foothills were pushed back and yet farther back into higher and more

inaccessible mountain regions of the West or into rougher or swampier or less fertile areas of the East. Always it was a retreat.

Fully 75 percent of the deer and elk of the West, in early times, was found principally on the plains and foothills. Now they roam high mountain country during part of the year. Bighorn sheep have not always as now made the high mountain fastness their sole abode. The despised coyote likewise was once primarily a plains animal. One of the exceptions is the antelope, which still persists as a plains animal although about one-fourth of the present population has taken to higher land. Thus during more than 300 years of American exploration and settlement, many big-game species have gradually been forced from their native range to a somewhat artificial habitat. Their new homes in the public forests, refuges, and parks or similar high country may be entirely satisfactory during the summer season, but they are seriously inadequate when the deep snows of winter cover the browse and other forage upon which the animals must feed.

In general, big game reached its lowest ebb in the West by the start of the twentieth century, when the greater number of the national forests were being created from the remaining public domain. Hunting for food, market, and economic purposes—clothing, shelter, and articles of trade—had largely ceased because of the general scarcity of game. Hunting for recreation, although in many places sharply limited by scarcity of wildlife, was becoming more popular.

The national-forest ranges at that period were satisfactory during the greater part of the year for the support of the big-game population at the time. Late spring, summer, and early fall range was plentiful. Even winter range, which is the most critical in the year-long cycle, and which generally was not to be found in the national forests, was usually adequate for the decreased game population. Only here and there at that time was lack of winter range serious.

But with more effective protection from hunters and predators established cooperatively by State and Federal Governments, and with wildlife given a definite place in the management of national forests, the numbers of most species of big game on national forests increased. Coincident with such increases was the gradual decline of adjacent winter range. Many

valley bottoms were converted into cultivated fields, and the foothills came to be so completely used and often overgrazed by domestic livestock that little if any winter feed was left for game. On these unmanaged ranges outside the national forests, depletion of the forage proceeded rapidly to a point where the balance between summer and winter range, which with increases in numbers became more and more essential to wildlife, was destroyed. Thus, in the West, shortage of winter range in the foothills and on the adjacent plains—much of the land is held in private ownership—has become the controlling factor in determining the maximum numbers of most species of herbivorous game animals.

Reliable data as to the number of game on various western national forests at the time they were created and for several years thereafter are not available, but it is known that the game population trend of the first 10 or 15 years on most national forests was definitely upward. Beginning with 1924, methods used in taking the big-game census were greatly improved and it is known that, taken altogether, the big-game population on the western national forests has almost trebled since. In spite of general open hunting seasons for deer and extensions of hunting season in the elk country, deer have increased 190 percent and elk have increased almost 160 percent in the last 15 years. Bighorn sheep and grizzly bear are the only two species that have shown a decrease. These significant over-all increases on national forests, though made up in some instances of increases on areas already overstocked, are in sharp contrast to actual decreases on some other areas, and illustrate how these animals respond to the better protection and management given them during recent years.

On much national-forest land and in the summer, more big game than is now present could be cared for. This is especially true in the Ohio Valley, in the Ozark Mountains of Missouri and Arkansas, and in other parts of the South.

Overstocking of deer on parts of the Huron and Manistee National Forests in Michigan; the Nicolet and Chequamegon National Forests in Wisconsin; the Malheur in Oregon; the Fishlake and Dixie in Utah; the Allegheny in Pennsylvania; the Pisgah in North Carolina; and the Modoc and Lassen in California is a result solely of shortage of winter forage.

Similarly the elk population exceeds the feed supply during the critical winter periods on parts of the Clearwater National Forest in Idaho; the Lewis and Clark, Flathead, and Absaroka in Montana; Olympic in Washington; the Umatilla and Whitman in Oregon; the Teton and Wyoming in Wyoming; and the Targhee in Idaho. But even if additional areas of winter range for wild game were acquired, present conditions might easily be repeated unless a control of the maximum numbers allowed on the range is maintained. No well-managed domestic herd is allowed to increase beyond its feed supply, and the same principle is applicable to wild game, especially to deer and elk.

The first steps to halt the downward trend in numbers of almost all species of wildlife were the State game laws to establish seasons, fix bag limits, and provide bounties for the taking of predators, and the creation of control and law-enforcement bodies under various forms. Another development was the establishment of refuges and sanctuaries by State and Federal Governments. Game animals, fur bearers, game birds, and fish have been transplanted in depleted areas or streams, and the propagation of planting stock at game farms, fish hatcheries, and rearing ponds has become an established practice. But perhaps most vital of all has been the development of a public sentiment favorable to wildlife conservation.

In almost all States containing national forests, resident forest officers are ex officio State game wardens serving without pay. Even where this is not the case, it is a recognized duty of every Forest Service officer to report violations of game laws and assist in law enforcement if such assistance is desired.

REFUGES established by States within national forests in 26 States now total more than 23 million acres. Federal refuges inside national forests in 13 States and Alaska total nearly $6\frac{1}{2}$ million acres, and some 7 million additional acres of national-forest land are handled as game refuges through administrative restrictions by the Forest Service. Of this $36\frac{1}{2}$ million acres, less than half is used by domestic livestock. Both within refuges and without, the numbers of domestic livestock and of game have been or should be adjusted to meet the carrying capacity of the range.

In much the same way, help has been extended in rebuilding the fish population. With the cooperation of the States and the United States Bureau of Fisheries, rearing ponds and fish hatcheries have been constructed on national forest land. In most instances these are being operated by the Bureau of Fisheries. Many miles of streams have been developed to improve the habitat for fish. Lakes have been covered with fish-habitat surveys and in many instances have been developed. In 1938 the Forest Service planted more than 180 million fish in national-forest waters, along with an even greater number planted by States and other agencies.

With the help of other agencies, game has been moved from overstocked to understocked range. Deer have been moved from Wisconsin and Michigan to the Ozark Mountains in Missouri. Beaver have been taken from Michigan and planted in the streams of southern Illinois. Elk plantings have been made on many national forests, among which are the Weiser and Cache National Forests in Idaho, the Sitgreaves in Arizona, the Wasatch and Fishlake in Utah, and nine national forests in Colorado. Surpluses of mule deer on the Kaibab National Forest of Arizona and white-tailed deer on the Pisgah National Forest in North Carolina have been trapped and liberated in other areas where these species had disappeared or were very scarce. Bighorn sheep have been imported from Canada and turned loose on the national forests of Wyoming. Wild turkeys, quail, and other game-bird species have been reintroduced on ranges from which they had disappeared. Such efforts at artificial restocking cannot be substituted for effective resource management as a method for increasing wildlife populations, but they do have a place in handling the wildlife resource.

PRINCIPLES OF MANAGEMENT, in the final analysis, start with and are limited by the possibilities for managing the wildlife's environment. Too often wildlife has been thought of as something separate and apart from land, rather than as one of the crops. Too often, also, public interest and game laws have centered on maximum numbers, rather than on relating numbers to the food supply available for the year-round support of the species. Thus, temporary increases, rather than sustained annual yields of wildlife

have been built up, only to be wiped out by an unusually hard winter, by disease, or by actual destruction of the habitat through too heavy use.

Protection from predators and man, artificial restocking, feeding, and other similar measures are all important aids to management, but without a favorable environment wildlife must decline. The planting of millions of fish in streams and lakes is of little avail if the natural habitat has already been destroyed by pollution of the waters, by silting over of spawning beds, or by destruction of the natural food supplies. Pheasants and quail may be introduced but they will gradually disappear again if food, shelter, and climate do not meet their needs. Woodpeckers may decrease with the elimination of dead trees and snags from the forest. Migratory waterfowl may travel the flyways unmolested by hunters; but destroy their nesting grounds by fire or overgrazing, drain the shallow lakes and marshes upon which they rest or feed, pollute the waters which they use, and their numbers will decline. Clearly, environment is the major factor in wildlife management.

Much of the history of wildlife is a record of temporary relief measures to correct an abuse without adequately attacking the broad problem. Experience has taught game administrators that such provisions as the buck law, game refuges, bag limits, and closed seasons, may be good or bad depending on the time and place. The bounty system may lead to the destruction of predators which have a very definite place in management. All such provisions are merely implements that have been used in an effort to correct unsatisfactory conditions, and they have been too long regarded as permanent management practices. The bad condition of many wildlife ranges today is largely the result of dependence on such corrective measures. Legal limitations on hunting may result in overstocking and partial destruction of the habitat; legal stimulus to killing, as exemplified in the bounty system, may lead towards extermination of the predators and consequent overstocking of the species on which the predators formerly preyed.

Efforts to remove surplus game by trapping have proved hopelessly inadequate. Outright slaughter is both abhorrent and ineffective in dealing with large surpluses. Some progress has been made with regulated kills by modification of the hunting season, etc., but nowhere yet has the principle

of treating wildlife as a renewable crop to be held to the food capacity of the "farm" been given full effective use.

Grazing by domestic livestock, production and use of the timber, and use of the water resources for domestic or industrial purposes, all—on the national forests—must be coordinated with the needs of wildlife. In some areas, use of game and domestic livestock compete for earth room and sustenance. In this the national forests of the East are not involved because open-range grazing by domestic stock is not commonly practiced. Likewise in the West there are more than 46 million acres of national-forest land which because of cover types, roughness of topography, lack of forage, lack of water, or inaccessibility, are not usable by domestic livestock. To this must be added nearly 6 million acres of usable grazing land set aside in virgin, botanical, wilderness, and wild areas where domestic livestock are not permitted. Much of this area is admirably suited to game use.

On lands properly grazed by livestock, there is ordinarily abundant cover and sufficient forage to maintain a reasonable stocking of wildlife. Here competition is minimized by the fact that different classes of livestock and different species of game normally feed on different types of vegetation. But on areas such as the ranges adjacent to Yellowstone Park, competition between game and domestic livestock for forage gives rise to sharp conflicts. Upon most national forests such problems are not unsurmountable if the desires and needs of the various interests are given full consideration and there is maintained a fair attitude of give and take.

Conflicts between wildlife and timber use are relatively easy to solve once the problem is correctly understood. Although any timberland will support wildlife of some kind, not all timberlands are suited to the reproduction of big game. In places the timber cover is so dense that herbivorous game animals can find little feed. On other areas the cover may have been completely destroyed by fire, and reforestation by planting may be required. Here the rabbit population may become so heavy that active control measures are essential for a few years if the forest is to be restored. In other instances, the winter deer population may be so heavy in cedar swamps that the reproduction will all be eaten and both the future forest and the game-food supply jeopardized. Here again control of numbers is indicated.

Timber harvesting, on the other hand, if carried on without regard to the needs of wildlife, may be detrimental to the habitat. On the other hand, cut-over areas, if properly handled, provide a more favorable food supply for wildlife than many virgin areas. To assure this, timber-cutting operations have been modified where necessary to increase the forage supply. In the eastern national forests, cutting methods have been changed to favor certain kinds of trees and shrubs that provide food for different species of wildlife, with good results. Also by leaving a number of hollow or defective trees, nesting places for birds and homes for squirrels, raccoons, and so on, have been increased. In artificial-reforestation plans for large areas, a portion of the area is left unplanted in order to improve the future habitat for game. Tree and shrub species valuable for game food and cover are being grown in some forest nurseries for transplanting to favorable sites to improve the habitat.

Similarly, the needs of wildlife must be considered in any plan to manipulate water levels or change the use of water on the national forests. Illustrative of this is the adverse effect on fish population when a sawmill discharges sawdust into a stream. The raising of water levels by water storage, as has been stated, may destroy feeding and nesting grounds for migratory waterfowl. The straightening of a stream channel through a wet meadow may reduce the cost of construction or maintenance of a road, but at the same time by more effective drainage it may destroy the habitat for beaver.

On the other hand, a small dam to raise water levels or create a new lake may provide just the conditions needed for migratory waterfowl or form a new habitat for fish. Springs developed primarily for domestic livestock may at the same time open up new range for big game or upland birds.

A MIGRANT YIELD, the wildlife crop must be managed as a cooperative undertaking. Although it is true that wildlife is one product of the forest, it is not a stationary product. It moves from place to place according to habits of the individual species. It is on public land today and on private land tomorrow. Some species summer on the national forests and move to the

adjacent low-lying private land in winter. The migratory fowl may nest in the Chippewa National Forest in Minnesota, and winter on some private estate in Florida. Private, county, State, and Federal land may all be used even by an individual animal.

The multiple-use plan of management in effect on the national forests recognizes and provides for wildlife as a major resource, in providing for game range and the improvement of the wildlife food supply and habitat. Conflicts between wildlife and other forest uses are adjusted in accordance with social, economic, and biological principles. Provision is made for temporary or permanent refuges where needed. Surveys and studies are made to determine carrying capacity of the ranges, the existing population, and the effect of changes in population on the carrying capacity.

The States, on the other hand, make and administer most of the laws relating to use and protection of the animals themselves. Migratory waterfowl is, of course, a partial exception. Among those laws are measures prescribing bag limits, sex or size of game or fish which may be taken, open and closed seasons for each species, designation of closed areas, bounties to be paid for taking predatory animals, and many other details.

Thus the management of game or fish and of the land or water which forms their habitat are in part divided. On one hand are restrictive laws which are essential tools to management, enacted and enforced by the States; and on the other is the management by the Forest Service of a large part of the environment so as to give the maximum contribution of wildlife in the light of other legitimate uses of the land. As part of the management of the environment it is clear that the Forest Service must retain the right to protect the property from damage by wildlife.

Under the division of authority, the closest kind of cooperation is indispensable. In certain States there are detailed formal agreements that are, in effect, cooperative management plans. In other States less formal but progressively satisfactory arrangements are in effect with the constituted State authorities. In some States, dependence on inflexible and restrictive State laws rather than on broad authority vested in a strong responsible game and fish department makes difficult or virtually impossible any adequate joint approach to wildlife management.



**HUNTERS-TRAPPERS
FISHERMEN
YOU ARE ENTERING
KILKENNY WILDLIFE MANAGEMENT AREA
WHITE MOUNTAIN NATIONAL FOREST
SPECIAL REGULATIONS IN EFFECT
STOP AND READ**

**WILDLIFE
MANAGEMENT AREA**

**UNITED STATES
DEPT. OF AGRICULTURE
FOREST SERVICE**

*The Forest Service manages a large portion
of this country's wildlife environment.*

WHITE MOUNTAIN NATIONAL FOREST, N. H.

But the States and the Forest Service are not the only agencies charged with responsibility for wildlife. The Biological Survey long has been the primary Federal research agency in this field. Here again, cooperation is essential and has been effected. A formal agreement between the Biological Survey and the Forest Service defines the responsibilities of each in a way that is mutually satisfactory. Briefly, the Biological Survey is the responsible wildlife research agency of the Federal Government and advises on questions related to the research field. The Forest Service is responsible directly for administration and management of wildlife resources on the national forests, and advises and assists in the solution of wildlife research problems.

The Bureau of Fisheries likewise shares responsibility. The fullest cooperation has been extended by that Bureau in the development and execution of plans for improving fish habitats and population. Detailed plans for fish hatcheries and rearing ponds have been prepared or reviewed. Advice as to the suitability of streams or lakes for different species of fish has been given. Also, millions of fish, with the approval of the States involved, have been turned over to the Forest Service from Bureau of Fisheries hatcheries for liberation in national-forest waters.

Effective cooperation in common wildlife problems has also been worked out between the National Park Service and the Forest Service. This is especially important in the West where many of the national parks either join or are surrounded by national forests and where complete protection within the parks may result in building up populations in excess of the carrying capacity of available winter range. Special mention should be made of the elk situation surrounding Yellowstone National Park where the National Park Service, the Forest Service and the Biological Survey, the States involved, and other interested agencies have sought the solution of an aggravated winter-range problem through buying up privately owned winter range, directing hunting during the period of migration from summer to winter range, and providing hay for the animals when snow conditions are too unfavorable.

Various semipublic organizations such as the American Wildlife Institute, the Izaak Walton League, National Association of Audubon Societies, the hundreds of sportsmen and game associations, and many others have

shared in the progress. Private landowners often have permitted the use of their property by wildlife at considerable cost and inconvenience to themselves. The tremendous increase in public interest in wildlife during the last 25 years has been reflected in improved legislation, both National and State, and in increased financial provisions for fish and game management and research. There is now general recognition that wildlife, in the present status of our social, economic, and industrial development, can no longer shift for itself. It has become a major problem for study and guidance and organized administration on a common-sense basis.

A CONFLICT OF INTERESTS between sportsmen and those who dislike killing anything was noted in chapter 1. Much energy and emotion is wasted by high-pitched contention; much remains to be done to harmonize the attitudes of various wildlife groups. One group places complete reliance on restrictive legislation; it wants nothing killed and would remove man's influence entirely from the wildlife picture and restore what they call Nature's balance. Others confine their interest to special groups such as songbirds, or hawks and owls, or predators, or some other important sector of the entire wildlife population, each seeing in the preservation of its particular interest the solution of the whole problem. Some of these demand that the rest of the animal kingdom be subservient to the needs of the class in which they are interested. Certain trout fishermen want all otter and all fish-eating birds exterminated. There are sportsmen who see only the game and do not recognize the need of food and cover, and fox hunters who want no foxes killed no matter how detrimental they are to upland birds.

Much of the difficulty in applying sound principles has come from a failure of the friends of wildlife to see eye to eye as to methods. But public attention now is focused on the problem; more wildlife administrators are stressing management of the environment; and these things can result only in fuller public understanding of the problem as a whole. An increasing and intelligent interest of the millions of forest visitors—sportsmen, campers, boy and girl adventurers, and picnickers—in the wildlife they see or hear on a trip to the woods will have a tremendous influence on the wildlife policies of the future.



F-364118

*Even though compensation might be secured for smelter damage,
this cannot restore the recreational values.*

NORTHERN IDAHO.

Miners



“Here are the factories,” they say; “here are the mines; here is the water power, and there stretch the bountiful farms. Is there anything lacking?” . . . The answer, unhappily, is yes. There is one thing, at least, lacking—and that is character. The system has collapsed because man worked it greedily. By mortgaging the future he succeeded in getting more, for a time, than the system could honestly provide . . . *Herbert Agar, Land of the Free, 1935.*

UNFORESEEN CONFLICTS between mining and other uses of the national forests have developed. They result partly from uneconomic operations, but more particularly from fake miners, miners in name only. Under present mining laws a man may squat on and misuse a piece of land claiming he is going to mine it, and it is often difficult to dislodge him. Then, too, the land planner has no choice save to regard mining as a prior claim, regardless of all the other values involved, unless the area is withdrawn by a special law from mining. The resulting state of affairs is troublesome alike to the public and to those in the legitimate mining industry who are trying to do an honest and careful job.

Because of the almost invariable priority accorded mining by law, national forest lands have suffered unwise and inappropriate use, and recreational use in many places has been severely thwarted. Very often land has been claimed or actually obtained under the guise of mining and so used as to restrict desirable public use. Claims taken up under mining laws have been developed and used as summer homes on locations badly needed for public campgrounds. Sometimes the occupancy of such claims blocks the use of much larger areas of adjacent public land. Again, unsightly structures, huge advertising signs, and hot-dog stands have been erected, changing the character of the environment almost completely.

Mining is a basic industry of great importance. Our history, our western settlement, is closely linked with the discovery of gold and other minerals.

Many mining operations today are producing wealth to the economic benefit of the Nation, and serving locally as the backbone of thriving communities. It is desirable to encourage bona fide and well-ordered developments of the mineral resources on the public lands. The fraudulent mining claim is a thorn in the flesh of the legitimate mining industry. It destroys confidence in mining as an investment and brings legitimate development into disrepute. Fraudulent claims have been a constant source of public irritation and annoyance and the industry as a whole gets the blame.

PRIMITIVE MINERS dug for wealth on this continent before the coming of the white man. The early Spanish explorers and the Jesuit priests recorded the use of gold and copper among the Indians. But it was the newcomers—not the natives—who were gold crazy, hungry and thirsty for gold. Gold was to be found here easily in the streams and “among the roots of trees,” wrote Columbus, reporting to the Court of Spain. Gold rushes, almost as much as soil rushes, helped push and draw succeeding waves of migration westward.

Such laws and ordinances as there were favored mining and once we set up a Republic here, that tendency persisted. Our first State and National mining laws were nothing more than local rules influenced to some extent by customs harking back to periods of French, English, Spanish, or Mexican jurisdiction. Essentially, they were little more than codes established by local usage designed wholly to protect miners' rights in public lands appropriated by them and to meet the exigencies of the times. Land in the mineralized sections of the Western States then had little, if any, recognized worth other than for mineral values, and the codes or local rules revolved around protection of mineral mining rights exclusively.

The various early Congresses of the United States enacted legislation from time to time dealing with mining. The first of these was the Act of May 20, 1785, which set up the rectangular system of land surveys and made certain provisions dealing with minerals. Various other acts were passed, but the first general mining act of importance was the act of July 26, 1866, known as the Lode Law. This was later supplemented by the general law

of May 10, 1872, which with some modifications and changes is still in effect today.

THE LAW OF MAY 10, 1872, grants the basic rights to prospect, locate, and patent mineralized areas on public lands, and applies to national forest lands as well as to other public lands. In some cases where national forest lands have been acquired by purchase, exchange, or donation, the mineral rights have been retained by the original owners. Such mineral rights are private property and not affected by the general law of 1872. Many areas of national forest land have been acquired by purchase or other means in the eastern United States and the mineral rights included in the transaction. Such mineral values also do not come under the operation of the Act of 1872, but are administered under the Act of August 11, 1915, under which the Forest Service issues permits for mineral extraction. A small charge is made for such permits and a royalty collected upon the mineral production. Title to the land does not pass to the miner.

With these exceptions the Act of 1872 governs all metalliferous mineral exploration and development in the national forests as well as on other public land. Placer claims may be located in units of 20 acres each with a maximum limit of 160 acres to any association or individual. Lode-claim regulations vary somewhat in different mining districts. The maximum limit on area and the one in most general use restricts lode claims to a tract not exceeding 600 feet in width and 1,500 feet in length. There is no limit to the number of lode claims which may be located by any individual. Requirements as to mineral discovery are extremely liberal. Claims can be located, and are often located, with no showing of valid discovery.

The courts have held in essence that a sufficient discovery requires proving the existence of mineral and evidence showing that a person of ordinary prudence would be justified in further expenditure of labor and means. Assessment requirements, as a prerequisite to patent, call for the expenditure of \$500 in labor or improvements for each claim. Annual assessment work is a condition required only for the continued possession of a claim as against adverse claimants, and failure to do such work is no basis for the cancellation of the location. Furthermore, Congress has now and

then passed special acts excusing locators from doing their assessment work in certain years.

The net of it is that locators can secure control of strategically situated tracts of public lands and hold them for long periods with little or no showing of mineral and with scant and often no expenditures for development. Mineral locators may cut timber from their claims. They may build flumes, tramways, and other improvements across public lands. They may file on additional areas of 5 acres for mill sites.

Established in a pioneer time when conditions of living, of commerce, and of transportation were primitive; and when all development was hazardous, highly speculative, and attended by definite personal risk; where mining was the major industry of the West, and other values, particularly in lands, were relatively unimportant, the mining laws were purposely framed to encourage the miner and to promote mineral exploration and development of the mineral-bearing public lands. They served their original purpose but in some respects they are now out of date.

New uses and new needs for lands have developed which were undreamed of in the pioneer days and could not have been anticipated. Nowadays public lands, even though they may contain minerals, may be of much higher value for other forms of public use.

But under the Act of 1872, minor mineral values and single-purpose use by an individual can outweigh much higher and far broader uses of public lands. Nowhere is authority conferred on a public official to give proper consideration to the multiple-use principle of land management, "For the greatest good of the greatest number in the long run."

FRAUDULENT CLAIMS . . . Many claims of little and often of no value for mining have passed out of public control and into the hands of people who wanted them and have used them for resorts, for store locations, for gas and oil stations, and the like.

The letter and spirit of the statutes make mineral contests difficult and expensive. Repeated mineral examinations and careful sampling and assaying are required. Each case must be completely worked up and competent witnesses secured, and even then the outcome is uncertain. The

Forest Service files record many contested cases where the administrators of the law have been unable to prevent passage of title to valuable public lands despite extremely doubtful mineral showings. In some instances subsequent events have made the original charge of fraud seem justified. In many other instances, claims have been initiated in good faith and carried through to patent and the land afterward used for purposes wholly foreign to mining. A few examples:

In western Montana a locator put up a disreputable shack along a roadside and held it as a lode claim. The Forest Service fought this case unsuccessfully for several years. The original locator died and willed the claim to another party. The second man held up construction of a public highway and finally secured payment of \$300 for a right-of-way through the alleged claim. Then he abandoned the claim entirely. Some years later (1932) a third party filed on the identical area. He built a couple of residences and a dance pavilion. The Forest Service again contested the location, finally won, and the location was declared invalid. The claimant still refused to vacate and now the Forest Service has started suit to dispossess him. This claimant thus far has been able to maintain possession of this tract upon which no indications of valuable minerals have ever been found.

In Colorado a locator established a night club, cabin resort, and filling station under cover of a placer claim and for 2 years successfully resisted all efforts to stop him.

Another Colorado man built a summer residence under guise of a mining claim and made no effort at all to develop mineral values. He stood on his rights as a mining locator. It took 3 years of constant effort to clear up the case.

SIDE SHOWS . . . In South Dakota Professor Piccard's famous stratosphere flight was staged on national-forest land. Five mineral locations were filed with the intention of charging spectators of the flight for the privilege of parking upon land covered by the locations. The Forest Service instituted prompt legal action and defeated the scheme.

At a very fine scenic lake in the State of Washington there are five resorts operating upon patented lands. These lands went to patent in four

instances as mill-site claims and in the fifth as a mining claim. In none of these instances are the areas being used in any way for mining.

In Arizona, a locator took up a claim along a main highway and attempted to operate a commercial campground and a lunchroom. The Forest Service won the first legal skirmish, but the claimant reoccupied the land and is now using it for commercial billboard privileges. The Forest Service is still fighting the case, but the matter has been in dispute for approximately 12 years. No mineral values have ever been established.

In California, two mining claims are held along the Redwood Highway and occupied wholly for residential purposes, and the Forest Service is contesting these now. Several similar suits in the same area have already been won.

In Montana, a certain nationally known religious association located a mill site and lode claim in order to use national-forest land for a summer camp and to escape paying any fees therefor. After three contest hearings and two appeals, the church association finally lost the case. This particular case dragged along for a total of 6 years and put the Government to a great deal of needless expense.

Many instances are on record in which the initial location of a new highway across mountainous forests has been immediately followed by the staking of numerous mineral claims along the right-of-way in efforts to secure private control of strategic places. Frequently when tunnels, canals, or water-diversion projects of any consequence have been started, locators have established mining claims at key spots across the course of the proposed projects. Many such locators have impeded large public and private developments of this nature by demanding large sums of money for a right-of-way across their claims. These extortion attempts have frequently been successful. In other instances, valuable tracts of public timber have been acquired under the guise of mining claims. Mineral and other springs, caves, geological formations, bits of unusual scenery, etc., have gone into private hands in the same manner.

There are dozens of instances where the Forest Service has claimed fraud and has been defeated. In almost every instance these claims are now used for gas stations, lunch stands, summer homes, and various other purposes foreign to mining.

In the very nature of things a fraudulent claim location in the national forests is very carefully selected by the locator for the special purpose he may have in mind, and the type of person who deliberately stakes a fraudulent claim is usually not above employing crooked witnesses and perjuring himself in an effort to gain his point. As a general rule, such claims when patented are put to uses which are injurious to planned use of the forest. In perhaps the majority of cases the improvements are unsightly and wholly out of place in the forest. Usually, these fraudulent claims not only spoil the land they embrace, but their use also interferes with proper use and enjoyment of much of the adjacent public land.

The Forest Service examines and contests all questionable claims as a matter of course. In the case of out-and-out fraud, where there is no indication of mineral, the Government has a good but by no means certain chance of winning its contests. In those cases where there is just enough mineral showing to raise a technical doubt, the Government has the difficult and often impossible task of proving the claimant's bad faith.

Present Federal mining statutes permit the locator to do virtually any manner of work necessary to develop his claim. There is no restriction as to the use of the surface or surface resources as long as these uses are in connection with bona fide development of the mineral deposits. Thus, adequate mineral exploration and development work as a general rule definitely conflicts with any public recreational use of the same area and often the conflict extends for long distances from the scene of actual mining operations.

It is obvious, for example, that the customary digging and tunneling operations with their accompanying structures and waste dumps mar natural scenery. Dredging and hydraulic operations completely wreck land surfaces. The cutting of timber for props, mine sets, and other uses denudes the surface of the claims. Fumes from smelters usually kill all timber touched. Even though compensation might be secured for smelter damage, this cannot restore the recreational values.

Mining improvements, such as power lines, roads, tramways, flumes, and mill buildings, scar the countryside. Mining roads put through the back country to reach mining claims can wholly alter the primitive charm

of large wilderness areas. Mining operations involve the use of water in many cases, and the pollution of lakes and streams from tailings, sludge, and chemical mill wastes, often affects entire watersheds and streams for miles below the mines. Many States have local statutes covering the pollution problem, but enforcement is usually inadequate and often lacking.

It is obvious that effective and full exploitation of mineral resources cannot be had without these or similar developments. It is also evident that in the very nature of things, such developments will hinder, if not largely prevent, any substantial recreational use of mineralized zones.

THE PRESENT STATUTES deal only with the individual claim and only from the mineral angle. Higher public values of the claim, both in itself and in conjunction with adjacent areas, are not recognized. For example, a couple of miners established a small placer operation on the headwaters of a fine trout stream. This enterprise produced just enough gold, much less than wages, to support these men but it threatened to destroy entirely the trout fishing enjoyed by hundreds. Under the mining laws, the claimants could not be dispossessed. Finally the fishermen banded together and bought the miners out.

In another instance some miners established a very doubtful mine back in a beautiful wilderness area and built a wagon road to the mine. Automobiles followed and as a result fishing was ruined, the primitive charm of the area destroyed, and a thriving local industry that handled horseback tourist travel was crippled. This mine is not a fraudulent enterprise, even though it has never produced a commercial shipment of ore. Other cases of a comparable nature are known, many others are impending. There is no need to recite a long list of similar happenings. The point is that these illustrations represent mining activities that are not necessarily fraudulent but, nevertheless, result in decided injury to other public interests.

The development of mining property on which the values are so low grade as to preclude present economic development but which may interfere with what the public regards as much more important uses, are attracting more and more unfavorable attention.

The tremendously increased interest in outdoor recreation in recent years

has developed the tourist business into a major industry. Chambers of commerce, development associations, luncheon clubs, and the like are deeply interested in the commercial angle of the recreation trade, as presented by the 30-odd million visits for recreation which are now made to the national forests each summer. The numerically powerful outdoor organizations, such as mountain clubs and wilderness and nature societies, are also interested in various phases of recreation and are displaying an increasing tendency to insist on complete preservation of natural attractions. Several million fishermen are not interested at all in mining but are keenly alive to the fishing values which unrestricted mining jeopardizes. All of these groups are becoming more and more critical of interference through fraudulent or ill-advised mining.

If all of these interests become united and organized, their impatience with the present abuses may easily result in too drastic restrictions upon mining development. The balance of power and of public opinion rests with the millions of people who do not live in the mining States. There is definitely a problem here which needs the cooperative and constructive attention of the mining industry and the responsible public agencies.

Part Four

WHAT REMAINS?

Too long we have reckoned our resources in terms of illusion. Money, even gold, is but a metrical device. It is not the substance of wealth. Our capital is the accumulation of material and energy with which we can work. Soil, water, minerals, vegetation, and animal life—these are the basis of our existence and the measure of our future.

Paul B. Sears, This Is Our World, 1937.



F-368244

*Often the narrow channels are bordered by towering mountains
of bare rock, worn smooth by glaciation.*

PUNCHBOWL COVE AREA OF RUDYERD BAY, BEHM CANAL,
TONGASS NATIONAL FOREST, ALASKA.



New Land: Alaska

Were the attractions of this north coast but half known, thousands of lovers of nature's beauties would come hither every year. Without leaving the steamer from Victoria, one is moving silently and almost without wave motion through the finest and freshest landscape poetry on the face of the globe. . . . It is as if a hundred Lake Tahoes were united end to end. . . . While we sail on and on thoughts loosen and sink off and out of sight, and one is free from oneself and made captive to fresh wildness and beauty.

John Muir, First Journey to Alaska, 1879.

THE PRICELESS PRIMITIVE quality of Alaska and the distinctiveness of its national forests are Territorial assets of enormous value. Here is a country almost continental in size, with richness and variety of inspirational resources, a frontier as yet little changed by man. Its land still lacks settlers. Its mineral deposits have been only partially developed. Its great river systems, mountains, volcanoes, tidewater glaciers, and fiords retain their primitive grandeur. The great conifer forests that clothe the south coast stand intact. The vast, open woodlands of the Yukon drainage and the far-northern tundra areas remain in large part unbroken wilderness. Wildlife is abundant, including the caribou which roams the interior watersheds in great herds as the bison once roamed the Great Plains. The population, white, Indian, and Eskimo, barely exceeds 1 person to 10 square miles.¹ Alaska is still almost entirely public domain with only 1 percent of its area in private ownership.

¹ The area of Alaska is 586,400 square miles. The population in 1939 is estimated to be 62,700.

The national forests of Alaska comprise a narrow strip of mainland, with hundreds of adjacent islands. They extend from the south boundary of the territory to the town of Seward. By localities the forests cover most of southeastern Alaska, the Prince William Sound region, and the eastern part of the Kenai Peninsula. The length of this maritime strip is 800 miles, but there are so many islands and deeply indented coasts that the shore line is more than 12,000 miles in extent. The two national forests, the Tongass and Chugach, cover nearly 21 million acres, about $5\frac{1}{2}$ percent of the total area of the territory. Both mainland and islands have extremely rugged topography. High mountains rise abruptly from the water's edge. An intricate network of narrow channels, including many extending far inland, brings all parts of the region within easy reach of tidewater.

Human occupancy is confined largely to scattered seaport towns. Except for these towns and isolated canneries, the shore line remains primitive. So does the back country except for mining operations here and there. Rough topography makes extensive highway construction prohibitive; most roads radiate no more than a few miles from the towns. Less than 1 percent of the total area is suitable for agricultural use.

This southeastern region is nearer the United States than any other part of Alaska. It is crossed by the main steamer route and is only 2 days by boat from Seattle. The highly developed salmon-packing industry and mining activities have made it the most populous part of the Territory. There are approximately 24,000 residents, white and native. These factors, combined with its recreational appeal, bring to the national forests more visitors, both tourists and residents, than to any other part of Alaska.

The Tongass National Forest is a land of waterways, a highly interesting region geographically. It presents the picture of a high, rugged mountain range that subsided countless centuries ago, partly below the sea; its labyrinth of protected waterways were one time valleys of rivers and creeks, and its islands are the tops of formerly connected mountain ranges. The famous fiords of Norway, with all their grandeur, hold nothing more inspiring than those seen in Alaska. Often the narrow channels are bordered by towering mountains of bare rock, worn smooth by glaciation, so nearly vertical that the boat cannot land except in a few places.

Going up Tracy Arm, a narrow waterway 20-odd miles long and often not more than one-fourth of a mile wide, a boat passes icebergs glistening in the sun. Generally the tops of the bergs are white snow-ice worn by wave action into caverns and overhanging shelves. The lower ice is usually a deep, steely, cold blue.

The boat heads, time after time, straight for a rocky cliff, and apparently into a cul de sac. Suddenly a narrow way opens up, almost at a right angle. The boat turns and goes on. Weaving and dodging icebergs, it comes without warning to the head of the Arm and there two immense glaciers rise 250 feet sheer from the water. The boat slows to a crawl through broken ice, bumping its way through small chunks. Avoiding large bergs, it approaches a mighty ice cliff. The engine is killed. The boat drifts. Suddenly the glacier cracks like a pistol shot. Then with a rumbling sound a huge piece breaks off and falls into the bay, leaving a streaming trail of powdery ice, and slowly sinks. A wave breaks, widens, and rocks the boat. The berg rises slowly from the water, turns, revolves, finally comes to rest and floats slowly with tide and current. Wheeling above the water, along the cavern-filled face of the glacier, is a flock of gulls. A streak appears on the still, intensely blue water. It is a hair seal swimming with his nose out of water.

On the return trip one may pass an old Indian and his woman paddling a dugout canoe, or on a rock point a lone Indian with a rifle—watching. They are seal hunters. Here in the cleft of a cliff an Indian gathers his kill—six hair seals. He skins them and lowers hides and bodies with a rope to his canoe. A bounty of \$3 is paid for each seal killed and the salmon are made safer from destruction. Clothing and moccasins will be made from the seal hides. The blubber will be dried and stored in gasoline cans against the cold of winter. He clambers down, carefully loads his skiff, and, disdainingly to wave at the visitors, rows away.

Above the forest-rimmed sea lanes are great glaciers. They move slowly down the valleys of high coastal mountains and drain off ice from the extensive icefields of their origin. Many glaciers terminate on the ocean border, with towering fronts from 200 to 300 feet in height and miles in width. These fronts are daily pushed forward by gravity, only to be under-

mined by waves, broken down into avalanches of glittering ice that falls with a thunderous roar and throws spray hundreds of feet high. To geologists, or to any student of earth's history, these glaciers and the surrounding lands are doubly fascinating, for they present, in a limited space, a series of related geologic views leading back from present-day conditions to the time of the last Ice Age. Nowhere on this continent can glaciers be more readily visited than on the Alaskan Coast. They can be seen from an ocean or river steamer, from plane or motorcar, or from foot trails.

Innumerable lakes, carved out of the high gulches of steep mountain ranges by former glaciers, are sources of vertical waterfalls that also may be seen along the sea channels. Varied rock formations, extensive zones of mineralization, volcanic cones, lava flows, and glacier-carved land forms, all free of vegetation at high elevations, give a further variety to the scene. The minerals include gold, copper, silver, lead, nickel, and platinum. Marble and limestone are abundant and here and there, coal.

The native Indians, with their curious totem poles and customs, interest the casual visitor and the student alike. They form the Haida and Thlinget divisions of their race. Apparently they are more closely related to Oriental peoples than to American Indians. They occupy the immediate coast line and live in 15 or more villages of 100 to 500 population. Their living comes principally from the sea. A few community houses where they formerly lived still stand. Their outstanding art is the carving of totem poles which are placed within and in front of their dwellings to exhibit tribal emblems and perpetuate tribal legends. These Indians also make beautiful dugout war canoes that carry as many as 50 men. They are skilled in blanket and basket weaving, in silver engraving, and in the making of highly ornamental skin clothing. The Forest Service is restoring ancient totem poles and community houses and compiling family histories. Out from Ketchikan an entire Indian village will be rebuilt. Indians will do the work. They are free agents, not wards of the United States, and most of them make their own living.

The high latitude of this region, its lofty mountains, and the modifying effect of the Japan current on the temperature of lands near sea level give great variety to the vegetation. Within a range of several miles and 3,000

or 4,000 feet in elevation, the plants display many types. Many plants at the shore line are common in the States. Higher, the plant robe is that of Arctic lands. Lands uncovered by retreating glaciers show the interesting plant succession employed by nature to reclaim gradually bare land with an ultimate cover of hemlock and spruce. Retreating glaciers expose unpetrified wood and plants of interglacial forests which grew thousands of years ago. Wild flowers grow everywhere in profusion; the green and white background of forests and snow provides an ideal setting for the vivid flashes of color.

FISH AND GAME . . . Good trout fishing may be found in the many lakes and creeks, and the large king or Chinook salmon abounds in sea channels. To take them with light tackle is real sport. Recently the use of commercial airplanes, mounted on pontoons, has resulted in fishermen's raids on certain fresh-water lakes and brought likelihood of depletion. This needs to be regulated. Such conservation measures as are now applied by the Federal Bureau of Fisheries to assure perpetuation of salt-water fish should be applied here.

Alaska is outstanding in the world for its wilderness animals. Game is food to the Alaskan and fur bearers add to his cash income. But the greatest value of wildlife to the Territory and to the people of the United States lies in its attraction for public enjoyment. The principal big-game animals on the national forests are deer, mountain goats, black, grizzly, and Alaska brown bears, moose, and mountain sheep.

Among local hunters the deer of southeastern Alaska are the game most sought, but the sport attracts few nonresidents, possibly because of the widespread range of deer in the continental United States. The legal take is unimportant in view of a small human population and a great number of animals. Killing by isolated residents, the predatory wolf, and starvation during winters of exceptionally heavy snowfall are the principal decimating factors. Recent checks indicate a decrease in the number of deer. More intensive protection is called for, and is being applied.

Mountain goats are abundant but seldom hunted. Their habitat among the rugged mainland peaks affords ample protection. The black

bear is everywhere abundant. He is little appreciated as a game animal in this region and has apparently multiplied greatly in the last 10 years. In the national-forest region the grizzly is found only on the mainland areas and more especially at the heads of long fiords and isolated bays. Perpetuation of this species in large numbers is an important feature of Alaska game administration.

The Alaska brown bear is the largest of the bear family and also the largest land carnivore on earth. Regarded as one of the outstanding big-game animals of the world, it attracts the same class of sportsmen who hunt lions in Africa and tigers in India with camera and gun. A recreational resource of romantic appeal as well as local economic value, this game animal appears to be increasing in Alaska. Its range covers at least one-fifth of the Territory but on the national forests the Alaska brown bear is confined to three large islands in southeastern Alaska, two islands in Prince William Sound, to the Kenai Peninsula, and to the outlying Afognak Island. As the national-forest land is the most accessible of the entire range, adequate safeguards for the animal are considered doubly important there.

Moose and mountain sheep are found over a large portion of Alaska but on the national forests they occur only in large numbers on the Kenai Peninsula. The Alaska species of these animals are especially prized by big-game enthusiasts and consequently are subject to careful administration. Like the Alaska brown and grizzly bears, both these species are true wilderness animals and their perpetuation requires protective measures against too great a contact with civilization.

PLEASURE GROUNDS . . . The same need exists in Alaska as in the continental United States for community outdoor play and pleasure. Because of the steep topography of most coastal town sites, such areas cannot as a rule be established within town limits but must be placed on adjacent national forest lands. Attractive national-forest areas have been set aside for groups of summer-cottage sites and leased to town residents. Camp and picnic grounds have been developed and fitted with shelters, tables, fireplaces, water systems, and simple play paraphernalia.

Winter sports, especially skiing and skating, are definitely on the up

in Alaska. A number of new play areas have been made accessible recently by roads and trails. The Forest Service has sought help from organized, unlimited-membership groups, such as ski clubs, hiking clubs, Scout organizations, and rifle associations to supervise orderly use.

Juneau has the largest gold mines in Alaska and an excellent library and museum of local history. Here woods trails for hiking lead out of town and facilities for quiet boating on fresh or salt water are available. Thirty minutes distant by highway is the Mendenhall Glacier. This ice mass descends a steep valley $2\frac{1}{4}$ miles wide. About 125 years ago, it is evident by the vegetation, the face of the glacier extended to tidewater. Wild goats can be seen at times on the grassy upper slopes of ridges flanking this glacial valley.

Twenty miles south of Juneau by launch is a very active glacier—Taku, fronting on the sea. Great blocks of ice drop from its mile-wide, 250-foot vertical face at frequent intervals during the day, and in the form of deep-blue, fantastic-shaped bergs, are carried down the fiord by the tides. This glacier is steadily advancing its front into the sea channel; a rare phenomenon, for most tidewater glaciers in Alaska are now receding.

Tracy Arm, situated 50 miles south of Juneau by launch, is an outstanding fiord—a clean-cut chasm extending for some 20 miles into an ice-capped mountain range. In the same locality is Port Snettisham with three beautiful hanging lakes, all lying 1,000 feet or over above sea level. Their waters pour into the bay over high waterfalls and multiple cascades.

Sitka is 50 minutes by airplane from Juneau. For 68 years prior to the purchase of Alaska by the United States, it was the capital of Russian America. From Sitka the Russians carried on their extensive sea otter- and seal-hunting operations, and their attempts to colonize the New World. Among the interesting relics of their occupation is a cathedral where services are still conducted for whites and Indians holding to old Russian creeds.

FOREST PLANNING . . . Of the total national-forest area of approximately 21 million acres only about 7 million acres have timber cover. The remain-



F-368239

*The same need exists in Alaska as in the continental United States
for outdoor play and pleasure.*

WARD LAKE RECREATIONAL AREA,
TONGASS NATIONAL FOREST, ALASKA.

ing 14 million acres are made up of muskeg, other open lands within the timbered zone, brush, grass, barren peaks, snow fields, and ice caps above timber line. This large untimbered area will be undisturbed by commercial forest activities. Of the total timbered lands, at least one-third is unlikely ever to be invaded by logging operations because of low commercial timber values. These low-quality forests are often as pleasing in appearance as commercial stands and are usually important as habitat for game and fur animals.

The great bulk of the national-forest commercial timber is confined to a strip from 3 to 5 miles wide along tidewater; but with orderly cutting, and reproduction of cut-over areas assured by timber-management plans, forest devastation with huge areas of unsightly brush or barren lands may be avoided. Lands of unusually high aesthetic and recreational values, in some cases covering thousands of acres, will be left intact.

Recreational planning on Alaska national forests resolves itself, then, into first providing for local community recreation. This presents no important difficulties. A substantial start on a program has already been made. To prevent conflicts between local outing activities and other national-forest uses, such as homesteads, fur farms, Indian claims, and logging operations, suitable lands have been reserved near towns and industrial centers.

The second consideration in recreational planning is coordination of forest recreation, wildlife management, and the preservation of scenery in localities where timber cutting is under way. This offers complicated problems that can be solved only by following definite policies and practices. Areas carrying commercial timber but having scenic and other paramount recreational values will be withheld from logging operations entirely or subjected only to such cutting as will not detract materially from the higher value. For instance along the narrow channels of main steamer routes, a light selective logging, not greatly altering the appearance of forest cover, may be feasible.

Only about 22 percent of the total forest area has loggable timber. Timber-management plans prescribe a tree-growth rotation averaging around 85 years, so that, in general, slightly more than 1 percent of the commercial-timber area will be cut over in any 1 year. No serious conflict need exist between lumbering and wildlife on the national forests.

The maintenance of numerous deer involves no difficult problems. The remote high-country ranging habits of the mountain goat give little chance of conflict between this animal and resource development. But the large wilderness animals, mountain sheep, moose, Alaska brown bears, and grizzly bears, constitute game resources of such dominant interest that special consideration must be given them in plans for land and resource use of every kind. Management plans of a type now in effect on Admiralty Island for bear will be established on all commercial timber-management units where wildlife is important.

The possibilities of a large newsprint production, a potential expansion of lode mining, fur farming, and other resource uses, will likely lead to greatly increased commercial developments in Alaska's national-forest regions during the next two decades. But all increase in settlement that can possibly be foreseen will perhaps leave three-fourths of the total land area undeveloped. The extensive back areas, so well suited to the frontier type of recreational use that is characteristically Alaskan, will be largely devoted to that purpose.

There are as yet few garish and clamorous invasions of the forest calm in southeast Alaska. Most developments fit into the scene. But to be sure that nature is not outraged in the coming commercial expansion, careful, integrated planning is required. The job is being approached from both the regional and local points of view.

Because of the steepness of the country and the excessive costs of clearing land, large-scale agriculture in southeastern Alaska is unknown. People do, however, raise vegetables, berries, and gorgeous flowers in small patches on cultivatable land near the coast.

Home sites are restricted to these better lands and to areas capable of supporting groups of homes rather than single scattered ones. Town sites and group home sites are selected and subdivided to concentrate commercial fishermen, miners, lumbermen, and others in properly located and sizable communities. Already island fox farming with free-running animals is passing from the picture, and isolated fox-farming families are being concentrated on 5-acre tracts along roads near towns where pen-raised fox farming offers better chances of success. In brief, land-settlement policy on

the national-forest area seeks primarily to avoid isolated settlement. Because of the adverse effect of isolation on human welfare and the difficulties of providing essential social facilities, such as mail service, schools, and roads, to scattered home sites, group settlement is encouraged. This helps also to safeguard recreational values and encourage wildlife.

A third consideration in forest planning is to provide a complement for, rather than to duplicate, the pleasures already available to outdoor lovers in the continental United States. The tourist industry, particularly that involving stop-over tourists, appears to offer some chance for expansion in Alaska. This recreational industry and industrial expansion should be coordinated so that the Territory will derive the economic benefits of both. It is not believed necessary to stifle either in order to have the other. Alaska has room enough for all.

TOURISTS . . . Visitors to southeastern Alaska must love water and travel on water. They must be content with much fog and rain; to wait for the views good weather brings. Extensive land travel for the average visitor is not practical. Most people seldom get more than a few miles from their boats. A week of clear weather, without fog or rain, is exceptional. But when good weather comes, the views of snow-clad mountains, 75 miles of them, are never to be forgotten.

Alaska is not likely to be called on, in any predictable future, to entertain great multitudes of visitors. No rail or highways connect with the United States, but airline transport is probable in the near future. Considerable time and expense are involved in reaching Alaska. Travel within it is mostly by boat and airplane.

More than half of the people who now visit Alaska are on round-trip pleasure cruises of about 2 weeks, out of Seattle, Wash., and Vancouver, B. C. As their time ashore is limited to stops of a few hours at principal coastal towns and other seaside points of interest, caring for their needs on national-forest lands presents no difficulties.

Some of Alaska's visitors come for extended visits. They usually have a definite reason for staying over—most frequently, perhaps, because Alaska has something unusual to offer in their particular field of interest. Many

want to experience for a while the zest of frontier living. The explorer seeks to enrich geographic knowledge of this new land. The high mountains and the unique game animals challenge the mountaineer and the big-game hunter. The motion-picture and still-camera enthusiasts and the painter are attracted by the scenery and wildlife. The student and the expert in natural sciences come to study the native races, wildlife, rocks, glaciers, volcanoes, northern flora, and many other subjects in this little-explored land. Such present and prospective visitors are but a small fraction of the thousands of forest visitors in the States. But they come here thinking, and what they have to say in their various ways, reflectively, from without, may make in time a real contribution to land-use planning in Alaska.

If this wilderness land is to be more widely used by the people, better facilities than now exist must be provided to bring them here and to care for their wants in town and field. Two bottlenecks now discourage stopover visitors. The first is insufficient steamship service during the summer season. The number of round-trip tourists seeking accommodations is so large that the transportation companies can readily fill their ships to capacity with this class of travelers. Stopover visitors then have great difficulty in obtaining return passage unless arrangements are made months ahead and strictly adhered to. The second serious obstacle is the lack of sufficient first-class hotel accommodations in many ports near entrances to wilderness areas. Interrelated, these difficulties will, no doubt, have to be solved together as parts of the same problem. They are, perhaps, matters that must be left to private initiative.

The Federal Government is building roads and trails, but more than that is needed. There should be simple but comfortable lodges adapted primarily to water trips, transportation from steamship ports to these lodges, and guide service for the back country. Planned trips for small parties could be arranged by the operators of these lodges, combining trout fishing, seeing the Alaska brown bear, clamming, sea fishing, visits to an Indian village, and to glaciers. Areas of national-forest land suitable for lodges and permanent camps can now be leased, provided the facilities are so located and the business so conducted that the natural beauty of this new land is not defaced and defiled.





F-384834

Giant tree ferns and flowering tree giants with tangled tropical undergrowth ablaze with flaming air plants and wild orchids.

CARIBBEAN NATIONAL FOREST, P. R.



Old Land: Puerto Rico

So it is that the forces that molded the earth have likewise molded humanity. Physiographic variations of the land have everywhere varied the lives of the inhabitants. And man who must follow the earth wheresoever it may lead, must bend to the earth's limitations.

J. H. Bradley, Autobiography of Earth, 1935.

PUERTO RICO is an island lying between the Atlantic Ocean and the Caribbean Sea some 1,100 miles southeast of the tip end of Florida. It is a small island—110 miles long and 35 miles wide. By steamer one can reach Puerto Rico in 4 days from either New York or New Orleans. It is only 7 hours from Miami, Fla., by plane. Whether going by plane or steamer, one enters the island at San Juan, a city of 140,000.

At the close of the fifteenth century when Columbus landed on this island he found a few thousand Indians of the Borinquen race. Today there are 1,800,000 persons occupying a land only two-thirds the size of Connecticut. The island is one of the most densely populated agrarian lands on earth. Agriculture is the first concern of three-fourths of the people. If the present rapid increase in population continues, there will be one inhabitant for every acre by 1945. Then there will be left to provide sustenance less than half an acre of arable soil for each person.¹

Since the first consignment of sugar left the island for Spain in 1533, the land has suffered. The "jibaros," or subsistence farmers, were early forced

¹ There are 16 acres for each person in the United States, 5 of which can be cultivated.

out of the cane lands to steep slopes of the mountainous interior where they practiced the destructive "conuco" system of clear, plant, and abandon. The land has been unable to withstand the mining methods practiced for so many years. And of the forests—also mined—not enough is left to supply the local demands for charcoal. Today the soil is, in the main, tired, thin, and poor; and where the soil is thin and used up, society wilts.

The Puerto Rican is one of the most mixed races on earth, but his environment has made him homogeneous. It has helped to subdue the warlike spirit, antipathies, the lust for gold, and to make these islanders tolerant. The gregariousness, the simple hospitality, the high-walled plazas are the growth of a crowded land.

PONCE DE LEON found Puerto Rico a land where "the vine is always fruited and the weather always fine." He called it the "gate of riches." Dense forests covered the land, rivers ran clear, and game was plentiful. Today these forests have disappeared, with the exception of some 15,000 acres of virgin cover in the Caribbean National Forest. Brush, crop, and pasture land have taken their place; yet the island is blessed as few countries are with natural beauty. It is like a pretty peasant girl with the carriage of a queen and the raiment of a dirty child. It is a land of contrasts.

Since October 18, 1898, when formal possession was assumed, when the American Flag was raised over fortifications where the emblem of Spain had flown for nearly four centuries, the new has mingled increasingly with the old. Oxcarts plodding patiently over modern highways turn aside for high-speed busses. Radios blare up-to-the-minute news from buildings centuries old. From the penthouse of a modern, expensive apartment one can look over an ancient plaza to the thick age-blackened walls of a sixteenth century Spanish fort. The battlefield where in 1625 the Spanish drove the Dutch invaders back to their ships is a nine-hole golf course now.

American efficiency was suddenly introduced. A postal system was installed, freedom of speech restored, a resident police force organized, medieval methods of punishment abolished, and Spanish currency was replaced by American money. Free public schools advanced literacy. English was taught and today many speak it fluently. Public health service and medical centers

reduced the death rate from approximately 37 persons per 1,000 in 1910 to less than 20 per 1,000 in 1935. The population has doubled in the 40 years since American occupation.²

The people, as a whole, responded quickly to these improvements and were awarded American citizenship in 1917. But the injections of modern civilization have completely modernized neither the land nor the people. The island still retains innumerable reminders of its four centuries under the Spanish Flag. Spanish architecture prevails. The ancient military road connecting San Juan and Ponce is still the most travelled. Many present-day farmers still turn their furrows with an ox and a crude plow. The people, in the main, still cling to folklore and traditions, to the quiet pastoral life with its swishing machetes and rumbling cane mills, to the warm earth with its smell of cane fields, citrus groves, and ripening tobacco.

San Juan, the island's capital, does show some exterior signs of American influence. Thousands of autos with a proportional number of filling stations, American-style department stores, office buildings, and apartment houses, indicate the influence of "Yankee ideas." But out on the island, back in the hills, the people have changed little. Here the forces that have molded their lives go back beyond the time of American occupation. They are forces as old as the mountains that divide the island, as old as the rivers and wind and rain that created the land—a land of extremes.

THE LAND is of mixed volcanic and sedimentary origin. Soil composition varies by the acre, from the coral sands of the coast to tenacious clays in the interior. Rock formations range from weather-resisting granites on mountain tops to soft, yielding limestones on the north-central coast. And each soil dictates the crop to be grown. Coconuts along the seashore, pineapples and citrus fruit a little farther inland, sugarcane on the intermediate coastal plains, tobacco in the high valleys, coffee and bananas, pasture, and brush-land in the hills proper—thus, generally, the soil determines its crop throughout the island.

The Cordillera Central Range, rising to 4,400 feet, divides the island

² This rapid growth has resulted from an increased birth rate as well as a decreased death rate. Births are 40 per 1,000, more than twice the birth rate of the United States.

lengthwise, throwing two-thirds of the drainage northward toward the Atlantic coast and one-third to the south coast into the Caribbean Sea.

The Luquillo Mountains on the east end of this divide stand full in the way of moisture-laden trade winds. There, on the north slopes of the Caribbean National Forest, 200 inches of rain falls on an average each year. Many of the moist winds are swept along the entire north side of the central range and provide ample water for all. But on the south coast, across the divide, rainfall is meager, a scant 20 inches in some localities. There, water has to be collected in rain barrels, stored in lake reservoirs, or pumped from deep wells and distributed by irrigation ditches to fields and stock.

Water is life in hot countries, and much water is needed to keep the people alive. Several large rivers, numerous small streams, and innumerable rivulets are sufficient while it rains; but when dry weather sets in the steep slopes run dry. Rivers become trickles over stony beds. The watercourses play an important part in the life of the people. Roads from the coastal areas parallel the larger ones and follow the easier topography of their valleys into the rugged interior. Rivers carry to the sea impurities which would otherwise be a potential menace to people in times of epidemics. In those same rivers they wash their clothes, slake their thirst, water their stock.

Visitors consider the climate of Puerto Rico one of its greatest assets. Year-round temperatures average 76° F. Strong contrasts, marking the seasons of the North are lacking, yet the climate has little of the monotonous heat characteristic of a tropical or subtropical country. The variation in temperature results mainly from differences in elevation, absence of lengthy wet and dry seasons common in parts of the Tropics, and to the cool trade winds that bring changes of humidity and billowy clouds.

But occasionally (four times since 1898) a tropical hurricane hits the island and does tremendous damage. Fortunately few lives are lost, thanks to advance storm warnings issued by the United States Weather Bureau and to well-constructed storm shelters. These severe storms influence the habits and philosophy of the rural Puerto Rican. He dates his birth, marriage, and death by their occurrence. He knows his house and most of his worldly goods will be destroyed, so he is content with little, to hold his losses small. And even though he names individual storms for religious

saints, the hurricane is a curse, the name itself coming from the Borinquen Indian word huricán, meaning "evil spirit."

FIESTAS . . . With such a background of contrasts and extremes working through the centuries to shape and mold the character of the present-day Puerto Rican, it is little wonder that he continually seeks a compromise—a middle ground. But the forces are strong, odds are against him, and, by and large, he remains very rich or very poor.

Puerto Ricans are pleasure-loving people. The fortunate few may take their families to the movies, casino, dance places, to the club, to a horse race, or a baseball game. The country people may indulge in cock fighting, domino and card playing, or attend a barbecue. Visiting or calling upon neighbors is a pastime common to all. They are socially inclined, fond of music, and whenever a group gathers for play or relaxation, a "fiesta" is in the making. The fiesta is the outstanding form of native recreation. It is spontaneous and unorganized; the participants take their pleasure as they do their food, as part of their everyday life.

The average Puerto Rican lives so at elbows with his fellows that the only forms of recreation ordinarily available are of the passive sort. He must be an onlooker rather than a participant. Inactively he has his enjoyment and diversion but gains few if any physical benefits. Furthermore, he is most likely to live in the relatively hot lowlands. Any climatic relief or change must be found on the island itself. His only resource is to go to the mountains, where climate and environment unite in offering stimulation.

The plight of two-thirds of the population, the laboring class, whose average weekly wage in 1937 was \$4.76, is today a major problem facing the insular and Federal Governments. Hunger appears to induce not revolt but apathy, inertia. But there is a danger of people, whose roots are in the land, remaining idle during their leisure and holing up in cities too long. Puerto Rico's high homicide rate is one result. It is imperative then that since the public forests offer the only conditions permitting real rest and change, the first objective should be to furnish outdoor recreation of a type available for the low-income masses. Forest recreation for the masses should be predicated upon group gatherings—the fiesta moved to the forest.

THE PUBLIC FORESTS have within their boundaries the finest opportunities for relief from the crowded lowlands found anywhere on the island. Under the administration of three agencies, but coordinated by central control, they cover nearly 85,000 acres.³ With the exception of the insular mangrove forests on the coasts, these public forest lands are confined to the high watersheds lying above 1,000 feet elevation.

The national forest, created by Theodore Roosevelt in 1903, includes lands formerly owned by the Spanish Crown and ceded directly to the United States Government by the Treaty of Paris. Because of their inaccessibility they were not parceled out as land grants but were held in Crown ownership. These lands were unexploited and thus the only large stands of virgin forests on the island were unintentionally saved for posterity.

The inaccessibility of the public forest land barred the masses. A rough and difficult trail did lead to the top of one peak, El Yunque, in the Luquillo Mountains, but it was used by only a few hardy souls. The national forest, in the main, remained as remote and untrodden as in the days of Columbus.

Recent development and consequent use of forest lands for purposes of recreation began when funds and manpower became available through the CCC and other emergency programs in 1933. The essential first step was to build motor roads opening up the forest interior. Because of steep slopes, rock faults, and cliffs, thin mica-filled soils that get as slick as soap when wet, and the tremendously heavy rainfall, landslides and wash-outs presented many engineering problems, especially on the new road traversing the national forest. The supervisor of the Caribbean National Forest directs the entire program.

That the scenic and climatic advantages of the area opened to the public by this road justified its construction is evident. In fact, public response began before the road and recreational development were well under way. As many as 1,000 persons a day seeking an outing was not unusual. After 5 years of work, the road has finally been connected across the divide. Now the recreational center is easily accessible to more than a million people

³ The Caribbean National Forest (2 units) contains 24,680 acres; the insular forests (7 districts) 39,600 acres; the Puerto Rican Reconstruction Administration forests (5 units) 20,650 acres; all public forest land on the island amounting to 84,930 acres.

living within 50 miles on both the northern and southern coasts. Much heavier use may be expected in the future.⁴

THE LA MINA RECREATIONAL AREA, 500 acres of breathing space in the Caribbean National Forest, is in a setting to be found nowhere else in the American Tropics. A combination of breath-taking panoramic views of palm-covered mountain slopes, timbered ravines, rocky gorges, cliffs, and waterfalls; giant tree ferns and flowering tree giants with tangled tropical undergrowth ablaze with flaming air plants and wild orchids; teeming with chameleons and tiny but vociferous tree frogs; all at 2,000 feet above the hot lowlands. Here, the air is always crisp and invigorating—a truly air-conditioned tropical forest.

Conditions are ideal for the family group. Rainproof shelters are necessarily provided as protection against the sudden, torrential downpours. The rain comes down in bucketfuls for several minutes, the storm passes over the mountain, and the sun comes out. Benches and tables, whipsawed from native timber, were planned with the fiesta in mind. The favorite holiday food is roast pig. Barbeque pits have therefore been made available and charcoal is furnished free.

There are two beautiful swimming pools fed by cool mountain streams. Well-graded hiking trails lead from the parking areas to outstanding points of interest and to mountain peaks.⁵ Comfortable cottages, with nearby dining-room facilities, are available for persons wanting overnight or weekend accommodations. People who can afford a longer escape from the heat of coastal towns can lease cottages from the Forest Service.

Wildlife is sadly lacking throughout the island because of the density of population, scarcity of forest cover, and the abundance of mongooses and rats. Hurricanes have also exacted their toll.

But on the public forests, under favorable natural conditions and protection, game is coming back, especially birds. The Puerto Rican

⁴ Within a radius of 25 miles are 592,000 people with 262,000 living in cities. Within 50 miles are 1,019,000, of whom 348,000 are urban dwellers.

⁵ In 1938 more than 10 miles of hiking trails, with observatory towers and trail shelters, were provided in the La Mina Area alone, and a total of 60 miles in all public forests.



F-384760

Rainproof shelters are necessarily provided as protection against the sudden, torrential downpours.

CARIBBEAN NATIONAL FOREST, P. R.

parrot, once believed to be extinct, is becoming increasingly abundant on the national forest. Scale pigeons, tanagers, and several other species of birds indigenous to Puerto Rico are increasing in numbers. In the deep forest interiors some boa constrictors may be found. But there are no poisonous snakes and few obnoxious insects to cause the visitor concern.

Tropical plants and trees grow in amazing numbers throughout the national forest. More than 300 tree species, 21 different wild orchids, and 500 varieties of graceful ferns, some growing 30 feet tall, have been identified. Many others have yet to be named. On the highest mountain slopes in the Luquillos grow dense dwarf forests. Because of thin soil, excessive moisture, and exposure to strong winds, the trees are no taller than a man, yet they are hundreds of years old and identical botanically to giant trees of the same species on more favorable sites. Many are varieties that exist no other place in the world. Their trunks and twigs are covered with dripping pendants of saturated moss.

Other recreational areas are necessary to supplement the La Mina development, located in the eastern end of the island, if a well-rounded recreation program is to be within reach of the entire population. The Doña Juana area in the high mountains of the Toro Negro Unit of the Caribbean National Forest, opens up similar recreational possibilities of benefit to people living in the central part of the island, especially around Ponce, on the hot dry southern coast. Roads with connecting trails through the Maricao Insular Forest, and a modest degree of recreational development, have opened the scenic and climatic resources of that forest to the people of Mayaguez and other western towns.⁶

Some 40 miles west of Puerto Rico, midway to Santo Domingo, is Mona Island; 14,000 acres of brush-covered limestone, honeycombed with deep caves and walled by precipitous cliffs 200 feet high. Fishing in the off-shore waters is said to be the best in the West Indies. Barracuda, tuna, sailfish, and king mackerel can be taken by the sportsman. Wild goats inhabit the limestone cliffs and afford good hunting.

⁶ There are 688,000 and 602,000 people living within a 25-mile radius of Doña Juana and Maricao Recreational Areas, respectively.

FUTURE USE of recreational areas in Puerto Rico will be limited only by their capacity to handle the crowds. Present facilities are taxed, yet it is believed that the 55,000 visitors on public forests in 1938 represent only the beginning of forest use. Ten times more people in proportion to the population visit national forests in the States. It is conservative, then, to assume that within a few years, visits to forest areas in Puerto Rico should become increasingly popular. Plans call for construction of 18 additional recreational areas during the next 10 years.

Tourist visits, accelerated by insular government leadership in travel promotion, should not conflict with normal recreational use. Most tourists visit the island during the cooler months when local use is at low ebb. There is every indication that more continentals will visit the island when they become better acquainted with the pleasures offered and the ease of getting to the American Tropics, and when more adequate tourist accommodations are available. Concrete proof of this is given in the first annual report of the Puerto Rican Institute of Tourism, covering the fiscal year ending June 30, 1938, which shows that more than 29,000 visitors were attracted during 1937-38, compared with 14,500 the previous season. An important byproduct of these visits will be the income derived by the island. The institute estimates the daily expenditures of cruise passengers at \$15. On that basis more than \$440,000 was left by the 1937-38 excursionists.

Tourists are entranced when motoring up the newly built forest highway to the La Mina Recreational Area. Magnificent vistas of mountain and sea unfold with each turn. Winding through depths of luxuriant tropical forests the road passes towering cliffs and misty waterfalls. About one in eight persons using the national forest is from outside the island; practically every foreign country has been represented.

The paramount objective of the forest program of the insular and Federal Governments is to develop every acre of public land to its highest use so the needs and welfare of a majority of the island population will be served.

Timber production and watershed protection will be the paramount use of forest land. The aggregate area required to meet the recreational needs of the people will not cover more than approximately 5 percent of

the total forest area. But until reforestation has converted the thousands of acres of idle brush and poor pasture land into timber-producing forests, recreation on the existing timbered areas will be an important activity.

On few areas under Forest Service supervision is recreation so compatible with the major uses of timber production and watershed protection as in Puerto Rico. For each 1,000-foot rise in elevation the temperature drops 3° F. Because of this universal fact, practically all recreational developments are in the high mountain areas. Six or ten degrees cooler makes a world of difference in the tropics. Above 2,000 feet, where most recreational areas are located, forest trees are chiefly those of species most valuable for their soil-holding ability. Commercial stands of timber are, for the most part, located at lower elevations, and timber cutting will be confined mostly to forests growing below areas of heavy recreational use. Only 1 species out of 50 of commercial importance, tabonuco, grows in stands sufficiently dense to justify clear cutting. Logging over most of the forest will, therefore, be of a highly selective character, and there will be but slight disturbance of natural environment.

With land so scarce, in Puerto Rico, every acre must count. In addition to providing breathing space for the masses, the Forest Service must provide living spaces for hundreds of families who never have owned the land they tilled nor the crops they raised. This land is now national forest land, but the people cannot be dispossessed—there is no place for them to go. The land they occupy is worn thin and in need of rebuilding—of the soil-holding and building power of forest trees. But the people have to live, to plant crops, to hold body and soul together.

The Forest Service has therefore established the “parcelero” system, under which a plot or parcel of denuded public land, some 5 to 10 acres, is allotted without title to each family. The family worker plants forest seedlings under careful supervision, and grows his sustenance crops between the rows of growing trees. After, say 2 years, the tree canopy closes and shades out vegetables. More tolerant crops, such as coffee and bananas, which provide the family with food and income, are then substituted. In this way the “parcelero” system re-creates the forest, builds up worn-out soil, gives human sustenance, and at the same time imparts hope for the future to each parcel farmer and his family.



F-200596

*If it is vacation time, most organization camps are filled
with underprivileged youngsters.*

CAMP SEELEY, SAN BERNARDINO NATIONAL FOREST, CALIF.



Ways and Means

If we do not allow a democratic government to do the things which need to be done and hand down to our children a deteriorated Nation, their legacy will not be a legacy of abundance or even a legacy of poverty amidst plenty, but a legacy of poverty amidst poverty.

Franklin D. Roosevelt, in an address May 22, 1939.

PAYING GUESTS . . . We come now to a difficult question, and delicate. If, as has been here maintained, the final crop of a land is the spirit of its people, some account must be taken of psychological changes that follow when a piece of country running short of soil, timber, minerals, and other natural resources begins more or less frantically to seek transient paying guests; to sell them space, sun, air, and service.

The changes that follow are no less real because they are for the most part intangible. A continuing, and at times overwhelming, influx of summer or seasonal visitors may do more harm than to run up store prices and rents and raise local standards of living to peaks from which most of the natives can only stand afar and envy.

A restless tide of relatively rich outsiders, continually ebbing and flowing, maintaining separate standards as to habitation, costume, and social mores, may disrupt the spirit of a rural or forest neighborhood, wound local pride, and in the end demolish native values. However intangible the forces at work, no discussion of public recreation in a democracy can ignore their rapid spread.

Walls of pride between pleasure buyers and pleasure vendors seem especially likely to rise around the private pleasure grounds of very rich

people and their resorts. But much the same thing may happen, in a measure, even in a forest environment. In *A Further Range*, a book of poems, Robert Frost tells in sharp, unforgettable accents of a crude roadside stand set up by a New England woods farmer trying to earn a little extra money from the swishing tourist transients:

A roadside stand that too pathetically plead,
 It would not be fair to say for a dole of bread,
 But for some of the money, the cash, whose flow supports
 The flower of cities from sinking and withering faint.
 The polished traffic passed with a mind ahead,
 Or if ever aside a moment, then out of sorts
 At having the landscape marred with the artless paint
 Of signs that with N turned wrong and S turned wrong
 Offered for sale wild berries in wooden quarts,
 Of crooked-neck golden squash with silver warts,
 Or beauty rest in a beautiful mountain scene.
 You have the money, but if you want to be mean,
 Why keep your money (this crossly) and go along.
 The hurt of the scenery wouldn't be my complaint
 So much as the trusting sorrow of what is unsaid:
 Here far from the city we make our roadside stand
 To ask for some city money to feel in hand
 To try if it will not make our being expand,
 And give us the life of the moving pictures' promise
 That the party in power is said to be keeping from us . . .

Sometimes I feel myself I can hardly bear
 The thought of so much childish longing in vain,
 The sadness that lurks near the open window there,
 That waits all day in almost open prayer
 For the squeal of brakes, the sound of a stopping car,
 Of all the thousand selfish cars that pass,
 Just one to inquire what a farmer's prices are.
 And one did stop, but only to plow up grass
 In using the yard to go back and turn around;
 And another to ask the way to where it was bound;
 And another to ask could they sell it a gallon of gas
 They couldn't (this crossly): they had none, didn't it see? . . .

Parts of rural New England are now so overrun by summer people who stay, with few exceptions, apart from the native life that it hardly seems like rural New England there now, until frost. Good! you may say; New England like any other part of our country, can stand an infusion of outside views, ways, impulses; and the mixture is likely to prove helpful. Perhaps, but throughout New England in general, as elsewhere, communion between hosts and paying guests is not invariably as free and friendly as we have found it, on the whole, at forest camps. Camping out, people get together. But when money comes into the equation, and the host collects, it's a trade, and "The guest (or customer) is always right."

The more money involved in the trade, speaking generally, the more completely and definitely is the class line drawn. In the highest priced resorts of New England, the southern Alleghenies, in Florida, in the Rockies, and on the coast and desert, space, sun, and air are sold to the rich in the European manner, with urbane, frock-coated men at desks sending drilled, uniformed American boys scampering, bowing, to answer bells and say, "Sir." Most of them do not like the work, but they need the money.

All this may be good business, but it has no place in the public forests. Forest Service policy has been, and will be, so far as possible, to keep public recreation inexpensive, democratic, natural. There is real need of this, not only for the sake of the millions of people who have little or no money to spend on recreation, but also as an offset to all the unnatural barriers which rise between Americans when outdoor recreation is bought and sold.

Among the great middle class, renting rooms in tourist homes, sitting on the porch and talking with their hosts, or visiting around from cabin to cabin at reasonably priced roadside cabin camps, the situation is, from the standpoint of a maintained democracy, much healthier. The great and abrupt expansion of the outdoor recreation business in this country, the growing habit of "auto-tourism," the jostling together of people from Oregon, Maine, Maryland, Illinois, Georgia, Florida, and Texas, has probably done the American spirit of democratic unity a great deal more good than harm.

THE RECREATION BUSINESS . . . Turn now for a little while to trade statistics, unsatisfying, incomplete, but definite: The American Automobile

Association is authority for the statement that vacationists traveling in automobiles spent $4\frac{1}{4}$ billion dollars in 1936. Glover and Cornell estimate tourist expenditures at 5 billion dollars in prosperous years. Weinberger places the total expenditures for vacation travel in the United States at 2 billion dollars for 1939; and a number of other estimates of outdoor recreational expenditures have been made, most of them around 4 or 5 billion dollars.

New Mexico estimates that her tourist crop produces more revenue than does the State's mining, agriculture, or livestock industries. California considers tourist travel next in importance to her great petroleum industry. In Michigan, tourist money is exceeded only by the money brought in by automobile makers. In Florida, vacation travelers as a source of revenue are said to be several times more valuable than the State's entire citrus crop.

For the whole United States, Roger Babson estimates the monetary value of the tourist business is 11 percent greater than the clothing business, 45 percent greater than the printing and publishing business, 60 percent greater than the lumber business, 185 percent greater than the banking business, 222 percent greater than the shoe industry, 518 percent greater than the cotton crop of 1933, and equal to the giant steel and iron industry. According to the American Express Company, serving pleasure travel is edging toward second place among the leading industries of the country.

Just how much of these impressive totals for all forms of outdoor recreation can be claimed for forest recreation in general or for national-forest recreation in particular is not exactly known. A single trip often includes visits to many kinds of recreational areas. The closest possible estimates, based on all known figures, indicate that for all classes of national forest visitors, total expenditure was certainly no less than 224 million dollars in 1937. Not included in this total are other local or semilocal expenditures such as taxes on summer homes, permit fees for summer homes, taxes and license fees for automobiles and trailers, automobile insurance, winter sports equipment, and hunting and fishing licenses. Expenditures by transients numbering 106 million who passed through the national forests on main highways are not included in this estimate, although it is obvious that such forest users often stop en route to purchase food, souvenirs, and

curios. It is probably reasonable to assume that in 1937 national-forest visitors spent about 250 million dollars on or near the national forests. This is about 5 percent of all outdoor recreational expenditures, assuming that the 5-billion-dollar estimate for total expenditures is not too high.

A widely quoted estimate of the American Automobile Association indicates distribution of tourist expenditures as: "Out of each dollar spent, approximately 20 cents goes toward transportation and a like amount for accommodations, 25 cents for incidental retail purchases, 21 cents for food, 8 cents for amusements, and 6 cents for refreshments." Similar estimates by other agencies indicate about the same general distribution of expenditures.

These broad estimates fail, however, to emphasize the exceedingly widespread influence exerted by the visitor's expenditures. Practically every local business enterprise benefits to some extent. Forest visitors help relieve local unemployment. They create markets for local farm produce. They are buyers of the products of what might be called fireside industries, pottery, bed quilts, homespun cloth, basketry, furniture, rugs, and novelty wooden toys and souvenirs. The presence of forest visitors stimulates rentals, and sometimes serves to lighten the local tax burden. And the tourist trade seems to remain remarkably stable through all kinds of economic weather. Even in the years immediately following the financial crash of 1929, people continued to visit the national forests in ever-increasing numbers. There was, it is true, a marked drop in the number of forest hotel and resort guests during the deepest depression years, but recovery in this particular has been surprisingly prompt and the number of campers and picnickers actually increased throughout these years. It is even possible that the drop in the hotel and resort business may not indicate a real decrease in number of visitors so much as a transfer of patronage to less expensive accommodations. The 9,848 tourist camps reported by the Bureau of the Census in 1935 was almost twice the number reported in 1933.

To sum up: Catering to forest tourists or visitors may not, for reasons that have been suggested, prove an unmixed benefit to the residents of small forest communities. Hunting and fishing may be less pleasant or less successful for permanent residents. Some of the visitors are noisy and unpleasant.

Shady dance halls may spring up on private land near the national forests, and there may be in other ways as well a destruction of solitude and of cherished, settled qualities.

Scarification of roadside landscapes by shrieking billboards and by blatantly tasteless structures has been sufficiently emphasized, perhaps, in previous chapters, especially in the section on camps. On public land within the national forests this is not permitted. But about one-quarter of all the land within national-forest borders is private land; and the only authority forest officers may exert there is by power of persuasion.

A more general display of resentment against roadside desecration has lately become evident and has produced in many places a remarkably prompt response. The American Automobile Association, the Garden Clubs of America, and other organizations in many States have moved to rid existing highways of billboards and defacing structures, and to keep new highways free of them.

The public is by no means helpless in such matters. Bidders for public favor respond at once to expressions of public anger, if it is solidly and forcibly expressed. A great many of the aesthetic drawbacks and spiritual losses which follow the tourist swarm are entirely uncalled for. They need not be suffered if the people of the communities affected will only get together on the question, take a stand, speak out.

If the visiting tide is decently and sensibly handled, in the light of an awakened local consciousness, outdoor recreation can be made to contribute substantially to the development of generally better and more permanent rural communities. It can lead to an expansion of existing local businesses with more varied stocks, and to a refreshing pick-up in the purchasing power of local residents. It can lead to better train and bus service, to improved telephone and mail facilities, to better roads and schools, to improved medical and dental services. And it can bring rural and urban peoples together, democratically, decently, to visit with one another, and weld their spirit as Americans.

It all depends on how it is handled, and that depends, more than anything else, on resolute local defense of native values, aroused and expressed in local action.

THE ILL-TO-DO . . . Love of the deep, far woods, and a desire to find rest and peace there, is an impulse surpassing class distinctions. The man with a million-dollar inheritance and the dollar-a-day farm and mill hand may each find his greatest happiness in the peace of woodland. The major difference is that the farm and mill hand can seldom afford it.

If it is good for the rich to get a change of scene, and rest, it is also good for the poor. Unfortunately, the ability to get to the forest bears no relation to need. The public forests are there, free, open to all. But it takes some money to get to them, and some more money to subsist during a vacation there. Not much money; just a little extra money. And not everyone has that extra money.

Sometimes you will hear a man with a yearly income of as much as \$5,000 remark: "I might be able to afford it, if only I were rich." Actually, he is very rich compared to the great majority of his fellow men, even in the United States today. A \$5,000 income places him among the top 2½ percent of our population.

Nearly half of the families or independent single individuals in this country have an income of \$1,000 a year, or less. A recent study of the distribution of consumer income, made by the National Resources Committee, estimated that some 116 million people living in 29,400,000 family groups and an additional 9,700,000 men and women living by themselves constitute the national income-spending units. The total distribution of the American income ran as follows during 1935-36:

Of 39,058,300 income units in the United States, 47 percent had \$1,000 a year, or less; 35 percent had between \$1,000 and \$2,000; 11 percent had between \$2,000 and \$3,000; 4½ percent had between \$3,000 and \$5,000; and only 2½ percent had \$5,000 or more a year.¹

Nearly half of the consumer units of this country receive, then, an income of \$1,000 or less a year. How much of that can be spared for forest recreation, or for recreation of any sort? Very little; no more, certainly, than one-tenth. Studies by the Bureau of Labor Statistics and the Bureau of Home Economics, covering the budgets of thousands of families in urban and rural America, indicate that the average family with an income between \$750

¹ A more complete tabulation is appended on page 293.

and \$1,000 per year spends only about \$20 for all forms of recreation and \$60 for transportation in a year.

Consider what this means in terms of a family of four, the most common consumer unit. The head of the family generally will have to pay street-car or bus fare to and from his job. The greater number of working days, the more fares he will have to pay. The wife will expend at a minimum several dollars in transportation during the course of a year. The children may have no private transportation cost getting to school, but they will do some traveling outside of school hours. When all this is added, it is easy to see how \$60 can be spent for family transportation without leaving anything over for pleasure trips.

Again, the \$20 which is the average annual recreation budget has to be distributed over 365 days. This allows only $5\frac{1}{2}$ cents a day for the whole family's recreation. Even a movie is a strain on such a budget. The normal cost of stopping in the forest would be prohibitive, even if the cost of reaching the forest did not generally present an almost insuperable obstacle.

That is the first cost of forest recreation—transportation. With four people in a car, the cost, including gas, oil, maintenance, and depreciation averages around 6 cents a mile, or $1\frac{1}{2}$ cents a person per mile. The lowest railroad coach rate is $2\frac{1}{4}$ cents a mile; the average bus rate is $1\frac{3}{4}$ cents a mile. And neither railroad nor bus would generally leave a person precisely at the picnic ground, campground, or other development that he might want to visit. Groups may occasionally hire a bus at reduced rates; this is being done more and more. But by no means now known is it possible to cut individual transportation costs to the forest much below $1\frac{1}{2}$ cents a mile.

Assuming a transportation charge of 6 cents a mile for a group of four, a table in the appendix indicates how the population of this country is distributed with respect to the cost of getting to the nearest national-forest boundary and back. The national forests are more widely distributed than any other public lands. But most of them are "far from the madding crowd" at its thickest, so far that only about one-third of the population of this country can make the round trip to any national forest for less than \$10; and for another one-third the transportation cost will be more than \$20.

The strain imposed by even a \$10 transportation charge upon half of the country's population, with an income of \$1,000 or less a year, has been noted. The hard fact is, under present conditions, transportation cost alone bars a large portion of this country's population from using the national forests for recreation.

For those who can afford to go, what does it cost? Only general estimates are possible. To drive from 15 to 20 miles for a family picnic costs more nearly \$2 than \$1 for a family of four. This counts in costs of wear and tear on the car. Almost the entire cost is for transportation. The cost of the food would be approximately the same as at home.

For camping, the cost runs a little higher; one has to be equipped with tents, blankets, mosquito bars, and so on.

What of summer homes, built by special permit on national-forest lands? Rent for the site is small, but the permittee has to put up the building. Amortization on the cottage amounts on the average to \$70 per year, annual maintenance runs roughly \$35, the annual permit fee averages \$15, and taxes probably also average \$15. With about 3 weeks of use for a family of four, a fair average for national-forest summer homes, this would amount to \$1.50 a day for each individual in addition to transportation. It is a cheap vacation, as vacations go, but far beyond the means of most Americans. As for private resorts, on or near the forests, the lowest charge runs around \$2 a day for bed and board per person, or \$8 a day for a family of four.

Who, then, can and does use the national forests for recreation? More than 32,000 forest visitors filled out questionnaires in 1937; and more than 25,000 of them, heads of families or independent individuals, stated their incomes.

In sum: 18 percent were persons with \$1,000 a year, or less; 49 percent had between \$1,000 and \$2,000 a year; 22 percent, \$2,000-\$3,000; 8 percent \$3,000-\$5,000; only 3 percent were persons with more than \$5,000 a year.²

The figures indicate that moderately poor people make the most use of the national forests for their ease and pleasure, but that relatively few of the poorest, who perhaps need it most, are able to do so. It is not the purpose

² The complete returns are compiled and appended on page 293.

here to contend that forest recreation is indispensable for all that great bulk of our population, nearly half, who have less than \$1,000 a year. Multitudes of people have lived and died without ever getting near the forests. But it is suggested that if, by either public or private arrangements, ways could be found to diminish personal costs so that our very poorest people may have forest vacations, or outings, this might be sound social policy. Cost cutting may be accomplished in a number of ways: (1) By a reduction in public-transportation rates; (2) by the establishment of forest camps or parks nearer great centers of population; and (3) by an increase in the number of privately supported organization camps.

ACQUISITION by the Government of certain lands now held in private ownership may tend in time to meet greater needs of accessible outdoor recreation for people of small means. Sometimes only a small obstructing tract need be acquired in order to throw open fully to the public a much greater area. Again, units of land large enough to provide something more than city-park diversions may be taken over and thrown open, fairly near large centers of population.

For example, in Big Cottonwood, Little Cottonwood, and Mill Creek canyons on the Wasatch National Forest, only 10 to 20 miles from Salt Lake City, enlargement of the existing forest camp and picnic grounds is not at present possible because from 60 to 95 per cent of all sites suitable for such use are privately owned. Acquisition here would give needed outings to additional thousands at the cost of only a gallon or two of gas.

A like situation prevails in other national forests. On the Angeles and Los Padres National Forests near Los Angeles, the bulk of the available flat-land suitable for overnight camp and 1-day picnic sites is in private ownership and is held for use as lodges and summer homes. Likewise, in the Sacramento Canyon, where a main highway passes through the heart of the Shasta National Forest, it has been possible to develop only one campground for public use because the Government owns no other usable land in the canyon. So, again, in the Pike and Roosevelt National Forests near Denver, Colo., the Government at present owns almost no bottom land in the canyons most suitable for picnicking and camping, and nearest town.

Similar instances could be cited on many other national forests, some of them fairly near crowded centers, some remote. The ones to which many more needy people might travel, if the way were opened, are the ones that most concern us here.

In a Virginia national forest, where a public campground encircling a small lake has been opened, the area, easily accessible to a large city, is already overcrowded. It is impossible to make more space for the public without acquiring for the public benefit two small tracts of submarginal farm land in a narrow creek bottom. If the Government could buy those two farms (totaling only 410 acres), the public could then be given free access to an entire watershed of more than 5,000 acres.

Often, in addition to barring woodland areas from free public enjoyment, small private holdings, resolutely held, bar public access to the shores of lakes, to natural winter sports, playgrounds, and to fishing streams. Many of the sites so pre-empted are not far from crowded cities. It is, indeed, where the impulse to seize upon private outdoor pleasure grounds is strongest that the Government is most likely to be balked in efforts to throw open for free use wider forest pleasure grounds.

ORGANIZATION CAMPS are the most promising mode of low-cost forest recreation now developing. Scattered throughout the tens of millions of acres of national forests are tiny constellations of cabins clustered in friendly fashion about larger buildings. Sometimes the setting is beside the tumbled, broken waters of a mountain stream, sometimes on the shore of a quiet lake or among the big trees of the high country. Flying northward one may catch glimpses of them over the hundreds of miles of California forests, and on the slopes of the Cascades. One may come upon them in the Rocky Mountains, the Ozarks of Missouri, among the new national forests of the Lake States, or up in New England. Southward, one may pick them out in the Alleghenies and throughout the Appalachians to the Gulf of Mexico. If it is vacation time, most of these camps will be filled with youngsters. To these clustered cabins thousands of boys and girls are brought from cities and villages by both public and quasi-public organizations and given the joys of a forest vacation.

Often such camps are turned over for a part of the season to organizations of older people, and families come for recreation together. Those built by cities and restricted in use to the citizens of the municipality usually have more adults than young people.

Organization camps began very simply with a few sleeping tents and a mess tent. But tents deteriorate rapidly. In a few years the cost of permanent buildings can be sunk in canvas with nothing left to show for the expenditure. Permanent mess halls were first erected, but soon permanent cabins were added. With these developments came improvement in water supply and sanitation. As experience grew, the standard camp plan became the multiple-building type, consisting of a mess hall and recreation hall, with sleeping accommodations in bunk houses or cabins. Cabins, however, are being favored as time goes on. They generally shelter four to six people, with a cot or bunk and a small chest of drawers for each.

An example of good structures and lay-out is Camp Seeley on the San Bernardino National Forest about 75 miles from Los Angeles. Under a special-use permit from the Forest Service, it was built and is operated by Los Angeles for its citizens. It has been so efficiently operated that in 1936 it furnished vacation opportunities at very low cost to 2,734 individuals for a total of 20,342 days and made a surplus over operating expenses of \$1,041.98.

Another example of an organization camp is that operated by the 4-H Club of Crooked Lake on the Ocala National Forest in Florida. This was built as a CCC camp, but when the number of camps was reduced, the Forest Service issued a special-use permit to the 4-H Club, which remodeled and rebuilt it.

The camps are often on land not owned by the Government. On private lands within the boundaries of the eastern national forests are hundreds of organization camps and summer camps for boys and girls, run for profit.

The widely varied organizations that have availed themselves of the opportunity to establish camps on the national forests fall, roughly, into five classes:

1. Municipalities. California is most advanced in developing municipal vacation camps, with 12 of them now in operation on national forests there.
2. Social nonprofit organizations. By far the largest users of camps in

national forests. Boy Scouts, Girl Scouts, Campfire Girls, Young Men's Christian Association, Young Women's Christian Association, 4-H Clubs, and the Salvation Army all have camps.

3. Restricted membership clubs and organizations. These include church, fraternal, and social groups, and farm and labor organizations. Some of these maintain camps for children or provide low-cost vacations for adults.

4. Hunting and fishing, hiking and skiing clubs—also of restricted membership—which maintain a simple or sometimes an elaborate lodge where members may pursue the sport which is the single purpose of the club.

5. Boys' and girls' camps run for profit as business enterprises. At most of these camps the charges may seem very moderate. The municipal camps have weekly rates of about \$8.50 for children and \$10 and \$12 for adults. Camps run by such groups as the Boy Scouts, Y. W. C. A., and 4-H Clubs charge from \$6 to \$8. But even this as a vacation expenditure puts the camp beyond the means, as a rule, of families in the lowest income brackets with \$1,000 a year or less.

At a number of forest camps run for underprivileged children in Florida, the cost has been reduced by buying a large part of the food through the Federal Surplus Commodities Corporation. Food cost for each child has thus at times been brought as low as \$2.50 a week. Even here, in order to give the neediest children their outing, organizations such as Rotary and Kiwanis have put up the money to pay for the food and to get the children, by bus, out to the forests and back home.

There are now 548 organization camps on the national forests, and they are of inestimable value. The camps on the San Bernardino in California alone gave forest outings for a week to 16,853 boys and girls in 1936. There has been a tendency lately on the part of labor groups to join in supporting organization camps for their members and young. But for all the good will in the world, it stands plain the country over that even organization camps most carefully planned and economically conducted can seldom stretch funds far enough, or find money enough, to give forest outings to the neediest.

We have considered thus far only the need of such outings for the poor but healthy. The need of making available sun and air in our forests for the poor

and ailing is one that must also be faced, in time. When poor people face physical crises, the universe is a cruel machine. They may survive with the aid of clinics, hospitals, and operating tables, but when the worst is over they must go back to their homes and to inadequate care at a critical time in their illness. For people such as these there should in time be developed camps and retreats where, in the quiet and healing of the forests, health could be restored. Leased to charitable organizations, welfare associations, or to public health clinics, such forest retreats would lessen for the poor some of the horrors of physical disability.

At Deer Lake in the Ocala National Forest in Florida last year an experiment began. On the shores of this lake with its facilities for bathing, boating, and fishing is now a camp having a maximum capacity of 140 persons. It was designed by the Forest Service and built as a W. P. A. project. It has a mess hall, recreation hall, lavatory buildings, 14 squad huts, and a director's cabin. The buildings are simple and substantial. A 200-foot well furnishes excellent water. The sanitation equipment is of the best engineering design.

Open for rental by any civic or nonprofit organization, it has characteristics which the Forest Service believes should be typical of the organization camps for low-income groups. Controlled by the Forest Service, a public agency, and with bookings for the full season allocated among various organizations, it makes efficient use of the recreational possibilities of an area rather than limiting the use of the area by giving a special-use permit to an organization which will use its camp for only a short time each year. Under Federal control it will be possible to erect more substantial buildings and influence more effectively the architecture and planning of the lay-out, thus avoiding the unsightly camps that are likely to result from the efforts of organizations operating with meager funds. Most important, it seems that the Government can so construct such camps and turn them over to use by groups of the people who will use them at much lower vacation rates than now prevail.



F-349412

*For the first time in their lives many prairie farm boys
are learning what trees were meant for.*

SHELTERBELT ON THE FARM OF
F. M. DOUGHTY, MANGUM, OKLA.



Space, Sun, and Air

All things invite this earth's inhabitants
To rear their lives to an unheard of height,
And meet the expectation of the land.—*Henry D. Thoreau.*

“THE EXPECTATION of the land!” Writing in 1926, Lewis Mumford echoed this phrase of Thoreau’s, and added, “One comes upon that phrase or its equivalent in almost every valid piece of early American thought.”

It is plain that in recent years our expectation of the land is faltering. In the same book, *The Golden Day*,¹ Mumford spoke of “the bucolic innocence of the Eighteenth Century, its belief in a fresh start, and its attempt to achieve a new culture.” Against that belief and hope he posed a picture of destruction: “The epic march of the covered wagon, leaving behind it deserted villages, bleak cities, depleted soils, and the sick and exhausted souls that engraved their epitaphs in Masters’ Spoon River Anthology.”

Later in his book Mumford declares: “What Thoreau left behind is still precious. Men may still go out and make over America in the image of Thoreau. What the pioneer left behind, alas, was only the burden of a vacant life.”

Our early pioneers left us, indeed, much to answer for. But the drubbing they have been taking from modern American writers lately seems, on the whole, excessive. If anything at all certain may now be said to come out of all our talk about the pioneer forebears, their faults and virtues, it is this:

¹ Entered, as are all books here noted, in the Bibliography, page 285, Appendix.

Pioneer restlessness, pioneer excessiveness, along with the pioneers' hope "to rear their lives to an unheard of height" remain surgingly alive on this land, and in its cities.

"An April restlessness," Bernard DeVoto called it, in 1932, writing Mark Twain's America. DeVoto is more concerned in displaying the pioneers as human than in depicting them as persons of special virtue. The despoiled resource he most deplors is space, and stillness. The early pioneer, he writes, "knew solitude and was not frightened by it. Always a mile would take one into the quiet." And, nobly, in closing, DeVoto describes the great body of our mainland: . . . "the beauty of the land across which the journey passed. Whatever else the word 'frontier' means, it has also meant water flowing in clear rivers, a countryside under clean sun or snow, woods, prairies, and mountains of simple loveliness. It is not necessary to think the literature of America a very noble literature in order to recognize the fact that one of its principal occupations has been the celebration of that beauty. Layer after layer of experience or frustration may come between but at the very base of the American mind an undespoiled country lies open in the sun."

To anyone deeply concerned in conserving or restoring that basic resource, it seems that the most hopeful change thus far has been expressed less in action than in words. Among historians and economists, Frederick Jackson Turner, Thorstein Veblen, John Commons, and the Beards, Charles and Mary, had called the turn by the dawn of this century. This list is far from complete; it omits many who have done or are doing yeoman writing. Among the poets, Robert Frost and more lately Archibald MacLeish and Pare Lorentz, proclaim the wickedness of wounding land, and the human consequences.

"Build soil!" sings Frost.² Assembling photographs of washed-out Americans, adrift, homeless on land which but a few decades ago seemed wide, rich, endless, MacLeish makes you hear the people dispossessed murmuring, wondering, all but despairing; "We wonder . . . We don't know . . . We're asking."³ Lorentz's film, *The River* (1938), has been mentioned. His picture, *The Plow That Broke the Plains* (1936), was as noteworthy.

² See: *A Further Range*, Bibliography, p. 285, Appendix.

³ See: *Land of the Free*, Bibliography, p. 285, Appendix.

REAPPRAISAL of American sources and growth is proceeding now so vigorously that there is perhaps some danger of our falling into hopeless thinking about ourselves and our country. That would be a natural reaction from optimistic excesses in the past.

Even so, to all who whack us awake from childish dreams of illimitable wealth and beauty forever to be grabbed and squandered, thanks. One such is H. L. Mencken of The Baltimore Sun papers. His journalistic flail went to work early in the century. His whoops of praise and derision, as a literary critic, high-lighted talents such as those of Sinclair Lewis, the creator of *Babbitt*. Like Mencken, Lewis plays rough with some of our fondest illusions; but there was a sort of tenderness in Lewis' presentation of this fellow creature, *Babbitt*, the pioneer turned timid burgher, fat, puffy, afraid to look at forces encompassing his spirit, afraid to knock or say his say against them, afraid to awaken, to shatter the waning dream, to take stock honestly.

Mencken could hardly be called a devotee of the natural order, of woods, of pastoral scenes, or of country matters generally. He is a born cockney, little interested in yielding earth. But the roaring courage with which he spoke out against that in his immediate environment which he found damaging and preposterous set an example now widely followed by editors and columnists; and this has been enormously invigorating, especially in the South.

You see many better-tended areas of woodland and farm land now as you travel southward than you saw 10 years ago; but the most vigorous portent of an actual reconstruction is to be seen, in little patches, in the columns of southern papers. In editorial pieces, in contributed articles, in letters from the people, in stray news items, and the work of signed columnists, hammering away, it is evident that a new leaven is at work. Visitors from without, if at all polite or prudent, still may hesitate to speak harshly of the southern scene and prospect. It is now less necessary. The liveliest minds of the South, academic and technical, agrarian and industrial, are talking it out, openly, in print.

The very source of most southern writers' strength is a deep attachment to what is left of the southern pastoral and woodland scene. This somewhat narrows their general appeal, and southern editors and columnists are generally not as widely heard as Washington and New York City columnists are. But no better writing is now being done anywhere in the country than

in the South—or by writers at the border, facing South. And many of these writers are moved simply by what they see from day to day all around them to examine with intense interest all proposals to strengthen and beautify the South's remaining natural resources from the ground up.

To this end Gerald W. Johnson, Hamilton Owens, and Phillip Wagner, particularly, contribute to Maryland's *Sun* papers strong writing, and editorial direction. In North Carolina, on the *Raleigh News and Observer*, there is Jonathan Daniels; in South Carolina, on the *Columbia State-Record*, James Derieux; in Kentucky, Herbert Agar of the *Louisville Courier*; in Alabama, John Temple Graves of the *Birmingham Age-Herald*. Many others might be named who, if they write less often about conservation, know what they are writing about in terms of the land they live on, and who, when they do write about it, hit hard. For instance, Frederick Sullens, editor of the *Jackson (Mississippi) Daily News* since 1905; and in Texas, Peter Molyneaux of *The Texas Weekly*.

To the north, there are among many, J. N. Darling and W. W. Waymack of the *Des Moines Register-Tribune*, William Allen White of the *Emporia Gazette*, William T. Evjue of the *Madison (Wisconsin) Capital-Times*, Henry J. Haskell of the *Kansas City Star*. On the west coast, to name but two, Paul Smith of the *San Francisco Chronicle* and Richard Neuberger of the *Seattle Post-Intelligencer*, stand forth to defend the land from harm.

REPORTERS' books describing, interpreting, both the world scene and the domestic scene, stand remarkably high on any list of books that Americans are reading now, and the same lists carry many a work by statesmen and scholars who have learned to write with the direct thrust expected of reporters. It is not strange that men in the Government service, and especially in the Department of Agriculture, should write continually and with growing concern of land and tenure problems. By the very nature of their work they have been for years up against a realization that with the continent settled, in the main, forests slaughtered, natural beauty and quiet laid to waste, soils skinned, waters sullied, and water tables sharply altered, basic conditions can no longer be described as fundamentally sound. But it is heartening and significant that there should have been so many contribu-

tions on the question from writers not in government service, and less specialized in their interests. To note a few:

In 1935, Herbert Agar's *Land of the Free*, from which, at the head of chapter 13, we have quoted; and Paul Sears' *Deserts on the March*, described by Hendrik Willem van Loon as a new way of writing history. In 1936, Stuart Chase's *Rich Land, Poor Land*; Arthur Raper's *Preface to Peasantry*. In 1937 Erskine Caldwell and Margaret Bourke-White published their terrifying collection of words and photographs, an album of dispossessed and hopeless hands and croppers, *You Have Seen Their Faces*. In the same year, Gerald Johnson compressed Howard Odum's monumental *Southern Regions of the United States* into a brisker, more personal study, *The Wasted Land*, and Walter Prescott Webb, author previously of a great and scholarly analysis, *The Great Plains*, relaxed into the mood of an unreconstructed southern agrarian and issued a challenging book-length pamphlet, *Divided We Stand*. In the same year, 1937, Paul Sears followed his *Deserts on the March* with a broader popularization of ecology, *This is Our World*, and in this work extended his previous argument.

The pattern of lichens on rock, Sears says, the grazing habits of elk in our remaining forests and mountain meadows, and the group behavior of elks on picnics, and of all other human groups seeking comfort and sustenance, are related growths. In 1938 there came DuPuy's *The Nation's Forests*, Lord's *Behold Our Land*, *A Southerner Discovers the South* by Jonathan Daniels, *Roads to a New America* by David Cushman Coyle, and Richard Neuberger's *Our Promised Land*. In 1939 the city reviews were appraising a variety of basic works on conservation such as *Seven Lean Years* by T. J. Woofter, Jr., and Ellen Winston, *Romances of the National Parks* by Harlean James, *These Are Our Lives* by members of the Federal Writers' Project, George Leighton's brilliant study of *Five Cities* and their wasting backgrounds, and, perhaps the most influential tract of all, though it is not strictly speaking a reporter's book, John Steinbeck's *The Grapes of Wrath*.

HUMAN CONSERVATION . . . There was a time when foresters could not see the people for the trees. This, perhaps, was a natural tendency at the beginning of the present century when the American conservation move-

ment first took form. There seemed to be plenty of room in this country then. Population pressure upon public parks and forests was not so intense. The initial cry was to preserve timber, minerals, soil, and water. There was a tendency to regard forest residents and forest visitors as inconvenient interlopers, probably up to no good. There were old-line foresters who regarded every forest resident or visitor as a suspected wood thief, firebug, or squatter. A few early rangers and supervisors, even after 1906, dealt in that spirit with people trying to make a living in the forest, and with people who came to the forests on pleasure bent. This was never the idea of Gifford Pinchot, the first Chief of the Forest Service; nor of any of his successors. As public pressure on the forests mounted, the number of forest officers concerned only with trees, never with people, diminished.

Not only in forestry, but on all the fronts of conservation, the narrowly materialistic view, which seeks to preserve this segment or that of our national resource and ignores all the other interrelated segments of the life cycle is on the wane. Unified planning with a view to final values is distinctly on the up.

Ferdinand Silcox, Chief of the Forest Service from late 1933 through 1939, worked hard to advance, to humanize, and to coordinate land-use planning throughout our land. His first thought was always of the final crop—the people. He never visited a forest without asking “Who lives here?” or “Who uses this forest?”; he always put that first in his inspections.

He is dead now; but his way of looking at land lives on. “Damage to the land is important only because it damages the lives of people and threatens the general welfare,” said Henry A. Wallace, Secretary of Agriculture, before the Association of Land Grant Colleges late in 1939. “Saving soil and forests and water is not an end in itself; it is only a means to the end of better living and greater security for men and women. Human conservation is our first and greatest goal.”

The year 1940, as this book goes to the printer, is barely a month along; but the year has brought forth already a number of extraordinary pronouncements as to conservation, in the broadest sense of the word. “I can see,” writes E. B. White in the February issue of *Harper's Magazine*, “no reason for a conservation program if people have lost their knack with earth. I can

see no reason for saving the streams to make the power to run the factories if the resultant industry reduces the status and destroys the heart of the individual. Such is not conservation, but the most frightful sort of dissipation."

In the February 1940, *Survey-Graphic*, Albert Mayer: "If we mean to gain and to retain healthful living in pleasant communities for ourselves, our children and our fellow citizens, then we must reckon with the new hot dog stand suddenly erected and noisily operating in our midst, with the old swimming hole being polluted by the new factories being built upstream, with the dust storms making our lives physically impossible. Whether we live in big cities or in small towns or in the country, we are affected by the forces of disintegration."

The editors of *Fortune*, in their Tenth Anniversary Issue (February 1940) sum up: "The U. S. is faced with problems different from those in almost any country in the world, and these problems have their origins in plenty. . . . These problems involve the land, the population, the national income, the distribution of wealth, the reinvestment of income—all of the headaches of our time. . . .

"The American cannot live effectively and decently without a vision; when the vision fails his whole system collapses. His new vision, his new future, his new project will of necessity be different from the old, both internally and externally. But unless the American is extinct, a project there will be. . . .

"If the dream is reborn, it must have some of the characteristics of maturity: it must relate the present to the future in a realistic way; it must demand a certain amount of planning and sacrifice. . . . So long as he is an American, the American will be an idealist. But there is no reason under the sun why he should always remain a wildman."

Well employed, or out of work, well to do or ill to do; riding high, dead broke and on the road; or rich enough to pay in terms of a couple of gallons of gas for a forest outing, we remain, in the main, a people of some spirit. The spirit of the people is the final crop of any land. The final crop, as well as the intermediate material crops, and the source—the land itself—need to be conserved. Viewed thus, recreation on the national forests is no mere

adjunct to timber and water and soil conservation; it is in itself conservation designed to preserve and strengthen the American spirit.

Solvent migrants swarm to the forests instinctively every week end of open weather and, in lesser number, throughout the week. It is as if something in their blood drove them to burn the roads, get out of civilization, and then whirl back to civilization again. "Got no new places to go now, so we just run in circles," growls an old-timer viewing with some distaste a holiday throng in a western forest camp. "I like the woods, though," he adds, "Even with a lot of people squealing in 'em, I like the woods!"

RESEARCH must be pushed; research ranging over the fields of economics, sociology, psychology, aesthetics, botany, ecology, pathology, and forestry; research to the end that the people may use the forests for recreation permanently without hurting the forests and, ultimately, ourselves.

The problems are distinctive and challenging not merely in their complexity but in their diversity. One need is closer counts or more accurate methods of estimating the number of persons who come to the forests, and the ability—or inability—of certain trees to stand human society. This perplexes research foresters, and they have not as yet learned fully what to do about it. Some of the most decorative trees in dry uplands, particularly, seem to shrink from the tread and touch of man. For instance:

The aspen, whose groves have always been favored for camping or picnic grounds, is a thin-barked tree and probably for that reason is very sensitive to heat injury. Aspen trees have frequently been killed by the heat of campfires at a distance which would have little or no effect upon individuals of other species hardier in this particular. Other tree species, some of great beauty, are sensitive to overuse of their immediate environment because their feeding roots are very close to the surface of the ground. The long-continued compacting of the soil about such trees, preventing the normal development of the feeding rootlets, affecting the normal aeration of the soil, and probably disturbing the delicate relations between the myriads of soil microorganisms, will slowly load the scales against the efforts of the trees to maintain themselves in the never-ceasing struggle with their nearby competitors.

Meinecke has shown the effect of soil compacting on the redwood groves

of California, and some of the unfortunate effects of overuse of campgrounds. General evidence indicates that the Colorado blue spruce of the central Rocky Mountains is also highly susceptible to the type of injury which has caused damage to the redwood. On the other hand, except at its lower altitudinal limits where the never-ending struggle is waged between tree growth and open prairie, ponderosa pine is relatively resistant to the effects of concentrated occupancy of its environment by man.

These are largely western problems. To the East, the birches suffer from the obeyed impulse of thousands to peel off their bark as mementos of a forest outing. "Give me of your bark, O Birch-tree!" Research to amend such habits must enter the field of applied psychology, and be grouped, perhaps, with studies of persuasion in fire prevention such as were noted in chapter 10.

Physical data as to the effects of new roads, trails, and recreational structures upon the tree growth and water yield is accumulating, but still is inadequate. The removal of large quantities of soil where cuts are made on sloping terrain disturbs and often quite radically changes the movement of water within the soil. Trees standing above a cut may find themselves without the supply of moisture which they demand and without which they cannot survive. A fill banking new soil about the base of a tree may result not only in changes in the soil moisture by alteration of the rate of percolation of surface water, but may also prevent proper aeration of the soil levels in which the feeding roots of the tree occur. To cut long swaths of timber through forests of even a moderate degree of density for road construction may cause profound modifications of the micro-climate to which the tree is accustomed. Violent changes in the local direction and velocity of air currents may result, and trees which otherwise might have stood for centuries may suddenly be blown down.

The precise causes of many such effects are as yet little understood. Definite studies and analyses will enable the road engineer and forest administrator to prevent defacement and waste. Obvious causes of deterioration and destruction, such as mechanical injury, can be controlled by administrative regulation. But to guard against the more deeply seated dangers involving slow changes in the relation of each kind of organism to

the others, changes in that totality of relations which constitutes the ecology of the forest, is more difficult.

Visibility has long been a subject of Forest Service research. In respect to the location of fire towers and the maximum extent of the prospect from towers, especially, striking advances have been made in recent years. One thing that hand-picked CCC boys and other small, skilled groups of relief workers have been doing for their country is to map it more graphically, beautifully, and accurately than ever before. Relief maps, done to strict scale up and down as well as longitudinally, have been made of some of the national forests. Such maps serve usefully in administrative planning; they show the area not as flat and static, but in its actual living dimensions. They are useful, again, in impressing upon forest visitors the actual lay of the country. The people remember such maps more vividly, and are guided by them more helpfully than by flat, gray maps. And in locating or relocating fire towers, so that almost no spot in the forest remains out of sight from the guards, these maps have proved most helpful. It is possible on such a relief map to place a flashlight bulb at height proportional to that of proposed towers, and then by turning the light on, in a dark room, to plat out in terms of light and shadow the range of visibility from that point.

Invisibility, or a relative invisibility of Forest Service structures set up for purposes of forest administration and forest recreation, is a newer research problem in aesthetics and in forest architecture; and ever since landscape architects were brought to the aid of forest recreation planning good progress has been made. Once forest administrators, in their innocence, painted all such structures green. It now becomes evident that against almost any forest background, with its infinite variety of greens shot through with light, flat green of any shade stands out in sharp contrast, inharmoniously. The darker the color, generally speaking, the more the structure seems to sink into the background, unobtrusively, gracefully. Most Forest Service structures on sites recently developed are painted a chocolate brown. On desert sites, and on sites intermediate between woods and desert, other color combinations are tried with varying success. There remains need for research, along with trial and error afield, in respect to forest and desert light effects and a harmonious introduction of structures.

In the fields of economics and sociology, forest research lags. Of this most foresters are well aware. "As between the economic benefits which accrue to a forest or near-forest community when tourists come in numbers, on the one hand, and between sociological consequences, both beneficial and harmful, on the other," say the authors of a recent research memorandum, "there should be a more accurate means of accounting." But the difficulties of drawing any such a balance sheet are obvious; for the tourist money thus brought in is a tangible gain, whereas the disruption of cherished local values, when such occurs, may be largely intangible.

THE HEALING FOREST . . . There is a saying often exchanged among visitors to the national forests, a trite saying, possibly, but one that seems to men whose life work has been forestry, profoundly true. Something like this: "I like coming up here. It makes a new man of me." To renew a man, or a woman, worn and weary, to restore them in health and spirit, is the purpose of forest recreation. And along with a restoration of the spirit goes a restoration, a conservation, of the source.

Surely, in this large sense, forestry is a good calling, a calling in which a man may work hard and without great riches, yet be proud. Much of it is inside work, nowadays, paper work; but generally there are outings, trips on business "for the good of the Service"; and professional foresters are in general given far more than most men to know the beauty and wonder of our land.

The office work may be stuffy, the piles of paper "for immediate attention" may tower high, the sense of imprisonment in a great stone city may seem to a range-reared forester at times intolerable; yet there are many compensations—memories of trips afoot or by horse over lone heights where the air went to the head like wine; where each day unfolded a new heaven, a fresher, more beautiful earth.

Our forebears fled an older world. Those were parlous days. So are these. But as our forebears had faith, so must we. Faith in America. Faith in democracy. Faith, too, that our forest lands cannot only create new jobs but can also make life pleasanter and more secure.

There is reason for this faith. Man's first food is said to have been acorns

from the Tree of Jove. Three thousand years before Christ was born cedar, cypress, and pine helped establish the maritime supremacy of an ancient Mediterranean civilization to which all the world is heir and debtor. Nehemiah used timbers for city walls and gates when Jerusalem was rebuilt. Here in our own land, forests sheltered, fed, and clothed the American Indian. Larders of Pilgrim Fathers were often stocked with venison and wild turkey. Tall masts of New England white pine helped a tiny fleet defy the Mistress of the Seas. Beaver hats and mink coats founded many a fortune. And trees helped make log cabins and cradles, towns, telephone lines, and transcontinental railroads. They were vital to the winning of the West, and the building of a nation.

“Out of the forests came the might of America—wealth, power, and men.” There is a world of truth in that statement by Jenks Cameron. Our homes are a crop of the forest. So are our books, our newsprint, our furniture. And in these modern times perfumes, plastics, naval stores, surgical absorbents, fiber containers, and thousands of everyday things are forest products. Farm woodlands yield fence posts, maple sugar, pulpwood, mine props, fuel, and other products that exceed in value the annual crops of rye, barley, and rice combined. Wages paid workers in the forests and forest industries support 6 million people. Two million live on wages paid for transporting and selling products of the forest. Carpenters, furniture makers, and other artisans of wood support 5 million more. In all, and directly and indirectly, America’s forests provide the necessities of life for nearly one-tenth of her population.

Besides all these values there are human values. The tempo of our daily lives has speeded up. Each year we experience less of natural physical activity and greater mental strain. In bustling office or crowded street we long for the friendly forest. Woodland recreation fills a definite need in our lives now, and we plan for it consciously.

TREES TO THE PEOPLE . . . Planned new plantations such as those of the field windbreaks seem likely, as time goes on, to offer more and more, especially to dwellers in our great treeless prairie and High Plains country, places of rest.

The prairie-plains area is for the most part gently rolling. It presents to the outlander a monotonous landscape. Those at home there do not find the landscape monotonous, but they long for rest from the heat of the sun and the thrust of progress; for change and rest in a different sort of country, sheltered by trees.

The need of such change and rest becomes plainly more urgent after one crosses the "dry line," the 100th meridian roughly bisecting Kansas and Nebraska. Dust has been blowing here from the southwest and the northwest, lately. Also, dust has been blowing locally. Heat waves shimmer and dance over this part of our land in summer. Mirage lakes tantalize the eye with visions.

The recreational wants of most of the people here, on farms and in towns, are simple. They lift their eyes to hills far beyond eyesight. They go for rest and change to wooded mountains, if they can.

To the Black Hills of South Dakota, to the Wichita Mountains of Oklahoma and the Turtle Mountains of North Dakota, they go for a while, for outings. Still to the west are always the Rockies, and a great many rather poor people of the Midland burn gas to get there and rest for a while at those heights. But most prairie people must seek places for recreation nearer home. Trees for shade and water for swimming and fishing are the essentials most in demand. Remnants of the native forest stands and planted groves have long been utilized as community gathering sites. People frequently drive many miles to enjoy the company of their neighbors at picnic and rodeo time in the welcome shade of the friendly trees. Even such elemental essentials are few and far between.

Under the Prairie States Forestry Project, created by executive order of the President in 1934, large-scale windbreak protective plantings were established on areas where soil characteristics were suitable and within rainfall zones where the annual supply was adequate to support tree growth. The tree resources of the prairies developed through this cooperatively administered Prairie States Forestry Project are helping to solve an economic problem of soil and agricultural stabilization and at the same time are making recreation spots. In many localities these tree plantings are changing the whole aspect of the countryside. Trees in long strips of a half mile

apart break up the wide reaches and temper the winds. Many of the trees, after 3 years of growth, are over 20 feet tall. Many of them are more than 30 feet tall.

Children from the schools come to the newly planted strips for their picnics. Farm families are tempted into the open for a watermelon "bust" in the shade of the trees. Where the strips are close to the farmstead, the family may take a noontime siesta there. For the first time in their lives many prairie farm boys are learning what trees were meant for—sheltering places to sprawl, rest, or play. Already there are swings for the young on the limbs of many of these new plantations. These trees are really growing.

When the Prairie States Forestry Project started many Plains residents said it was foolish, that trees would not grow in those parts. And it remains, as David Cushman Coyle remarks in his book *Roads to a New America*, "a curious fact" that most people who do not live in that part of the country and see those new trees growing "believe that the shelterbelt was just another failure."

"If God didn't make any trees in the Plains, how can man put them there?" they ask. The answer, Coyle continues, "is that a seed cannot grow in that country because the ground dries farther down than its first-year root can reach. But if it is started in a nursery and transplanted after its roots are long enough to reach below the bone-dry surface layer, it will grow. In the first 3 years, 6,500 miles of shelterbelt were successfully established, but the Plains need 220,000 miles of it."

To people accustomed to live with trees, the idea may seem ridiculous, but even at the end of the first 2 years, when most of the plantings did not stand more than 15 feet high, on the average, the Plains people already were starting to have picnics in that new-made shade. Now with a canopy 30 feet high, and—in many places—higher, recreational use of plantings has increased; and birds return to add charm and variety to the scene.

On the strips planted under the Prairie States Forestry Project, doves have been known to nest in trees the year they were set out. Scissor-tailed fly catchers, quail, prairie chickens, and other indigenous species are now commonly seen in plantings only 3 years old. This increase in birds has economic value in insect and weed control. But possibly the value that bird

life adds, by bringing animation and change into the lives of prairie people, is as great; and the whole project, while not designed for recreational purposes, does suggest important possibilities in open-air recreation for low-income groups. If it is not always possible to bring the people to the forests it is sometimes possible to bring the trees to the people.



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Appendix

BASIC PRINCIPLES GOVERNING RECREATIONAL MANAGEMENT ON THE NATIONAL FORESTS

1. The recreational resources of the national forests will be so managed as to provide for their fullest use consistent with suitable use of the other national-forest resources under the multiple-use plan of management. This involves determination of the areas on which the recreational values are so important as to justify dominant or exclusive consideration; the areas where recreation and other uses are of approximately equal importance and may be enjoyed concurrently with relatively minor mutual concessions in management; and the areas where either recreational values are so small or other uses so important as to call for subordination of recreational use.

2. Areas of special value for recreation will be identified, protected, and suitably managed in order to bring about a balanced program providing for all forms of recreation appropriate in the forest. This will include, at one extreme, adequate provision for such concentrated use as on campgrounds, picnic grounds, organization camps, resort areas, and the like; and at the other, setting aside substantial areas where natural conditions will be retained, including virgin, wild, and wilderness areas.

3. The planning and development of the recreational resource and the necessary adjustments with other uses will be conducted in cooperation with all groups interested in recreation or other resources. The organization of local and general associations of those interested in recreation to act in an advisory capacity in national-forest recreation planning will be encouraged.

4. Priority in the expenditure of Federal funds to care for visitors to the national forests will be given to those developments which can take care of the most visitors for a given unit of expenditure. Under this principle the following priority order will usually be recognized: Campgrounds and picnic grounds, organization camps, resorts. Preference will also be given to recreational developments which emphasize opportunities for participant rather than spectator enjoyment of forest-recreation activities.

5. Particular attention will be given to facilities for the use of those in the low-income groups who can enjoy forest recreation only if its cost is small. This means emphasis on both camping and picnicking facilities, and organization camps owned by the Government and made available to those sponsoring vacations for low-income groups.

6. Uses which require exclusive occupancy, such as summer homes and limited-membership clubs, will be confined to areas not needed by the general public, and will necessarily have the lowest priority.

7. The Government will install and operate simple, moderate-rate resorts in order to insure appropriate and timely developments and provision of adequate service at the lowest

feasible rates. Where public funds are not available for this purpose, such installations will be permitted by private enterprise, but under permit requirements which retain government control of the type of development and the quality and cost of services rendered.

8. The Forest Service will develop or permit the development of such facilities as will aid in the enjoyment of those types of recreation appropriate to the forest environment. It will exclude inappropriate developments and especially those which tend to introduce urbanization into the forest. In all developments the aim will be to have them harmonize as much as possible with the natural environment.

9. The Government will install or permit installation of facilities only to the extent required to serve public needs so as to keep to a minimum the introduction of artificial developments in the forest environment.

10. The recreational developments on the national forests will be managed so as to complement rather than compete with those available on other public lands in the same locality. Likewise, duplications will be avoided of developments on private lands which care adequately for the public needs under conditions and rates comparable to those on the national forests.

11. The recreational use of the national forests will be handled with the fewest possible restrictions on users consistent with the protection of the forest against destruction or damage, the observance of essential sanitary and safety measures, and the prevention of actions by individuals or groups which would unduly interfere with the enjoyment of others.

12. Charges will not be made for the use of ordinary facilities such as those commonly provided on campgrounds, picnic grounds, and winter-sports areas, but in general charges will be made for special facilities.

WHAT TO DO WHEN LOST

Most forests provide maps and folders free, to visitors. You can get them from the forest guard or ranger. They are good to have, not only as a means of getting oriented, but also as aids to understanding the country. Most of the maps carry, on their reverse side, concise local information, and admonitions as to sane forest behavior. This, taken from the back of a California forest map folder, is the counsel of long experience:

A clear head will find itself. If everyone remembered this, there would be fewer persons lost in the mountains and forests. Loss of mental control is more serious than lack of food, water, or clothing. The man who keeps his head has the best chance to come through in safety.

The following helpful rules are worth remembering:

1. Stop, sit down, and try to figure out where you are. Use your head, not your legs.
2. If caught by night, fog, or a storm, stop at once and make camp in a sheltered spot. Build a fire in a safe place. Gather plenty of dry fuel.
3. Don't wander about. Travel only downhill. Follow watercourses or ridges.
4. If injured, choose a cleared spot on a promontory and make a signal smoke. The Forest Service fire lookouts or the observers in an airplane may see your smoke.

5. Don't yell, don't run, don't worry, and DON'T QUIT.
6. A word from the forest ranger to the new camper, hiker, or vacationist:

It is better to carry a clear head on your shoulders than a big pack on your back; yet in going alone into the mountains it is well to go prepared for any emergency. A fish-line and a few hooks, matches in a waterproof box, a compass, a little concentrated food, and a strong knife should always be carried. A gun may help as a signal, seldom for obtaining food. Above all, keep cool, and the chances are you will come out of the woods on your own feet.

Three quickly repeated and evenly spaced sounds or signals are a standard distress call on land. Signals may be of any kind, audible or visible—calls, whistles, gunshots, flashes from searchlights or mirrors, smoke signals, waves of the arms, a piece of clothing or firebrand, or three small fires evenly spaced. The repetition in threes and the even spacing distinguishes the distress call.

TABLE A.—*National-forest areas in complete Federal ownership*
[Acreage as of January 1, 1940]

Forest	Headquarters	Acres	Forest	Headquarters	Acres
Absaroka	Livingston, Mont. .	999, 647	Chippewa	Cass Lake, Minn. .	574, 309
Allegheny	Warren, Pa.	434, 451	Chequamegon	Park Falls, Wis. . .	789, 693
Angeles	Los Angeles, Calif.	643, 738	C h o c t a w	Tallahassee, Fla. . .	315, 564
Angelina	Houston, Tex.	139, 957	hatchee.		
Apache	Springerville, Ariz.	1, 569, 089	Chugach	Juneau, Alaska . . .	4, 799, 899
Apalachicola . . .	Tallahassee, Fla. . .	501, 260	Cibola	Albuquerque, N.	1, 641, 829
Arapaho	I d a h o Springs, Colo.	967, 644		Mex.	
			Clark	St. Louis, Mo.	803, 511
Ashley	Vernal, Utah.	1, 076, 367	Clearwater	Orofino, Idaho. . . .	1, 039, 844
Beaverhead	Dillon, Mont.	1, 957, 928	Cleveland	San Diego, Calif. . .	379, 925
B e l l e v u e - S a	Winona, Minn.	10, 710	Cochetopa	Salida, Colo.	1, 173, 809
vanna (Ill.).			Coconino	Flagstaff, Ariz. . . .	1, 725, 867
Bienville	Jackson, Miss.	175, 085	Coeur d'Alene.	Coeur d'Alene,	704, 247
Bighorn	Sheridan, Wyo. . . .	1, 113, 667		Idaho.	
Bitterroot	Hamilton, Mont. . .	1, 900, 814	Columbia	Vancouver, Wash. .	1, 254, 499
Black Hills	Deadwood, S. Dak.	655, 219	Colville	Republic, Wash. . .	749, 266
Black Warrior . .	Montgomery, Ala.	176, 323	Conecuh	Montgomery, Ala.	68, 749
Boise	Boise, Idaho.	1, 287, 486	Coronado	Tucson, Ariz.	1, 384, 676
Cabinet	Thompson Falls, Mont.	1, 112, 492	Croatian	Columbia, S. C. . . .	116, 716
			Crook	Safford, Ariz.	1, 422, 777
Cache	Logan, Utah.	702, 687	Cumberland	Winchester, Ky. . . .	420, 883
Caribbean	Rio Piedras, P. R. .	20, 665	Custer	Billings, Mont. . . .	1, 196, 744
Caribou	Pocatello, Idaho. . .	845, 497	Davy Crockett . . .	Houston, Tex.	160, 467
Carson	Taos, N. Mex.	1, 128, 860	Deerlodge	Butte, Mont.	1, 125, 270
Challis	Challis, Idaho. . . .	2, 447, 080	Deschutes	Bend, Oreg.	1, 431, 707
Chattahoochee . .	Gainesville, Ga. . . .	574, 929	De Soto	Jackson, Miss.	463, 738
Chelan	Okanogan, Wash. . .	1, 811, 777	Dixie	Cedar City, Utah. . .	798, 403
Cherokee	Cleveland, Tenn. . .	536, 541	Eldorado	Placerville, Calif. . .	588, 385

TABLE A.—*National-forest areas in complete Federal ownership*—Continued

[Acreage as of January 1, 1940]

Forest	Headquarters	Acres	Forest	Headquarters	Acres
Fishlake.....	Richfield, Utah...	1, 414, 418	Minidoka.....	Burley, Idaho.....	591, 295
Flathead.....	Kalispell, Mont...	2, 215, 243	Modoc.....	Alturas, Calif.....	1, 457, 265
Francis Marion.	Columbia, S. C....	243, 383	Mono.....	Reno, Nev.....	1, 262, 770
Fremont.....	Lakeview, Oreg...	1, 102, 962	Monongahela..	Elkins, W. Va.....	802, 686
Gallatin.....	Bozeman, Mont...	848, 966	Montezuma...	Mancos, Colo.....	756, 440
George Wash- ington.	Harrisonburg, Va..	917, 873	Mount Baker..	Bellingham, Wash.	1, 815, 142
Gila.....	Silver City, N. Mex.	2, 393, 572	Mount Hood...	Portland, Oreg....	1, 100, 756
Grand Mesa...	Grand Junction, Colo.	653, 168	Nantahala.....	Franklin, N. C....	326, 266
Green Moun- tain.	Rutland, Vt.....	160, 539	Nebraska.....	Halsey, Nebr.....	206, 026
Gunnison.....	Gunnison, Colo...	1, 283, 584	Nevada.....	Ely, Nev.....	1, 232, 646
Harney.....	Custer, S. Dak....	528, 189	Nezperce.....	G r a n g e v i l l e, Idaho.	1, 931, 124
Hiawatha.....	Escanaba, Mich...	406, 268	Nicolet.....	Rhineland, Wis..	552, 874
Helena.....	Helena, Mont....	894, 971	Ocala.....	Tallahassee, Fla...	316, 897
Holly Springs..	Jackson, Miss....	114, 795	Ochoco.....	Prineville, Oreg...	764, 040
Holy Cross....	Glenwood Springs, Colo.	1, 086, 352	Olympic.....	Olympia, Wash...	812, 448
Homochitto....	Jackson, Miss....	186, 411	Osceola.....	Tallahassee, Fla...	156, 182
Humboldt....	Elko, Nev.....	1, 059, 865	Ottawa.....	Ironwood, Mich...	614, 869
Huron.....	East Tawas, Mich.	354, 970	Ouachita.....	Hot Springs Na- tional Park, Ark.	1, 473, 487
Idaho.....	McCall, Idaho....	1, 784, 048	Ozark.....	Russellville, Ark...	803, 765
Inyo.....	Bishop, Calif.....	1, 582, 146	Payette.....	Boise, Idaho.....	1, 312, 423
Jefferson.....	Roanoke, Va.....	529, 811	Pike.....	Colorado Springs, Colo.	1, 074, 014
Kaibab.....	Williams, Ariz....	1, 772, 859	Pisgah.....	Asheville, N. C....	461, 113
Kaniksu.....	Sandpoint, Idaho..	1, 162, 998	Plumas.....	Quincy, Calif.....	1, 147, 854
Kisatchie.....	Alexandria, La....	501, 250	Powell.....	Panguitch, Utah...	1, 032, 505
Klamath.....	Yreka, Calif.....	1, 509, 065	Prescott.....	Prescott, Ariz....	1, 265, 539
Kootenai.....	Libby, Mont.....	1, 790, 168	Rio Grande....	Monte Vista, Colo.	1, 289, 357
La Sal.....	Moab, Utah.....	534, 299	Rogue River...	Medford, Oreg....	905, 774
Lassen.....	Susanville, Calif...	917, 773	Roosevelt....	Fort Collins, Colo..	788, 133
L e w i s a n d Clark.	Great Falls, Mont.	1, 814, 821	Routt.....	Steamboat Springs, Colo.	984, 098
Lincoln.....	Alamogordo, N. Mex.	1, 145, 878	Sabine.....	Houston, Tex.....	184, 411
Lolo.....	Missoula, Mont...	1, 701, 941	Salmon.....	Salmon, Idaho....	1, 980, 036
Los Padres....	Santa Barbara, Calif.	1, 773, 992	Sam Houston..	Houston, Tex.....	159, 291
Malheur.....	John Day, Oreg...	1, 075, 598	San Bernardino.	San Bernardino, Calif.	593, 090
Manistee.....	Muskegon, Mich...	238, 796	San Isabel.....	Pueblo, Colo.....	617, 495
Manti.....	Ephraim, Utah....	728, 613	San Juan.....	Durango, Colo....	1, 255, 932
Mark Twain...	Springfield, Mo...	364, 070	Santa Fe.....	Santa Fe, N. Mex...	1, 233, 676
Marquette.....	Escanaba, Mich...	248, 725	Sawtooth.....	Hailey, Idaho.....	1, 201, 535
Medicine Bow..	Laramie, Wyo....	1, 057, 082	Sequoia.....	Porterville, Calif..	1, 362, 329
Mendocino....	Willows, Calif.....	829, 493	Shasta.....	Mount Shasta, Calif.	1, 090, 774
			Shawnee.....	Harrisburg, Ill....	183, 697
			Shoshone.....	Cody, Wyo.....	1, 566, 324

TABLE A.—*National-forest areas in complete Federal ownership—Continued*
[Acreage as of January 1, 1940]

Forest	Headquarters	Acres	Forest	Headquarters	Acres
Sierra.....	North Fork, Calif..	1, 516, 461	Umpqua.....	Roseburg, Oreg...	984, 589
Siskiyou.....	Grants Pass, Oreg.	1, 371, 819	Uncompahgre..	Delta, Colo.....	786, 225
Sitgreaves.....	Holbrook, Ariz....	801, 735	Wallowa.....	Enterprise, Oreg..	969, 021
Siuslaw.....	Eugene, Oreg.....	509, 623	Wasatch.....	Salt Lake City, Utah.	844, 731
Snoqualmie.....	Seattle, Wash.....	1, 045, 307	Washakie.....	Lander, Wyo.....	869, 702
Stanislaus.....	Sonora, Calif.....	819, 988	Weiser.....	Weiser, Idaho.....	570, 289
St. Joe.....	St. Maries, Idaho..	789, 646	Wenatchee....	Wenatchee, Wash.	961, 375
Sumter.....	Columbia, S. C...	296, 737	White Moun- tain.	Laconia, N. H....	704, 188
Superior.....	Duluth, Minn.....	1, 761, 744	White River...	Glenwood Springs, Colo.	895, 499
Tahoe.....	Nevada City, Calif.	676, 992	Whitman.....	Baker, Oreg.....	1, 419, 893
Talladega.....	Montgomery, Ala..	335, 527	Willamette....	Eugene, Oreg.....	1, 646, 562
Targhee.....	St. Anthony, Idaho.	1, 367, 841	Wyoming.....	Kemmerer, Wyo...	1, 699, 653
Teton.....	Jackson, Wyo.....	1, 800, 636	Total acre- age.		175,232,101
Toiyabe.....	Reno, Nev.....	2, 152, 231			
Tongass.....	Juneau, Alaska....	16, 044, 100			
Tonto.....	Phoenix, Ariz.....	2, 409, 924			
Trinity.....	Weaverville, Calif.	1, 430, 208			
Uinta.....	Provo, Utah.....	933, 156			
Umatilla.....	Pendleton, Oreg...	1, 300, 650			

TABLE B.—*Census of big game on national forests, January 1, 1939*¹

Kind of game	National-forest regions					
	Northern	Rocky Mountain	South-west	Inter-moun-tain	Californ-ia	Pacific North-west
<i>Nonpredators</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
Antelope.....	1, 000	1, 180	6, 700	5, 700	2, 200	1, 280
Bear:						
Black and brown.....	8, 000	5, 820	2, 200	4, 300	10, 800	13, 150
Grizzly.....	470	106	4	100	.....	7
Deer.....	131, 000	155, 150	142, 200	195, 400	317, 500	198, 290
Elk.....	39, 000	30, 900	5, 100	35, 300	331	29, 000
Moose.....	2, 500	520	.....	2, 500	.....	.....
Mountain goat.....	5, 600	20	.....	1, 500	.....	5, 300
Mountain sheep (Bighorn).....	1, 100	3, 200	300	3, 500	390	40
Wild boar.....	.....	.....	.....	.....	100	.....
<i>Predators</i>						
Coyote.....	28, 600	32, 750	33, 570	45, 600	65, 300	35, 000
Bobcat and lynx.....	3, 000	7, 290	18, 250	10, 700	52, 200	16, 240
Mountain lion.....	420	299	875	1, 300	1, 434	1, 257
Wolf.....	41	1	55	65	43	145

¹ Alaska is not included in the above census figures.

TABLE B.—*Census of big game on national forests, January 1, 1939—Continued*

Kind of game	National-forest regions				
	North-east	South-east	Lake States	Total	National forests on which found
<i>Nonpredators</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
Antelope				18, 060	35
Bear:					
Black and brown	2, 150	775	4, 060	51, 255	134
Grizzly				687	33
Deer	52, 200	26, 200	328, 000	1, 545, 940	158
Elk	50	43		139, 724	95
Moose	10		1, 148	6, 678	31
Mountain goat				12, 420	30
Mountain sheep (Bighorn)				8, 530	55
Wild boar		545		645	4
Total				1, 783, 939	
<i>Predators</i>					
Coyote			7, 000	247, 820	
Bobcat and lynx	3, 610	15, 936	2, 500	129, 726	
Mountain lion		4		5, 589	
Wolf		441	1, 450	2, 241	
Total				385, 376	

TABLE C.—*Number of fires in the national forests of the six western regions in relation to camper and smoker fires, and number of recreational users, 1924–36, average annual figures*

Period	Fires from all causes per year	Camper fires per year	Campers and pic-nickers per year	Camper fires per 10,000 campers and pic-nickers	Smoker fires per year	Recreational users per year	Smoker's fires per 10,000 recreational users	Total area burned over	Area, size of fires
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Acres</i>	<i>Acres</i>
1924–27	6, 355	625	3, 551, 826	1. 8	1, 004	4, 967, 205	2. 0	488, 643	76. 9
1928–32	6, 272	674	4, 936, 328	1. 4	1, 247	7, 532, 826	1. 6	475, 077	75. 7
1933–37	7, 002	643	6, 967, 495	. 9	1, 481	14, 472, 302	1. 0	198, 944	28. 4

IMPEDIMENTS TO RECREATION FOR THE ILL-TO-DO

TABLE D.—*Distribution of income units (families and single individuals) in the continental United States, by annual income level, 1935-36*

Income level	Income units		Cumulative distribution
	<i>Number</i>	<i>Percent</i>	<i>Percent</i>
\$0-\$1,000.....	18, 371, 170	47	47
\$1,000-\$2,000.....	13, 652, 157	35	82
\$2,000-\$3,000.....	4, 392, 423	11	93
\$3,000-\$5,000.....	1, 712, 658	4½	97½
\$5,000 and over.....	929, 892	2½	100
All income levels.....	39, 058, 300	100	100

TABLE E.—*Amount and percent of population of continental United States in six zones according to the cost of a round trip to the nearest national forest for a group of four, based on 1930 census*

Cost zone	Maximum round-trip distance	Population		Cumulative distribution
	<i>Miles</i>	<i>Number</i>	<i>Percent</i>	<i>Percent</i>
\$0-\$5.....	83	22, 263, 098	18	18
\$5-\$10.....	167	19, 852, 038	16	34
\$10-\$15.....	250	20, 896, 973	17	51
\$15-\$20.....	333	21, 123, 643	17	68
\$20-\$25.....	417	17, 071, 563	14	82
\$25 and over.....		21, 567, 641	18	100
Total.....		122, 774, 956	100	100

TABLE F.—*Relation of percentage of entire United States population to percentage of national-forest campers in each income class*

Income class	Percentage of entire United States population ¹	Percentage of national-forest campers ²	Ratio of percentage of United States population to percentage of national-forest campers in each income class
\$0-\$1,000.....	47	18	1 to 0.4
\$1,000-\$2,000.....	35	49	1 to 1.4
\$2,000-\$3,000.....	11	22	1 to 2.0
\$3,000-\$5,000.....	4½	8	1 to 1.8
\$5,000 plus.....	2½	3	1 to 1.2
Total.....	100	100	1 to 1.0

¹ Based on figures in Consumers' Incomes in the United States; Their Distributions in 1935-36.

² Based on 25,486 filled-out questionnaires to heads of families or independent individuals.

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