

SANITATION IN RECREATION AREAS¹

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Historically, public health workers have been charged with the unhappy responsibility of warning the public of health hazards—real or potential. The rapid change in the pattern of our environment during the past few decades has provided ample opportunity for such warnings. Air is becoming a problem in air pollution—so stop breathing. Our foods are becoming implicated in food borne disease—so stop eating. Alcoholics Anonymous are in a difficult position since our water supplies have been shown to contain increasing amounts of toxic chemicals—so stop drinking water. The Surgeon General's report on smoking condemns the practice as hazardous—so stop smoking. Statistically, we can prove that sleeping is the most hazardous activity in the world, since most deaths occur in bed—so stay out of bed.

It is with a feeling of utter relief and tremendous enthusiasm which results from my being able to say "Recreation and Public Health are synonymous." Here we have a positive program we can support—one which contributes to the health, physical well-being, and social improvement of our people.

Although we may have had a slow start, public and governmental recognition of the values of recreation have grown at a tremendous rate, particularly since the end of World War II. This has tended to parallel the gains of our economy and the increase in leisure time. Do you know that at the turn of the century the average work-week in this country was 60 hr? Today, the average work-week is 40 hr, and many predict that by the year 2000, it will be 30. An understanding of the demand for recreational opportunities and the extent of present and planned governmental activities are essential to any meaningful discussion of recreation area sanitation.

Dollar-wise, recreation is big business. The combined expenditures of all forms of government—Federal, State, and local—are estimated to be over a billion dollars annually. In addition to the governmental expenditures, there is a twenty-billion-dollar

market for goods and services utilized in outdoor recreation.

We also must recognize that recreation is not limited to any segment of our population, or confined to any group with a burning desire or interest, such as in fishing or golf; but it is an activity participated in by fully 90% of the population.

An insight into the things that people do for recreation is also necessary if we are to deal successfully with these problems. Surprisingly the most popular activity is driving for pleasure, followed very closely by walking for pleasure. Activities in order of popularity following walking are: outdoor games or sports, swimming, sight-seeing, bicycling, fishing, attending sports events, picnicking, nature walks, boating, camping, ice skating and water skiing, to name a few. These activities bear out the fact that water is a focal point of recreation, and this fact presents additional problems for health agencies because many of these activities on the water and the watersheds tend to degrade the quality of water which is ultimately used for human consumption.

Outdoor opportunities are most urgently needed near metropolitan areas as three quarters of the people will live in these areas by the turn of the century. They will have the greatest need for outdoor recreation, and their need will be the most difficult to satisfy as urban centers have the fewest facilities (per capita) and the sharpest competition for land use.

Across the country, considerable land is now available for outdoor recreation, but it does not effectively meet our needs. Over a quarter billion acres are public designated outdoor recreation areas. However, either the location of the land or restrictive management policies, or both, greatly reduce the effectiveness of the land for recreation use by the bulk of the population. Much of the West and virtually all of Alaska are of little use to most Americans looking for a place in the sun for their families on a weekend—when the demand is overwhelming. At regional and state levels, most of the land is where people are not. Few places are near enough to metropolitan centers for a Sunday outing. The problem is not one of total acres but of effective acres.

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PUBLIC HEALTH ASPECTS OF RECREATIONAL AREAS

According to available information and reports, the planning, provision and maintenance of environmental sanitation facilities basic to health protection in recreational areas are not keeping pace with recent trends and the rapidly increasing population using the various types of recreation areas. As a result, optimum use of such areas is not possible and rapid deterioration of overtaxed facilities is all too common. Where facilities such as water supply, sewage disposal and refuse handling are inadequate or totally lacking, pollution creates conditions which are grossly insanitary and the door to serious environmental health hazards is being opened on vacationers and neighboring community residents. Because the cost of adequate environmental health utilities and facilities often are approximately one-third of the cost of developing total new recreational areas, the role of the environmental health specialist in requiring and assuring proper environmental conditions should be recognized by recreation, park and public health agencies as a very important and vital aspect of recreation area development. An example of a new trend in vacationing occurring in the past 5 yr is the increasing use of travel trailers containing individual water and sewage systems.

The overall Federal recreation policy developed by the Bureau of Outdoor Recreation in the Department of Interior gives full recognition to the need for high standards of public health protection in recreational areas. Emphasis is placed on the need for the cooperative participation of all levels of government and private enterprise for the planning, provision and maintenance of sanitary facilities in recreation environments. This is outlined in the Recreation Advisory Council's Circular No. 3, "Policy Governing the Water Pollution and Public Health Aspects of Outdoor Recreation." This Council has been re-established as the President's Council on Recreation and Natural Beauty by Executive Order 11278. Let me cite two excerpts dealing specifically with the role of public health authorities in this matter and with their relationship to officials having direct managerial responsibilities for recreation and park development, construction and maintenance:

"It is incumbent upon agencies responsible for the planning, development, and operation of outdoor recreation areas to provide the health and sanitation safeguards required to protect the health, safety, and well-being of the recreation users."

"To achieve that objective, agencies responsible for the management of outdoor recreation areas shall utilize the recommended health standards of the Federal, State, or local public health authority having jurisdiction; and they shall maintain close

cooperation and consultation with the appropriate public health authority."

As large as the Federal program is, it is still recognized that State and local governments have really the key role in the development of recreational facilities, since, being closer to the people, they may shape their programs to meet particular needs and problems. The function of health agencies continues and extends into recreational activities under their jurisdiction. In the field of recreation, the Public Health Service is attempting to perform its normal function of collating information, providing technical assistance and consultation, development of uniform standards, and fostering research. However, we also have an operational program because many of the National Park Service areas are under the exclusive jurisdiction of the United States Government. Since 1922 we have had an operating agreement with the National Park Service for consultation, including inspection and plan review of environmental health facilities and programs in national parks. Most other areas under Federal management, i.e., Forest Service land, Bureau of Land Management land, Bureau of Reclamation land, etc., do not fall within the exclusive jurisdiction classification, and State laws and regulations are applicable. The authority of health departments to regulate sanitation facilities in recreation areas on land other than that owned by the Federal government and on private property will vary depending upon the strength or weakness of State law.

ENVIRONMENTAL HEALTH PROBLEMS INVOLVED

Let us now turn our thought to environmental health aspects of outdoor recreation. First of all, we can ask "Why does this merit special attention when considered with all the other pressing and important functions that we have?" One obvious answer to that question is that there are far too many outbreaks of disease occurring in our recreation areas. The unfortunate typhoid outbreak in Zermatt, Switzerland, could easily be repeated in many of our recreational areas. In March of 1962, 75% of the tourist population visiting a popular ski area in the west was struck low by an outbreak of gastroenteritis. Investigators were not really surprised when they discovered that the condition was practically endemic, and had been recurring periodically for many years. Outbreaks of gastroenteritis have occurred so frequently in many areas that local residents have applied descriptive terms to them, such as "Yellowstone-itis," "Sheridan Glink," "Belton Belly," and "Rocky Mountain Quick-step." The Public Health Service has investigated many of these outbreaks, and describes them with the term, "resort diarrhea."

We have been somewhat unsuccessful in controlling these outbreaks and other conditions deleterious to health because we have not fully recognized that there are many special and unusual conditions pertaining to recreation which thwart our efforts to apply procedures found satisfactory in community programs. A few of these unusual or special conditions may be listed as follows:

1. *Seasonal operation.* This raises many economical problems for private individuals or companies operating recreation facilities, such as dude ranches and lake resorts. Although the visitor may be delighted to return to nature and live in primitive surroundings, adequate public health precautions require use of devices and equipment such as chlorinators, dishwashing machines, and sewage treatment facilities, to name a few, which often are expensive and pose a very real question and sometimes a dilemma, about the feasibility of financial investments in seasonal operations. The economic question may be transposed to a whole host of problems even in government operation. For example, packer-loader equipment would be a great time and labor saver for solid waste collection in campground areas in many large parks and recreational areas, but can the considerable cost of this equipment be justified if it will be used only three or four months of the year?

Seasonal operation also creates many problems related to personnel and staffing. A majority of food service personnel in recreation areas could be classified as amateurs, and this refers primarily to college students. Could this use of unskilled food service personnel be in any way related to the frequent outbreaks of gastroenteritis in recreation areas? Staffing for seasonal operation is also a problem when it is necessary to employ modern-type water and sewage treatment facilities. It is necessary that operators be trained and the "bugs" worked out of the plant from the initiation of operations in June. By the time this is accomplished, it may be Labor Day and time to close the plant down for winter.

2. *Public Behavior.* This also is a matter which makes the whole question of recreation sanitation different. A quote from the report on Outdoor Recreation for America on this topic reads, "Perhaps the most serious difficulty in public use of private lands is the problem created by the guests. Complaints are common about vandalism, theft, and thoughtless actions injurious to property and to the general recreation environment. Picking up trash and litter left by guests, and repairing petty damages, are often a major expense . . ." We have all seen many, many examples of problems caused by thoughtless visitors to recreation areas. Careless disposal of garbage, such as the ever-present watermelon rind, is the

major contributing factor to fly population in recreation areas. There are many examples we could cite of vandalism, but perhaps it is sufficient to say this is a problem, and suggest that you think for a moment of the pit-privies which you have observed from time to time in some of our recreation areas. These are often a special target of vandalism. The solution to this problem of public behavior may require major expenditures for more caretaking personnel and may also require an extensive public education program similar to the Smoky Bear effort in fire prevention.

3. *Accidents.* Frequent accidents are also a characteristic of recreational activities which should not be overlooked by health agencies. A recent study has indicated that one out of four patients treated at hospitals in one northeastern city were injured while participating in sports, recreation, or entertainment. There are some sports, such as skiing, sledding, hunting, and swimming, which are inherently hazardous, but frequent accidents generally are associated with recreational activities because these are activities which are new to people or in which they engage only occasionally.

4. *Vector and Animal Problems.* Recreation in the outdoors provides the recreationist with much more exposure to animals, reptiles, and insects which in many instances may pose a threat to health and safety. Infection by encounters with rabid bats, ticks causing Rocky Mountain spotted fever, encephalitis, and fleas from rodents infected with plague is potential in many areas. Insects crawling into the ears of outdoorsmen have created painful conditions that require surgical procedures for removal. Visitors are sometimes bitten or attacked by animals as bears or snakes. Mosquito bites may cause such discomfort to visitors that some recreation areas are unused or full enjoyment is not possible.

5. *Noxious Plants and Weeds.* This again will be an increasing problem as greater numbers of people are exposed to the outdoor environment. The major problems are related to hay fever and other allergic reactions, such as poison ivy and poison oak. Millions of Americans annually suffer from these conditions. Control measures, which are in the embryonic stage, offer much promise for relief in the future.

6. *Remote Locations.* Lack of electric power and roads in remote areas cause many design and operation problems. If electric power is unavailable pressure for a water distribution system must be provided by other means. Intakes may be located high enough upstream to produce sufficient pressure by gravity flow or internal combustion engines may be used for pumping. Transportation of construction materials and operational supplies to a remote water intake or treatment location may be difficult.

7. *Landscape and Wildlife Protection.* The ob-

jectives of many recreational activities require, among other things, the preservation and development of the natural scene for enjoyment by present and future generations. This entails considerable effort on the part of planners to assure that the natural scene will not be despoiled by man-made structures such as elevated steel water tanks, water and sewage treatment facilities located within view of visitors. This factor of landscape protection requires many sanitary engineering innovations and often times results in the use of alternative methods which are most costly.

There are many additional factors too numerous to be listed here, which call for new approaches and approaches which are different from those employed on our every-day community sanitation programs. Dealing with these environmental health problems successfully will require a partnership approach of health agencies at all levels.

RECREATION ENVIRONMENT

Among the requisites for a safe and healthful environment are the following:

Site Selection—Proper consideration of drainage, soil permeability, topographical or geological hinderances, accessibility to proposed sources of water supply or sewage works, mosquito and disease vectors, location and possible effects of swamps, streams, lakes on health and safety.

Watershed Management—Supervision, regulation, maintenance, and wise use of the aggregate resources of a drainage basin to provide the maximum yield of desirable quality, including the control of erosion, pollution, and floods. The principal activities include: construction, logging, grazing, mining, waste disposal, pesticide control, conservation fire control, and recreation use of watersheds.

Water Supply—Development of sources, treatment and distribution of water supply for domestic and culinary purposes that meet physical, chemical, and bacteriological requirements of the Public Health Service Drinking Water Standards or equivalent.

Sewage Disposal—Proper sewage collection, treatment, and disposal facilities prevent defilement of land and water areas, and to prevent pollution of surface or underground waters or other conditions conducive to the transmission of communicable diseases and to enable maximum enjoyment of water areas.

Plumbing—Adequate fixtures, approved materials, and proper installation and maintenance procedures to prevent cross-connection and backflow conditions in plumbing systems. Utilization of permanent and mobile comfort stations and portable toilets.

Building and Housing Hygiene—Adequate and safe housing, including campsites, cabins, dormitories and other public use buildings.

Food Service Sanitation—Design of kitchen, dining and other facilities to insure that safe handling and serving of food and drink to the public can be accomplished. Certification of sources of foods, frozen desserts, and milk and milk products during operation.

Refuse Handling—Proper storage, collection, and disposal of garbage and other refuse.

Swimming Pools and Outdoor Bathing Places—Design and operation of swimming pools. Evaluation of water quality and bacteriological standards for outdoor bathing places.

Travel Trailer Parking—Development of adequate travel trailer parking areas to provide parking accommodations, service building facilities, water and sewage hook-ups and other liquid wastes disposal facilities, including a sanitary station for sewage disposal from holding tanks.

Boating—Design of marinas to provide adequate facilities for launching, docking, collection and disposal of domestic sewage, waste oils and fuels, and solid wastes as garbage and refuse. Requirements for operation of boats equipped with marine toilets.

Fish Cleaning Facilities—Provision of adequate facilities to control nuisances, odor, and pollution from cleaning fish and disposal of waste products.

Insect and Rodent Control—Provision of adequate prevention and control measures during the planning, construction, and operational phases of recreation areas to minimize public health hazards created by insects and rodents.

Recreation Safety—Elimination of accident hazards and promotion of safety.

Campgrounds and Picnic Areas—Development of campgrounds and picnic areas for the enjoyment of the recreation with proper consideration given for environmental health factors relating to this mode of recreation.

Stable Sanitation—Provision of adequate facilities for stabling of horses and proper removal, storage, and disposal of manure.

NEED FOR COORDINATION OF AGENCY ACTIVITIES

Our most immediate and pressing need is to apply the knowledge and abilities which we already possess to these problems. The Public Health Service can contribute in this area by collecting and collating data, preparing criteria and standards, and other publications specifically related to environmental health aspects of recreation areas. Examples of these publications which have been developed are: (1) *Environmental Health Practice in Recreation Areas*, (2) *Environmental Health Guide for Travel Trailer Parking Areas*.

State and local health agencies have the prime responsibility for enforcement of public health programs. The basis of this is inspection and effective follow-up to assure that sanitary defects and health hazards are eliminated. One rather simple and effective procedure which could bear improvement in many States is that of effective coordination between park and recreation commissions or agencies, and health agencies. If someone asked me what is the most important single factor to improve sanitation in recreation areas, the answer is "Plan Review." In the area of recreation, this can only be accomplished by developing procedures for coordination between the various agencies having responsibilities for recreation. Again our most immediate and pressing need is to apply the knowledge and abilities which we already possess.

Secondly, all of us—Federal, State, and local—must

do a better job in defining needs in recreation areas so that efforts to obtain the necessary funds for adequate facilities will be reinforced. I point with pride to the Public Health Service's consultative program with the National Park Service. We have been of tremendous help to the National Park Service in identifying needs and providing public health support for water, sewerage, and other sanitation projects. State and local health agencies generally can also do much to assist and support budget requirements of other agencies of government having the responsibility for construction, maintenance, and operation of environmental health facilities in recreation areas. We should not neglect to define our own increased activities in recreation and, hopefully, these activities would be reflected in increased budgets for health surveillance.

And, third, there is a real need to develop and nurture a research program for environmental health aspects of recreation.

SUMMARY

Considerable attention is being focused on the outdoor recreation resources of this country by all levels of government, public and private agencies, concessionaires, and the recreationist. Our recreation

environment is becoming greatly overcrowded, many existing areas lack adequate health and sanitary facilities, and the development of new areas requires investment of money, resources, and effort.

There are many environmental health planning aspects which must be considered in the over-all planning, development, and operation of existing and future recreation areas to provide the health and sanitary safeguards to protect the health, safety, and well-being of the recreation users. We all have a necessary and significant role in this endeavor.

The need for greater participation and cooperation between health, planning, and recreation agencies to determine recreation trends and provide adequate recreation opportunities and facilities is one of the most challenging of the metropolitan planning jobs to be done.

REFERENCES

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2. Outdoor Recreation for America. A Report to the President and to the Congress; Outdoor Recreation Resources Review Commission. Jan. 1962.
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STATE WATER LAWS REACH RECORD VOLUME

With nearly 500 new measures, state laws dealing with water conservation and pollution reached a record volume in 1967, says Commerce Clearing House.

This significant amount of legislation is attributable in large part to the Federal Water Quality Act of 1965 which required all states to submit water quality standards to the federal government by June 30, 1967.

States were faced with the problem of determining whether they could comply with the federal law, and, if not, of taking steps which would bring them under the federal requirements rather than having water quality standards imposed by the federal government, said CCH, publishers of *Water Control News*.

Among the subjects covered in this 1967 legislation were flood control zones, pollution control schedules, water pollution taxes, water authorities, sanitary and sewer facility financing, state water control compacts, soil erosion and siltation

and refuse in waters.

Other subjects included industrial pollution, watershed controls, tax incentives and exemptions, wildlife preservation, land and water recreational resources, irrigation districts, water standards, water and sewage research, local water regulation, water drainage, water districts and environmental pollution problems.

Illinois led the nation in new enactments of water-related proposals with 58 followed by California with 45, Florida with 35 and Maryland with 30.

On the important tax incentive front wherein states grant tax breaks to private enterprise for the installation, operation and maintenance of water pollution control devices, property tax relief is now granted by nineteen states, corporate or personal income tax breaks, or both, are afforded in eleven states, while sales tax breaks are granted in eight states, CCH reported.