

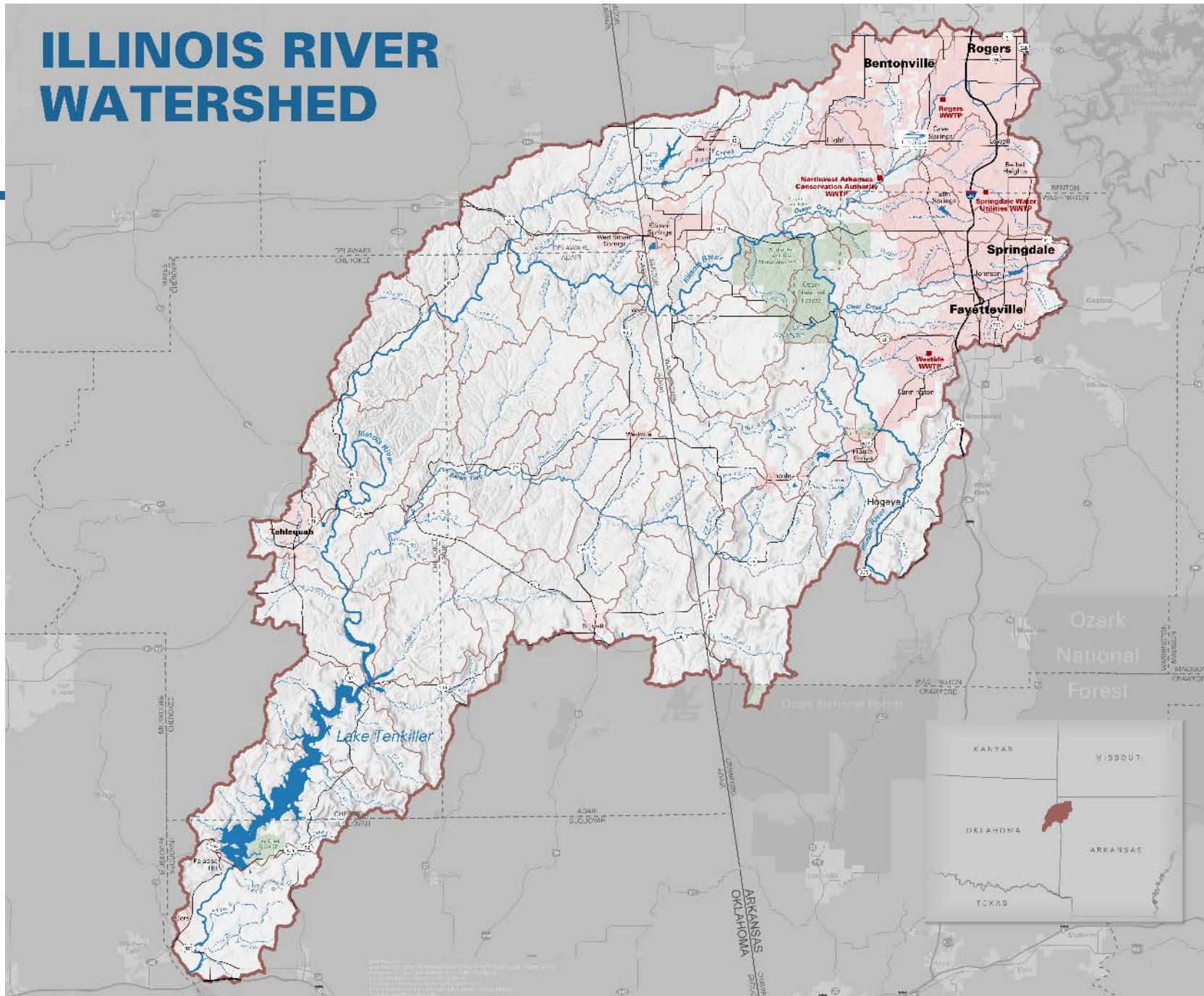
# ILLINOIS RIVER WATERSHED PARTNERSHIP

INTRODUCTION AND STREAMBANK EROSION DISCUSSION

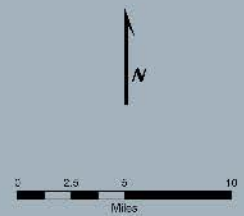
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# ILLINOIS RIVER WATERSHED



- Illinois River Watershed Partnership
- Wastewater Treatment Plant (WWTP)
- Headwater Community
- Interstate
- US Highway
- State Highway
- STATE BOUNDARY
- COUNTY BOUNDARY
- Urban Area
- Public Land
- Lake/Pond
- HUC 8 River
- HUC 10 Stream
- Minor Stream
- Illinois River Watershed HUC 8 Boundary
- Illinois River Watershed HUC 12 Boundary





# OUR MISSION



IRWP works to improve the integrity of the Illinois River through public education, community outreach, and implementation of conservation and restoration practices throughout the watershed.





# OUR APPROACH

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- Conserving and restoring our natural areas and waterways is cost effective, improves water quality, and preserved Northwest Arkansas heritage.
- We offer a “toolbox” of voluntary water quality management solutions to landowners.
- Connect rural and urban landowners to organizations that provide these tools.
- Find solutions that fit the short-term and long-term needs of the landowner.

# WHAT WE DO

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## YOUTH EDUCATION

- Free school-year field trips to IRWP's Watershed Sanctuary
- Mobile Learning Labs
- Provide water quality-focused, STEM-based online curriculum





# WHAT WE DO

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## STAKEHOLDER EDUCATION

### Focused on:

- Urban Low Impact Development
- Riparian Reforestation
- Land Conservation
- Rotational Grazing
- Streambank Erosion

### Offer:

- Workshops and Field Tours
- Printed Educational Materials
- Online Content
- Public Presentations

# WHAT WE DO

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## LANDOWNER SERVICES

- One-on-one consultation
- Custom conservation plans
- Liaison between landowners and organizations offering financial assistance





# WHAT WE DO

## RESTORATION PROJECTS

Work with landowners and local agencies to implement practices that address:

- Riparian forests
- Sediment loading
- Grazing management
- Poultry farm management
- Forest management





# WHAT WE DO

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## ASSESSMENT PROJECTS

- Ecological Assessment in Arkansas and Oklahoma
- Water Quality Monitoring
- Streambank Erosion Assessment



# STREAMBANK EROSION ASSESSMENT

- Average erosion rate of 5.2 feet/year
  - As high as 42 feet/year
- Sediment loading of study area:  
37,500 tons/year
- Phosphorus loading of study area:  
56,250 lbs/year
- P Loading of WWTF's in watershed:  
24,196 lbs/year





# STREAMBANK EROSION ASSESSMENT



Figure 1. 2017-2019 Cross section graph and 2019 data collection photograph overlay at survey





# STREAMBANK EROSION ASSESSMENT

Classification	Erosion Rate (feet/year)	Percent of Streambanks
Extreme	At least 3	2%
Very High	2 to 3	10%
High	1 to 2	26%
Moderate	0.66 to 0.99	42%
Low	0.33 to 0.66	19%
Very Low	0 to 0.33	2%



# WHY IS IT IMPORTANT?

- Loss of productive lands
  - Estimated to lose 40 acres per year
- Safety hazard to people and livestock
- Threatened infrastructure
- Sediment and nutrient loading:
  - Expensive to treat
  - Impacts aquatic wildlife



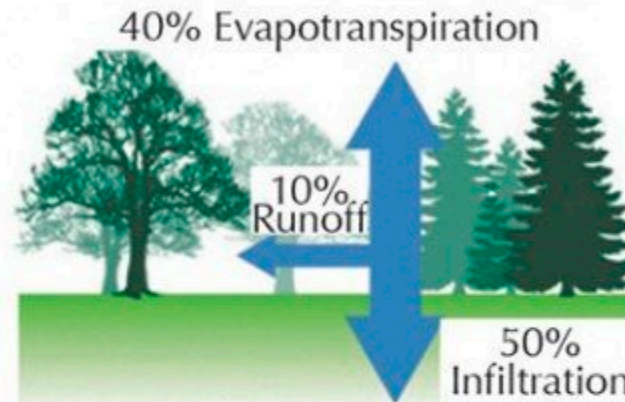
# Why is it happening?

- Loss of wetlands
- Straightening or trenching
- Loss of riparian forests
- Urbanization

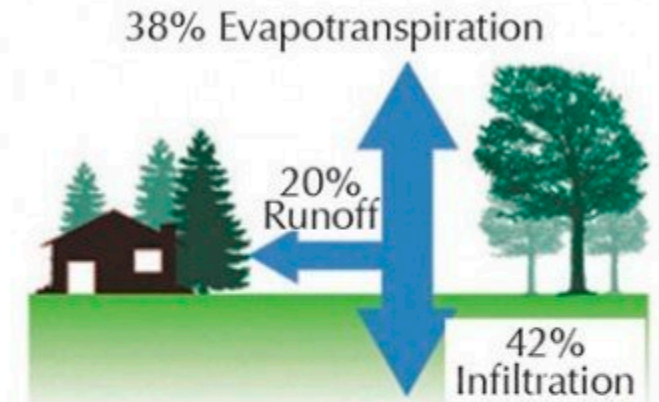


Increased velocity

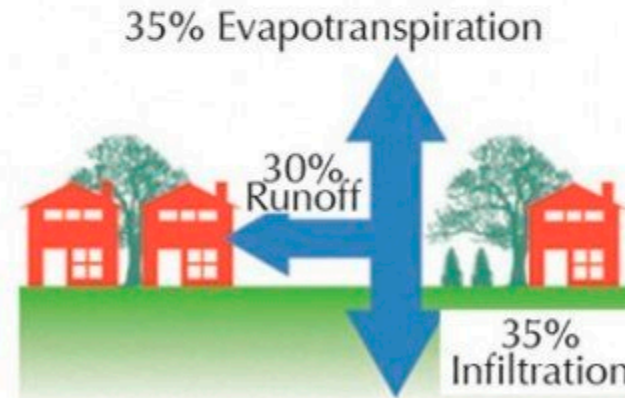
## EFFECTS OF IMPERVIOUSNESS ON RUNOFF AND INFILTRATION



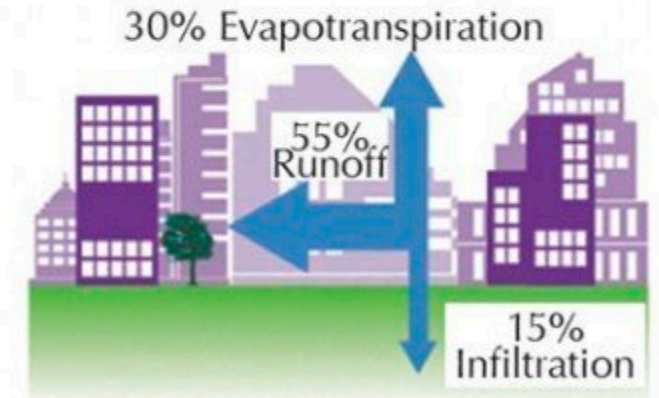
**Natural Ground Cover**  
0% Impervious Surface



**Low Density Residential (e.g. rural)**  
10–20% Impervious Surface



**Medium Density Residential (e.g. subdivision)**  
30–50% Impervious Surface



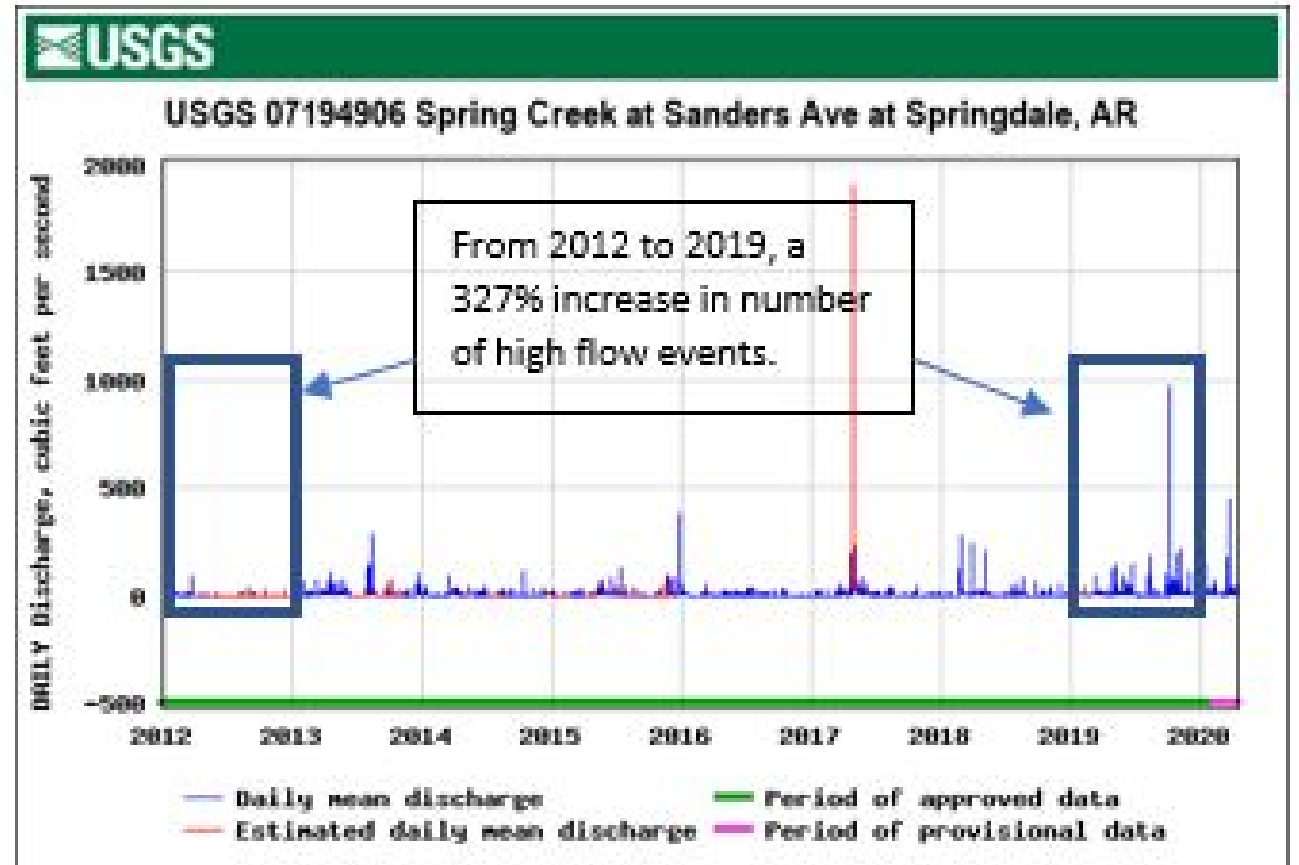
**High Density Residential / Industrial**  
75–100% Impervious Surface

# Why is it happening?

- Loss of wetlands
- Straightening or trenching
- Loss of riparian forests
- Urbanization



Increased velocity







# IMPORTANT TAKEAWAYS

- Large quantities of streambank erosion (across several miles of river) indicate system-wide change
- Riparian forests provide streambank protection, but only to a certain point.
- Identification of significant causes can be difficult.
- Restoration is expensive and risky. Locations for effective preventative measures are difficult to predict.





# THANK YOU

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