

DOER FY13 IPR

Realizing a Triple Win in the Desert: Systems-level Engineering With Nature on the Rio Grande

Kelly Burks-Copes

• Problem

- Three constructed projects on the Middle Rio Grande:
 - Ecosystem Revitalization @ Route 66 Project
 - Middle Rio Grande Bosque Ecosystem Restoration Project
 - Albuquerque Biological Park Wetland Restoration Project
- All 3 deployed EWN strategies
 - bendway weirs
 - high flow channels
 - willow swales
 - wetland restoration
- Ops needs an approach that promotes **transparency** and **collaboration** to adaptively monitor, evaluate and enhance the returns on these investments as well as a means to tactically and strategically capture the broad range of **ecological, social and economic benefits** arising from these features

• Objectives

- **Develop** a series of ecosystem production functions and a monetization strategy to characterize the EGS produced by the MRG studies;
- **Devise** a methodology to integrate these new metrics into the current operation and management paradigm; and
- **Explore** adaptive management strategies to maximize return on investment (ROI) based on system goals and objectives.



• Approach

- **Kickoff Workshop**/Webinar (FY13-14)
- **Develop** EGS Metrics and Calibrate (FY14)
- **Perform** MCDA on EGS (FY14-15)
- **Evaluate** System and Determine ROI (FY15)
- **Formulate** Adaptive Management Measures (FY15)
- **Produce** TN/TR (FY15)

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- **Project Funding by Year**

- FY13: \$50K
- FY14: \$220K
- FY15: \$150K

- **Major Project Deliverables**

- Tech Report (or series of Tech Notes) detailing the process and outcomes
- Series of EGS associated with commonly utilized EWN Features in the arid landscape
- Series of metrics that can be ported to other studies – Las Cruces, NM & Bottomless Lakes (Pecos River)



- **Benefits to Navigation Program**

The alignment of traditional USACE operational objectives with **broader societal benefits** could generate a range of advantageous outcomes including:

- ❖ **increased** potential for innovative funding,
- ❖ **greater** public appreciation of the multifunctional role of USACE projects, and the
- ❖ **enhanced** awareness of aquatic ecosystem protection benefits for both people and wildlife

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- **FY13 Products**

- The Albuquerque District managers and their stakeholders will be engaged in the development of the services and their corresponding performance metrics in a transparent manner using a spiral modeling framework that encourages the participants to identify problems, deliberate, propose solutions and respond to contextual changes in recursive reflection cycles (centered around information presented at each workshop/web meeting).
- Workshops will be initiated in the Fall 2013.
- This interactive group methodology will allow the District to seamlessly assume control of the monitoring and evaluation of service production over time.
- A TN/TR series will be developed documenting both the process and the protocols at the end of the study to support the District in their endeavors.

