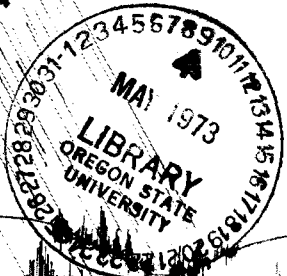


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# Oregon's Environment

OREGON STATE UNIVERSITY

May 1973

Number 11

## EFFECTS OF SMOKE ON NONSMOKERS

Senate Bill 508, sponsored by nine legislative members, was introduced to the Oregon Legislature during the first week of April. The bill prohibits smoking at any public meeting of any public body. The following report of research conducted to study the effects of smoke on the health of nonsmokers recently appeared in the March 17 issue of the Lancet, a British Medical Journal, and subsequently in the Wall Street Journal. The research tends to support the concept behind SB 508.

The study was conducted in London by researchers at the Institute of Psychiatry and at St. Bartholomew's Hospital. In the experiment, 12 nonsmokers, seven cigarette smokers and two cigar smokers volunteered to stay in a small unventilated room for times ranging between 52 minutes and 104 minutes. The room was filled with the smoke from 80 cigarettes and two cigars, producing an atmosphere in the room with average concentrations of 38 parts carbon monoxide per million parts of air. The cigarette smokers were allowed to smoke while in the room, but the nonsmokers merely breathed the air. Blood samples were taken and checked for the amount of carbon monoxide absorbed during the stay in the room.

A comparison of the blood samples of the smokers and nonsmokers revealed that the smokers began the experiment with relatively high amounts of carbon monoxide in the blood (5.9%), which rose even higher during the experiment (9.6%). The nonsmokers had relatively low amounts of carbon monoxide in the blood at the start of the test (1.6%), which increased by about 1.03%. The amount absorbed by passive smoking was roughly equivalent to the amount taken in by the smokers from one cigarette.

The tiny room was more smoke-filled than people are likely to encounter in a social situation, the researchers conceded. However, they added, the volunteers spent a fairly short time in the room. "Even with slightly better ventilation three or four hours in a smokey car or pub would almost certainly involve a nonsmoker in significant passive smoking."

The researchers said, "a small but real health risk is another potential consequence of passive smoking. This is an order of risk that smokers are prepared to take many times a day but insignificant though it may be compared with active smoking it is a risk that many nonsmokers may wish to avoid. They should at least have a choice."

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## JUNK AUTOS

The Tennessee Valley Authority (TVA) has awakened considerable interest on the part of local governments around the nation in setting up programs to collect and re-cycle junk cars. Special collection vehicles have been designed which are less expensive to build and operate than regular wreckers. Blueprints provided by TVA make it possible to construct and install a body on an available truck chassis for less than \$1200 --- the result being a collection vehicle.

A 28-page booklet entitled "The Junk Car from Field to Foundry - A Guide for Solving a Community Problem" has been prepared. Both the vehicle blueprints and the new booklet are available from the TVA Office of Tributary Area Development, Knoxville, Tennessee. Single copies are free, with multiple copies available at a slight cost.

The Council of State Governments has addressed itself to the same problem. Its Committee on Suggested State Legislation has prepared a model "State Abandoned Vehicle Act" which would discourage the abandonment of vehicles, encourage the efficient and rapid collection of such cars from public and private sites, and assure that related resource recovery is fostered. Reprints of the Act are available at one dollar each from the Council of State Governments, Iron Works Pike, Lexington, Kentucky 40505.

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## EROSION AND SEDIMENTATION

Publication of the first federal guidelines to control erosion and sediment, the top volume pollutant of the nation's waters, was recently announced by the Environmental Protection Agency.

The publication, "Guidelines for Erosion and Sediment Control Planning and Implementation," prepared by EPA's Office of Research and Monitoring, is designed as a manual for constructors, local officials, and others involved with urban and suburban development.

The 228-page volume is on sale for \$1.75 from the U.S. Government Printing Office. It is designated EPA-R2-72-015, August 1972. EPA says that two more major publications on the subject are expected to result from current research.

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Governor Tom McCall has announced that the Western Governors' Conference will be held in Oregon this fall and "Energy" will be the main theme.

## PORTLAND'S WATER SUPPLY

In late December, the Environmental Protection Agency (EPA) classified Portland's water supply as "provisionally approved". According to EPA this is because of system deficiencies which have been under consideration for some time. They include the recurring problems of turbidity which exceeds drinking water standards, the need for filtration of Bull Run water, the requirement to cover six water storage reservoirs to prevent contamination, and the questionable effectiveness of the use of chloramines in the disinfection of the city water.

Portland has made notable progress in the certification of water system operators, in the continued improvements in cross-connection controls, in recently employing a quality control engineer to assure adequate monitoring of water quality and in hiring a consulting firm to study future needs for system additions and alternatives for additional water supply sources and treatment.

EPA hopes to be able to revise Portland's Provisionally Approved status before November, 1973.

## RURAL ZONING PATTERNS IN THE UNITED STATES

One of the principal tools in regulating land use for the wise preservation of natural resources is zoning. Current legislative debate over SB 100 in Oregon has focussed many times on "who" zones or regulates "what". Of interest in this matter is a book entitled "Rural Zoning in the United States: analysis of enabling legislation" published by the U.S. Department of Agriculture. The following paragraphs are taken verbatim from the volume.

Zoning of unincorporated or rural areas is authorized in all 50 states and in more than three-fourths of the 3,000 counties in the United States. The number and kinds of governmental units empowered to zone and the areas each may zone vary by state. Generally, the local governments authorized to zone are all or selected counties in the South and West, all or selected towns or townships in the Northeast, and both counties and towns or townships in most Lake States. Where zoning is authorized at two or more levels the zoning regulations, if any, are usually applied by the lower level of government.

Zoning to protect agriculture is at the state level in Hawaii. Prime agricultural lands are placed in agricultural zoning districts, and forest and watershed lands in conservation districts. Also, Hawaiian law requires zoned property to be assessed for taxation with consideration given to permitted uses as well as present use.

State agencies are empowered to zone flood plains in Iowa and Minnesota, coastal wetlands in Rhode Island, unorganized boroughs in Alaska, shorelands in Minnesota and Vermont, and flood plains and shorelands in Wisconsin. The State highway commission in Mississippi is empowered to establish and enforce setback regulations. Similar state agencies in Louisiana, Maryland, Minnesota, Montana, Oklahoma, and Wisconsin are authorized to zone certain roadsides. Selected roadsides are zoned by the legislature in South Dakota.

Any land not zoned by a local government could be zoned by the Governor of Oregon after December 31, 1971. In Maine, a land use control commission is empowered to provide planning, zoning, and subdivision regulations in unorganized townships for all areas located within 500 feet of the edge of public roads and within 500 feet of shorelines of certain classes of lakes and ponds.



Open space land, under one classification in a Washington State differential assessment and tax law, must be so designated in an adopted city or county land use plan, and zoned accordingly.

In 17 states, selected cities and towns are empowered to zone adjacent areas outside their boundaries.

Some states provide for regional planning and certain implementing measures at the regional level to prevent urban sprawl, to provide major areas of open space, and to protect the agricultural base of local processing industries and service trades. In North Dakota, metropolitan or joint planning commissions may be empowered to zone the planning area by agreement between local governments. Additional legal precedent for zoning by regional, metropolitanwide, and interstate regional agencies is provided by recent enabling legislation in California and Nevada. In each of these states, a provisional interstate regional agency was authorized and empowered to prepare plans for, and to adopt and administer, zoning, subdivision, and related regulatory measures for the Lake Tahoe Basin, which comprises parts of two counties in California and parts of

three counties in Nevada. These two interstate regional agencies were soon superseded by an interstate regional agency, following adoption and ratification of a compact. This agency has comprehensive planning and regulatory jurisdiction over the entire basin.

The state legislatures are the sources of zoning powers. When granting these powers, the legislatures usually indicate the objectives that local governments may seek to attain through zoning. Of increasing importance are orderly growth, conserving and developing natural resources, preserving historic and scenic attractions, and fostering agriculture and other industry. Rural zoning statutes also permit exercise of use, building-tract (area), building size, and population density regulations to attain community objectives. For example, use regulations enable a community to establish separate zoning districts for homes, business, or industry, as well as districts for agriculture, forestry, recreation, flood control, conservation, or other purposes.

Zoning enabling laws in a score of states exempt agriculture from zoning regulations. The exemption does not preclude creation of agricultural zoning districts in which nonfarm uses are restricted or excluded. A few enabling statutes confer express authority to create exclusive-type agricultural zoning districts for farming and related uses only. Similarly, a few statutes confer express power to establish exclusive-type districts for industry or business only.

Zoning enabling statutes in Hawaii and Minnesota empower local governments to prescribe both minimum- and maximum-lot or tract sizes. In several states, minimum-tract sizes may be voided by the courts if tracts would be too large in areas of residential growth on the urban fringe. However, the same minimum size is permitted in exclusively agricultural zoning districts; and the range can be from 5 to 80 acres or more.

Zoning innovations authorized by Connecticut, Indiana, Kansas, Kentucky, New Jersey, Pennsylvania, and Vermont legislatures allow flexibility in grouping residential buildings and open spaces to fit natural and topographic features of the area under development. The aim in planned residential development, cluster zoning, and layout is to give greater variety and amenity and less soil erosion and urban sprawl.

A half-dozen statutes authorize zoning regulations requiring that automobile graveyards and junkyards be screened from view. Other statutes permit creation of historic zoning districts to safeguard and promote educational and recreational aspects of historic areas.

Some state legislatures have been slow to grant their rural governments any or adequate zoning powers. Other legislatures have failed either to update zoning enabling statutes to keep pace with regulatory needs of rural governments or to allow use of new zoning techniques.

(Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 - Price \$1.50.)

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The Department of Agriculture is currently studying 11 million acres of roadless National Forest land as possible additions to the national wilderness preservation system.

## SAVING WATER

The general impression gained from a survey of 18 communities in the eastern United States was that people are quite ignorant of their water supply and tend to take it for granted. Most people are willing to save water but do not know how. The communities surveyed had suffered water shortages and water works officials were questioned to learn about past emergencies and what procedures were employed to control the use of water.

Voluntary and compulsory restrictions worked equally well, but since consumers generally prefer voluntary controls it is recommended that they be used first. If the shortages are temporary (as were those encountered in this study) and if the consumers are well aware of the situation, the voluntary approach can succeed.

People responded very well to instructions which were relayed through private communications media, but there were deficiencies. Therefore, community or area officials should release official conservation requests and messages and coordinate communications. Greater savings might be achieved if consumers were better informed about their water supplies and methods of conservation. Managers should undertake and promote a better understanding of domestic water matters.

Extemporaneous activities by managers to curtail water use and restore service were successful, but actions which followed pre-established contingency plans were most effective. All managers are advised to develop, formalize, and exercise contingency plans and use them in appropriate situations. (From "Social Aspects of Urban Water Conservation", by Century Research Corp., Arlington, VA, August 1972. Available from National Technical Information Service, Springfield, VA 22151)



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### NEW METHODS FOR FINANCING RURAL WATER-SEWER SYSTEMS

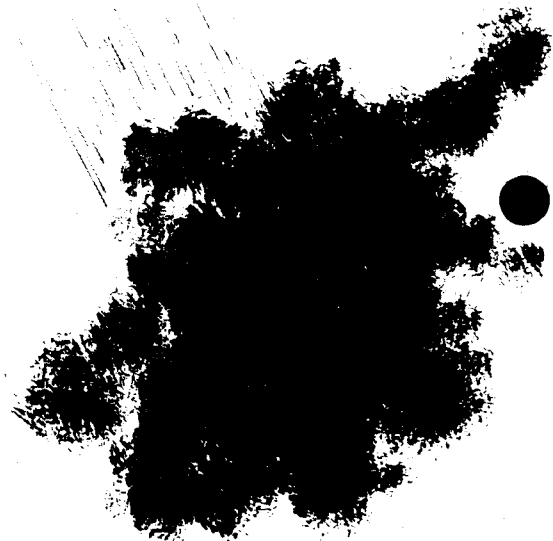
Denton E. Sprague of the Farmers Home Administration suggests that new methods be used for financing joint water-sewer systems in rural areas. Water and sewer systems have been installed in rural areas as a matter of necessity where individual systems failed or supply was not adequate. Paying for installation and operation of a public facility has not been easy for users in low density areas. It is also difficult for users to foot the bill for additional capacity required by future expansion. In many cases there simply are not enough users to afford additional capacity.

Sprague recommends that such systems not be financed solely through revenues derived from users. He feels that other should share in the cost --- owners of large acreages who benefit from increased property values, or nearby communities --- even though they do not actually use the system. Only one organization should serve an area. This would result in better management, more efficient maintenance and operation, more dependable service, and, probably, lower costs.

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A 1972 pilot program testing the feasibility of providing access for recreation on the nation's farms and ranches will be continued in 1973. Five counties in Oregon have been participating --- Malheur, Polk, Wasco, Washington and Yamhill.

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### REGIONAL WASTEWATER TREATMENT

Regional planning for wastewater management is a complex problem. The solution requires a considerable variety and quantity of information, a great deal of time, and a wide diversity of expertise. Such information is needed as: (1) location and capacity of existing treatment and transmission facilities, (2) location and characteristics of waste sources, (3) design criteria and cost functions for wastewater treatment plants, interceptors, pumping stations, and force mains, (4) projected population growth and industrial development within the region, and (5) water quality standards for the receiving streams.

A recent study attempts to isolate the critical factors which must be considered in regional planning. ("Primary Considerations in Regional Wastewater Treatment Planning", June 1972, Water Resources Research Institute, Mississippi State University, State College, Mississippi, 39762).

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### SHORT COMPUTER COURSE

A graduate-level short course on Digital Computer Techniques for Tidal Modeling of Well-Mixed Estuaries and Shallow Bays will be held at Oregon State University on August 27-31, 1973. The principal lecturer will be Dr. J.J. Leendertse of the Dept. of Physical Sciences, The Rand Corporation, Santa Monica, California. Participation will be limited to 30 so that "application-oriented" discussions can be encouraged, and applications received by June 1, 1973 will receive priority consideration. Write to Dr. Larry S. Slotta, Director, Ocean Engineering Program, Oregon State University, Corvallis, OR 97331 for further information.