

EPA Perspective

CCAWWG Aug 25-27, 2015

Karen Metchis - Office of Water

Tom Johnson - Office of Research and Development

EPA Water Program Challenges

- Focus on water quality and ecosystems, smaller spatial scales:
 - Municipal water infrastructure, stormwater controls, septic systems
 - Water-segment, pollutant oriented TMDLs (point/ nonpoint source)
 - Point source permits (NPDES)
- Time scale of regulatory process is near term (3, 5, 10 years)
 - Although decisions usually result in long-term 'facts on the ground'
 - And long-term goals require near term actions
- Public/legal scrutiny (of regulatory decisions)
- Decisions typically based on modeling, observational data
- Given uncertainties, can't plan in a rigorous, quantitative way
- *Strategy: Tools, information to assess vulnerability & manage risk*

Step 1- Summarize Relevant Literature

- * Water Quality Assessment - synthesis of science on effects of climate change

Step 2- Obtain Climate Change Information

- * *Climate Projections Selection Strategy Tool*
- * *Modernized Low Flow Statistics (7Q10, 7Q2)*
- * *Modernized Atlas 14 IDF Curves – NOAA project*

Step 3 - Make Decisions about How to Use the Climate Change Information

- * *Decision Tree Wizard for CRT– EPA ORD and NOAA*
- * *Hydrologic and Water Quality System (HAWQS) CAT*
- * *Protecting Aquatic Life from Effects of Hydrologic Alteration* technical doc.
- * Incorporate water temp in linked atmos., hydro, watershed & ecosys. models
- *Tools: CREAT, SWMM-CAT, Stormwater Calculator CAT, BASINS-CAT, WEPP-CAT*

Step 7/8 - Making Decisions Under Uncertainty//Communicating Results and Uncertainties to Decision makers

- Evaluation of RDM methods for OW, focusing on the TMDL program.
- Active OW workgroup, brownbags, website, enewsletter

* In Development

Step 4 - Assess Natural System Response

- Projections of hydrologic change using USGS water balance model (with USGS)
- * Reference Monitoring Networks to detect impacts of climate change in waters (Technical Document and RMN networks)
- * PNW vulnerability of hydrologic landscapes and stream flow
- * Plant biodiversity and ecosystems - nitrogen deposition/loading and climate
- * Coastal acidification – discerning causes (CO₂ vs. Nutrients)
- * Pacific Coast vulnerability assessment of near coastal species & habitats
- * Inventory of wetland vulnerabilities under climate
- * Extreme weather events and health endpoints
- * Delaware Estuary and Mid-Atlantic Bight WQ under climate change.

Step 5 - Assess Socioeconomic and Institutional Response

- * 3V Effects of climate on DelMarva
- * Implications for stormwater management

Step 6 - Assess System Risks & Evaluate Alternatives

- Quantitative and Qualitative assessment of climate in 3 pilot TMDLs
- *Being Prepared: A Workbook for Developing Risk-Based Adaptation Plans*
- *CRWU Aids*
- Also see list of tools under Step 3 on previous slide

Did the LTDoc Guide our Thinking?