

Another Look at Design Criteria for Streambank Restoration Projects

Jeffrey C. Davis¹ and Gay A. Davis¹

Stream bed scour followed by lower bank sloughing has been identified as a cause for bank failure of constructed banks. The physical characteristics of stream channels were measured at reconstructed and reference locations to identify factors that could influence bed scour rates and to identify sites with high potential for bedload movement. Comparisons among sites were used to determine both design criteria and construction methods that could be used to minimize bed scour, lower bank sloughing, and upper bank failure. Bank sloughing prior to reconstruction often results in local deposits of fine material that is more susceptible to scour. Bed scour and bank sloughing resulting in bank undercuts of over 1 meter were observed. Settling of physical project structures (rootwads and header/footer logs) occurred at discrete locations. Bank reconstruction often modifies channel width and bank heights relative to reference sites that can result in increased bed tractive forces. The design and location of physical structures can be used to minimize bed scour, bank sloughing, and the responses of structures to the loss of supporting material.

¹Aquatic Restoration and Research Institute, P.O. Box 923, Talkeetna, Alaska 99676
907 733-5432 or 907 715-8707, arri@mtaonline.net www.arrialaska.org