



US Army Corps of Engineers  
Great Lakes Ohio River Division



# USACE Adaptive Management Planning Great Lakes/Lake Ontario



## ***USACE Great Lakes Activities***

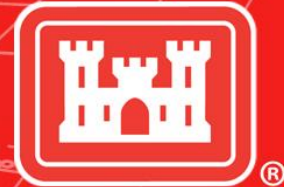
- USACE Programs/Projects
- International Joint Commission
- Federal and State Agencies
- Private and Public Organizations



## ***USACE Transformation***

The U.S. Army Corps of Engineers (USACE) has embarked on an ambitious initiative to transform our planning, design, construction, and operation and maintenance principles and decision-making processes.





## ***Fundamental Shift in the USACE Approach***

- Comprehensive Systems Approach
- Risk Informed Decision Making
- Communication of Risk to the Public
- Professional and Technical Expertise





## NRC Report (2004)

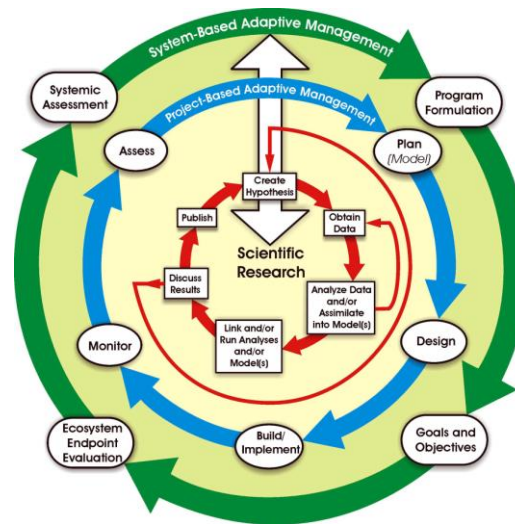
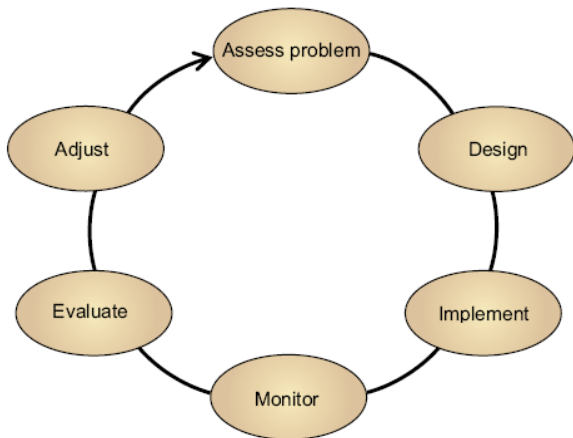
# Adaptive Management for Water Resources Project Planning





A comprehensive system approach will allow USACE to plan and design resilient systems that account for dynamic conditions and non-linear processes of nature such as climate variability, rise in sea level

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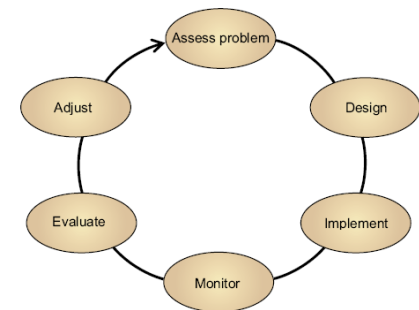


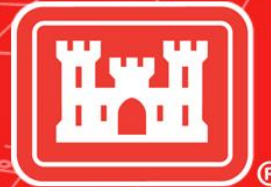
Weber in Galat et al 2007



# ***USACE Adaptive Management (AM) Project Delivery Team (PDT)***

- Investigate incorporating AM into USACE programs and projects
- Develop a framework for AM implementation
- Utilize AM to strengthen stakeholder relationships
- Advocate AM implementation

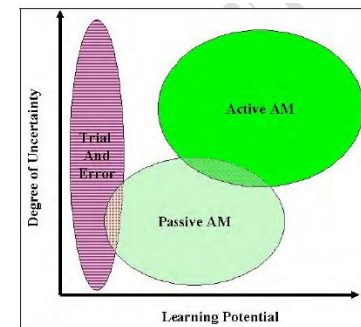




# ***AM-PDT***

## ***USACE Technical Guide***

- As part of the PDT's efforts a technical guide will be developed to realize benefits through advancing the application of adaptive management in USACE programs and projects.





## ***USACE Adaptive Management (AM) Project Delivery Team (PDT)***

- Kenneth Barr (Lead) CEMVR-PMA Upper Mississippi River
- Tomma Barnes CEMVN-PM-OR Coastal Louisiana
- Marci Cook CENWP-PM-E Columbia River
- Bradley Thompson CENWO-PM-AE Missouri River
- Craig Fischenich ERDC-EL-MS R & D Tools for AM
- Elmar Kurzbach CESAJ-DR-R Everglades
- Steven Bartell E2 Consulting Engineers Inc. Risk Assessment
- Richard Thomas CELRD-RBW Great Lakes
- David Vigh MVD Ecosystem Planning Center of Expertise
- Craig Fleming, Missouri River Threatened & Endangered Species recovery
- Martha Bullock, (ERDC)

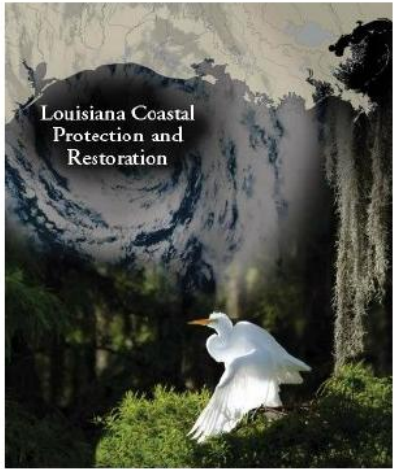
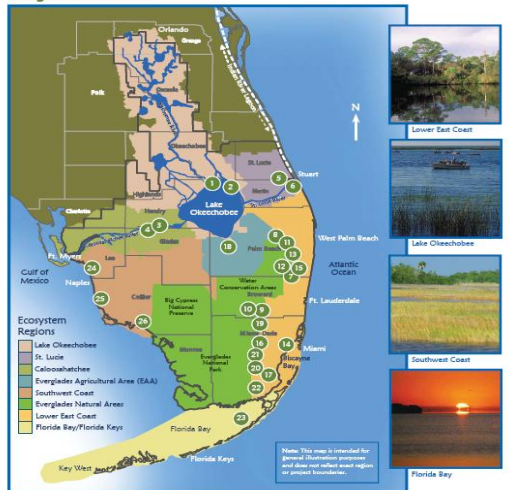




# US Army Corps of Engineers Great Lakes Ohio River Division



## Current GERP Project Project Features





# US Army Corps of Engineers Great Lakes Ohio River Division



Port of Woodland



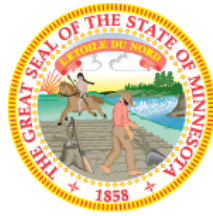
PORT OF ST. HELENS  
*The Columbia River's Deep Water Port with a Future.*



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY



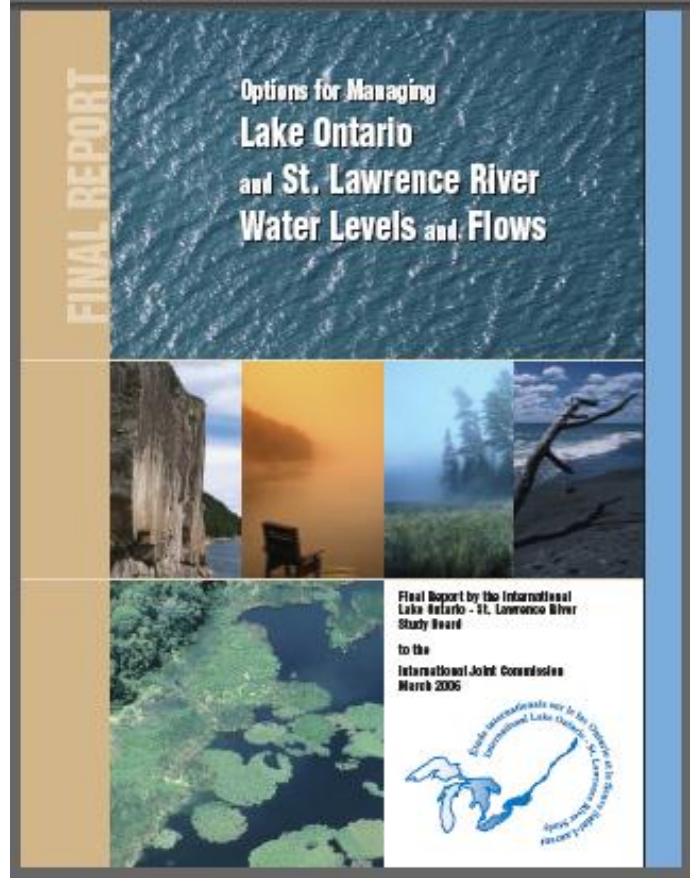
Port of Vancouver USA



**BUILDING STRONG®**



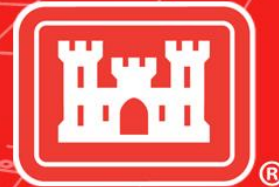
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## ***Challenges***

- Funding
- Workload
- Resource Availability
- Competing Agency Mandates
- Litigation
- Level of Detail (Monitoring/Assessment)
- Defining Basin Restoration Needs
- Changing Conditions/Dynamics



## ***Successes***

- Monitoring and Assessment
- Interagency Teams/Trust Relationships
- Formalized Structure
- Shared Information
- Improved Communication
- Ecosystem Restoration

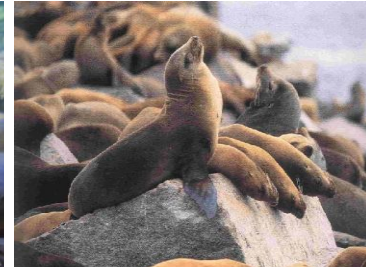
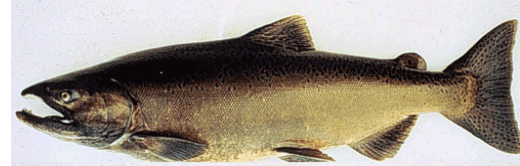


## ***Lessons Learned***

- Understanding Roles/Responsibility
- Streamlining Implementation Process
- Scheduling
- Develop Decision Criteria
- Develop a Tracking Process
- Need to Facilitate
- Maintain Long Term Relationships



## *Species at Risk*





# *Ecosystem Restoration*





## ***Social and Institutional***





## ***Future Actions***

- Leadership Commitment
- Stakeholder Involvement-Collaboration
- Funding



“It is critical for USACE to effectively adapt to the changing world and our future environment, and equally critical to better anticipate future changes.”



# US Army Corps of Engineers Great Lakes Ohio River Division



## Links:

**U.S. Army Corps of Engineers Headquarters**  
<http://www.usace.army.mil/Pages/Default.aspx>  
**Great Lakes Ohio River Division**

<http://www.lrd.usace.army.mil/>

**U.S. Army Corps of Engineers Environmental Programs**  
<https://environment.usace.army.mil/>

**CERP - Comprehensive Everglades Restoration Plan**  
[http://www.evergladesplan.org/pm/program\\_docs/adaptive\\_mgmt.aspx](http://www.evergladesplan.org/pm/program_docs/adaptive_mgmt.aspx)

**MRRP - Missouri River Recovery Program**  
<http://www.moriverrecovery.org/mrrp/>

**CRCIP - Columbia River Channel Improvement Project**  
<http://www.nwp.usace.army.mil/issues/crcip/aem/home.asp>

**LCA - Louisiana Coastal Area Ecosystem Restoration Study**  
<http://www.mvn.usace.army.mil/environmental/lca.asp>

**Upper Mississippi River Navigation and Ecosystem Sustainability Program (NESP)**  
<http://www2.mvr.usace.army.mil/UMRS/NESP/default.cfm>

**International Joint Commission**  
[http://www.ijc.org/en/home/main\\_accueil.htm](http://www.ijc.org/en/home/main_accueil.htm)