



Monitoring Potential Surface- Water Effects from Shale Gas Exploration and Extraction Activities in the Fayetteville Shale

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Outline

- Water resource concerns (within the Fayetteville Shale)
- USGS involvement in the Fayetteville Shale area
- (Background) water quality data
 - Gulf Mt WMA
 - Cypress Creek
- Water use information
- Questions

Activities within the Fayetteville Shale Area



Current USGS Involvement in the Fayetteville Shale

- 3 Continuous-recording 5-parameter QW monitors (1 funded by SWN, 2 by government)
- 14 Full-flow streamgages (funded by government)
- Monthly and storm-event sampling 2 streams (funded by SWN and government)
- Bi-monthly and storm-event sampling 1 stream and lake (funded by SWN)
- Watershed model (funded by SWN)
- Sampling ~150 wells/springs (funded by private-parties and government)

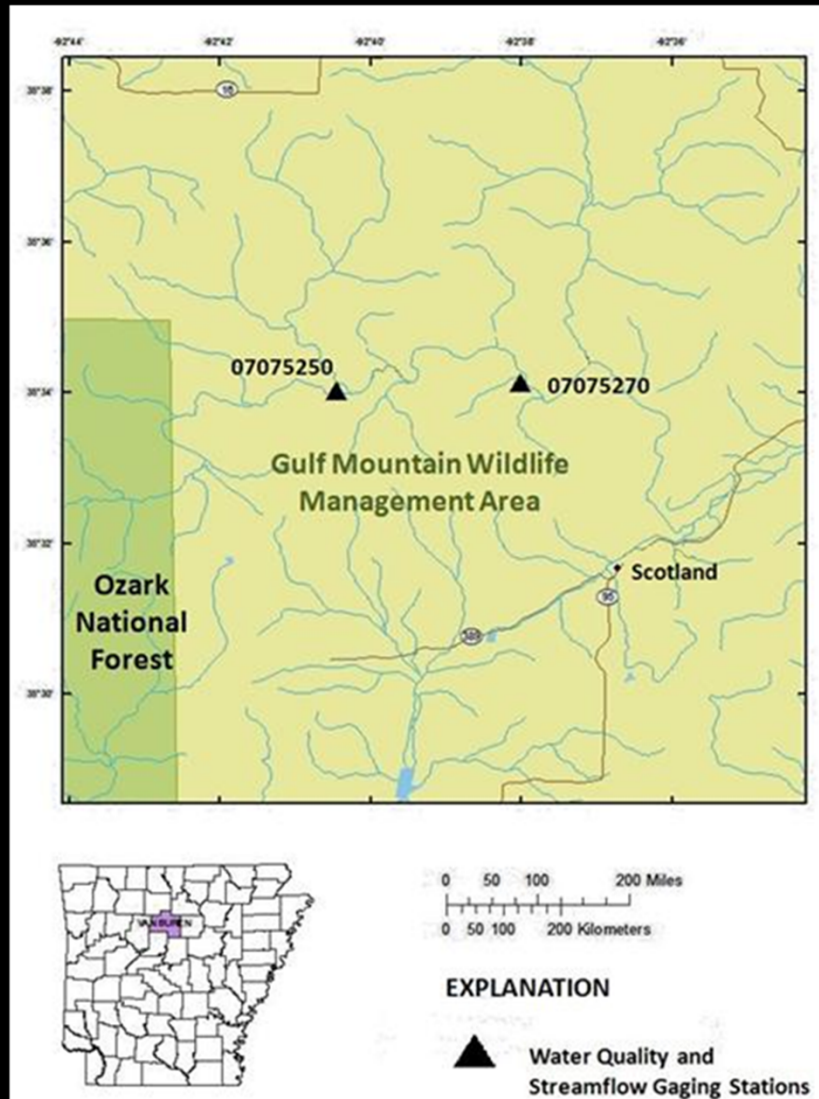
USGS Partners in the Fayetteville Shale Play



USGS Operated Gaging Stations

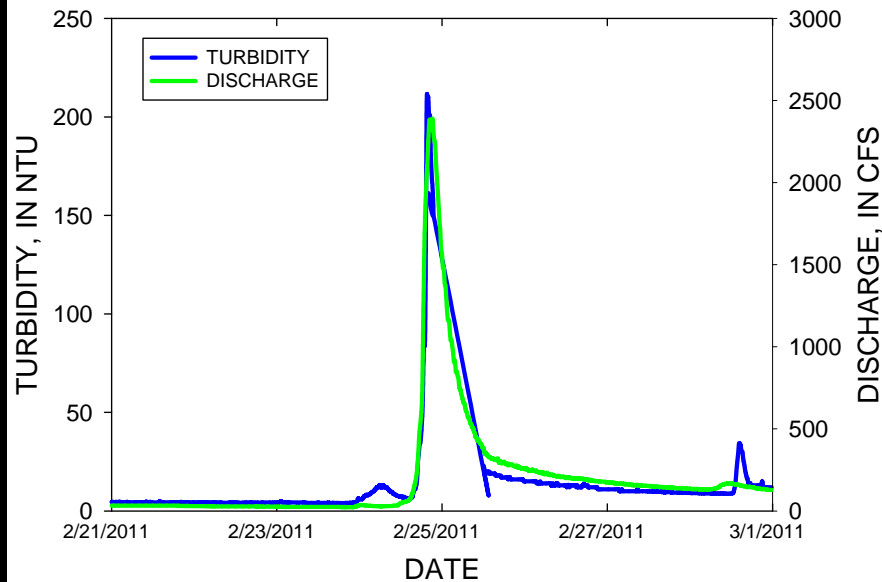


Gulf Mt. Wildlife Management Area

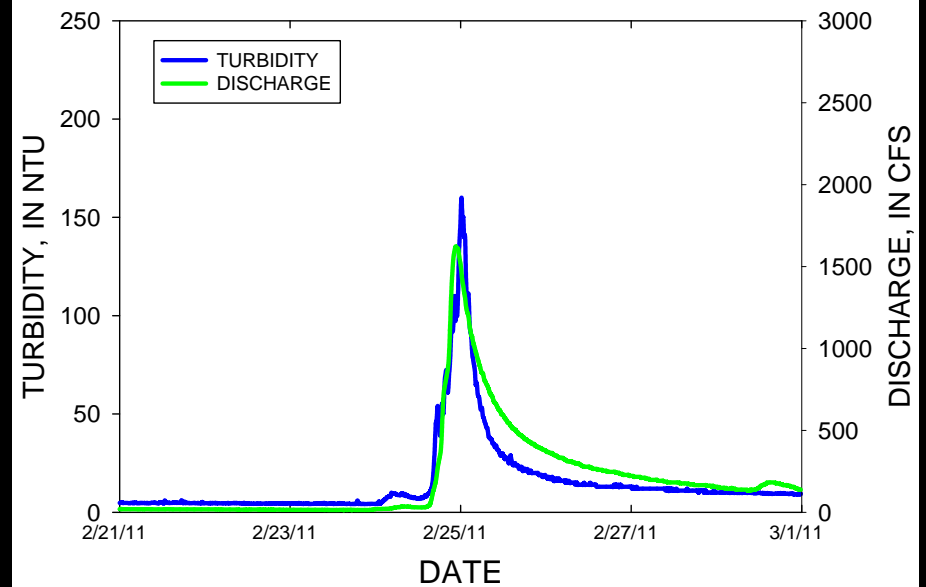


Gulf Mt. WMA Background Water Quality---Turbidity

SOUTH FORK LITTLE RED UPSTREAM OF WMA

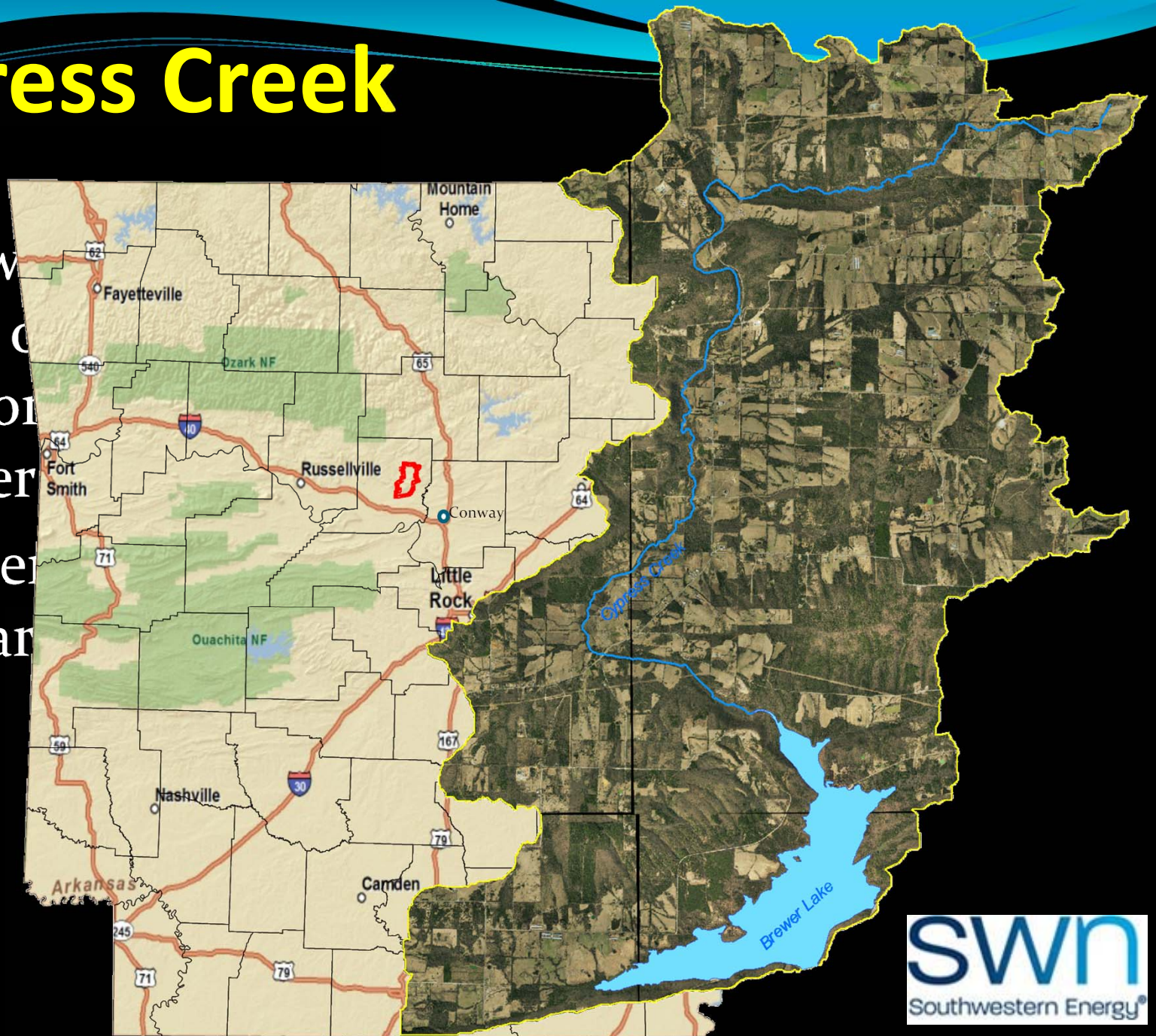


SOUTH FORK LITTLE RED DOWNSTREAM OF WMA

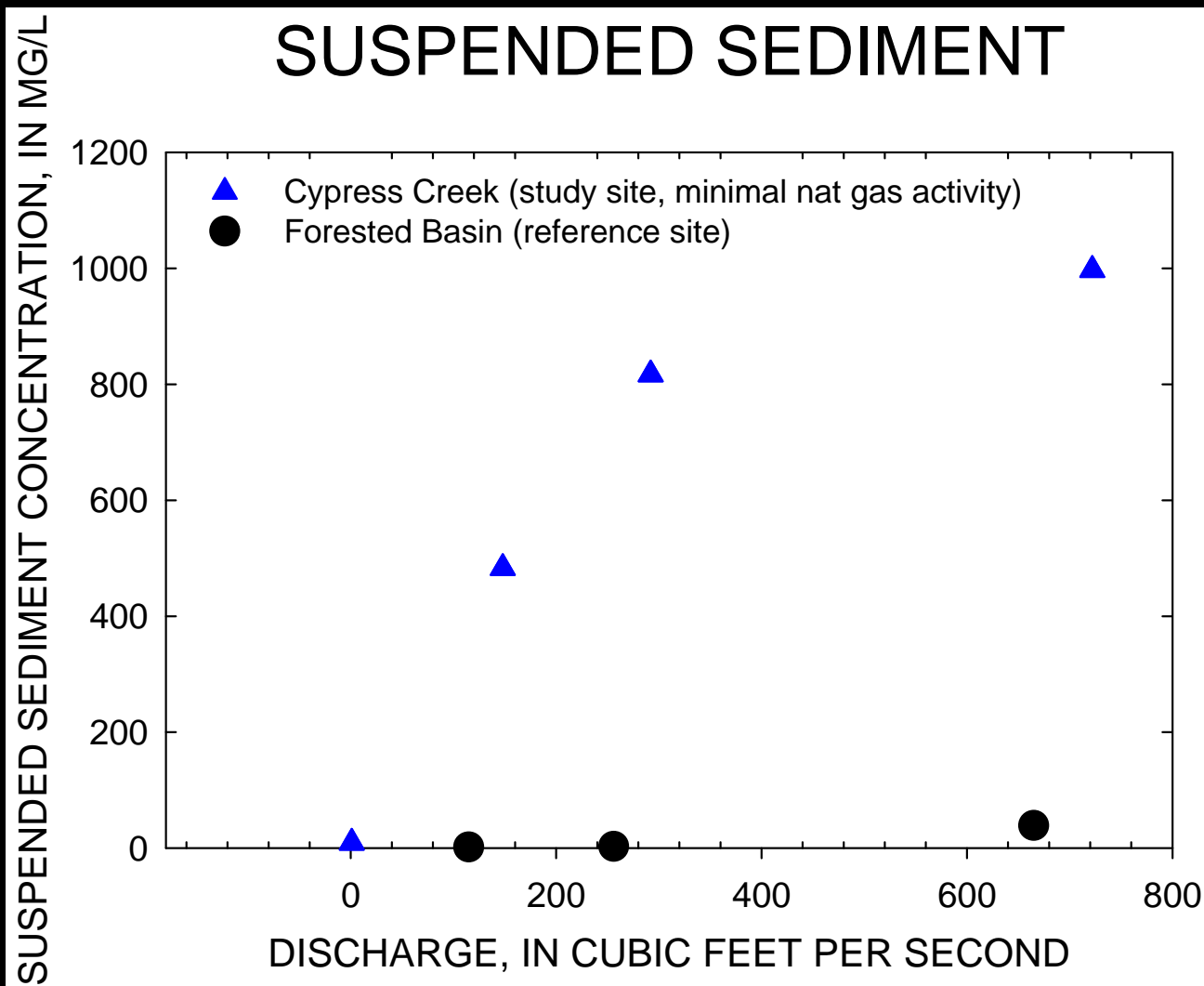


Cypress Creek

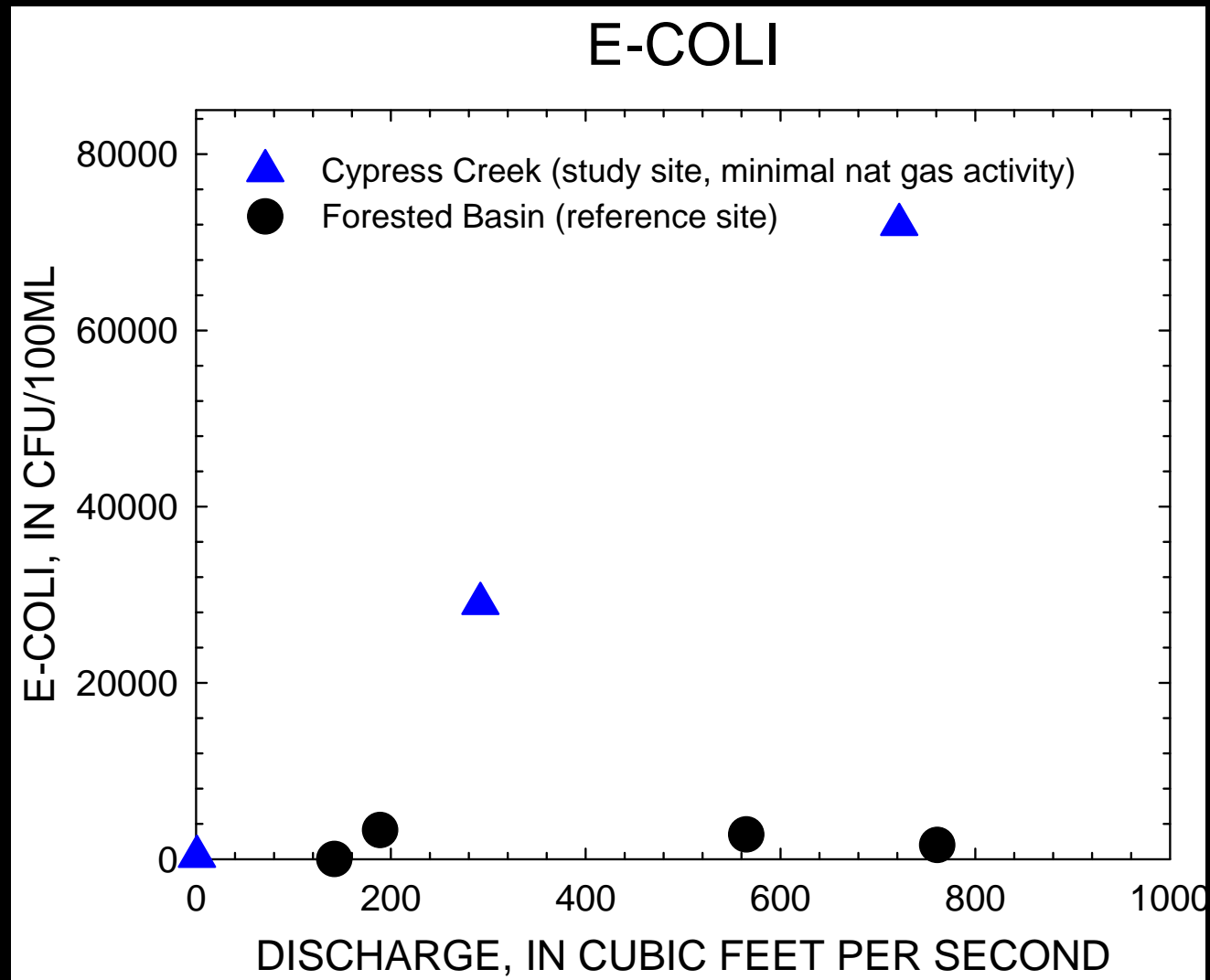
- Brewster County is the City of Little Rock's major water source
- Water is produced at 100 square miles



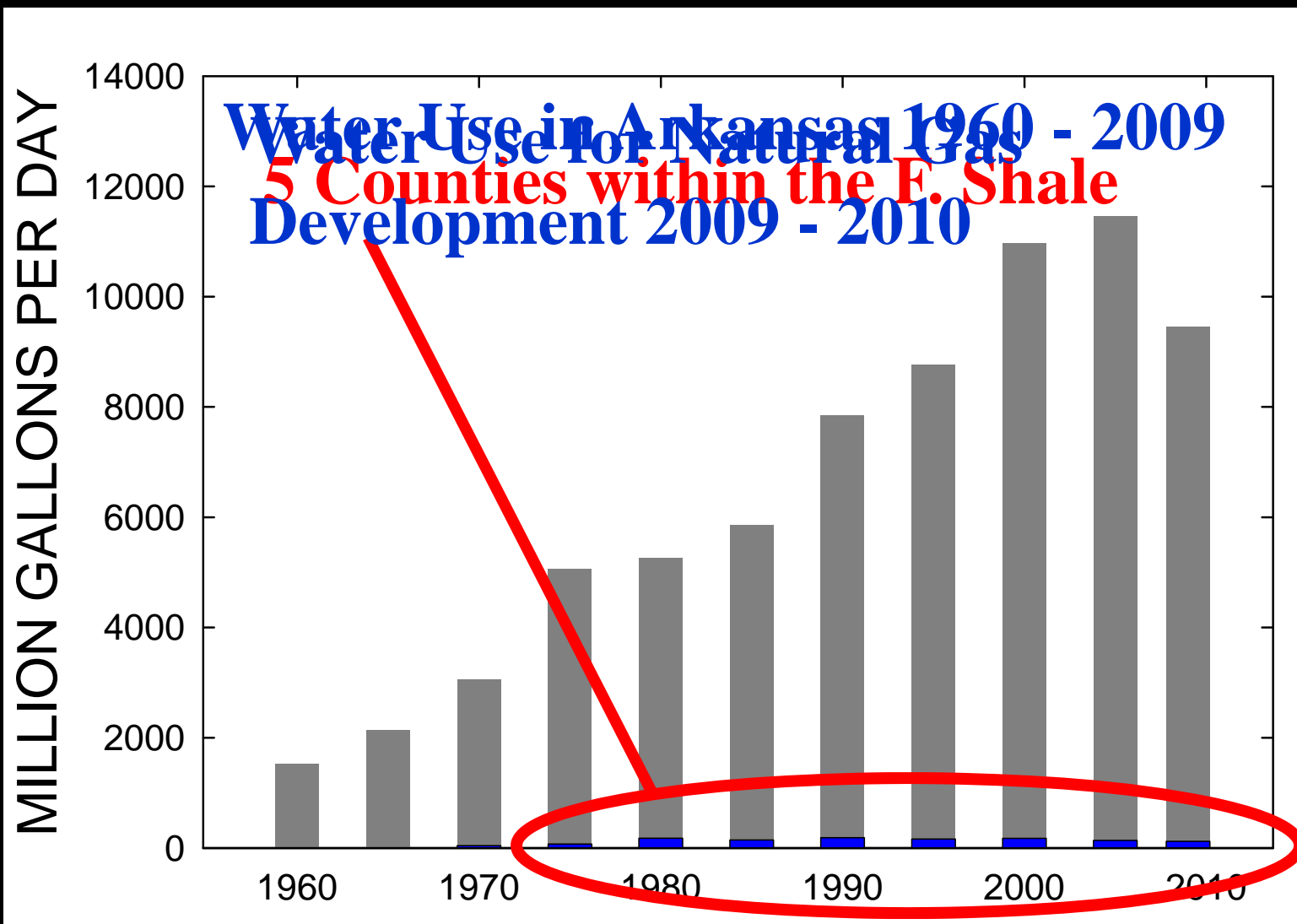
Cypress Creek Background Water Quality---Sediment



Cypress Creek Background Water Quality---Bacteria

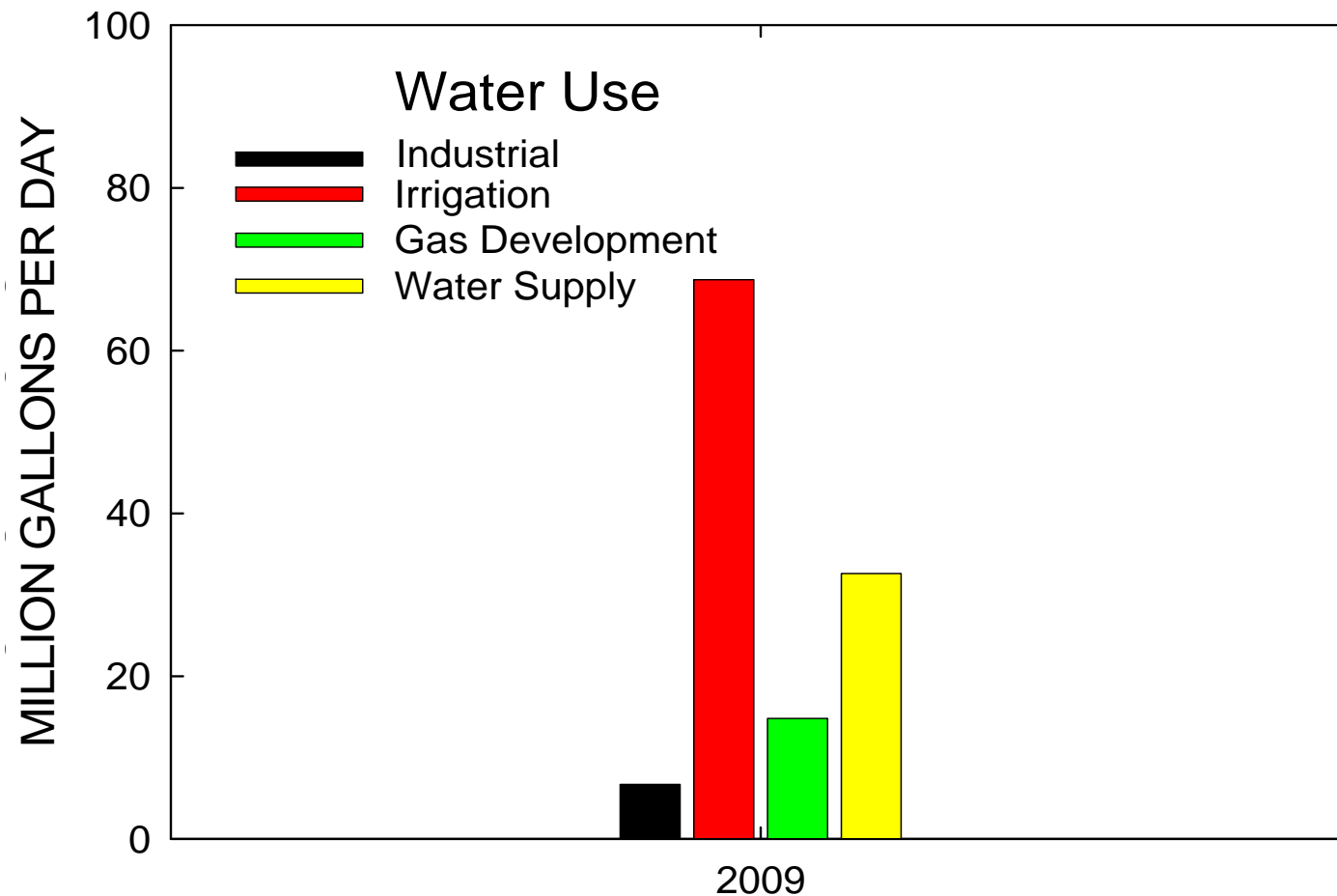


Water "Use"(d) within the Fayetteville Shale



Water "Use" (d) within 5 Counties Located in the Fayetteville Shale

WATER USE IN FIVE COUNTIES WITH SHALE GAS ACTIVITY



Questions?

