

playground with slides and swings for the youngsters; tennis courts, baseball diamonds; or an ice-skating rink, as in Rockefeller Center.

Some cities may have a lake in their boundaries, where one can go boating, as in Oakland, Calif., or Boston. Farther out from the city may be a bicycle path along a canal, or a swimming beach such as Jones Beach of New York City.

2. General outdoor recreation areas. These areas are more extensive and are farther from the cities—as much as 20 or 40 miles. Here Americans can plan to spend one or two days—swimming, picnicking, fishing, boating, camping and hiking along trails.

These areas include regions such as Bear Mountain in New York or the ski slopes of Colorado. For these daily excursions from the city, urban dwellers are finding that farmers are cordial in permitting them to fish in their creeks or picnic on their land.

3. Natural environment. Along a roaring river, beside a quiet stream, up a mountain or skimming a lake, an American loves to fend for himself, to walk over a part of that land he feels his forefathers saw. Here he can fish in peace, or hunt at leisure. In other areas, the bird watcher can spend solitary hours beside a reedy swamp, or a geologist can inspect the traces of glaciers.

Many commercial and private agencies maintain these areas. The forest industries, for instance, have opened up more than 95% of their land for people to come and enjoy the beauties of nature. This is an excellent example of using land for many purposes—the multiple use of land.

On one forest area, for instance, the land may have four uses: lumber, watershed, wildlife, as well as such recreations as fishing, hunting, hiking, picnicking or, in the winter, skiing.

4. Unique national areas. The spouting geysers in Yellowstone, the thousand-year-old *Sequoia* trees, the deep gorge of the Colorado River in the Grand Canyon, the sand dunes of Cape Cod—these and many other parks protect some of the greatest natural wonders of the world.

5. Primitive wilderness. No roads cut through such areas; there are no cabins, no picnic areas—and a man may enter only on foot, on a pack animal, or in a canoe. Here is the real untrammelled, uncut, unprotected wilderness.

The fight to preserve the right for trees, shrubs and brush to stand alone is being waged now in the Wilderness Bill, another natural resource bill, asking for two percent of America to be set aside in this category.

6. Historic and cultural sites. Stand beside an ancient cannon on a Civil War battle area; walk through the stately white mansion of Mount Vernon on the Potomac River; climb the wooden stairs of the North Church Tower of Boston—these are some of the preserved monuments of America.

Without the action of Federal, state, civic, commercial, private agencies and individuals, these areas would long be lost—chipped away by souvenir hunters, trampled underfoot by thousands of shoes, picked apart, cut down, overrun, covered by concrete, and all the other outrageous things that man can do without thinking.

Right now these agencies are fighting for the survival of other pieces of land. The names of these areas read like a poem of Walt Whitman—Fire Island in New York, the sand dunes of Assateague Island in Maryland, Whiskeytown in California, the Oregon Dunes, the Ozark rivers of Missouri, the racing waters of the wild Allagash River in Maine; Sleeping Bear dozing along Lake Michigan; Flaming Gorge in Utah, and Pictured Rocks in Michigan.

Man Must Manage Nature

Such parks should be run as laboratories, suggested Prof. Robert Merton Love, chairman of the department of agronomy, University of California at Davis.

Once man has invaded the wilderness, he said, he must manage it to produce whatever benefit is desired. With a rotating use of land, Americans can gain both economic subsistence and recreation—cattle land, timberland, mining land can all be easily used for fishing, hiking and other outdoor pleasures.

Prof. Love, who believes that taxpayers' money could be more wisely spent on preventing forest fires than on putting them out, said that many people today not willing or able to keep pace with modern mechanical occupations could be gainfully employed in protecting and tending to these places.

"If we want a forest or a range or a wilderness or a park, we must work for it as a farmer does for a cotton field or a rice crop," he said.

With millions of people coming to the woods, shores and mountains, it is impossible to keep wilderness exactly as it was. But we can protect these great areas by cleaning them up, educating the people who use them, controlling the pests and putting more time into the study of soil, climate, flora and fauna.

• Science News Letter, 84:90 Aug. 10, 1963

PUBLIC HEALTH

Depleted Uranium Draws Pollutants From Exhausts

► DEPLETED URANIUM, the ore left after the fissionable material has been removed, may be put to work to curtail the air pollution blanketing many of our communities.

Both hydrocarbons and carbon monoxide discharged in motor vehicle exhausts—two of the major causes of air pollution—are burned up by depleted uranium.

Scientists have found that depleted uranium acts as a catalyst, a chemical agent that burns up the air pollutants by causing oxidation to take place. For best results in removing hydrocarbons and carbon monoxide, the researchers combined the depleted uranium with copper and chromium, but they stress it is the depleted uranium that acts as the catalyst.

They used this catalyst in afterburner muffler units attached to the exhaust of laboratory engines run under typical road use conditions and of engines of actual vehicles operated on the road.

The afterburner muffler units are still far from satisfactory for immediate use by the public, two reports to the Office of Techni-

However, further research by either the Government or private industry might perfect a muffler that could be attached to the exhausts of cars in use.

Current research is being conducted by the U.S. Bureau of Mines for the U.S. Atomic Energy Commission.

A double bonus would be reaped by further development of this catalytic agent: these pollution agents would be eliminated from the air and an attractive economic use would be found for the depleted uranium AEC has available for industrial use.

• Science News Letter, 84:91 Aug. 10, 1963

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