BIG DAM FOOLISHNESS; THE PROBLEM OF MODERN FLOOD CONTROL AND WATER STORAGE

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Big dam foolishness; the problem of modern flood control and water storage by $\,$ Elmer T. Peterson

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ELMER T. PETERSON

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BIG DAM FOOLISHNESS

"Flood control
is mainly a problem in land use.
Though it would probably be blocked
by unwieldy bureaucracy,
the logical thing would be
to put all flood control policy
under the U. S. Department of Agriculture."
AUTHOR.

BIG DAM FOOLISHNESS

The Problem of Modern Flood Control and Water Storage

BY ELMER T. PETERSON

AUTHOR OF Forward to the Land

INTRODUCTION BY Paul B. Sears

NEW YORK - 1954

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To the Valiant People of the Valleys Who Fight for Their Homes and Their Lives

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Introduction

Science, when it can be used in warfare (and this includes a surprising amount of medical knowledge), in manufacture and business, or in spectacular health measures, gets prompt attention. When its benefits are long-range, to be diffused through society by the slow process of education and self-control, the going is not so easy. The scientist can speak his piece and let the public go to hell if it chooses; or he can turn evangelist—an unhappy role for him—and try, as preachers always have, to urge good behavior in the hope of its ultimate reward.

Now and then he gets welcome help from a layman of insight, whose profession does not bar him from the rough and tumble of the forum, or better yet, one whose business it is to enlighten and inform the public. Such a man is Elmer T. Peterson, whose skill in making information palatable without distorting it is evident in the pages that follow.

A series of meticulous researches following the climatic and economic crisis of the 1930's has served to confirm an ancient intuition of the students of earth and life. This belief—for it is scarcely emerging as a law—holds that no species, not even Man, can multiply indefinitely without having to reckon with the limitations of the environment; that all species, including Man, exist by virtue of orderly processes within the environment, regulating the flow of energy and material change; and that Man is well advised to respect and conserve these processes, rather than disrupt them.

One of the first, and most costly, results of disruption is water trouble—too much where it is not wanted, too little where it is needed. The essential picture is one of growing cities, effectively waterproofed and designed to get rid of water as it falls. With this goes an increasing thirst on the part of cities, causing them to reach out unbelievable distances for their water supplies, smugly confident that the hinterlands continue to accumulate water in orderly fashion, if the cities themselves do not.

This child-like faith of the city man is sadly misplaced. Well-designed experiments show that in all but the most skillfully managed agriculture the power of the earth to absorb moisture and delay runoff is greatly reduced by destruction of the natural vegetation, whether it be forest or prairie. Perhaps the most striking example comes from the work of Warren Thornethwaite at Seabrook Farms, New Jersey, in disposing of some 8,000,000 gallons of waste water a day. At first he tried spraying this onto agricultural land of various types. It soon became saturated and would hold no more. But when he sprayed it over the forest, the entire

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amount—equivalent to some 500 inches of rain a year—readily was absorbed. This process has been going on throughout the growing season for several years with no ill effects, resulting in a dense undergrowth such as is seldom met outside the tropics.

From test-plots in Oklahoma, Ohio, the Rocky Mountains, and doubtless other places as well, comes the same story. Land covered with native vegetation or a reasonable facsimile thereof will absorb water. Land cleared and subjected to ordinary agricultural treatment loses from half to two-thirds of its capacity to absorb. And it is upon water that is so absorbed, or otherwise retarded in its return to the ocean, that all terrestrial life depends.

Civilization, with its growing centers of population and industry, its rising standards of sanitation and convenience, has a vast and growing thirst. Along the flood plains of great rivers it sets hostages in the form of rich farms and costly urban structures. Elsewhere its roofs and roads waterproof the earth, while an ill-considered agriculture makes the earth less permeable, and rectilinear highways supplant the old and leisurely water-courses. Perversely, waste and want walk hand in hand. Civilization represents a state of increasing hazard with respect to water.

These statements can be documented as scrupulously as the readings in a laboratory. Yet for remedy we have chosen to prescribe for ourselves hair from the dog that has bitten us—more of the same, and yet more.

So it is no journalistic whimsy that the man who some years ago engineered a book called Cities Are Abnormal