Part II Cowboy Hydrology







Many Universal Similarities



1. Carry Water (Generate Energy)

2. Respond to Energy (Erosion and Deposition)

3. Kinds and Amounts of Vegetation



Cowboy Hydrology Fluvial Geomorphology for Dummies

Soil

Water



The Key to the Rosgen Classification of Natural Rivers



reaches, values of Entrenchment and Sinuosity ratios can vary by +/- 0.2 units; while values for Width / Depth ratios can vary by +/- 2.0 units.

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Lane's Relationship, 1950









Lesson 1: Creeks do not want to be wide and straight





Bankfull Flow 1 – 2 Year Flood Base Flow



Lesson 2:

Floodplains Dissipate Energy and Trap Sediment

Low velocity water





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Lesson 3: Flooding Recharges Water Tables





Lesson 4:

Excessive Erosion Enlarges the Channel







Lesson 5: Down-cutting Drains the Water Table





Lesson 6:

Down-cutting: Loose Access to Floodplain

















Lesson 7: The Water Table Sustains Base Flow



Riparian Sponge



Lesson 8:

Channel Widening Reduces the Riparian Sponge







Lesson 9:

Overly Wide Channels Reduce Sediment Transport Ability





Lesson 10: Degraded and eroded channels can be restored



Natural Channel Restoration





























Bear Creek

1977



Burro Creek 1981

28

Burro Creek 2000

10/2000















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4.12

2012

2012 04 08

The Role of Riparian Vegetation