

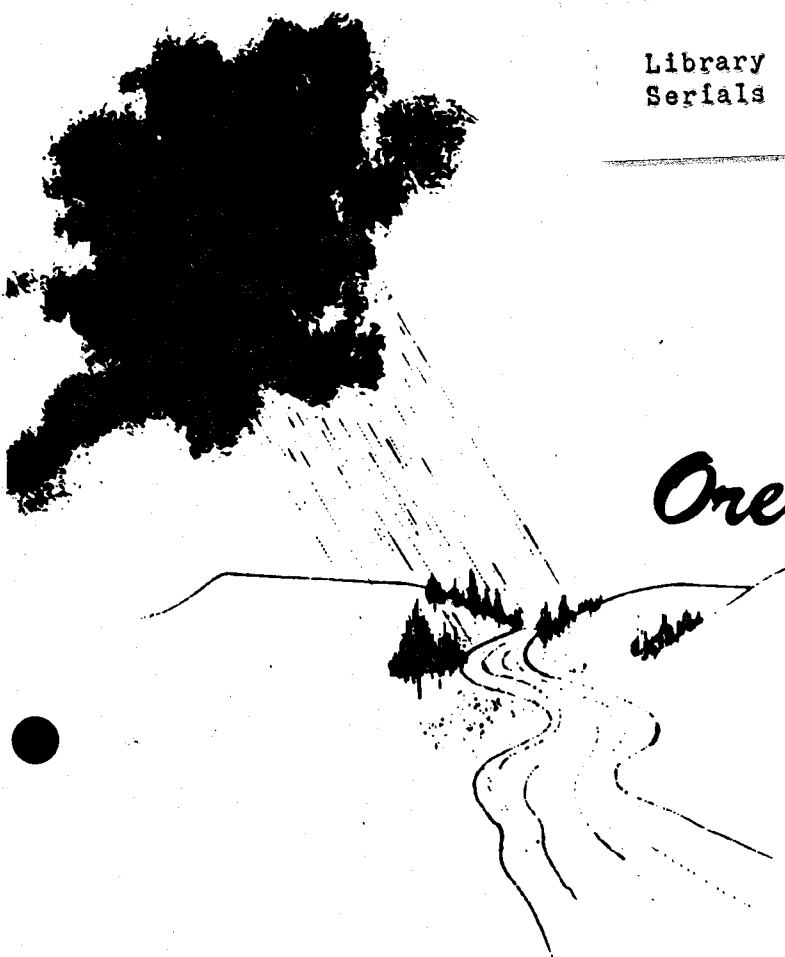
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COLUMBIA RIVER STUDY

An excellent series of volumes has been published, under the title of "Columbia Basin Water Withdrawal Environmental Review", by the U.S. Army Corps of Engineers, Portland. Copies have been placed in public libraries in Oregon and they are also available, at the cost of reproduction, from the Corps.

The material quoted below has been extracted from the Executive Summary of the series.

Feelings on this subject {water withdrawal from the Columbia} vary from person to person depending on individual interests, and the feelings are often mixed as people begin to see that any issue as complex as water use has many elements to consider.

"It would be unreasonable to believe that water withdrawal for agricultural use could have only positive or negative effects. Instead, we can reasonably expect that there are trade-offs related to water use - trade-offs which must be carefully weighed against each other as we all face new decisions about water use in our future.

"Without the use of river water for irrigation, the Columbia Basin region would, for the most part, be a dry and much less agriculturally productive area. Water withdrawn in this region has greatly increased regional productivity and has created jobs not only for those who work on the farms, but also for those employed in related activities such as food processing, equipment sales, or crop dusting, or in the new retail and service businesses which have sprung up around agriculturally developed areas.

"At the same time, this tremendous withdrawal of water from the river and its tributaries has changed aspects of the river, has affected other uses of the river, and has changed the lives of the people in the region.

"Wildlife populations, for example, have shifted as species more adapted to new land uses become more abundant, and species adapted to the native vegetation decrease or die out. The quality of the water returned to the river is affected by any chemicals added to it or by sedimentation. New developments sometimes cause "growing pains" for a small community. And so on.

"As the population continues to grow in the Columbia Basin river system (starting in Canada and extending over most of Idaho, Washington and Oregon), we have more cities, more irrigation, more people wanting and needing water. We can no longer think of water as an unlimited resource as we once did. And we cannot ignore the effects of water withdrawal on other parts of our ecological system. Instead, we must carefully evaluate how water in the Columbia River system is used and how new demands on the system will affect our ecology. We must be informed and prepared to make the best decisions about this resource for today and for tomorrow.

... "After gathering baseline information, we {the Corps team} analyzed it and tried to determine relationships between uses. And then, in order to speculate on what could happen to the area if water withdrawals increased in the future we created two fictitious "scenarios" in which we could ask a number of 'What if?' questions. . . .

"Because the scenarios are fictitious, they did not represent any particular projections, predictions, or recommendations. But they did make it possible for us to assume some additional irrigation so we could show what would happen to other, sometimes competing, uses of water.

"The results of this Columbia Basin Water Withdrawal Environmental Review have now been compiled and are suggested here. Technical appendixes provide extensive detail in each subject area, but in this document we have attempted to provide a general overview - a broad stroke of the pen, you might say - of the results of our work.

"You will not find answers to all your questions here. Neither did we.

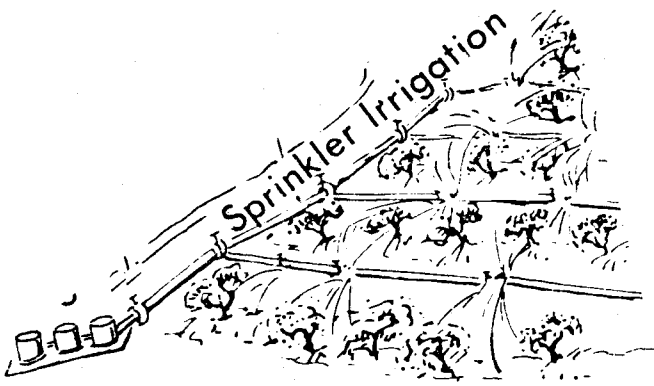
"As you read through the document, you will see that in some cases, no concrete results could be found. In other cases, results were quite different from one area of the river system to another. And in few cases, only general statements could be made about the results.

"But it is a guide, a starting point, a tool for other investigators and for citizens of the region as they work together with public agencies to consider and plan their future in a responsible and informed manner."

Technical appendices were prepared for each study area. They are as follows:

- A. Land Use
Part I and Part II (Maps)
- B. Sociology
Part I (Regional Social Effects)
Part II (Community Social Effects)
- C. Economics
Part I (Literature Search)
Part II (National Economic Development)
Part III (Regional Economic Development Effects)
- D. Fish
Part I (Columbia River)
Part II (Snake River)
Part III (Models)
- E. Wildlife
- F. Water Quality
- G. Recreation
- H. Agriculture
Part I and Part II (Maps)
- I. Hydrology, Navigation and Flood Control

On irrigated lands in the Columbia Basin, a wide range of crops is grown. Alfalfa is the principal crop, accounting for about 35 - 50 percent of the irrigated acreage. Wheat accounts for about 33 percent of the cropland. Others grown are fruits, vegetables and grass seeds.



STATE WATER BOND SALES

Jim Sexson, State Water Resources Director, calls attention to loan applications to be submitted for funding in the Water Development Loan Program. Loan applications received after February 1 will be considered in the next bond sale, tentatively scheduled for November 1981. February 1 was the deadline for possible funding under a proposed spring bond sale.

The Water Development Loan Program provides long term, low interest loans for irrigation and drainage projects located in the State of Oregon. "Proposed drainage projects, development of irrigation wells, pumps, mainlines, wheel lines and center pivots are only a few of the projects eligible for financing under the Program," said Sexson. "Any individual Oregon resident, farming partnership or corporation whose principal source of income is farming, and many quasi-municipal and municipal entities are eligible for a loan. Anyone who has a question as to their eligibility or the eligibility of a project should contact a representative of the Program as soon as is possible."

In the past two years the Department has had four bond sales totaling almost \$20 million which financed 126 water development projects. The projects, located in 27 of Oregon's 36 counties, have benefited 73,897 acres.

For information about the Water Development Loan Program, contact the Water Resources Department at 378-8131 in Salem or toll free at 1-800-452-7813.

CONSERVATION PLANNING GUIDE PUBLISHED

Greater emphasis is being placed on integrating water conservation with state water management planning. To assist the states in this effort, the Water Resources Council has developed a "State Water Conservation Planning Guide" now available from the Council on request.

In early 1980, a draft of the Guide was distributed to all states and territories for review. Following that, seven workshops were held to discuss both water management concerns and comments on the draft Guide. Representatives from fifty states and territories attended.

Briefly, the Guide includes discussion of:

- * considerations which form the basis for establishing state conservation policies
- * regional differences and pros and cons of certain water conservation measures
- * the relationship between federal, state, regional and local jurisdictions and the role of the public in plan development
- * key factors and elements of a water conservation plan
- * elements of a contingency conservation plan for emergency shortages
- * outline of steps for implementing a statewide plan and other conservation program activities.

A limited supply of copies is available from the Council on request. Copies are also being placed with the National Technical Information Service for distribution. Contact the State Programs Division, U.S. Water Resources Council, 2120 L Street, NW, Washington, DC 20037. The telephone number is 202-254-6446.

VIEWS ON ENVIRONMENTAL IMPACTS

Gus Speth, Chairperson of the President's Council on Environmental Quality, has issued three memorandums regarding two of Nature's finest amenities, agricultural lands and wild rivers. According to the first memo, Federal activities contribute to the loss of agricultural lands, which amounts to one million acres each year. Since August 30 of 1976 Federal agencies' environmental impact statements have included references to the presence of farmlands that would be affected by agencies' actions; however, recent studies by CEQ and the General Accounting Office have indicated that Federal agencies have not adequately assessed the environmental impacts on agricultural lands or reflected the need to protect those lands. In addition, agencies must begin to cooperate with state and local governments in their efforts to retain agricultural land. According to Mr. Speth, Federal agencies should contact the Chairperson of the United States Department of Agriculture (USDA) Land Use Committee or any USDA office for technical data to help assess impacts and to define alternatives. USDA will then refer to CEQ those proposed Federal actions it believes will be environmentally unsatisfactory because of unacceptable effects on farmlands.

The second memo issued by Mr. Speth requested, by November 1, 1980, the following information from Federal agencies (as part of the CEQ's oversight responsibility under NEPA): (1) identification of existing or proposed agency policies intended to preserve or mitigate the effects of agency actions on prime or unique agricultural lands, including criteria or methodology used in assessing those impacts; (2) identification of specific impact statements prepared from October 1, 1979 to October 1, 1980, covering actions that seemed likely



to affect agricultural lands; and (3) identification of the official who is responsible for agricultural land policies in each agency, and the name of the official in each agency's NEPA office who is responsible for carrying out related activities.

Memorandum three regards President Carter's August 2, 1979 directive which stated: "Each Federal agency shall, as part of its normal planning and environmental review processes, take care to avoid or mitigate adverse effects on rivers identified in the Nationwide Inventory prepared by the Heritage Conservation and Recreation Service (HCRS) in the Department of the Interior." According to Mr. Speth, memorandum three is intended to assist each Federal agency in meeting the President's directive, which mandates agency consultation with HCRS in situations whereby agency action could foreclose the designation of a wild, scenic, or recreational river segment.

Mr. Speth emphasized that consultation with HCRS should occur at an early stage in order to reduce or avoid resource management conflicts. Under Appendix I of the memorandum, entitled "Guide for Identifying Potential Adverse Effects", in order to be eligible for inclusion as a wild and scenic river, a river must be

"free-flowing", although dams will not automatically bar inclusion; it must possess "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values", which is fairly all-encompassing and rivers are further broken down as follows. "Wild rivers" are those which are generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. "Scenic rivers" are those that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads. "Recreational rivers" are those that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some diversion in the past.

The following is a list of examples of development that would probably require consultation with HCRS because of their potential for adversely affecting rivers: small docks, small bulkheads, clearing, drainage, irrigation canals, dikes, erosion control structures, small reservoirs, increased commercial navigation, dredging or filling, roads, railroads, any type of building, pipelines, bridges, wells, mines, quarries, power substations, recreation areas, dumps, clearcut timber harvest, radio towers, and windmills.

Those activities which are considered more severe in their impacts on rivers, and will therefore almost invariably require consultation with HCRS, include: channelization, surface mining, locks, dams, airports, landfills, factories, gas or oil fields, highways, railroad yards, power plants, sewage treatment plants, housing developments, shopping centers, industrial parks, marinas, and commercial docks. In addition to the effects of development

within the river corridor being analyzed, development outside the corridor that would cause visual, noise, or air quality impact should be assessed.

(From "Agora", Vol. 1, Number 1, Autumn 1980. Newsletter of Landscape Architecture Foundation, 1717 "N" Street, NW, Washington, D.C. 20036)

EFFLUENT FOR GOLFING

Wastewater effluent is being used for watering golf course and park district turf near Chicago, Illinois with a view toward annual water savings of 3 billion gallons. The test project, supervised by The University of Illinois, uses 15 individual plots in a 3/4 acre site that has been seeded with three kinds of grass and planted with shrubs and ground cover. The irrigation project includes application of potable water, secondary and tertiary effluent to Kentucky bluegrass, annual bluegrass and creeping bentgrass. The plots, seeded in the fall of 1979, are located at the North Shore Sanitary District treatment facility in Gurnee, Illinois. All waters are applied through automatic sprinkler systems.

Tests may last more than 4 years with the first data being collected in the spring of 1981. About 20 million gallons of water annually are needed for an average golf course. Use of wastewater would not only prove to be a conservation method, but may also save the average golf course some \$5000 to \$7000 in annual water fees.

Further details on the research project are available from:

Dr. David J. Wehner, Asst. Professor
Turfgrass Science, College of Agriculture
Department of Horticulture
University of Illinois
Urbana, Illinois 61801

GROUNDWATER MODELS

A study recently concluded by the American Geophysical Union has identified, through the use of numerical models, four major problem areas in groundwater management. The final report provides guidance to governmental and non-governmental agencies on measures necessary to improve the utility of models. The problem areas are:

1. Accessibility of models to users. Top priority should be given to making existing models more accessible to potential users as the most necessary immediate improvement. Increasing the accessibility of models consists not only in improving the quality of information about models and making this information and the models more available but also in improving the training of those persons who use models.
2. Communications between managers and technical personnel. Measures must be taken to improve the links between management and those who provide technical services employing models. This will involve designing model outputs to be more responsive to management needs as well as to involve more interactive participation by managers and technical personnel in problem definition and model applications.
3. Inadequacies of data. Solutions to problems of data will require increased attention to the identification of those data critical to the solution of groundwater management problems. Improved methods of data collection, storage, and retrieval are needed.
4. Inadequacies in modeling. In certain areas, models still do not exist or are considered inadequate. The development or improvement of these models should be encouraged; in many instances, however, models will have to be preceded by improved scientific understanding of the fundamental processes which the models are to describe.

Specific recommendations for action have been formulated in each of these areas. The recommendations have been conceived as broadly as possible and are intended to improve the utility of models in both developed and developing nations. (From "Groundwater Management: the Use of Numerical Models". Water Resources Monograph 5, AGU, Washington, D.C., 1980.)

IS THERE A DROUGHT?

Is Oregon in for another drought like the one we had in 1976-77? According to Earl Bates, OSU agricultural meteorologist, there are similarities between the two winters, but there are also major differences.

The main similarity is the intensity and the persistence of the high pressure ridge, an area of higher barometric pressure, influencing our weather patterns, said Bates.

The difference is that the center of the high pressure ridge was off the Oregon coast in 1977; this winter, it is over the center of Oregon and Washington, delivering warm rains and melting the early snowpack, he added.

The USDA Soil Conservation Snow Survey Office in Portland monitors the amount of moisture in the snowpack in Oregon. The mid-January average for snow water content on Mount Hood should be somewhere between the Jan. 1 average of 21 inches and the Feb. 1 average of 37 inches. Mount Hood now has about 6.5 inches of water in its snowpack.

"Things change very rapidly," said Bates. "In 1976 and 1977, we had virtually no rain or snow until around Feb. 20." But then in the last week of February, Oregon had 64 percent of its normal monthly rainfall in one week, while March received 121 percent.

"There are some areas east of the Cascades that might not have enough irrigation water this summer even if we do get normal precipitation," said Tom George of the Portland Soil Conservation Service Snow Survey office. "Some areas where there is no reservoir storage available will have problems this summer."

George indicated that one of the highest recording sites for snow in Oregon on Mount Hood showed only 23 percent of normal snowpack. Farther down the mountain where most streamflow originates, there are places with no snowpack.

Optimistically, Bates points out that normal precipitation is the most likely condition to expect from this point through the winter.

"But this is a climatological expectation, not a forecast," said Bates. "We have to review each day and each week as they arrive and revise our thinking based on the conditions. It is certainly too early to say that we will not have normal winter precipitation from now on." (Reprinted from OSU "Barometer", dated January 22, 1981).

LAND AND WATER

A volume published under the sponsorship of "Landscape Architecture" magazine delineates the problems caused by increased development in water sheds and coastal areas, and suggests ways in which architects and planners can avoid or lessen them. Drawing largely on experiences in particular towns and cities, and with oceanfronts and beaches, the chapters discuss watershed planning and design, communities and rivers, low-lying land development, hazards, resource analysis and management, and recreational water use. Excellent illustrations and photographs complement the lucid text. The publication, "Water and the Landscape", is edited by Grady Clay. McGraw-Hill, 1979, 192 pp.

PRIMER FOR WASTEWATER TREATMENT

What the "Dick and Jane" books did for children learning how to read is what a 21 page booklet does for adults who want to learn about sewage treatment. Available from Publications Clerk (Mail Stop 635), EPA, 1200 Sixth Avenue, Seattle, 98101

