

FIELD PROCEDURE: BANK STABILITY ASSESSMENT

To help evaluate the severity of the erosion and revetment you documented in the Erosion/Revetment protocol, this protocol provides a simple rating scale, based on some easily-recognizable factors. It was developed at the University of Washington [Henshaw and Booth, 2000], and has been found to provide reliable results when the assessments are performed by different observers ($R^2 = 0.71$ indicates a strong correlation between scores given by different observers [Sossa and Booth, 2004]).

FIELD PROCEDURE:

1. Assess the entire vicinity of your reach, if possible, not just the part within the "official" reach boundaries. By "vicinity," we mean the entire stretch of stream that has similar characteristics (gradient, valley/channel shape, and riparian vegetation) to your "official" reach.
2. Use the scale below to assess the degree of stability/instability, and check it off on your data sheet.

Categories of bank stability, from Henshaw and Booth (2000), adapted by Sossa and Booth (2004), further adapted with assistance from Booth 2004.

Class	Description
4	STABLE Herbaceous vegetation other than just grasses down to the ordinary low-water line (us. the bottom or "toe" of the bank slope) No raw or undercut banks No recently exposed roots No recent tree falls
3	SLIGHTLY UNSTABLE Vegetation to water line in most places Some scalloping of banks Minor erosion and/or bank undercutting Recently exposed tree roots rare but present
2	MODERATELY UNSTABLE Vegetation to water line sparse (mainly scoured or stripped by lateral erosion) Bank held mainly by hard points (trees & boulders), and eroded bank elsewhere Extensive erosion and bank undercutting Recently exposed tree roots and fine root hairs common
1	COMPLETELY UNSTABLE No vegetation (other than grasses) at water line Bank held only by hard points Severe erosion of banks on outside bends and both banks on straight stretches Recently exposed tree roots common Tree falls and/or severely undercut trees common
1	ARMORED BANKS Banks held by placed structures such as riprap, retaining walls, etc.

BANK STABILITY

A slightly unstable bank (Class 3): Jimmycomelately 0.6



A moderately unstable bank (Class 2): Jimmycomelately 0.2 prior to channel restoration



A completely unstable bank (Class 1): Valley 0.4; note the failed revetment.

