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USACE PERSPECTIVES ON ENGINEERING WITH NATURE

High Flow Channel

Willow swales

Bank Destabilization

Invasive control and Forest Plantings



What is Engineering With Nature?

Applying science and engineering to:

- Produce operational efficiencies;
- Leveraging natural processes to enhance performance;
- Minimize resource demands;
- Expand the range of benefits achieved;
- Maintain or promote natural functions

The Corps has embraced NNBF in coastal, riverine and wetter parts of the country. Few practices have been applied to the arid SW or ephemeral systems.







What is Engineering With Nature?

Definition: Engineering with Nature (EWN) is "the intentional alignment of natural and engineering processes to efficiently and sustainably deliver economic, environmental, and social benefits through collaboration." - Jeffrey K. King, Ph.D., P.E.,



More info: Engineeringwithnature.org, https://ewn.erdc.dren.mil/







USACE Challenges

USACE Civil Works Projects

- Mission Areas Flood Risk Management, Ecosystem • Restoration, Navigation
 - Water Supply, Water Resources Planning, Cultural Preservation
 - Emergency Management
- Partnership Driven- Cost shared
- Project Owned and Maintained, Monitored by Local Sponsor ٠
- Project Costs must be Offset by Benefits to the Nation •
- USACE is project funded ٠



E) RIVER







USACE Opportunities

USACE Civil Works Projects

- Can Work on Land Owned by Others.
- Can Work in Large Scale
- Relies on Local Engagement and Stewardship
- Recent Legislation Strengthened Justification Beyond Economics









Preparing for the Future

Advance the Technology Quantify the Benefits Change Our Culture Adapt our Strategies





Preparing for the Future

Understand Future Challenges



