

PARADISE STABILIZED: JUVENILE SALMONID ABUNDANCES IN THE YELLOWSTONE RIVER^{AFS}

Alexander V. Zale

Montana Cooperative Fishery Research Unit, USGS
Department of Ecology, Montana State University

Bozeman, MT 59717

zale@montana.edu

Juvenile salmonid abundances along bank habitats of the Yellowstone River near Livingston, Montana, were assessed to evaluate the effects of bank stabilization on recruitment to the fishery. Use of stabilized main-channel banks (riprap, barbs, jetties) was similar or higher than that of natural, unaltered main-channel banks. Artificially-placed boulders and shoreline irregularities associated with stabilized banks likely attracted juvenile salmonids. Some natural bank reaches included little cover and were used by few fish. Juvenile abundances at all banktypes were low relative to other rivers and were likely

insufficient to maintain the fishery; immigration may therefore be an important component of recruitment here. Abundances of juvenile salmonids in ephemeral lateral side channels during spring runoff were higher than among main-channel banks. Bank stabilization that reduces the frequency and duration of inundation of side channels, or reduces side-channel formation rates, or directly precludes inundation or accessibility of side channels likely decreases juvenile fish habitat and possibly recruitment. A comprehensive understanding of recruitment dynamics in the Yellowstone River is necessary to competently evaluate the effects of anthropogenic alterations. Management of development along the Yellowstone River will continue to be contentious until consensus is reached on how much lateral migration the river will be allowed.