

USACE CLIMATE PREPAREDNESS AND RESILIENCE ACTIVITIES

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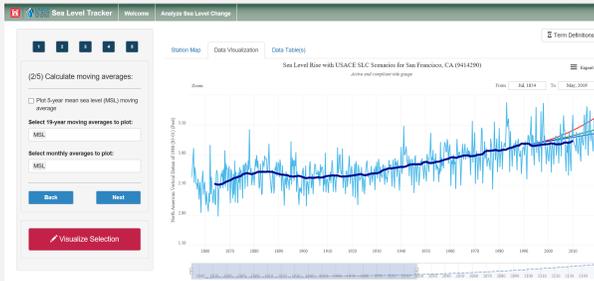
Coastal Climate Change

Sea Level Tracker Tool

[ER 1100-2-8162](#)

Curve Calculator Tool

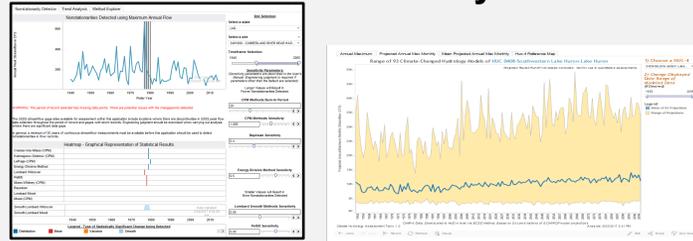
Riverine Impacts –
Downstream boundary



Inland Climate Hydrology

Inland Hydrology Guidance **ECB 2018-14**

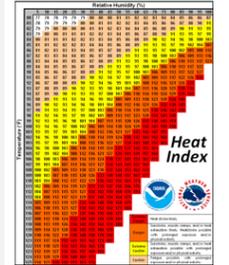
- Literature Synthesis
- Tools – Repeatability & Consistency
- Non Stationarity Detection Tool
- Trend Analysis, Time Series Toolbox
- Watershed Vulnerability



Army Support

Heat/Humidity Stress Analysis
Safety Performance

- Contract Clauses
- Building Design
- Landscape Shading
- Goods & Services



Army Base Resilience

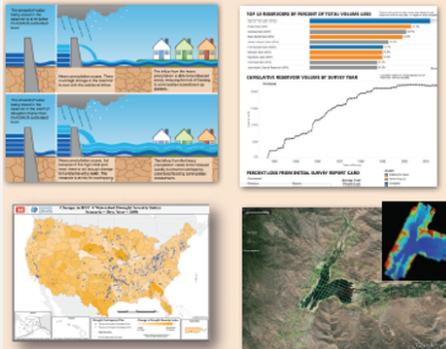
Climate Resilience Handbook 2019-2020

Reservoir Impacts

Sediment Survey

Operations

Drought Contingency Planning



Climate Information State of the Art

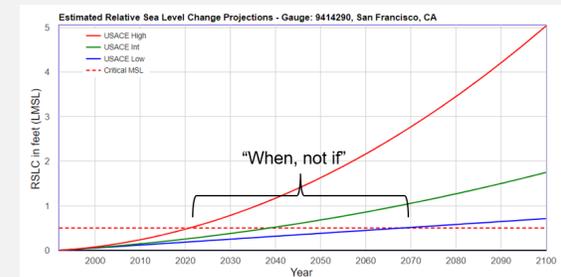


GCM Models (VIC and PRMS hydrology)



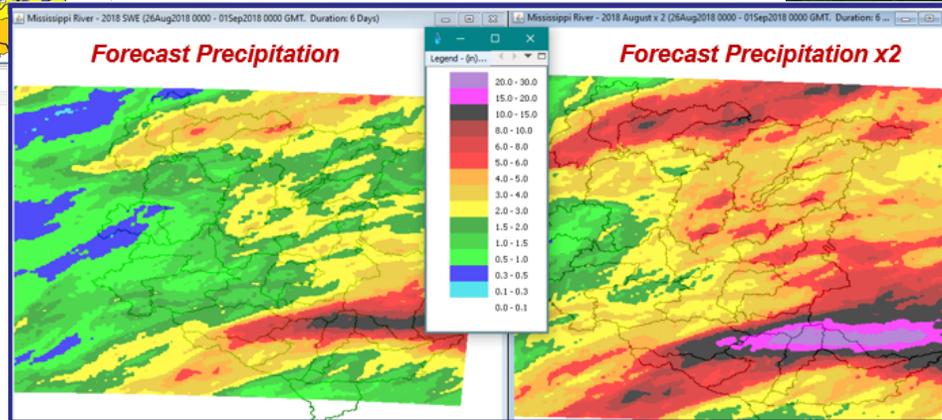
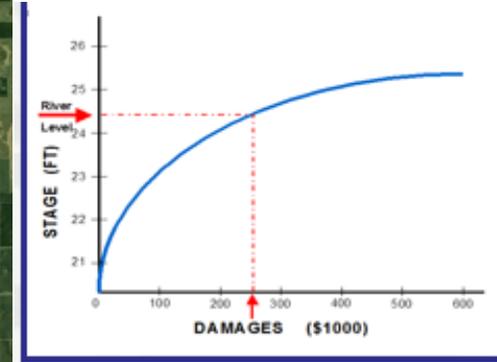
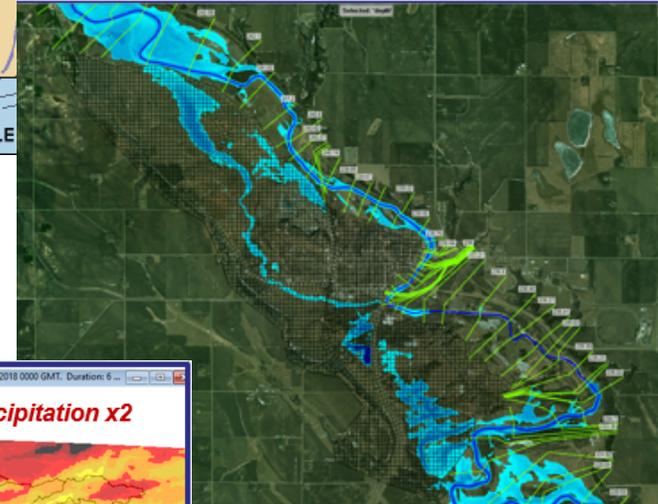
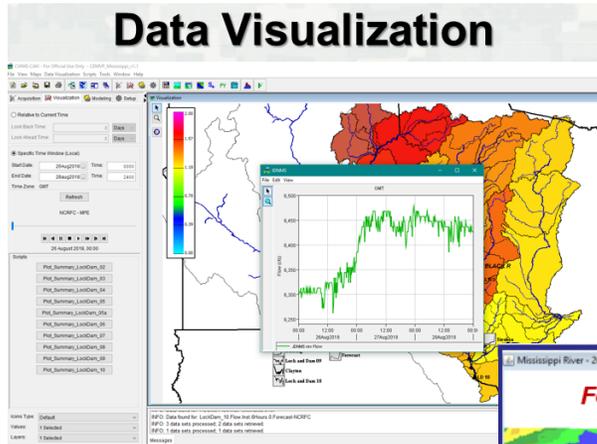
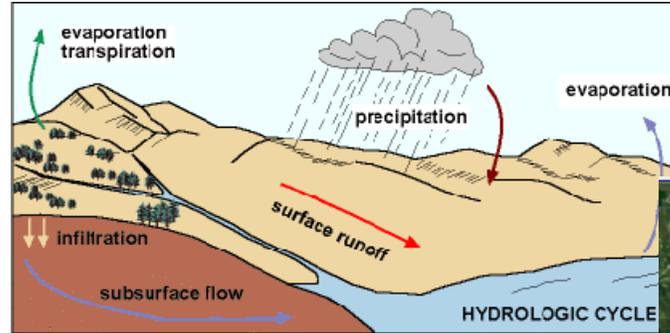
Improvements – CMIP5-LOCA

Project Resiliency



When, Not If.
Thinking Longer Term
Trigger Points & Economics

CORPS WATER MANAGEMENT SYSTEM (CWMS)



HEC Model Suite: CAVI, HMS, ResSim, RAS, FIA



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MINNESOTA CLIMATE ADAPTATION CONFERENCE

11/25/19



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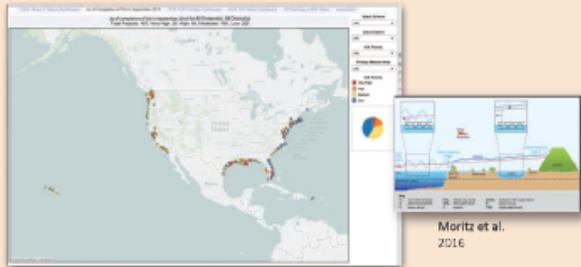
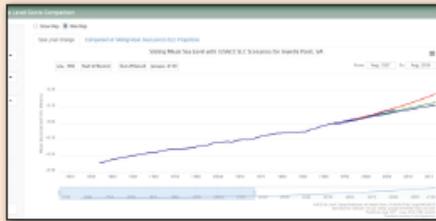


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COASTAL CLIMATE CHANGE

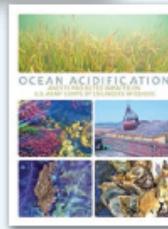
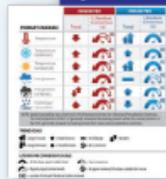
Strategy #: 1, 2, 3, 4

- ER 1100-2-8160
- EM 1110-2-6056
- ETL 1100-2-1
- EC 1105-2-186
- ER 1105-2-100
- USACE Screening-Level Assessment of Projects with Respect to Sea Level Change
- USACE Review of Progress Toward Consistent Vertical Datums



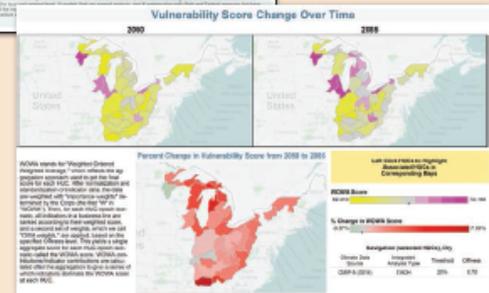
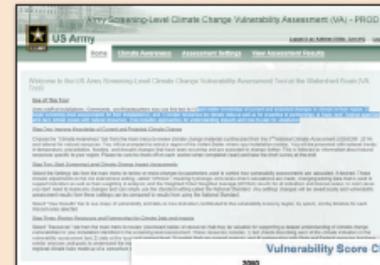
CLIMATE INFORMATION

Strategy #: 1, 3



WATERSHED VULNERABILITY

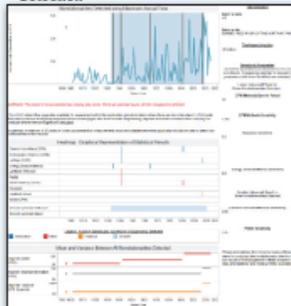
Strategy #: 1, 3



CLIMATE HYDROLOGY

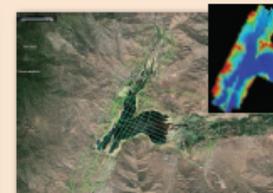
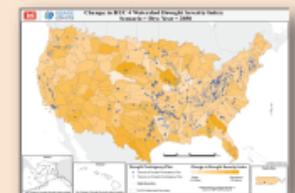
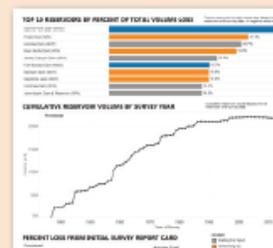
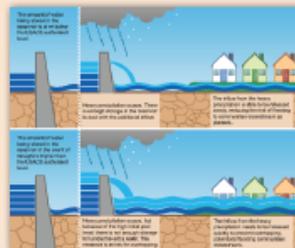
Strategy #: 1, 2, 3, 4

- ECB 2014-10, Qualitative Approach to Hydrology
- ETL 1100-2-x, Nonstationarity Detection
- User Manual ECB 2014-10
- User Manual Nonstationarity Detection



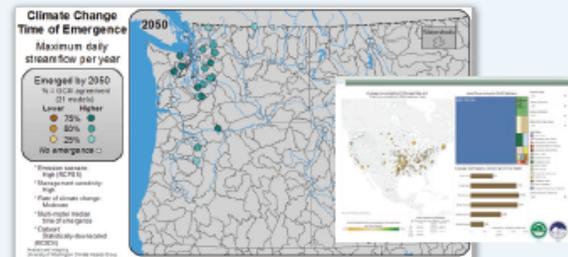
IMPACTS TO RESERVOIRS

Strategy #: 1, 2, 3, 4



EMERGING TRENDS

Strategy #: 2, 3



Methane Production and Emission in Reservoirs

