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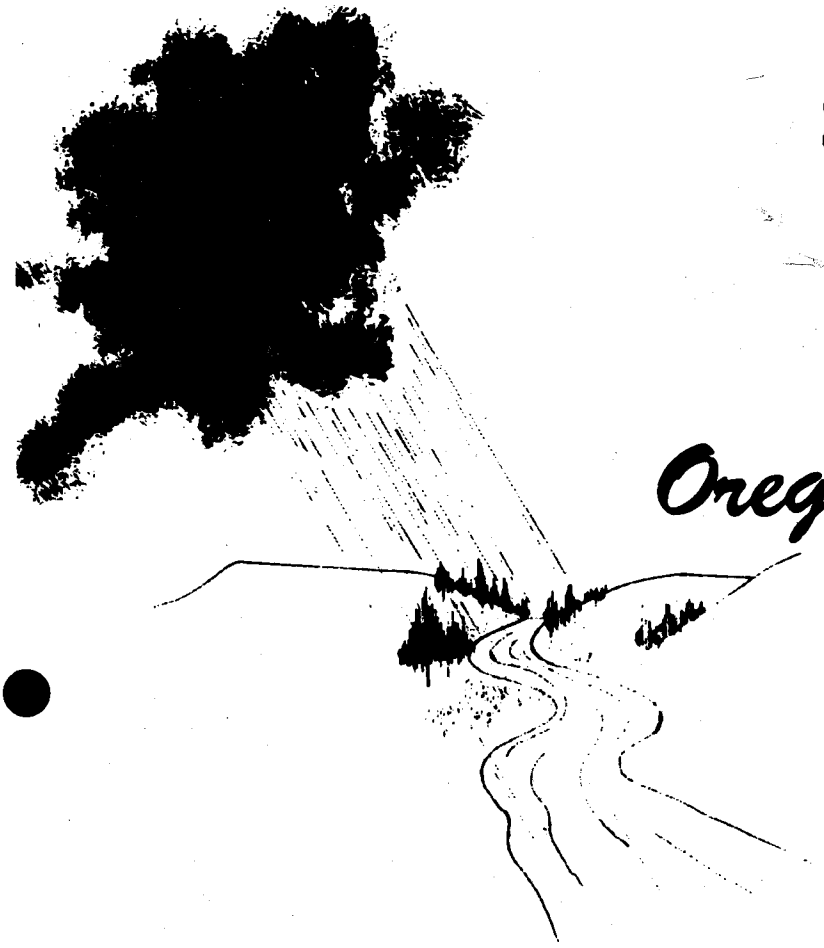

Oregon's Environment

December 1979
Number 38

YEAR-END REVIEW

Congress will have adjourned by the time you read this. There is the usual attempt to assess the activities of the year in terms of impact on water resources policy and development. It is safe to say that the administration's attempt to initiate a "get tough" policy regarding water projects has been modified by various factors.

Environmentalists feel that the outlook is not good (see inside for views of The Natural Wildlife Federation). On the other hand, many state and local governments and business interests point to a need for giving greater consideration to economics and social factors. This is brought about by the energy crisis and the nation's economic status. Not to be discounted is the special effect of election campaigns.

WHERE ARE THE STATESMEN?

Where have all the statesmen gone? Are any members of Congress more concerned with the overall welfare of the country than about federal handouts into their districts which may win them a few votes?

Observers of the public works charade now being played out cannot help but wonder -- and gag at the sorry spectacle. It now appears that Congress will approve the biggest and most costly biennial flood control and water resources bill of all time. At last count, financial swill from the public trough for dams, locks, harbors, levees, bridge and drainage projects would go into at least one-fifth of the Congressional districts. This buys support because few members have the fortitude to vote against construction in their home areas. In fact, most will seek credit for supporting the bill.

This is pork politics at its worst. Some projects cannot pass even minimal economic analyses and have negative benefit/cost ratios. Some are pure handouts and require no local cost-sharing. Some are not even thoroughly studied or planned. The bill is so vague that the Congressional Budget Office cannot even estimate its total costs -- and at a time when the national debt continues to soar. The Administration's efforts to institute sound water policies are ignored, as are concerns for fish and wildlife and other natural resources.

To describe it baldly and bluntly, the emerging rivers and harbors bill is a travesty on sound, responsible government and should be defeated. If passed, however, we only hope the President summons up the courage he once had and vetoes this bill. In this situation, no bill is by far the best bill. (From *"Conservation Report", Report No. 29, Nov. 9, 1979, National Wildlife Federation.*)

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CONSERVATION

Water conservation devices have practically universal application. This is because water itself has universal application and because water conservation devices accomplish three major objectives: water conservation, energy conservation, and wasteflow reduction.

The devices are appropriate for use in all areas of the country, at all times and in all situations. If your home is located in rainy Seattle, Washington, you will benefit from the energy conservation and wasteflow reduction aspects of water conservation devices.

If you live in the Southwest, the water conservation aspects should be appealing. And, if you reside in the desert with a completely solar energized home, the wasteflow reduction benefits will again be important.

It matters little whether you are in a home in the country or a high rise office building in New York City -- water conservation devices will apply. Whether your business is agricultural or industrial, food processing or clothing manufacturing, one room rural school house or major university -- water conservation applies.

IS IT SAFE TO DRINK?

More than 14,000 Oregonians in 29 of the State's 36 counties have no way of knowing whether their drinking water is safe to use, according to information released this summer by EPA. A total of 89 of the 890 community drinking water systems throughout the State have failed to establish that the water they provide meets national standards for bacteria and turbidity.

"Those 89 systems are leaving their 14,000 customers in the dark," declared Donald C. Gipe, coordinator of EPA's Safe Drinking Water program in Oregon. "Whether it's a case of the water suppliers not testing the water, or testing the water but not reporting the results, it adds up to the same thing: their customers have no assurances the water they drink is free of contaminants that can endanger their health."

Gipe said EPA's concern is prompted by data developed by both EPA and the State of Oregon that Oregon has four times as many waterborne disease outbreaks as the national average. "We don't want to see any repeats of the Crater Lake episode of 1975 or the Neskowin incident of 1978," Gipe added, in references to the outbreaks of gastrointestinal upsets that made hundreds of people ill because of impure drinking water. "Contaminated water can make people sick, but without taking samples and analyzing them, it's impossible to tell whether there are impurities in the water or if turbidity is interfering with disinfection. People are entitled to know what's in the water they drink."

Failure of a public water system to test for bacteria and turbidity at prescribed intervals, and to report the results on schedule, is a violation of the Safe Drinking Water Act of 1974. Under that law all community water systems must report the results of bacteria tests. For systems that take their water from surface water sources, there is the additional requirement that tests for turbidity be reported as well. Noncompliance with these requirements makes the water supplier liable for both Federal enforcement action and individual citizen suits. (From *"Northwest Environment", September 1979, EPA, Seattle, WA*)

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ROGUE RIVER HEARING

The Oregon Water Policy Review Board will hold (or, has held) a public hearing on January 8, 1980 in Medford to consider:

a) Withdrawal of the unappropriated waters of the Rogue River and its tributaries upstream from Lost Creek Dam from further appropriation except for domestic and livestock uses;

b) Withdrawal of the unappropriated waters of the mainstem of the Rogue River from Lost Creek Dam to the confluence with the Pacific Ocean except for domestic and livestock uses and irrigation not exceeding one acre in area.

c) Whether the withdrawal of the unappropriated waters of the Rogue River Basin as specified in a) and b) is necessary to insure compliance with the state water resources policy or is otherwise necessary in the public interest to conserve water resources of this state for maximum beneficial use and control.

The purpose of the proposed order is to adequately protect storage releases from Lost Creek Lake in the Rogue River for fishery enhancement. The proposed order of withdrawal shall remain in effect until such time as the Corps of Engineers makes a determination on the final allocation of water impounded by Lost Creek Dam, allowing the Director of the Water Resources Department to issue the appropriate permits.

RECYCLING ANIMAL WASTE

The purpose of an EPA research project was to evaluate the technical and economic feasibility of an alternate disposal and utilization system of animal waste management in an operation involving overland spray for crop production. The system included two lagoons, one anaerobic and the other aerobic, in close proximity to the swine installation. These lagoons were used in series to dispose of the swine waste and to improve effluent quality for land application. Hence, there was a time lag with economic constraint to complete the cycle through a terminal aerobic lagoon.

A primary objective of this project was delineation of techniques for deriving nutrient benefits from animal wastes and making them directly available for selected crop production. In this respect, the investigation contributed to developing a workable design that addresses itself to the evaluation of an overland spray system using animal wastes. For this purpose, swine waste was transported into two adjacent lagoons and pumped through 7.6 centimeters (cm) PVC and improvised gas lines to irrigate three demonstration fields and 12 research plots equipped with runoff and soil water collection devices.

Vegetable crops were grown in the plots and animal forages were grown in the demonstration fields where growth responses were assessed. Preliminary soil analyses were conducted to determine the extent of uniformity of soil elemental contents. A soil profile determined successive depths for soil water sampling. Soil water from three trial periods was chemically analyzed for pH, chloride, specific conductance, nitrate, nitrite, and ammonia nitrogen. These parameters were meticulously evaluated with respect to their impact on the soil-plant-soil water system.

Inventories of feed consumption and swine numbers were maintained to assess the contribution to the lagoon system. Subsequent degradation processes were periodically examined with respect to the effect of the treatment units on nutrient preservation and effluent quality. In this study, emphasis was upon conservation and transformation processes of nutrients pursuant to the lagoon changes. Nitrogen-containing nutrients known to be valuable for adequate plant responses were appraised and the impact on the native ground water system was documented. (From *"Overland Recycling System for Animal Waste Treatment". EPA-600/2-79-029, January 1979*)

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INSTREAM FLOW STUDY

The Natural Resources Law Institute of Lewis and Clark Law School, Portland, Oregon, has received a grant from the U.S. Office of Water Research and Technology to examine the technical information needs of instream flow decision-makers. An interdisciplinary approach to the study is being followed, using both legal and social science methodologies. The legal research and analysis is being done by Institute personnel. The social science research is being conducted by Marvin Berry, College of Santa Fe Department of Political Science and Nicholas Lovrich, Washington State University Department of Political Science.

The study will include an examination of the water allocation decision-making process in Colorado, Idaho, Montana, and Washington. Each state takes a different approach to the protection of instream flows.

WATER QUALITY ISSUES

At its meeting on November 30 in Gold Beach, the Water Policy Review Board acted on several issues that have far-reaching effects on Oregon's water resources.

The Water Policy Review Board adopted a resolution to the Corps of Engineers requesting that a portion of the water stored in the multiple-dam Willamette system be allocated specifically for water quality programs. The Board's action recognizes that the sewage treatment programs adopted by most valley communities and industries are predicated on the assumption that a sufficient streamflow will be maintained in the Willamette to dilute treated effluent to an acceptable standard.

Water is now stored in the Willamette system for flood control, power generation, navigation, and irrigation uses. The Board is fearful that, if water is not specifically reserved for water quality releases, it may not be available at some future time, thus upsetting existing programs. If sufficient water is not released to satisfactorily dilute already treated releases, various water-using industries could be affected and communities in the valley may be forced to spend millions of dollars for additional water treatment facilities. The public had some warning of the potential problem during the drought of 1977.

The Board's resolution called on the Corps to "initiate necessary studies to accomplish the allocation of sufficient upstream storage to assure flows in the Willamette River of 6,000 cubic feet per second measured at Salem." Copies of the resolution were forwarded to Oregon's Congressional delegation.

The Water Policy Review Board also adopted a plan of action to consider the minimum streamflow priorities identified by the Department of Fish and Wildlife earlier this year. The plan, proposed by the Water Resources Department staff, was supported by the Department of Fish and Wildlife in testimony offered at the Gold Beach meeting. Water Resources Director Jim Sexson said, "Under the schedule adopted by the Board, most of the minimum streamflows that will be considered will be addressed within 18 months."

* A leaky hot water faucet can waste 40 cents worth of energy every week. It can be fixed in minutes -- for a few pennies.

WHY MUST WATER BE MANUFACTURED?

Most people - accustomed to turning a faucet for instant water - tend to take it for granted. After all, they reason, water is a natural resource. So why must it be manufactured?

The truth is that water today needs treatment before it can be used. Human wastes and industrial pollution dumped into streams or seeping into the ground often render it unfit to drink. Too many towns dump their raw sewage back into our waterways. And even natural sources may contain objectionable materials. So water treatment is vital.

Unfortunately, too, water today, isn't always where it is needed. For example, some metropolitan areas such as New York and Los Angeles - must bring water many miles from distant sources. Water for southern California, for example, must be brought more than 400 miles from the Colorado River.

Today, modern technology provides all the tools and know-how to convert raw water into a high-quality product and deliver it to the consumer. There is no need to wait or postpone improvement projects in the hope that nuclear energy or some new, way-out development will soon answer all our water and pollution problems. The equipment and knowledge are here.

All that is needed is the planning and money to get the job done. And the job must be done NOW! It cannot be postponed.

For turning water-supply-and-treatment dreams into reality takes time. Acquisition of land and right-of-ways and the size and scope of the machinery, equipment and facilities involved need many months and sometimes years to acquire, build and install. Miles of pipe must be laid deep in the ground. Huge tanks and pumps installed. The work cannot be done overnight.

What's more, it is false economy to postpone improvements with the idea of saving money. For they will only have to be done later when the needs will be greater. Meanwhile, the cost of labor, materials and interest charges on financing will continue to rise. So it is cheaper to make the improvements now.

For true economy and effectiveness, improvement planning must be based on predicted population growth in the area, increasing personal demands for water, and anticipated needs of new business and industry. The latter won't settle where there may be water-supply or pollution problems.

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TASK FORCE

Oregon's Department of Energy has created six task forces to study alternate energy possibilities. The hydro-power task force, consisting of 14 members, has drawn up several tentative issues to address: resource assessment, simplifying licensing, funding, education on existing information and incentive programs, anticipating and minimizing environmental problems, and promoting new technologies.

The task force will examine creative ways of developing Oregon's hydropower resources. To implement the plan, the task force may recommend funding various programs through an agency or university, changing state or federal laws, hiring private consultants, establishing loan programs, or any of several other options.

WATER USE IN INDUSTRY

Oregon industries - from restaurants and car washes to paper and food processors - all use water, and usually in large amounts. They too can be affected by a serious water shortage. Following are some ways that industries can conserve water:

1. Reclaim and reuse industrial wastewater, whenever possible. This is probably the biggest potential source of savings. Some industries are already a step ahead in learning how to conserve water because of federal water pollution requirements. Lumber mills are sprinkling decks of stacked logs with water instead of using mill ponds. Food processors are using dry methods of conveying foods inside a plant instead of transporting them with water. Industries are also transporting reclaimed wastewater to farmers for use as irrigation water. The possibilities are almost endless. For more information on reclaiming and reusing waste water, contact the State Department of Environmental Quality.

2. Take a close look at production processes and pinpoint areas in which water use can be cut. Look at washdown and cleaning techniques. Repair water leaks and install shut-off nozzles on water hoses.

3. Alert employees as to how they can save water on the job. Install water saving devices in bathrooms and kitchens.

4. Reduce the use of water for landscaped areas. Water only when needed and use water saving irrigation methods.

5. Some restaurants are already serving water only on request, not only to save water but also to save the energy used to make ice and wash the glasses. A reduction in the use of unneccessary plates and silverware might also be in order, since they are rewashed along with dirty dishes.

(From *"Final Report to the Pacific Northwest Regional Commission on Oregon's Drought and Conservation Activities". Oregon Water Policy Review Board, March 1979*)

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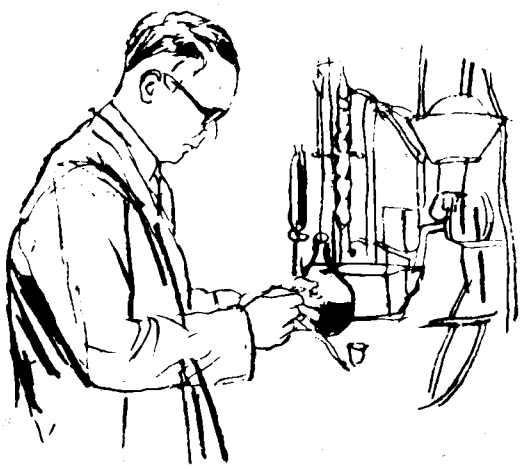
ASSESSMENT

The Second National Water Assessment of the Water Resources Council found that the nation's overall water supplies are generally sufficient to meet our needs for all beneficial purposes. However, due to the difference in geographical distribution between population and water supplies, there are major water supply problems in many of the 21 regions of the nation. Data drawn from the National Water Assessment and from a study being done at the Office of Water Research and Technology make the following predictions:

- Agricultural withdrawal of freshwater will decrease by two percent, and agricultural wastewater discharges will decrease by 15 percent.
- The recycle rate for manufacturing will change from 2.2 to 16.8.
- The recycle rate for steam electric power will change from 1.6 to 7.5.
- The recycle rate for minerals industries will change from 1.9 to 8.8.

WATER FACTORY



A report from Stanford University describes the performance of "Water Factory 21", a 0.66 cu m/s advanced wastewater treatment plant designed to reclaim secondary effluent from a municipal plant so that it can be used for injection and recharge of a groundwater system. Included in this evaluation of the first one and one-half years of performance are summary data for general inorganics, heavy metals, virus, and a broad range of organic metals.

Processes included in the plant are lime treatment, ammonia stripping, breakpoint chlorination, filtration, activated-carbon adsorption, reverse osmosis, and final chlorination. The performance of individual processes as well as overall efficiency was evaluated. A 19-page booklet, entitled "Water Factory 21", has been prepared by the Office of Water Research and Technology as a capsule version of the full 100-page publication. Copies of the booklet are available free of charge from the Institute office.

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URBANIZATION PROBLEMS

The water problems of large cities are well known, but until recently less attention was paid to the problems of smaller, rapidly-developing communities.

Small communities have difficulty handling the pressures and contentions of well-organized and aggressive developers; and their staffs are not trained in technical problems such as stream pollution, lake eutrophication, flooding, erosion, and water supply. Unlike large central cities which must rely mainly upon remedial programs, the urbanizing areas may adopt preventative strategies such as planning to avoid some of the impacts which would otherwise occur.

The water problems of urbanizing areas are many and varied:

*Reliable, safe water supplies for growing communities may be difficult to provide.

*Problems of flooding and of channel erosion are accentuated by development.

*Environmental impacts of water pollution usually become serious and complex as an area develops.

*Attractive streams and lakes may be seriously deteriorated just at the time when their potential usefulness is increasing.

These various problems are often interrelated. Pollution may adversely affect water supply, either surface or ground water sources. Common plans must be made and common programs adopted to control urban runoff in the interest of flood management and of reduction in particulate pollution. Land use plans should take into account many different kinds of water problems and not just one at a time. (From *"Water Research in Action", Vol. 3, No. 5, 1979. Publication of OWRT*)