

Syllabus
River Dynamics and Vegetation in the Arid West
August 10th, 2015
University of Colorado, Mountain Research Station

CU researchers, Greg Tucker, Irina Overeem and Mariela Perignon, will share insights on river processes in the Western US. Educators will learn more about the physics of water flow and sedimentation processes.

We will use the Rio Puerco, New Mexico, to illustrate how river morphology rapidly changed with the introduction of the invasive tree species Tamarisk in the 1920s. More recently, efforts to destroy Tamarisk have led again to dramatic changes in channel geometry and sedimentation during floods. Thus, the Rio Puerco represents a unique natural experiment in the effects of long-term vegetation change on a dryland river system. Participants will do hands-on experiments and computer modeling that can be easily used in your own classrooms to learn about river dynamics and vegetation.

- 8.00 Introductionary classroom session
- 8.30 -10.00 Lectures
- Lecture 1 Theory of River Flow and Sedimentation Processes
- Lecture 2 The Rio Puerco, New Mexico; a story of changing river morphology
 and invasive species
- 10.00-10.30 Discussions on invasive species and river management
- 10.30-12.00 Hands-on experiments on river-vegetation interactions

- 12.00-1.00 Lunch and discussion on engaging students in experiments

- 1.00-2.30 Lectures
- Lecture3 Rivers and Vegetation in the Arid US West
- Lecture 4 Modeling of river-vegetation interactions for the Rio Puerco
- 2.30-3.00 Discussions on teaching with computer models
- 3.00-4.30 Computer modeling experiments on water and sediment transport
- 4.30-5.00 Guided discussion on predictive models and river management
- 5.00-5.15 Wrap-up and Evaluation