CONFLICTING CONVICTION

ROCKY MOUNTAIN PERSPECTIVE ON STREAM RESTORATION

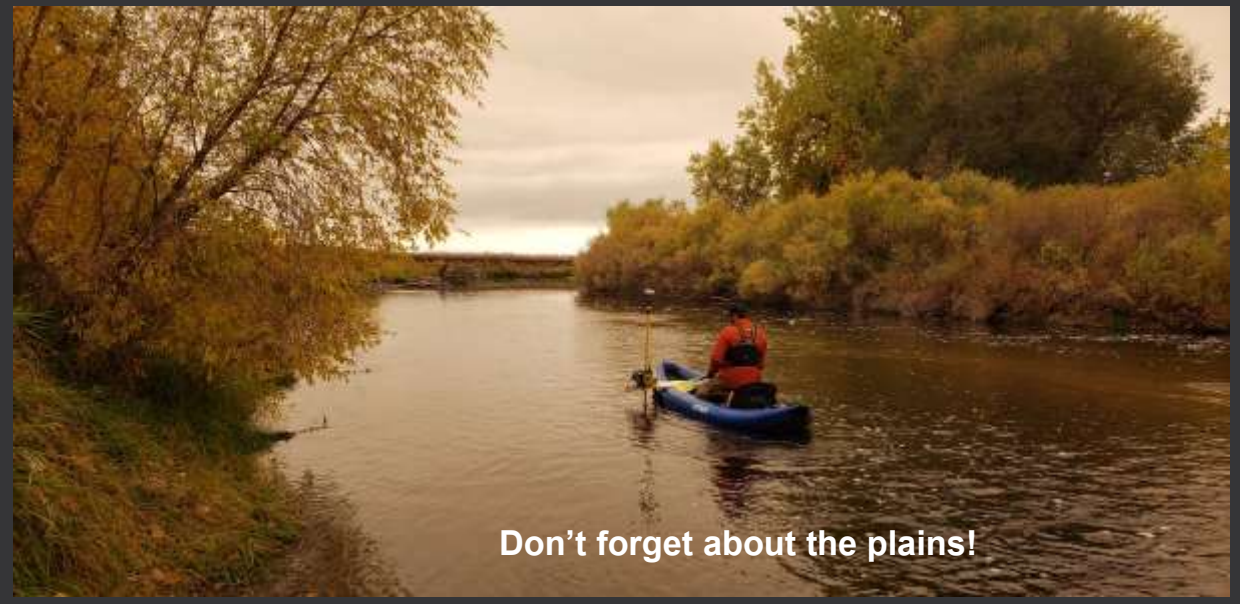
First National Stream Restoration Conference

August 1st, 2022

WATERVATION

Overview

- History of Stream Restoration in The Rocky Mountain Region
- Catalysts
- Recent Trends
- Growing Pains
- Moving Forward



History of Stream Restoration in The Rocky Mountain Region

- Overwhelming support for traditional channel design methods
- General distrust with “softer” approaches
  - Devastating failures
- Not enough designers & contractors with stream restoration experience
- Absence of drivers for encouraging new methodologies
- No reason to try something different

History of Stream Restoration in The Rocky Mountain Region

- One-off projects were spearheaded by “true believers”
  - Strong focus on bankfull flow (only)
  - Vanes!
- Design and implementation was often clunky
- Missteps prevented future projects
- Recession of 2008-2009

Catalysts – Flood of 2013

- Damage drove the desire for multi-faceted “repairs”
  - Functional
  - Aesthetic
  - Environmental
- Successful projects fueled interest
- Requirements for multi-disciplinary solutions emerged
  - Environmental
  - Ecologic & Biologic
  - Economic
  - Resilience
- Diligent (possibly obsessive) practitioners

Catalysts

- Wildfires
- Debris flows
- Climate change

Current Drivers

- Erosion Mitigation (MS4 Compliance)
- Stream & Wetland Mitigation (Relatively New)
- Aquatic Habitat Restoration
- Fish Passage
- Irrigation Diversions
- Flood Mitigation
- Altruistic?

Current Drivers: Erosion Mitigation (MS4 Compliance)

BEFORE

AFTER

Current Drivers: Stream & Wetland Mitigation

BEFORE

AFTER

Current Drivers: Aquatic Habitat Restoration

BEFORE

AFTER

Current Drivers: Fish Passage

BEFORE

AFTER

Current Drivers: Irrigation Diversions

BEFORE

AFTER

Current Drivers: Flood Mitigation

BEFORE

AFTER

Current Drivers: Altruistic

BEFORE

AFTER

Photo Courtesy: Colorado State University

Recent Trends & Conflicting Conviction

- Colorado Stream Quantification Tool (CSQT)
- Wyoming Stream Quantification Tool (WSQT)
- Colorado Stream Health Assessment Framework (COSHAF)
- River Health Assessment Framework (RHA)
- Nebraska Stream Condition Assessment Procedure (NeSCAP)
- Etc.

- Exhausting
- Inconsistent
- Missing the intent of assessment?

Recent Trends & Conflicting Conviction

- Beavers & BDA's
  - Headwater restoration-Beavers
  - South Platte-Beavers
  - Culvert Repair-Beavers
- Stage-0
  - Never mind the flooding
- Process-Based Restoration
- "Do-Nothing" Approach
  - So why am I paying you?
- Field Fitting
  - Ah, we'll figure it out in the field?
- LWD
  - I like big wood and I can not lie
- Bio Engineering
  - But it doesn't rain here….and everything catches on fire
- Urban vs. Rural Restoration Approaches

Growing Pains in A Maturing Region

Positive Outcomes

- Watershed awareness
- Development of new design ideas
- Sustainable future for stream restoration
- Outstanding partnerships

Negative Outcomes

- Scattered processes
  - No dominant project driver
- Polarizing schools of thought
  - Assessment protocols
  - Design approaches
- Urban approaches bleeding into rural, and vice versa
- Tendency to go “all in” with the next new restoration idea (see previous)

Moving Forward

- Remember the fundamentals
  - Watershed context
  - Hydrology, hydraulics, sediment
  - Multi-disciplinary
- Unbiased Approaches
  - Project Purpose → Goals & Objectives → Restoration Toolbox
- Functional & Specific Reviews

Thank You!

Questions?