

River Stability Field Guide with a Book of Forms

Available June 2008! Order Today and Save 15%!

The River Stability Field Guide includes the tools and techniques developed by Dave Rosgen to implement a consistent, quantitative and comparative river assessment

About the River Stability Field Guide:

- Provides a rapid, portable, visual reference to complete various field tasks
- Contains 264 pages of user-friendly worksheets/forms, diagrams, procedural instructions and examples
- Supplements WARSSS – Watershed Assessment of River Stability and Sediment Supply (available at www.wildlandhydrology.com) with detailed field procedures and examples to assist field practitioners
- Includes four levels of assessment to evaluate the multiple processes that are key to maintaining stability, including streambank erosion, lateral stability and vertical stability using morphological, hydraulic and sedimentological variables
- Presents validation methods to improve prediction models and to better understand river processes and response
- Assesses reach condition for river restoration planning and design purposes
- Includes procedures and worksheets that have been developed and field-tested in Rosgen River Courses

200+ Pictures/Figures



Procedures and Techniques Included:

- Field methods for the morphological description, including cross-sections, longitudinal profile, pebble counts and meander geometry
- Stream classification, hydraulic relations and establishment of dimensionless ratios and morphological data
- Channel stability rating procedure and stability indices
- BANCS model to predict total annual streambank erosion
- Sediment competence/entrainment procedure
- FLOWSED and POWERSED model field data requirements to predict total annual sediment yield and transport capacity
- Overall sediment supply ratings related to specific sources, processes and locations
- Monitoring methods to validate the river stability predictions

40+ Worksheets/Forms

Stream Type:	
Location:	Valley Type:
Observer:	Date:
Enter Required Information for Existing Condition	
D_{50}	Fillite bed material D_{50} (mm)
D_{85}	Bar sample D_{85} (mm)
d	Largest particle from bar sample (ft) (mm) $\frac{1}{32}$
S	Existing bankfull water surface slope (ft/ft)
d	Existing bankfull mean depth (ft)
γ_s	Sediment specific weight of sediment
Select Appropriate Equation: Calculate Critical Dimensionless Shear Stress	
$D_{50} Q_{50}$	Range: 3 - 7 Use EQUATION 1: $\tau^* = 0.0384 (D_{50} Q_{50})^{0.872}$
$D_{50} Q_{85}$	Range: 1.3 - 3.0 Use EQUATION 2: $\tau^* = 0.0284 (D_{50} Q_{85})^{0.887}$
τ^*	Bankfull Dimensionless Shear Stress EQUATION USED:
Calculate Bankfull Mean Depth Required for Entrainment of Largest Particle in Bar Sample	
d	Required bankfull mean depth (ft) $d = \frac{\tau^* D_{85}}{S}$ Use $D_{85} = 16$
Check γ :	<input type="checkbox"/> Stable <input type="checkbox"/> Aggrading <input type="checkbox"/> Degrading
Calculate Bankfull Water Surface Slope Required for Entrainment of Largest Particle in Bar Sample	
S	Required bankfull water surface slope (ft) $S = \frac{\tau^* \gamma_s}{d}$ Use $D_{85} = 16$
Check γ :	<input type="checkbox"/> Stable <input type="checkbox"/> Aggrading <input type="checkbox"/> Degrading
Sediment Competence Using Dimensionless Shear Stress	
τ^*	Bankfull shear stress $\tau^* = \frac{\tau}{\gamma_s}$ Use $\tau = 0.0384 (D_{50} Q_{50})^{0.872}$ Use $D_{50} = 16$
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S	Bankfull water surface slope (ft) $S = \frac{\tau^* \gamma_s}{d}$ Use $d = 16$
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About the River Stability Forms & Worksheets:

- Book contains four sets of full-color forms from the River Stability Field Guide that are separated by reach location
- Includes a CD-ROM of electronic worksheets and forms