

THE ROLE OF A ROBUST SCIENCE PROGRAM IN ECOSYSTEM RESTORATION

Comparing Everglades Restoration with the Missouri River Recovery Program



Eliza Hines, PBS&J

Presentation Outline

- Overview of Ecosystem Restoration
- Comprehensive Everglades Restoration Plan
- Missouri River Recovery Program
- RECOVER
- Integrated Science Program
- Similarities/Differences
- Lessons Learned



Overview of Ecosystem Restoration

- USACE ecosystem restoration/recovery initiatives
 - Emerging as a primary mission of the USACE
 - Nationwide
 - Large and small scale
 - ~\$400-\$500 million/year



Ecosystem Restoration



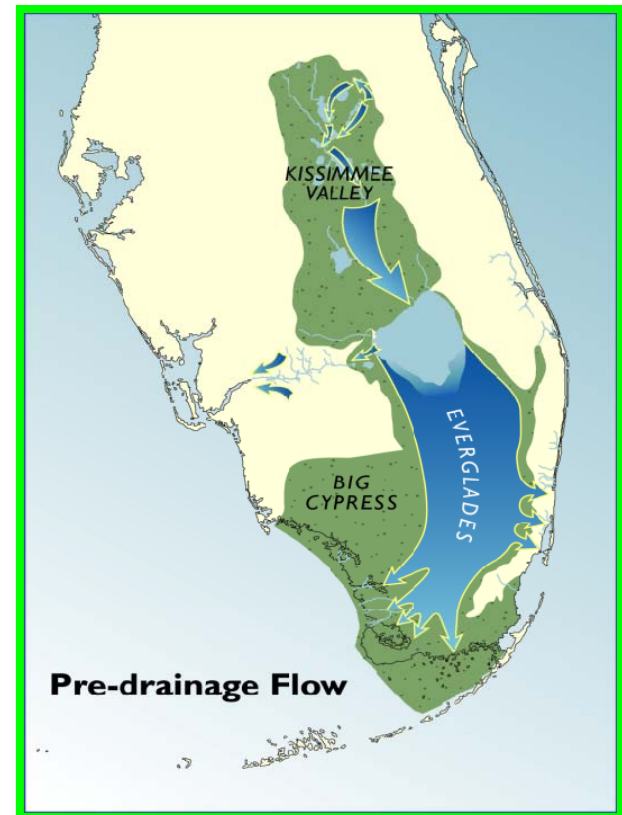
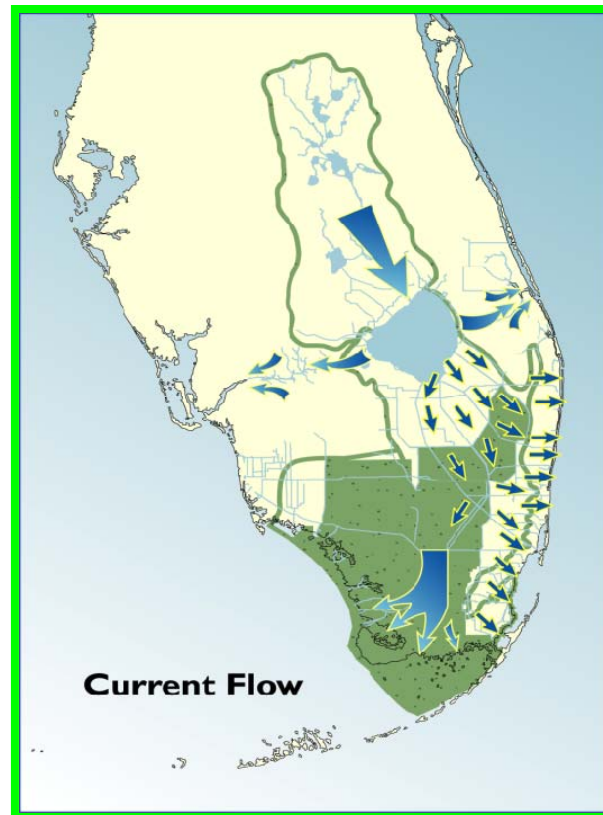
Everglades Restoration

- ❑ Comprehensive Everglades Restoration Plan (CERP)
- ❑ Encompasses the Everglades & South Florida
 - 18,000 sq miles
- ❑ Authorized by the Water Resources Development Act (WRDA) 2000
- ❑ 68 Components
- ❑ 50/50 Federal-State Cost Share
- ❑ 30-Year Implementation Schedule



South Florida & the Everglades

- Quality, Quantity, Timing & Distribution – “Getting the Water Right”
- Restore sheetflow and connectivity
- Preserve other water-related needs of the region including water supply & flood protection



Missouri River Recovery Program

- ❑ Missouri River Recovery Program (MRRP) – 2006
- ❑ 2,321 miles of river and 529,000 square miles
- ❑ Flood Control Act of 1944 - Mainstem Reservoir System – 6 dams
- ❑ Habitat Creation – Bank Stabilization & Navigation Project (Mitigation Program)
- ❑ Biological Opinion (BiOp) – 2000 & 2003
 - Least tern, piping plover, bald eagle and pallid sturgeon
 - 70 RPAs, 21 RPMs and 14 conservation recommendations
- ❑ 100% Federally funded
- ❑ 35 Year implementation schedule



Missouri River Basin



- Three Forks, MT to St. Louis, MO
- State, federal & local participation
- 28 Tribes
- Goals
 - Construct habitat
 - Recover T&E species



The Role of a Robust Science Program

- Provide a system-wide perspective
- Assess whether the goals and objectives of a program are being met
 - Support to the USACE Planning Process
 - Monitoring (pre and post-construction) and assessment
- Communication of science to managers for decision-making
- Feed the adaptive management (AM) process



Everglades Science

- **RE**storation **CO**ordination and **VER**ification (RECOVER)
 - Scientific arm of CERP
 - Programmatic and System-wide Perspective
 - Interagency and Interdisciplinary
 - Mission areas - Planning, Evaluation & Assessment
- Predictive modeling, monitoring, performance evaluation and assessment, Plan improvement, vision of success
- Planning/implementation of the CERP AM Program



Science in the Missouri River Basin

- Integrated Science Program (ISP) – BiOp driven
 - Provide an integrative system perspective
 - Conduct scientific and technical investigations
 - Communicate and coordinate the results
- Mission areas - System monitoring, focused investigations, science integration with management actions, knowledge management, and science quality process.
- Monitoring, focused investigations, assessment scientific/technical review, independent peer review, support to AM



Differences – A Program Perspective

- Riverine versus tropical grassland/coastal wetland
- Scale – Missouri River Basin is 30 times larger than Everglades ecosystem
- Authorization
 - CERP – WRDA 2000
 - MRRP – Mitigation Program & BiOp
- Funding – cost-shared vs. 100% federally funded
- Status of implementation/construction



Similarities

- Plagued by great deal of ecological uncertainty
- Implementing AM process
- Critical need for a well-defined vision of success
- Developing conceptual ecological models, hypotheses and performance measures and using information from predictive models
- Conducting monitoring and assessment
 - \$10-15 million/year



Facing Similar Challenges

- Cost containment – funding is limited, scope is large
 - Meeting monitoring requirements
- Reaching consensus about assessment results
- Integrating scientific/technical information into the USACE planning process
- Successfully conveying results to managers
- Linking science to decision-making
- Fully engaging the public and stakeholders



Lessons Learned – Transfer of Knowledge

- Transfer of lessons learned from one program to another
 - MRRP reviewing RECOVER MAP – no comprehensive monitoring & assessment plan
 - RECOVER considering MRRP assessment process – inclusion of third party
 - Communication of scientific/technical information for use by managers, decision-makers, stakeholders & the public
 - AM process – learning development and implementation



Questions?

Eliza Hines

PBS&J

ebhines@pbsj.com

Casey Kruse

USACE – Omaha District

casey.d.kruse@usace.army.mil

