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SOIL CONSERVATION SERVICE POLICY

On May 5, 1975, the Soil Conservation Service (SCS) issued Conservation Planning Memorandum-15, regarding policy on "Conservation of Wetlands."

The memorandum is keyed to wetlands types 1 through 20 as described in Fish and Wildlife Service Circular 39. Excluded are lands artificially diked and flooded to produce commercial crops of domestic rice, wild rice, or cranberries and previously wet soils converted to other substantially irrevocable uses.

Briefly, the policy provides:

1. SCS is not to provide technical and financial assistance for draining or otherwise altering wetlands types 3 through 20 in order to convert them to other land uses.
2. SCS can provide technical and financial assistance to alter wetlands types 1 and 2, including conversion to other uses such as cropland and pastureland. SCS is to encourage the preservation of wetlands types 1 and 2 where they are adjacent to wetlands types 3 through 20 and are needed to maintain a balanced aquatic or semiaquatic ecosystem. When a decision is made by the landowner or user to alter wetlands types 1 and 2 or to convert them to other uses, SCS is to encourage the application of land treatment measures needed to reduce erosion and sedimentation and protect environmental values; and SCS is to encourage decisions to preserve key areas and, where possible, to include enhancement measures on such areas.
3. Project actions, such as watershed or RC&D projects, are not to include features designed for the purpose of draining or otherwise altering wetlands types 3 through 20 in order to convert them to other land uses. If such projects include features for other purposes that unavoidably result in losses to types 3 through 20 wetlands, the loss is to be mitigated by establishing wetland habitat values in the same vicinity that are equivalent, insofar as possible, to the wetland habitat values lost. Provisions are to be established for managing these wetlands on a comparable or more intensive basis than those lost. Sponsors, conservation organizations, state fish and wildlife agencies, or others can assume these management responsibilities.
4. SCS is to assist in restoring damaged wetlands that are not irrevocably committed to other uses, and in establishing wetland habitat where appropriate.
5. SCS is to encourage landowners and project sponsors to consider and use the programs of other federal, state, and local agencies and private organizations that may help to preserve wetlands.

(From talk by William B. Davey, deputy administrator for Water Resources, SCS, USDA, at the 22nd National Watershed Congress, Portland, Oregon, June 3, 1975.)

WETLANDS REVIEW

The engineering consulting firm of Howard, Needles, Tammen and Bergendoff recently completed wetland review studies of Alsea and Siletz Bays on the Central Oregon Coast for the Portland District, Corps of Engineers. Through interdisciplinary analysis the reviews established specific physical, biological, esthetic, land use, social and economic criteria that define the "public interest" in connection with Corps permits under Section 10 of the Rivers and Harbors Act. The studies also recommended nearly 2,000 acres of marsh, tideflats and riparian edges as "wetlands important to the public interest" where permit activities will ordinarily be denied. The wetland reviews were undertaken under 33 CFR 209,120 and were the first application in the Nation of discretionary authority given to District Engineers under those regulations.

The Environmental Defense Fund of Washington, DC, which monitored the progress of the reviews, has been urging application of similar study techniques by Corps Districts for estuarine and other wetland resources nationwide. Copies of the Alsea/Siletz wetland reviews are available from the Portland District, Corps of Engineers in Portland.

LAND USE HANDBOOK

Guidelines have been prepared by EPA to assist administrators in planning land use. The report is designed to be used as a handbook by local planning officials in planning for and regulating the use of five distinct natural areas: streams and creeks, wetlands, woodlands, hillsides, and groundwater and aquifer recharge areas. Each section is devoted to the discussion of local regulation

of land use in areas identified as "sensitive"; and each area is discussed in terms of its ecology and value to the public, current regulatory practices, and recommended programs for regulating the area. Also included are appendices showing where and how to go about getting technical assistance from existing governmental agencies and examples of local ordinances for protecting the environmentally sensitive areas.

The final section is a monograph on environmental performance standards, the result of a preliminary study on the feasibility of extending the performance standard concept used in industry to regulation of the environment. Its purpose is to explore this possibility and to suggest new areas for research.

("Performance Controls for Sensitive Lands: A Practical Guide for Local Administrators". EPA-600/5-75-005, March 1975. Available through National Technical Information Service, Springfield, VA 22151.)

NO SLUDGE FOR WHITE HOUSE

Researchers are developing methods of using the ever-increasing tonnage of sludge from the nation's sewage treatment plants. The U. S. Department of Agriculture in its laboratory in Beltsville, Maryland, has been active in treating and composting sludge. It has been used in several soil-enriching projects, including Constitution Gardens along the Mall in downtown Washington, DC, and in state parks. However, there is one D.C. establishment which is still a little wary of the practice. The White House, reports the Interstate Commission on the Potomac River Basin, toward the end of last summer, turned down an offer of 20 tons of composted sludge meant to enrich the soil of the South Lawn.

NEW INSTITUTE
DIRECTOR NAMED

Peter C. Klingeman, associate professor of civil engineering at Oregon State University, has been named director of the OSU Water Resources Research Institute. He succeeds Robert Alexander, director for three years until his death last July.

"Dr. Klingeman will continue his teaching and research duties as a member of the Department of Civil Engineering," said Roy A. Young, vice president for university research.

"In his new duties, he will direct the institute which was organized in 1960 to encourage research and education related to all factors which affect the quantity and quality of water." The institute is administered through the Schools of Agriculture, Engineering and Forestry and works closely with federal and state agencies.

Research projects are under way in the areas of water supply and quality, planning and management, systems analysis and legal complexities.

Klingeman earned civil engineering degrees from Northwestern University and a doctorate from the University of California, Berkeley.

This year, he was named outstanding teacher in the School of Engineering. Since coming to OSU, he has concentrated his teaching efforts in water resources and hydraulics. A former assistant director and acting director of the Water Resources Research Institute, he also has taught at North Dakota State University, University of California, Berkeley, and at a university in Chile. He was academic guest of the Swiss Federal Institute of Technology in Zurich in 1973-74.

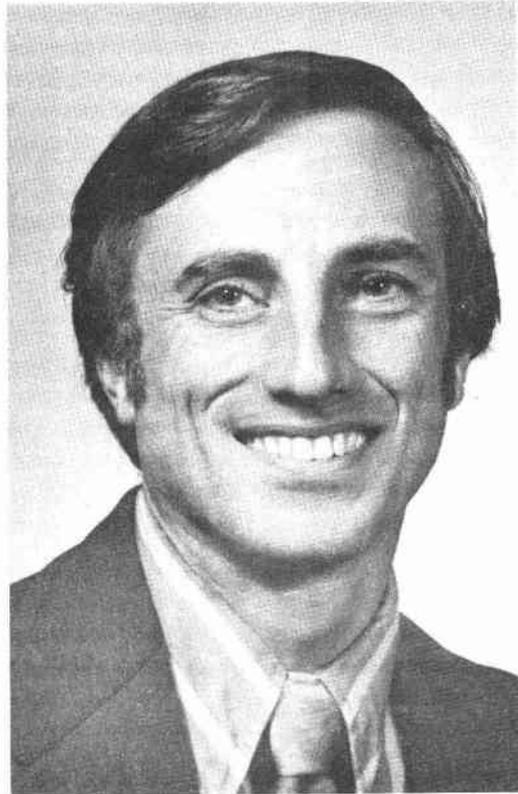
Klingeman's recent research has focused on streambank stabilization, sediment transport and river development and dredge spoil distribution and estuarine effects.

ASSESSMENT IN PROGRESS

Oregon's Water Resources Department is engaged in a program to identify water and land resource problems, needs, and issues throughout the state. From this will be developed an assessment of the priority of each and possible solutions or necessary courses of action.

Your decision to buy so-called convenience goods or items with built-in obsolescence is a decision to accept continued over use of natural resources and the resulting pollution.

As a consumer, use your purchasing power wisely.



GUIDELINES FOR RECREATION

Recreational managers are struggling with the problem of how much use a lake or river or beach can stand before deterioration develops. A recent study at North Carolina State University produced the following major conclusions concerning recreational capacity of water systems:

1. Based on verbal and behavioral reactions to heavy use conditions, it generally appears that use densities as great as 1 boat per 6 acres of total water area is still below the upper recreational capacity limit for boating on a lake.
2. The dominant adverse reaction to dense boating is from fishermen and sail boaters, indicating a need for lake surface use zoning.
3. There seemed to be a desire among pleasure boaters and skiers to participate in their respective activities during times of heavy use.
4. Setting capacity in terms of number of boats at one time does not appear to be a viable and valid concern of management.

The report of the study conducted on Lake Burlington in the Piedmont of North Carolina lists three specific recommendations:

1. Managers should not attempt to establish capacity limits as a management objective. Users of a lake system seem to automatically accommodate themselves to existing conditions. In this respect, the design capacity of developed sites and facilities within the lake system should not be allowed to act as a limiting factor. Overall recreation satisfaction of users is likely to be limited if capacity limits are imposed either directly or indirectly.



2. The water surface of a lake system should be zoned to accommodate slower and smaller boats and sail boats. These boats and their operators cannot compete effectively for space with larger, more powerful boats.

3. Further research needs to be conducted to assess the impact of heavy use loads on potential users' decisions to use or not use a lake system. The research did not consider the non-user. Such a consideration could alter somewhat the conclusions reached and recommendations made.

(From *"Capacity of Water-Based Recreation Systems, Part III: Methodology and Findings"*. Report No. 90, Water Resources Research Institute of the University of North Carolina, 124 Riddick Building, North Carolina State University, Raleigh, North Carolina 27607.)

HOW ABOUT HOME WASTEWATER?

An evaluation of individual home wastewater characteristics, reuse and disposal methods has been accomplished in Colorado utilizing field and laboratory methods and literature sources. The study is available from Colorado State University at a modest cost.

The average per capita daily generation of wastewater in the home was found to be 44.4 gallons of which 33 percent was for toilet use, 17 percent for sinks, 2 percent each for garbage disposal and dishwasher, 20 percent for bathing, and 26 percent for the washing machine. Per capita daily use was found to be greater for small families. The daily design household use for all family sizes was found to be 250 gallons.

Pollutional strength measurements of household wastes were found to be COD = 0.35 lb/day, BOD = 0.11 lb/day, and suspended solids = 0.15 lb/day. Approximately one-half of the pollutional strength was found to be due to toilet wastes, one-fourth due to the garbage grinder, and the remainder due to the soap related wastes from sinks, bathing, dishwashing, and clothes washing.

A brief evaluation of the treatment methods used in home systems is presented. A large variation in the results of the standard percolation test was observed and a three hole, ninety minute test was found to be very beneficial in obtaining representative results. The leaching field trench area criteria based on number of bedrooms was questioned.

Aerobic treatment systems were field tested and found to have effluent characteristics similar to those from a septic tank. Median BOD and suspended solids levels in the effluents from homeowner operated units were found to be approximately 150 mg/l.



The theory of evaporation-transpiration systems is discussed along with some of the considerations for field applications. Generalized cost analyses for system components for individual wastewater methods are included.

Laboratory studies evaluating several methods for renovating the soap related wastes from individual homes to meet quality criteria for reuse for toilet flushing are reported. Plain aeration treatment with a four day detention time was found to be an effective method for stabilizing the BOD of soap related wastes. Filtration was evaluated as a process for removing the fine suspended solids in the effluent but the results were not encouraging. Granular carbon adsorption was determined to be partially successful in the removal of both dissolved and suspended organics. Methods for renovation of soap related wastewaters are demonstrated but the costs of the systems as presented would make the system impractical. Further development could reduce these costs substantially, the report concludes.

(From *"Individual Home Wastewater Characterization and Treatment"*. Completion Report Series No. 66, July 1975. Environmental Resources Center, Colorado State University, Fort Collins, CO 80521).

GROUNDWATER STUDIES

A recent EPA report cites a general need for more basic information on geologic and hydrologic conditions, water quality, and identification of sources of groundwater pollution. It states that there has been a considerable increase in groundwater investigations on both state and federal levels in the Northwest but groundwater conditions over large portions of the region remain essentially unknown.

This lack of data is also reflected in the quantity and type of data on water quality. There is a distinct lack of baseline water quality data and a definite need for preparing this type of information so that degradation of water quality can be detected in the future. Laboratories should be set up on a regional or county basis and groundwater and surface water sampling and analysis should be carried out on a regular basis.

Standardized methods for reporting and collecting data on incidents of groundwater pollution should be developed so that cases can be quickly evaluated and remedial action can be taken immediately to correct the situation. Perhaps a computer printout system of pollution incidents similar to that in use by the Department of Environment in Washington would be useful in the individual states.

State governments should set aside a larger portion of their financial resources for the protection of groundwater resources. This will enable administrators to acquire the necessary professional staff and to plan and carry out groundwater quality investigations. At the present time, the staff and personnel in charge of groundwater resources in several states are solely administrators of water rights and either have no authority to investigate cases of groundwater contamination or have insufficient personnel to make thorough investigations.

Further investigations to inventory and evaluate groundwater contamination should be a major concern of public water resources agencies. Perhaps each agency can start to inventory, for example, each industrial waste-disposal site, sewage lagoon, mine tailings dump, landfill operation and oil pipeline. Aerial photographic techniques, including remote sensing and multispectral photography could be useful for this purpose. Records of flow and discharge of waste effluent could be assembled so that potential problems can be more easily evaluated. To deal with existing problems of groundwater contamination, standard techniques call for the drilling and testing of monitoring wells, and collection of water samples. Installation of such wells is by far the most expensive part of any investigation, and research is needed to devise better and more economical methods for obtaining subsurface information. Additional research in geophysical techniques could probably refine the present mapping techniques to obtain better definition of bodies of liquid waste below land surface.

After the initial evaluation of polluted groundwater has been made and the hydrologic environment has been established, measures can be taken to contain the contaminants and prevent them from further spreading in the aquifer zone. This containment could be carried out by manipulation of hydraulic gradients through controlled pumping operations; by prohibiting or restricting pumping in a specified zone surrounding the contaminated area; or by physical containment by means of artificially injected hydraulic barriers.

The report concludes that the best way to reduce future cases of groundwater contamination is through education of the general public and through legislation and enforcement of regulations. There is an urgent need to acquaint the public with the serious consequences of groundwater pollution and the large financial expenditures required to contain or remove underground pollution. (From *"Ground-Water Pollution Problems in the Northwestern United States"*. EPA-660/3-75-018, May 1975. For sale by NTIS, U. S. Department of Commerce, Springfield, VA 22151.)

LEGISLATIVE ACTION REQUIRED

The State Water Resources Board in its last official report before becoming an integral part of the Water Resources Department pointed out the need for legislative action. It called for a review of the water resource development needs in the state and the adequacy of federally sponsored programs to meet these needs. During the past few years, the level of federal involvement in sponsoring water resource development projects has declined drastically. During this same period, the demand for additional water supply has increased as available supplies from direct diversion are depleted. Because of this situation, the Board stated that "the Legislature should consider the need for commitment of state fiscal involvement in water resource development".

In some matters, such as state participation in federal flood control projects, the state Constitution prohibits the state from giving some of the assurances required by federal law. This applies in particular to the requirement that Oregon "hold and save the United States free from damages due to the construction works". This problem has been presented to the Constitutional Revision Commission and legislative committees on numerous occasions.

U. S. Public Law 86-700 requires assurances and contracts for future municipal and industrial water supplies that would be stored in federal projects. Public Law 89-72 requires repayment by nonfederal interests of one-half of the separable costs assigned to fish, wildlife, and recreation enhancement pertaining to federal projects. The Board has been advised in the past by the Attorney General's office that meeting the requirements on behalf of the state would be in violation of the Constitution. If the state, through agencies designated by the Legislature, is to provide these assurances involving repayment over a period of time, it would be necessary to amend the Constitution.

In the absence of a constitutional amendment, it will be necessary to continue to look to local government entities, such as counties, municipalities, and special service districts, to meet the requirements of federal law. Fortunately, in numerous cases both the federal and state agencies have been able to satisfy the regulations and avoid conflict by judicious wording of documents and general administrative skill.

UDI's ARE HERE

A new concept, launched in 1969-70, is being applied in the west to ownership of recreational sites. This is the "UDI Approach", with UDI standing for "undivided interest". Instead of acquiring a lot, with all its connotations of private ownership and speculative payoff, the buyer becomes part owner of the total development. In effect, he purchases a membership in an outdoors recreation club.

Since the buyer doesn't own any particular piece of land, he (or she) cannot build a cabin. Instead,

the shared facilities---clubhouse, swimming pool, tennis courts, etc.--- are located at a central spot and members camp out in established campsites or trailer parks. Some UDI's permit limited improvements, but in general the idea is to keep all significant development in one area. The advantages and disadvantages of the concept are examined by two economists in Land Economics, University of Wisconsin Press, May 1975.

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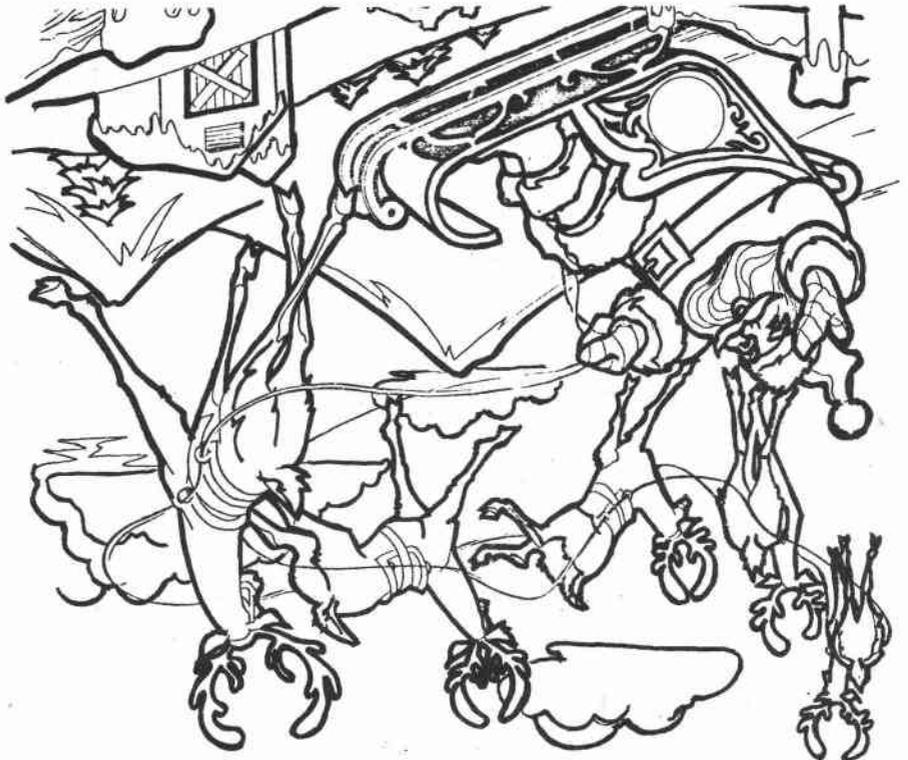
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