Water in Oregon

OREGON STATE UNIVERSITY
December 1968

Number 1

RESEARCH NOTES

9

The Water Resources Institute at the University of North Carolina, Raleigh, North Carolina, has issued a report for evaluating the quality of water-based recreation facilities using four sets of criteria. These measure the quality of picnic areas, boating areas, swimming locations, and vehicular access and parking. They are employed in the selection, design, construction, and maintenance of water recreation facilities.

****

Research has been going on at the Water Resources Research Center, University of Tennessee, Knoxville, concerning the problem of small ponds or reservoirs on farms. Excessive seepage has resulted in a need for effective and economical means to seal ponds. In recent years, efforts have turned to the use of chemicals to break down or disperse soil aggregates in an effort to improve soil sealing. The results of tests suggest that sodium pyrophosphate and sodium carbonate significantly decreased soil permeability and would be useful as pond sealers.

****

In an article entitled "Oregon's Water-Management Districts", which appeared in the December 1967 issue of Oregon Law Review, researchers from the School of Law, University of Oregon, raised basic questions. In essence the article questions present institutional arrangements. Why do we have so many district types to handle our water management problems? Is it possible that the separate districting acts have all grown like Topsy, until now they overlap each other in hopeless confusion? Is it better to authorize new district types or would it be better to redesign via statutes the existing districts? Could not some of the existing district types be combined without seriously imparing any of their capabilities?

****

The College of Forestry, University of Washington, has begun a study of "new techniques" in evaluating alternative uses of forested lands and the effects on streamflow. The approach to the problem states:

"Although some past studies of logging in western Washington have tended to show no influence on water yield there is sufficient information from smaller studies and from basic knowledge of the hydrologic cycle to indicate strongly that total water yield should increase following logging. Furthermore if losses or temporary storage of water by infiltration into the ground is appreciably altered, the period of run-off concentration will be shortened resulting perhaps in dramatic changes in run-off patterns. These changes may affect such occurrences as flood peaks or drought conditions. Thus

it is important that a knowledge of this effect on water yield be understood. Unfortunately the techniques that have been used by previous investigators have obviously not been sensitive enough if there is in fact a relationship as is expected. There is, therefore, a need to develop new techniques. Such new techniques have been suggested and it is the intention of this study to apply some of these suggestions.

"Additions to the basic knowledge concerning the precipitation-run-off relations will, of course, be applicable to any forested area. In addition, the new techniques which will be applied in this study, may have much broader application than merely to this specific problem. Thus, although this project applies itself specifically to a state of Washington problem the results will have national and international application."

PLANNING

The National Academy of Sciences points out that there are several kinds of variable factors in water use planning, each of which requires consideration of alternatives. They are:

Alternatives of objective: A canyon can be exploited as a reservoir site or preserved for its scenic and recreational values.

Engineering alternatives: Flood control and power production may be achieved in a certain reach of river by three dams or one large dam.

Management alternatives: Flood losses may be reduced by dams and reservoirs alone or by flood plain regulation.

Institutional alternatives: Related to management alternatives, they involve the political structure through which the resources are to be managed; irrigation waters, for example, may be managed by the Bureau of Reclamation according to the relative strength of individual water rights, or they may be managed through a conservancy district to which all rights are conveyed in return for proportionate water allocations.

Timing and size alternatives (which are closely interrelated): Based on predictions of future conditions and needs, a dam constructed to the full potential of a site might provide facilities that exceed present needs. Alternatively, it might be possible to construct an initial dam to a lower elevation, with provisions for future raising, if needed. Such stage construction is to be preferred to overdesigning in terms of near future needs, because the anticipated distant needs may never develop. If stage development is not feasible, it may be better to delay construction until the need approaches the site potential. With respect to timing alternatives today may not be the best tomorrow. Technological breakthroughs, value shifts, and government actions may so change the priority of alternatives that starting tomorrow may prove wiser than starting tody.

Alternatives of locations: Each of these may lead to a different set of physical and social impacts on the region affected.

****

The federal government has a number of programs under which the states, their political subdivisions, individuals, groups and associations may qualify for assistance in outdoor recreation. This assistance involves credit, cost-sharing, technical aid, educational services and research. In a recent, revised publication entitled "Federal Assistance in Outdoor Recreation", the Bureau of Outdoor Recreation, U. S.

Department of the Interior, gives details regarding the various agency programs. The booklet may be obtained from the U. S. Government Printing Office at a cost of 35 cents.

****

In its "1968 Fall Water Supply Summary", the Soil Conservation Service reports that Oregon's 1968 water supply was severely short in most areas. The water outlook in 1969 is drastically poor unless the coming winter brings a superabundance of deep mountain snowpacks with water content greatly in excess of usual amounts.

Snowpacks were only slightly below normal on January first this year, but later winter storms were scarce and failed to increase the all-important snow blanket which normally provides Oregon's streamflow in the summer months.

Excessive precipitation in Auguest and early September caused only slight increases in streamflow but severely damaged crops in parts of Willamette Valley. It also lengthened the irrigation season by two to three weeks in many districts in eastern Oregon, and improved mountain soil moisture for the 1969 season.

RECENT FEDERAL GRANTS

1. The Department of Housing and Urban Development (HUD) has approved the following public works planning advances, which are without interest and repayable when construction is started:

YACHATS....$41,800 to finance planning of sewage collection and treatment facilities.

CLATSOP COUNTY....$1,900 to finance planning of sewerage facilities in the Sunset Beach area.

RAINIER.... $10,500 to finance planning of a storm and sanitary sewerage system to cost a total of $500,000.

2. The Federal Water Pollution Control Administration (FWPCA) has awarded the following:

OREGON STATE UNIVERSITY..... $24,485, to investigate the area and degree of biologic influence of a typical ocean waste outfall from a kraft pulp mill.

..... $24,174, to evaluate the effect on water quality of floating log rafts in estuarine and fresh water environments.

..... $28,387, to investigate the microbial activity in lake sediments and determine the effect of this activity on eutrophication.

..... $81,273, to develop control standards in logging for temperature and sediment.

..... $30,639, to study economic benefits from an improvement in water quality.

..... $52,432, to develop a remote sensing tool for the evaluation of dispersion of wastes from existing or proposed ocean outfalls.

..... $39,138, for a study of the physical factors affecting Oregon coastal pollution.

..... $14,100, for mathematical and computer services for the analysis of data and design of experiments for certain FWPCA programs.

KLAMATH PLYWOOD CORPORATION.....$42,028 to design, construct, operate and evaluate an extended aeration activate sludge lagoon treatment plant on urea-formaldehyde plywood glue waste.

3. Oregon has received from U. S. Department of the Interior $606,573 for FY 1969 from Land and Water Conservation Fund appropriations. All money allocated must be matched on a 50-50 basis, and payments are made for individual projects approved by state officials and the Department of the Interior's Bureau of Outdoor Recreation.

4. The Water Resources Council, under the Water Resources Planning Act of 1965, has made a grant of $45,703 to the state of Oregon for use in fiscal year 1969 to encourage comprehensive planning in the development of water and related land resources.

5. Approval of a $200,000 watershed loan to the Junction City Water Control District in Lane County to help finance flood prevention works, including river channel realignment, was recently announced by Robert V. Pierce, Oregon Director of the federal Farmer's Home Administration.

****

HAPPY HOLIDAYS