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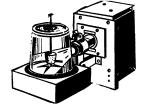
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CONSERVATION

# Floods With Us Always

➤ MAN CAN MODERATE the sudden flooding streams and rivers that bring destruction to cities and farms, but he cannot eliminate them.

"People should reject the idea that man can control nature, and realize that we must learn to get along with it," believes Dr. Raymond Mace, research scientist with the water resources division of the U.S. Geological Survey, Washington, D. C.

Floods are normal phenomena of nature, he said. No matter how much money is spent, no major flood will ever be completely controlled by man. All we can do is fight to hold down the floods, learn to live with them, and adjust by building our industrial centers, homes, cities and farms in areas where floods will not cause terrible damage.

Floods are caused by intense rainfall or by melting of accumulated snow. They occur most often in the spring, as the warming sun melts the winter snow, but they can also occur when storms hit in the summer, fall or winter. As billions and billions of waterdrops accumulate in the highlands, they run down the hills, ridges and mountains to form rivulets which grow into larger creeks, streams and rivers in a powerful rush to the sea. Too much water at one time, or too low a bank of the water course, causes the water to overflow its natural course and spill over the land. The amassed water can rush down the watercourse in a wave called a crest, such as the 27-foot crest that bore down on St. Paul as part of the record Mississippi flood waters, worst of the century.

Floods occur along practically every river in the world, and some occur a dozen or more times in a single year on the same river. Some floods cause no damage, but many leave millions of dollars worth of ruin behind them, depending upon the concentration of civilization in their path.

Scientists, engineers and technicians can avoid much flood damage by many methods. For instance, in the highlands, water runoff can be reduced by contour plowing and terracing the land to hold the water. Grass, shrubs and forests can be planted so the roots will hold the rain water or melting snow. Storage ponds on farms and other property can be dug to collect and retain much water. Series of open-gate dams on many streams can be operated to hold back the water during flood season and let it flow at other times, while larger dams can hold back tremendous volumes of water. Channel cutoffs can be dug to divert the overflow, and along low-lying cities and plains, levees of sand, soil and other fill act as walls to keep the rolling waters in their course.

But the most effective measure to prevent flood damage is by zoning the flood plains, as the low flat areas of land bordering the rivers are called, believes Dr. Mace.

By mapping the topography of these flood areas and by making detailed studies of the geology and histories of former floods, geologists can tell exactly what parts of the land are apt to be flooded and how often. The U.S. Geological Survey has been concentrating on these studies within the last several years, he explained.

These potential flood areas are then zoned by the city, county or state to allow only certain construction or activity in certain areas. By this careful zoning, everyone can be informed of the risk or safety involved in flood areas, he said.

• Science News Letter, 87:270 April 24, 1965

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Reflected Solar Radiation **Measured From Everest** 

METEOROLOGY

THE SUN'S reflected radiation at the highest point from which it has ever been measured by ground-based instruments—19,000 feet up Mt. Everest—was 60% of the incoming radiation, about as expected.

Reflected radiation measurements are important in long-range weather forecasts.

Temperatures taken in the high valley on Khumbu Glacier were warmer than expected, John J. Roche of Eppley Laboratory, Newport, R.I., reported to the American Meteorological Society meeting in New York City. He said the temperatures at night seldom went below zero and averaged 30 degrees Fahrenheit during the day.

Mr. Roche reported on the measurements made by Barry C. Bishop of the National Geographic Society, Washington, D.C., who was one of the men taking part in the first successful U.S. expedition to the summit of Mt. Everest in May, 1963. Drs. Anders K. Angstrom and Andrew J. Drummond, also of Eppley Laboratory, collaborated in the research.

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