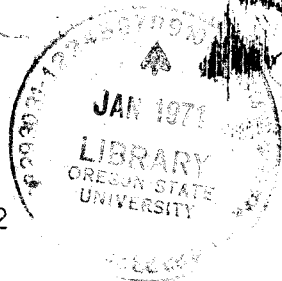


TD172
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no. 2

Oregon's Environment



OREGON STATE UNIVERSITY
December 1970

Number 2

HOUSEHOLD WATER USE

A study completed last year for FWQA by General Dynamics was directed at the problem of household water use. Among the conclusions arrived at in the report are the following:

1. Quality requirements for specific household tasks can be safely lowered. Many of them do not require water of drinking quality. In many cases, the established standards are related to taste or odor, and water of lower quality could be used for practically all purposes except those associated with drinking or food preparation.
2. Household water usage can be significantly reduced. There are many household functions in which water is used wastefully. Water for bathing, toilet flushing, and laundry could be economically reduced approximately 35% by use of presently available devices and technology. In a city of 100,000 these savings could amount to more than two million gallons of water per day that would not have to be supplied to the users and eventually treated in the waste treatment plant.

The reduction in household water use is an attractive and practical way of aiding the fight against water and waste problems. Waste prevention is one method of pollution control that will not become obsolete as new treatment technology is developed.

Some manufacturers have anticipated the demand for plumbing devices that use less water. Valves which restrict flow for faucets and showers, toilets which use reduced flushing volumes, and washing machines which allow just the required amount of water to be used are already available. A new toilet with flushing quantities similar to the United Kingdom toilets has been introduced. Other innovations such as the dual flush cycle toilet will probably be introduced in this country in the near future.

3. A limited public opinion survey showed little opposition to the use of flow reducing devices. The survey of homeowners, plumbers, architect-engineers, and equipment manufacturers substantiated most of the opinions formed during the study and indicated ready acceptance for all the water reduction devices except the home urinal and the recycle toilets. The relatively good response to the survey showed that public interest in protecting and preserving the environment is high. Most of the survey participants seemed to favor the concept of flow reduction devices but were somewhat hesitant to accept them in their own homes. Many of the architect-engineers and plumbers seemed interested, but skeptical, and said they lacked data on most of the devices. (From "A Study of Flow Reduction and Treatment of Waste Water from Households", FWQA 11050 FKE 12/69. Superintendent of Documents.)

HILLS CREEK

The Corps of Engineers has awarded a contract to Oregon State University for a one-year study of Hills Creek Reservoir in the Willamette River Basin. The problem to be studied is one of turbidity which now exists in the reservoir and, potentially, may occur in other reservoirs located in western Oregon.

There is concern that a turbidity problem might result in failure to provide the anticipated and needed degree of aesthetics, fishlife, and recreation benefits. More information will be sought regarding causes,
(Continued)

LOSS OF FISHING SITES

Research at the University of Kentucky has been directed at determining the value of fishing opportunities lost to water resource development.

The pressures of urbanization and industrialization are gradually destroying stream fishing sites while at the same time producing an increased demand to serve a greater population. Reservoir construction is one cause behind the diminishing availability of stream fisheries. The recreational value of the stream fishery lost should be deducted from the value gained through reservoir recreation in estimating net benefits for economic justification. This study utilized information collected from 3321 stream fishermen to derive a method and the necessary empirical coefficients for predicting the number and economic value of the average annual fisherman-days enjoyed along average streams throughout Kentucky.

The locations of the home and fishing site were noted for each fisherman interviewed. The collected data were fitted to a gravity-type model for predicting annual fishing use from the magnitude and distribution of the surrounding population. The unit value of a fisherman-day was estimated from the observed willingness of fishermen to travel to find a suitable fishing site and an estimated cost of travel. The unit value was found to vary as functions of geographical location within Kentucky and stream order. The annual number of fisherman-days was found to vary with stream order.

The method when applied to a reservoir which inundated 75.6 miles of stream from the second through the fifth order in Western Kentucky deduced an average annual recreational value lost of \$10,410 at an average value of \$1.83 per fisherman-day. Annual values per mile ranged from 1.9 fisherman-days and \$2.60 on second order streams to 221 fisherman-days and \$3.95 on fifth order streams.

There could be something of value in this study to communities weighing the relative advantages of water resource projects.

("The Economic Value of Streams for Fishing", by Dennis H. Bianchi, Research Report No. 25, 1969, University of Kentucky Water Resources Institute, Lexington, Kentucky.

HILLS CREEK (Continued)

effects and possibilities for prevention of the condition. The researchers will also examine the potential for turbidity problems at Lost Creek Reservoir, now under construction on the upper Rogue River.

The research team will include scientists from many disciplines --- civil engineering, soils, botany and hydrology. The results will be published and made available to appropriate federal and state agencies, public officials, and others.

URBAN-RURAL CONFERENCE

The sixth Urban-Rural Conference has been set for February 12, 1971 at Oregon State University. Outstanding speakers will include Dr. MacVicar, President of OSU, Dr. Borlang, Nobel Peace Prize Winner, and Governor Tom McCall. Subject of the conference will be "Land Uses".

FEDERAL GRANTS

The Federal Water Quality Administration (FWQA) has announced awards of grants to help build waste treatment facilities in Oregon communities. The grants are indicated below, followed by total cost:

Beaverton: \$29,520.	Project cost: \$101,000.
Hillsboro: 321,090.	Project cost: \$988,000.
Hines: 32,400.	Project cost: \$108,000.

Grants previously awarded to two areas were increased. Bear Creek Valley will receive an additional \$1,975,183 and Pendleton \$45,000. These grants are awarded under authority of the Clean Water Restoration Act of 1966, which permits the FWQA to pay from 30 to 55 percent of the estimated reasonable cost of construction of a municipal facility.

YAQUINA RIVER REPORT

The Corps of Engineers issued a statement last month regarding its findings after a study of flood control for the Yaquina River and its tributaries.

The reporting officers found that needs exist for protection of limited areas of discontinuous lowlands against flooding from storm runoff, tidal action, and a combination thereof and for the improvement of natural drainage in those areas. They also found that although a need exists for removal of floating debris from the tidal estuary, one time removal would not solve the problem and that watershed management or similar programs for prevention of debris accumulation are required.

They further found present and foreseeable development are limited and that, except for possible recreational development, potential public benefits are not sufficient to justify improvements. Accordingly, the reporting officers recommended that no improvement in the interest of flood control and related purposes be undertaken by the Corps of Engineers at this time; that in the absence of justifiable works for flood control, local government adopt a program for flood plain use regulation; and that findings contained in the report be used as a guide to future study and development of water and related land resources for Yaquina River Basin.

In accordance with the law, the report is now being referred for review to the Board of Engineers for Rivers and Harbors in Washington, D.C. Interested parties may present written views on the report to the Board. Statements submitted should not repeat material previously presented at public hearings held by the District or Division Engineers, or contained in their reports, as this information is already available to the Board. Information submitted should be new, specific in nature and bear directly on the findings in the report.

* * * * *

PUBLICATIONS

Solid wastes are the subject of two publications now available from the Superintendent of Documents, U.S. Government Printing Office, Wash., D.C. 20402. These are:

Sanitary Landfill Facts - PHS Publication No. 1792. This volume examines the planning, design, operation and public health aspects of sanitary landfill. \$1. per copy.

Mathematical Analysis of Solid Waste Collection - PHS Publication No. 2104, written by two scientists from Johns Hopkins University. The booklet covers the application of operations research to the analysis of solid waste collection systems, and describes and extends mathematical models for facility location and routing. \$1.50 per copy.

Another publication from the same office concerns itself with electrical transmission systems. Entitled "Environmental Criteria for Electric Transmission Systems", the booklet contains specific recommendations regarding tower design, route selection, right-of-way clearing, construction, clean-up and restoration, and maintenance.

FLOOD DAMAGE REDUCTION

The State Water Resources Board at Salem issued this year a small brochure entitled "The Flood Plain and Flood Damage Reduction". It addresses itself to the following questions:

- What is a flood plain?
- What has been done to prevent flood damage?
- What else can be done?
- What planning and technical assistance is available?
- What can you, the citizen, do to prevent flood damage?

It points out the reasons for land use control. "Many areas", says the Board, "throughout the nation and in Oregon have enacted land use regulations in which the flood plain is recognized as an integral part of the planning effort. Such land use control is widely recognized to be the primary responsibility of local government".

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STRAW DISPOSAL

Straw plus tree prunings equal a possible fireplace log ---and perhaps one answer to getting rid of some of the unwanted straw left on Willamette Valley fields after harvest.

The fireplace log, being tried by a major timber firm, is one of several concepts for using the crop residue being explored by Oregon State University under a Public Health Service grant. The PHS funds, explained Dr. David O. Chilcote, coordinator of the OSU project, are an outgrowth of the Solid Waste Disposal Act of 1965.

The first year grant of \$76,524 will be matched by the state for a total of \$114,707. Next year, PHS has indicated, the federal agency will grant \$141,076, with state funds bringing the total to \$211,614.

ANNUAL MEETING

The annual luncheon-meeting of the Water Resources Research Institute and the Air Resources Center will be held in the Memorial Union on the Oregon State University campus at noon on January 25. Principal speaker will be Gilbert F. White one of the nation's truly outstanding experts in the area of water resources. He has a distinguished record of appointments to national resource planning commissions and added to his list of publications in 1969 with "Strategies of American Water Management", an analysis of public policy and how decisions are made.

Wm. H. Buckley
Editor