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Illinois River Watershed Modeling and TMDLs Development Project
Informational Meeting
Cherokee Casino and Hotel
2416 Hwy 412
W. Siloam Springs, Oklahoma 74964
Thursday, November 14, 2013
6:00 p.m. – 8:00 p.m.

Draft Agenda

- Introduction
- Project Background/Tentative Schedule
- The Illinois River Watershed Modeling - Update
- Q & A
- Meeting Adjourn

P.2 + P.4

Illinois River Watershed Modeling and TMDLs Development
Project Update

EPA

Siloam Springs, Oklahoma
November 14, 2013

2

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TOPICS

- Background
- Project Tentative Schedule
- IRW Modeling Development Update

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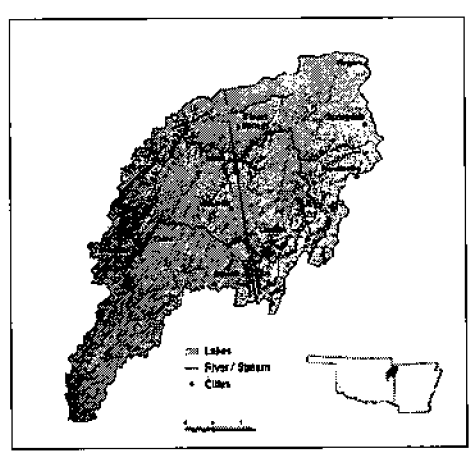
Illinois River Watershed Modeling and TMDLs Development



- Goals: Protect & Restore
- EPA Commitments:
  - Funding - $$$
  - FTEs

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Working with Our Partners

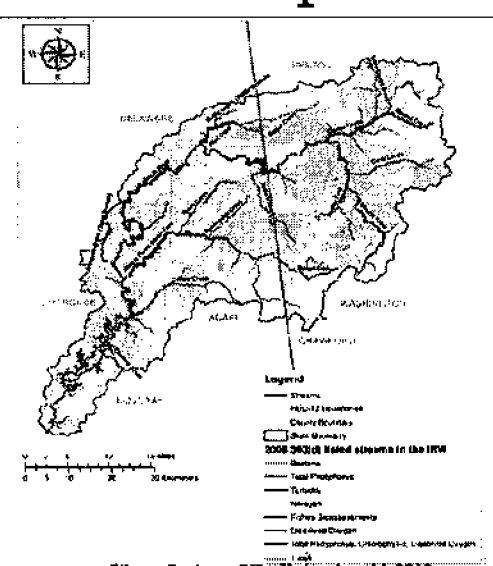
- Partners in Project
  - Oklahoma
  - Arkansas
  - Tribes
  - Other

Project Tentative Schedule

Milestones	Timeline
Calibration/Validation Modeling	March 2014
Peer Review of the modeling	May 2014
Sensitivity Analyses of the Modeling	May 2014
Uncertainty Analyses of the Modeling	June 2014
Load Reduction Scenarios Modeling	July 2014
Draft TMDLs Development	Dec. 2014

Illinois River Watershed TMDLs Modeling Development

Illinois River Watershed: Impaired Waters



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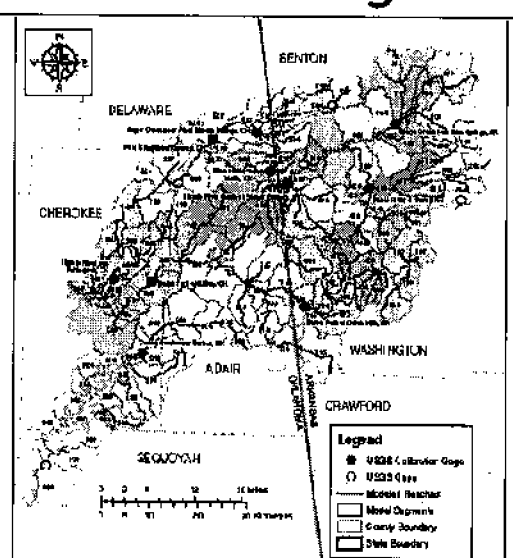
Illinois River Watershed: Segmentation



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9

Types of Data Used in the IRW Modeling

- Driving/Forcing Data
- Watershed Characterization Data
- Observations/Monitoring for Cal/Val

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10

ED_002032_00009513-00005

Data Used in the Watershed Modeling

- Driving/Forcing Data:
  - Precipitation and evaporation (NWS, NEXRAD, OK Mesonet, BASINS)
  - Other climate data (NWS, Climate Centers, BASINS)
  - Point source (e.g. POTW) discharges (DMRs, POTWs)
  - Fertilizer/manure/litter applications (ODAFF, ANRC)
  - Atmospheric Deposition (NADP, CASTNet)

Data Used in the Watershed Modeling (con't)

- Watershed Characterization Data:
  - Soils (SCS Soils Datamart)
  - Land use (USGS NLCD, UA CAST, USDA CDL)
  - Topography (USGS DEM 30 m and 10 m)
  - Hydrography (EPA/USGS NHD+)
- Observations/Monitoring for Cal/Val:
  - Flow, sediment/TSS, WQ (USGS, ODEQ, OWRB, AWRC, others)

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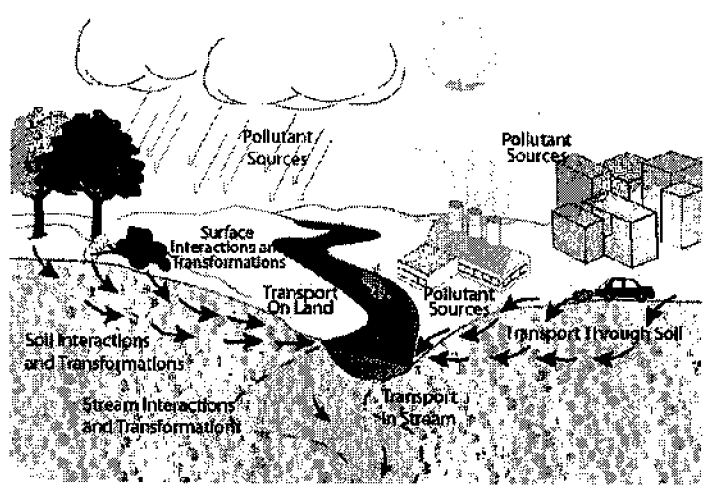
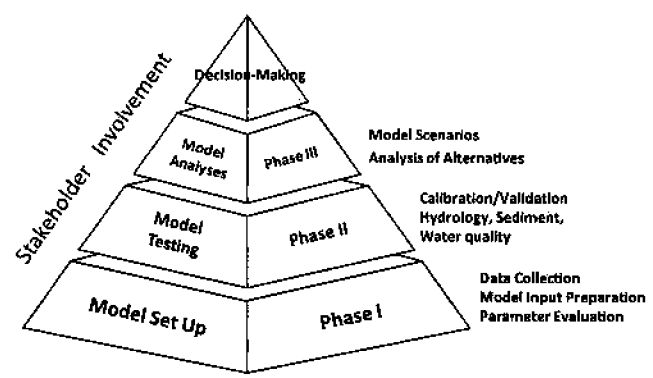
How does the Model work?



How does the Model work?

- Converts climate and human activities into impacts on hydrology and water quality throughout the watershed
- Performs water balance and mass balance calculations to track water and contaminant generation and movement
- Tracks water and pollutant loadings from the land to the stream, and subsequent fate/transport to model concentrations continuously throughout the IRW

The Modeling Process



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15

BOTTOM LINE!

- The Watershed Model …

  …. it's like having a monitoring station at EVERY point in the watershed where you need information for WR & WQ planning and management

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16

ED_002032_00009513-00008

ED_002032_00009513-00009

Modeling Terminology

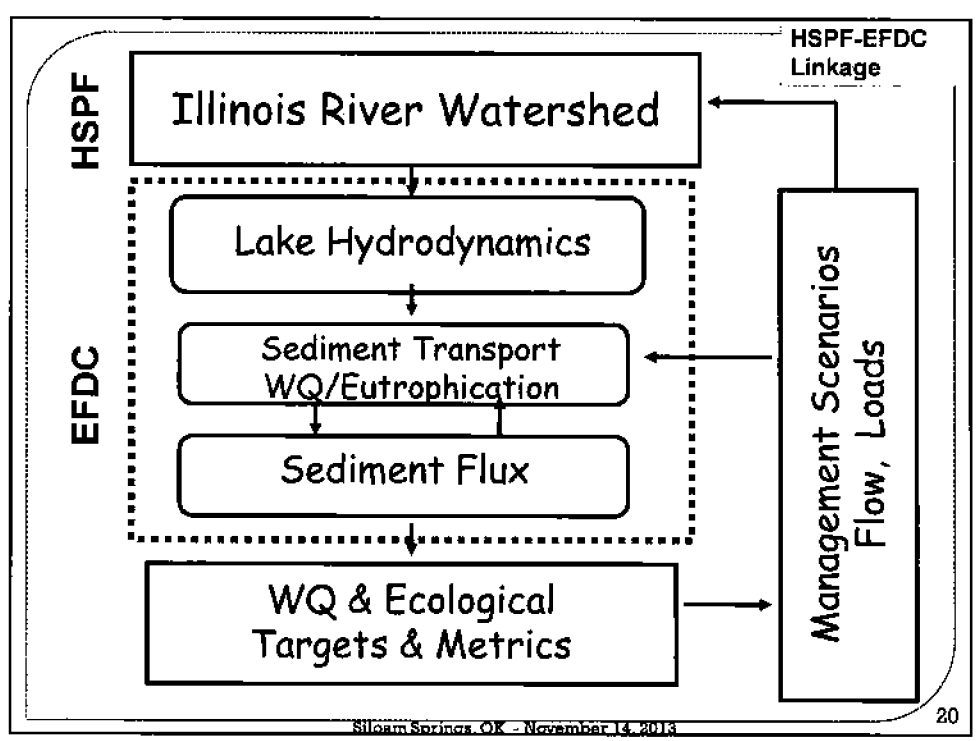
- Calibration – process to assess, adjust, and demonstrate ability of the model to reflect watershed behavior (e.g., tuning to a radio station)
- Validation – process of confirming the calibration with 'new/other' data not used in calibration

Modeling Terminology

- Sensitivity Analyses – Evaluate the sensitivity of the key model output to changes/variations in key model parameters and inputs
- Uncertainty Analyses – Evaluate the degree of confidence in key model outputs (e.g., analogous to a weather forecast … '90% probability of rain')

IRW HSPF Model – Current Status

- Hydrology cal/val – COMPLETE
- Water temperature cal/val – COMPLETE
- Sediment cal/val – 70% Complete
- WQ cal/val – 30% Complete



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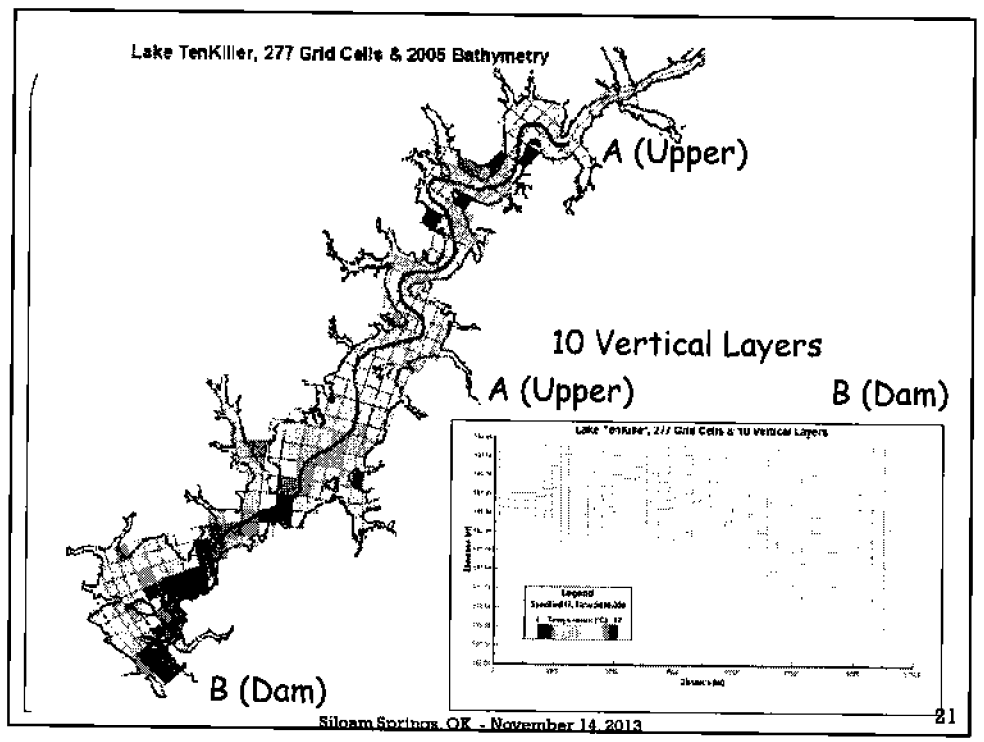
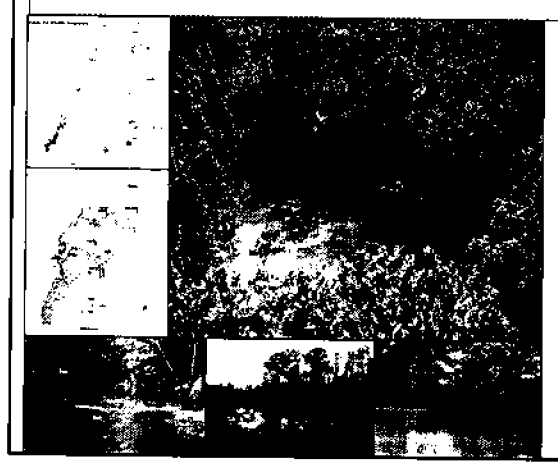


PROJECT WEBSITE

www.epa.gov/region6/water/npdes/illinoisriverwatershed/index.htm



Questions ?

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