



Riparian Restoration Workshop

June 23-25, 2015, Flagstaff, AZ

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Objective and Background

Explore successes and challenges in nonnative vegetation control.

Seek recommendations for scientifically based vegetation control program

Why

- Desired Future conditions – Increase native species
- Tamarisk beetle and woody vegetation expansion
- Revegetation efforts can be costly and success unquantifiable
- Failure due to vague objectives and poorly defined outcomes
- Apply experience to large challenge

Workshop Approach – Case Studies

Review of Successes and Challenges in Non-native Vegetation Control in the Colorado River Basin

Principles and Scales of Restoration

Local, River, Watershed,

Focus Areas

- Local Scale – Canyon de Chelly, Yuma area, Grand Canyon, Glen Canyon
- River Scale – Rio Grande, Lower Colorado River, Upper Colorado River
- Watershed Scale – Gila Watershed, Dolores River, Verde Rivers
- Monitoring & Measuring Success – Principles, Site Monitoring, Citizen Science



Bloodworth/Neilsen	Tamarisk Coalition	Tamarisk Beetle
K. Burke	Grand Canyon Wildlands	Glen Canyon
D. Dean, J. Bennett	USGS, NPS	Rio Grande
M. Grabau	Geosystems Analysis	Lower C.R.
M. Ingraldi	AZ Game & Fish	Monitoring
McMaster & Chaudhry	Mariposa Ecological and Botanical Consulting, NPS	Granite Camp restoration
F. O'Donnell	Northern Arizona University	Climate modeling for G.C.
D. Oppenheimer	Tamarisk Coalition	Dolores R. Partnership
Orr, Johnson et al.	Stillwater Sciences, NAU	Virgin, Gila River
C. Rasmussen	Eco Mainstream contracting (EMC)	Colorado River in Utah
Rasmussen & Orr	EMC & Stillwater Sciences	River resilience redefined.
L. Reynolds	Colorado St. U, USGS	Canyon de Chelly
Sarr_Oppenheimer	USGS, Tamarisk Coalition	Watershed restoration principles
Sarr and Norris	USGS, NPS	Monitoring
J. Schmidt	Utah St. University	Riparian vegetation and Channel Form
A. Schrenk	Friend of Verde River Greenway	Invasive Plant Management
J. Schuetz	University of New Mexico	Citizen Science/data collection
Shanahan and Eckberg	Southern Nevada Water Authority	Las Vegas Wash Revegetation
P. Skidmore	Walton Family Foundation	Colorado River Basin restoration
Trathnigg and Phillips	Fred Phillips Consulting, LLC.	Restoration and response monitoring
T. Whitham	Northern Arizona University	Climate change and genetic approaches

Workshop Take Away

Identifying/defining resilience in the face of climate change and water demands

What are the underlying biogeomorphic processes driving change?

Incorporation of genetic variability into restoration in the face of climate change

Locally adapted today = Locally maladapted in the future.

Spectrum of restoration as a decision criteria

Passive to active approaches tied to river resilience

Multi-partner communication and information sharing

Keeping apprised of best practices and sharing success/failures



Workshop Take Away

Initial site assessment critical + future water demands
Incorporation of cost/benefit analysis into success/failure assessment
Community engagement is a strong lever for success

Tools for collaboration

X-Watershed network – good technical support
Bosque Monitoring – good example of community network

Research

plant/soil/water relationship information
Proxy measures for soil characterization
Life history information of native /nonnative species

Product

USGS Open-File Report Online – June 2016

- Extended Abstracts for most presentation – in review
- Transcribed comments of last day identifying needs
- List of participants and contact information

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