

Consortium Turns Flood Disaster Into Scientific Learning Experience

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On July 15, 1982, the Lawn Lake dam, a privately owned reservoir within Rocky Mountain National Park, failed, sending a 700-acre-foot torrent of water down the Roaring River into Fall River and into the town of Estes Park. The flood caused three fatalities and over \$30 million damage to public and private property. The site was later declared a major disaster area by the President of the United States.

Impacts of the flood on the Park's natural resources were numerous. Lawn Lake was partially drained. About 8 miles of aquatic ecosystems and the adjacent riparian and other plant communities were inundated. The river channels were scoured to bedrock with cuts up to 50 feet deep. A 42-acre debris fan was deposited, damming the Fall River and creating a new lake.

Although the event was tragic in terms of loss of life and property, scientists in the area saw the site as a unique opportunity for research. Rarely does a high elevation perturbation of this magnitude and type, in an easily accessible area and protected in a national park, occur.

In May 1983, through the interest of Dr. Gustav Swanson of Colorado State University, the Lawn Lake Flood Research Consortium was formed. Its purpose is to share knowledge and resources in the course of conducting research on the physical, biotic and social impacts of the flood. The consortium is multidisciplinary, with about 15 scientists participating. Contributing individuals, agencies and colleges include: The National Park Service, Rocky Mountain National Park, Rocky Mountain Regional Office (via Jim Reid, Regional Chief Scientist), and Water Resource Field Support Laboratory at Fort Collins (via Dr. Raymond Herrmann, Director); Colorado State University; the University of Colorado; the Institute of Arctic and Alpine Research; the University of Northern Colorado; the U.S. Geological Survey; and the Bureau of Reclamation.

The park is seeking additional funding to meet the needs of an intensive 3-year base line research program. This will be followed by a more limited long-term monitoring program. The research has basic and applied implications; data for interpretation and management direction will be provided relating to the natural recovery of high elevation ecosystems. The research also has implications as to mitigation and restoration of mining impacts, and in the development of predictive models of dam breaks, their impact and recovery rates. Such information applies to several hundred other high elevation dams in Colorado.

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