

WHAT TO DO ABOUT FLOODS?

Dredging? BRASS has received a number of letters and phone calls by members who want the river dredged. These persons are very worried by recent, frequent floods that have damaged property, caused deaths, and threaten still more lives. Dig the river channel deeper, they believe, and water will more likely stay within its banks.

How Rivers Work. Yet, man has little power over rivers or weather, and both are inextricably bound. Through the hydrologic cycle, all earth's water is cycled and re-cycled and moves from one place to another in continental circulation. So, the Boquet is part of a global system (which is why we should worry about ozone and global warming), but it is also a reflection of our particular geologic history. The Boquet is a young river, maybe 9,000 to 6,000 years old. When the glaciers receded, ice melt water began to carve the landscape. All new precipitation since that time does what running water does: it erodes. Every crevice in the mountains and hills has felt the power of running water and has been transformed - and will continue to be transformed - by it. Constant erosion slowly wears away the hills and widens the valleys. Dredge the river, and it will quickly fill again, for that is the role of running water. Everyone who has watched gravel removal on the Boquet, knows that gravel and sediment quickly accumulate again in those areas, sometimes in a year or less. Dredging is but a deeper, artificial removal of streambed materials that the river must replace for balance.

The job of running water and rivers is to cut and fill. Sediments eroded off the land or scraped from the streambed are deposited downstream in gradually widening floodplain valleys. Sediments that remain in the stream are deposited in patterned groups, creating streambed bars with pools in between. Although not



well understood, this is an inherent process in every river. If we dredge a section of the Boquet, the river will work very, very hard to create again its own system of balance. There is need for caution as well, for the river is a system of patterns. Change the depth, width, or curvature of a river in one place, and it will have a definite impact on another area downstream. Channel dredging can even cause a condition called "headcutting" whereby the streambed begins a steady, progressive erosion upstream until equilibrium is again restored.

Flood Buy Out. For several centuries, we tried to control rivers. We harnessed them for power. Dams, levees and dikes were built to protect the industries, roads and homes constructed next to the river. Only lately has come the realization that

you can't control rivers. Man can't determine their depth, straighten them, take away their floodplains, nor drain wetlands without severe consequences. That is why the U.S. government and the Army Corps of Engineers now favors a flood "buy out" policy over all other forms of flood mitigation projects. Getting people to move out of the floodplain is proving to be the safest and most economical action.

Why BRASS' Erosion Control Projects? One might ask why BRASS tries to control streambank erosion if the river's job is to cut and fill. BRASS cannot halt the natural erosive power of running water. But much of the streambank erosion along the river has been caused by humans. Wherever vegetation has been removed for farming, roads, or houses there is a greater "unnatural" propensity for erosion. Trees and vegetation are part of the hydrologic cycle; they draw up water from the streambanks improving their stability (and their roots help hold soil in place). Remove vegetation, and the river will cut and fill at an ever increasing rate. Therefore, to decrease man-induced sedimentation of the river, BRASS tries to stabilize bare bank areas with vegetation wherever possible and appropriate. Sometimes BRASS resorts to cribbing structures. This technique is used when there is little chance for vegetation to quickly develop the strong root systems needed to withstand high velocities or ice scour.
