

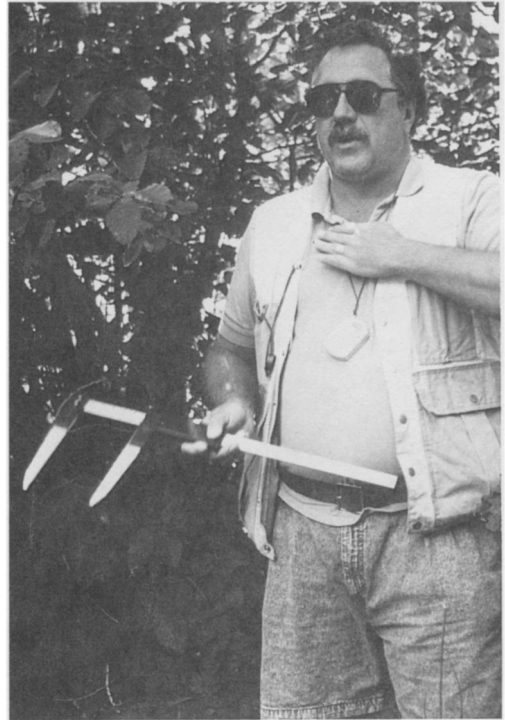
WILLIAM S. COOPER AWARD

CLIFF R. HUPP

The William S. Cooper Award is given by the Society for recent contributions in geobotany, physiographic ecology, plant succession, or the distribution of organisms along environmental gradients.

The 1993 recipient of the William S. Cooper Award is Dr. Cliff R. Hupp for his 1992 paper "Riparian vegetation recovery patterns following stream channelization: a geomorphic perspective" which appeared in *Ecology* 73:1209-1226.

Stream straightening, dredging, and clearing has been one of the principal methods of regulating stream discharge and peak flow. This channelization has been controversial because of the significant changes in the fluvial processes it engenders. Cliff Hupp took advantage of a natural experiment created when a large number of streams were channelized between 1959 and 1978 in Western Tennessee. As a part of a large multidisciplinary study, he analyzed 150



sites along 15 streams that had undergone major human channelization. The study documents basin-wide ecologic, hydrologic, and geomorphic processes that bring about an integrated characteristic recovery sequence. A six-stage model of channel evolution is used to provide a spatial and temporal framework for plant ecologic and fluvial geomorphic interpretations. The study finds that the processes of channel bed aggradation, woody vegetation establishment, and bank accretion are linked and signal the recovery of the channel to quasi-equilibrium fluvial processes.

This study is a further example of the significant insights that hydrogeological processes have on vegetation dynamics and vice versa. Fluvial processes are well defined and provide the mechanisms that explain how landforms develop. These processes thus are important na-

tality and mortality forces on plant populations. In turn, the plant populations influence the rates of the hydrogeological processes. The paper is a distinct contribution from a scientist in the U.S. Geological Survey who brings an unusual interdisciplinary approach to the study of plant community dynamics. The expertise of a stream geomorphologist was essential to the paper's strong contribution to vegetation recovery along stream channels.

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