ILLINOIS River

WATERSHED PARTNERSHIP

Agenda:

- **IRWP Introduction**
- **Ecological Assessment of Priority Subwatersheds**

The Illinois River and its tributaries will be a fully functioning ecosystem, where ecological protection, conservation, and economically productive uses:

- support diverse aquatic and riparian communities,
- meet all state and federal water quality standards,
- promote economic sustainability, and
- provide recreational opportunities.

The Illinois River Watershed Partnership works to improve the integrity of the Illinois River through:

- public **education** and community **outreach**,
- water quality **monitoring**, and
- the implementation of **conservation** and **restoration** practices throughout the watershed.

IRWP's Mission

ILLINOIS River
WATERSHED PARTNERSHIP

Local Stakeholders

Agriculture

Business

Conservation

Construction

Government

Technical, Research & Education

ILLINOIS River
WATERSHED PARTNERSHIP

Agriculture	Local Livestock Producers	Arkansas Farm Bureau	
Business	Simmons	Tyson	Denali Water Solutions
Conservation	The Nature Conservancy	Walmart Sustainability	The Sustainability Consortium
Construction	Crafton-Tull	Baldwin-Shell	
Government	Springdale Water Utilities	Grand River Dam Authority	Cherokee Nation
Technical, Research, and Education	NWA Master Naturalists		
At-Large	Arvest Bank	AEP-SWEPCO	

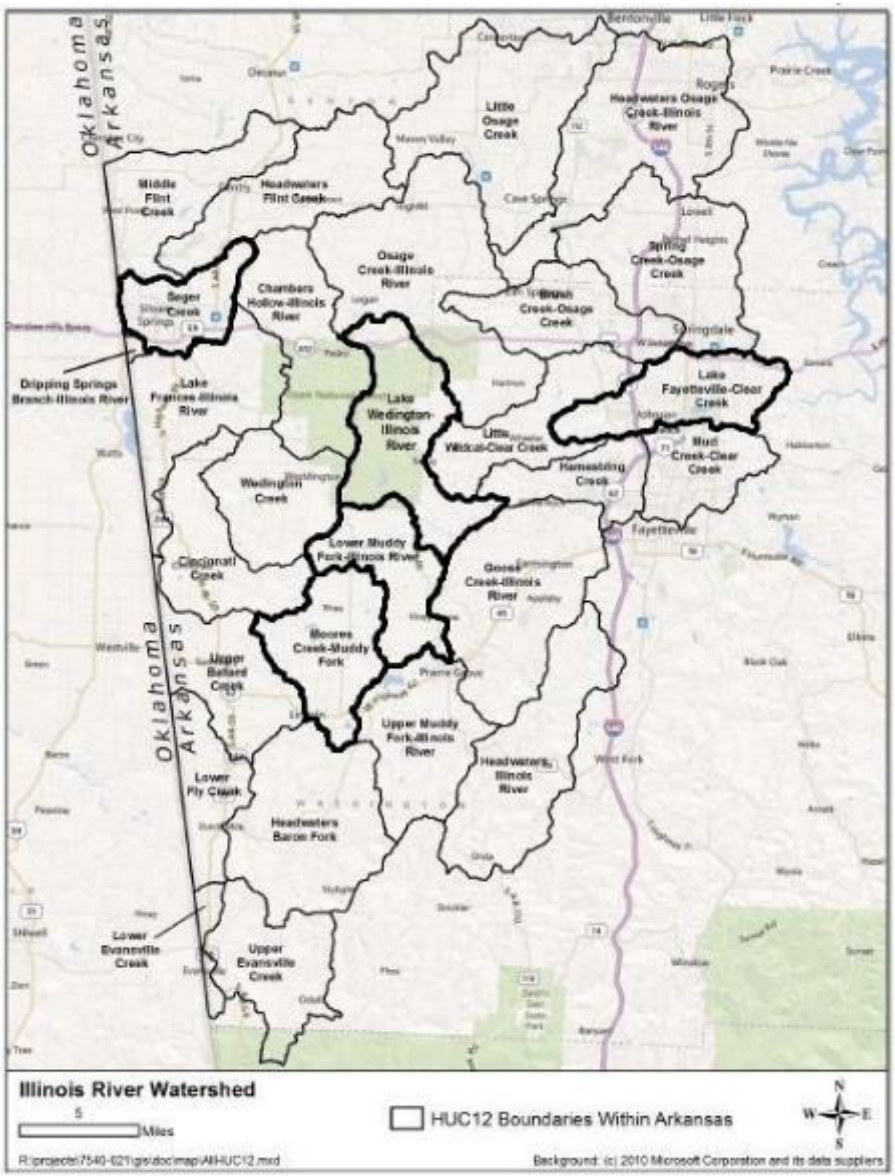
ILLINOIS River
WATERSHED PARTNERSHIP

IRWP's 2018 Funding Sources

ILLINOIS River WATERSHED PARTNERSHIP

ILLINOIS River
WATERSHED PARTNERSHIP

Priority Subwatershed Strategy



2016 Impaired Subwatersheds, ADEQ

Subwatershed	Impairment
Sager Creek	Nitrate
Moore's Creek	Sulfate, Pathogen
Lower Muddy Fork	Pathogen
Clear Creek at Lake Fayetteville	Pathogen
Clear Creek at Mud Creek	Sulfate, Pathogen
Upper Muddy Fork	Pathogen
Illinois River	Chloride, Sulfate, Pathogens

Illinois River Priority Subwatersheds

ILLINOIS River
WATERSHED PARTNERSHIP

ILLINOIS River
WATERSHED PARTNERSHIP

Monitoring:

Ecological Assessment Project

Streambank Erosion Monitoring Project

Goal: In-depth assessment of priority subwatersheds for water quality and ecosystem health

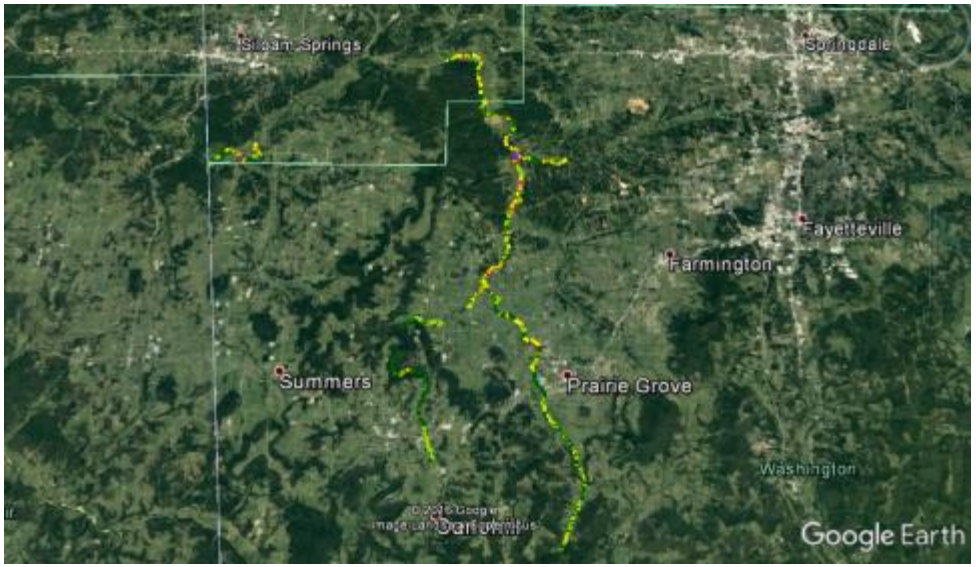
- Partnered with local EAST Initiative schools

- Assessments:
  - Land use and aquatic habitat
  - Macroinvertebrate community
  - Water quality

- In 2018, monitored four to five locations within priority subwatersheds three times

Goal: To create prioritized list of areas with highest (and lowest) rates of streambank erosion

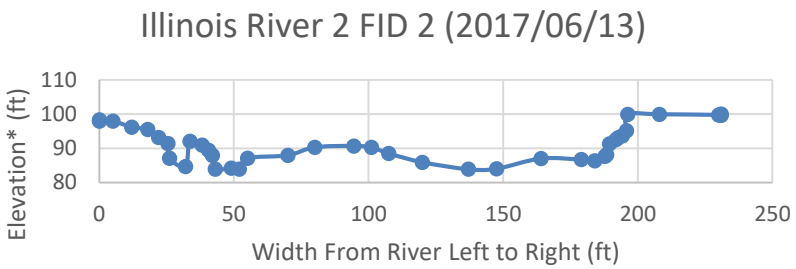
- 45 miles of streambank inventoried (929 sites on impaired streams)
- 139 sites estimated to be losing at least one foot of land per year

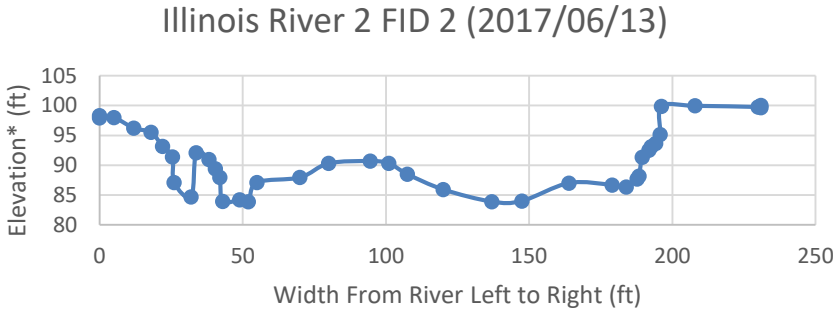


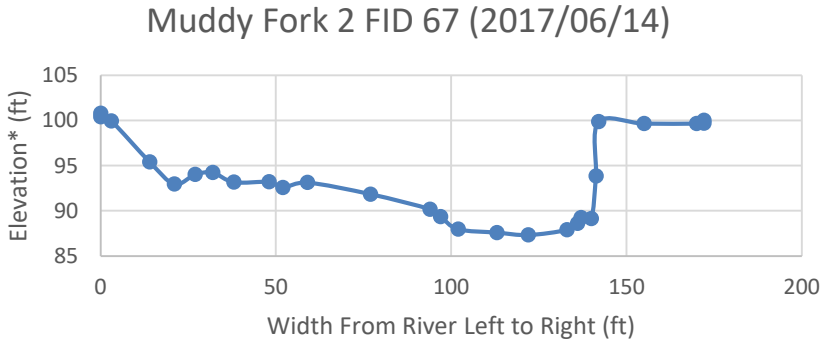
	Number of Banks within each Bank Erosion Rate Category			
	Extreme (+3 ft/yr)	Very High (2-3 ft/yr)	High (1-2 ft/yr)	Total/ Subwatershed
Middle Illinois River	6	14	21	41
Lower Muddy Fork	0	13	13	26
Upper Muddy Fork	1	2	22	25
Lower Moores Creek	0	1	19	20
Lower Illinois River	1	4	4	9
Clear Creek	0	4	4	8
Upper Moores Creek	0	0	5	5
Sager Creek	0	0	5	5
Total	8	38	93	

Results

ILLINOIS River WATERSHED PARTNERSHIP







Streambank Erosion Monitoring Next Steps

ILLINOIS River
WATERSHED PARTNERSHIP

ILLINOIS River
WATERSHED PARTNERSHIP

Restoration:

Landowner Services Program

Urban and Riparian Restoration

Goal: multi-modal education for landowners regarding practices for water quality improvement

6 priority BMP's:

- Commercial Low Impact Development
- Residential LID
- Rotational Grazing
- Riparian Buffers
- Streambank Restoration
- Land Conservation

LID Demonstration Projects

- 47,639 square feet installed
- 195 students, teachers, and volunteers working on projects

Volunteer Streamside Tree Plantings

- 4.4 acres planted with 14 native tree and shrub species
- 440 volunteers, 894 work hours

Forest Management and Restoration

- Three invasive species removal events
- 56 volunteers, 143 work hours

Creek Clean-Ups

- 4 Clean-Ups with 175 volunteers

Community Outreach

ILLINOIS River WATERSHED PARTNERSHIP

Goals:

- Protect riparian areas with no to low erosion
- 20 miles of riparian restoration
- Two square miles of new rotational grazing systems

Eligible projects:

- Grassed and forested buffers
- Alternative watering
- Fencing
- Streambank stabilization
- Wetland construction/restoration
- Prescribed burning
- Stream habitat improvement
- Forest stand management

Launched in 2018: Riparian Restoration Program

ILLINOIS River WATERSHED PARTNERSHIP

ILLINOIS River
WATERSHED PARTNERSHIP

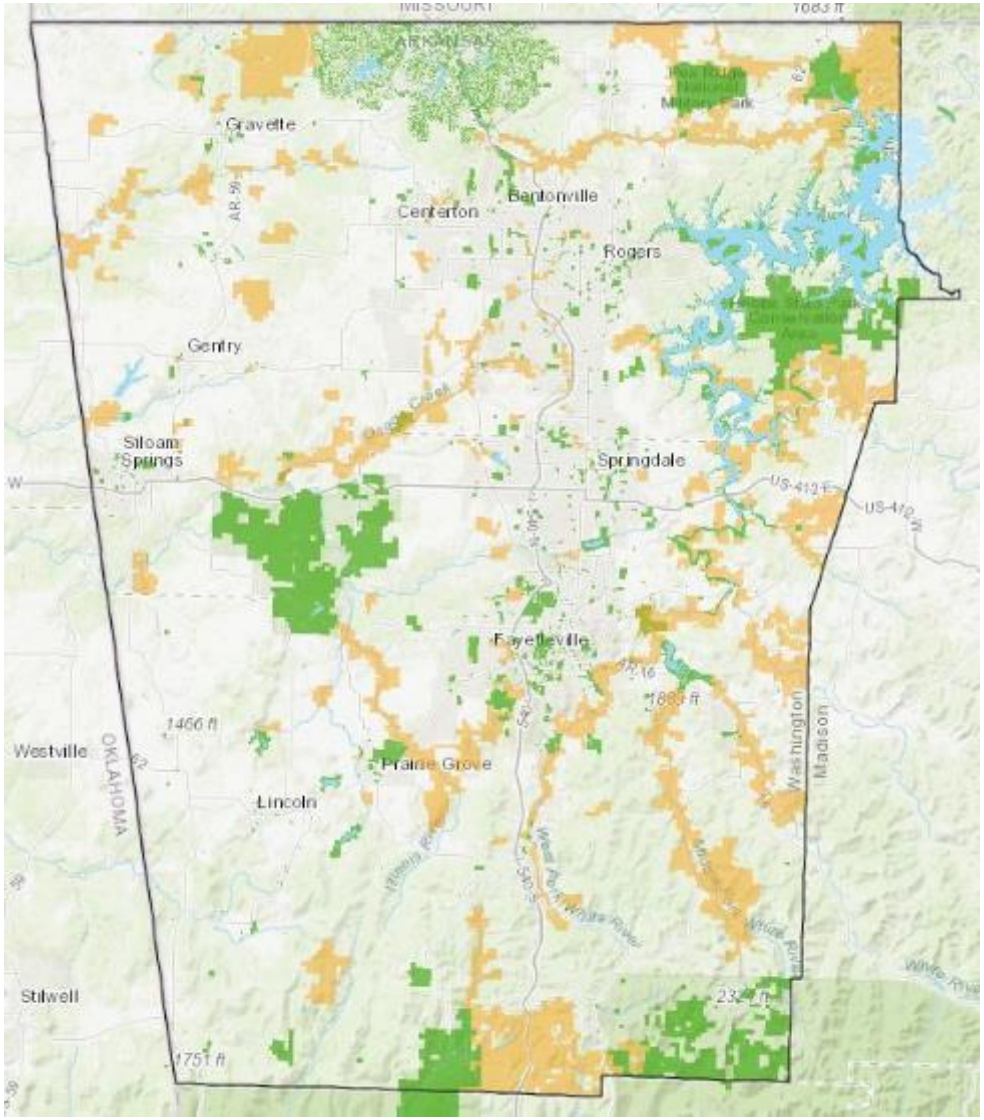
Conservation:

Implement the Open Space Plan

Goal: Conserve high priority areas within the watershed

- Short term goal: Work with partners to find “homes” for available properties.
  - Over 1,000 acres protected across Northwest Arkansas

- Long term goal: Two county ballot measure to establish conservation fund



ILLINOIS River
WATERSHED PARTNERSHIP

K through 12 Education:

- ***Learning Center Field Trips and Summer Camps***

School Year Field Trips

- 2,246 students from 20 schools from 2nd grade to UA

Clean Water, Healthy Watersheds Summer Camps

- 120 summer camp attendees

K-12 Education Programs

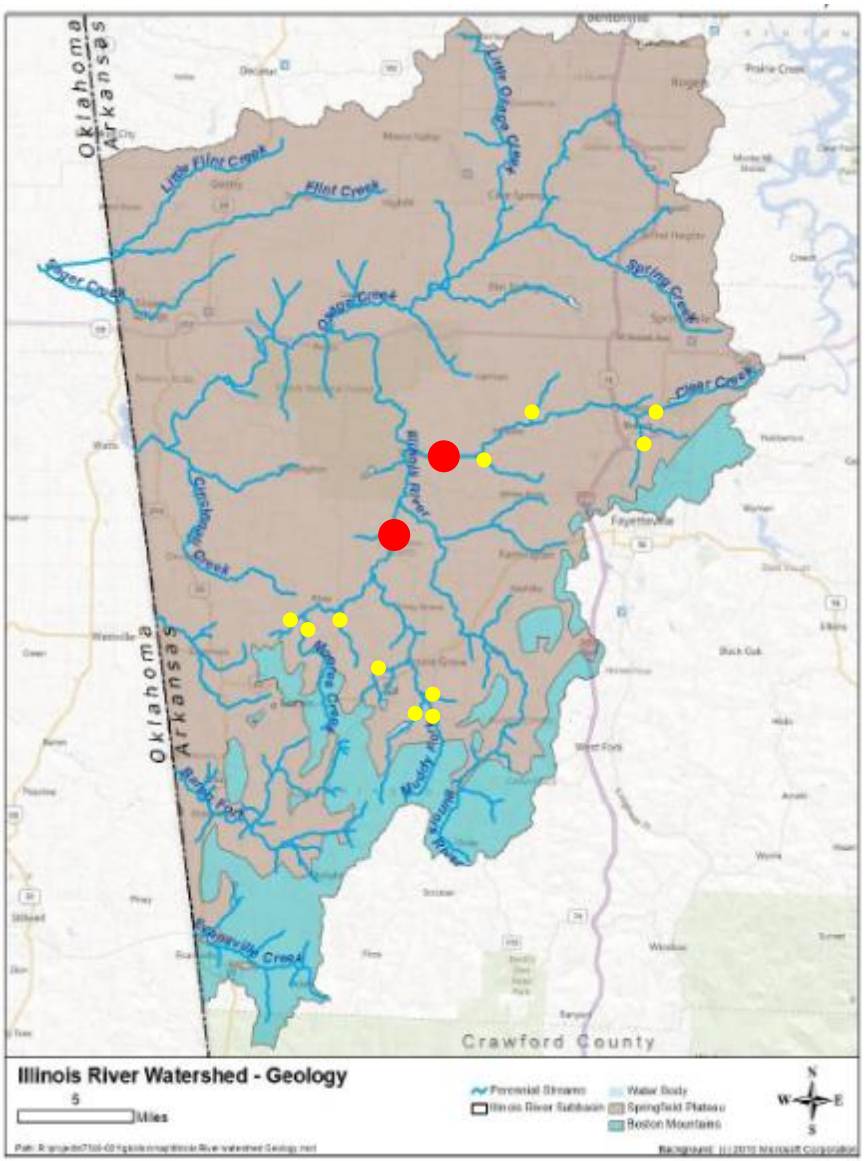
ILLINOIS River WATERSHED PARTNERSHIP

Agenda:

- IRW Land Use Challenges
- IRWP Introduction
- **Ecological Assessment of Priority Subwatersheds**

Goals:

- In-depth assessment of impaired subwatersheds
- Identify potential “hotspots” within each subwatershed
- Target outreach and education efforts



= ADEQ sampling site

Sampled April, August, November 2018

Habitat Assessment

- Utilized EPA's *Volunteer Stream Monitoring: A Methods Manual*
- 300 foot stream reach divided into 75 ft sections: 4 observations/reach
- Qualitative, visual data collected

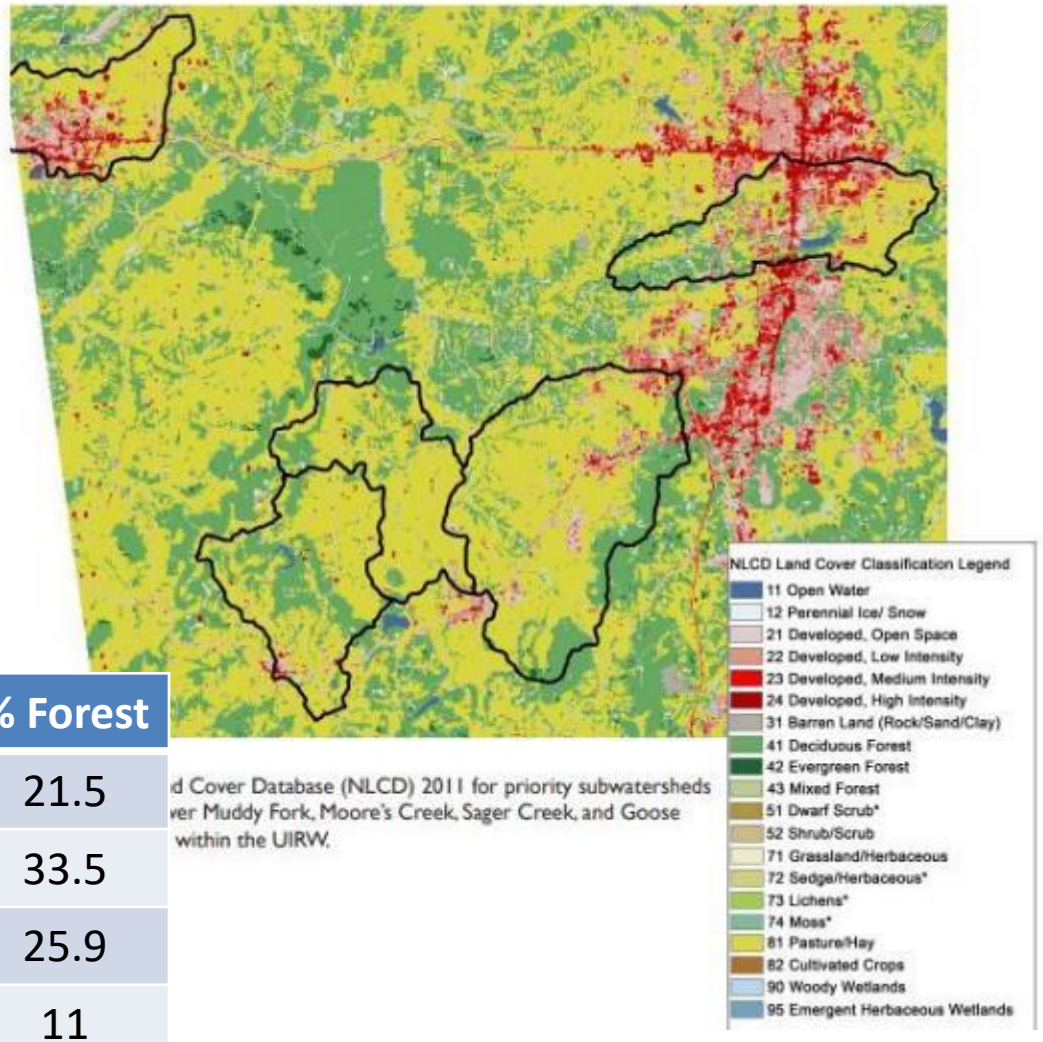
Macroinvertebrate Communities

- Composite of three 3' x 3' riffle locations
- Site rating calculation accounts for pollution sensitivity and relative abundance of each species

Methods

ILLINOIS River WATERSHED PARTNERSHIP

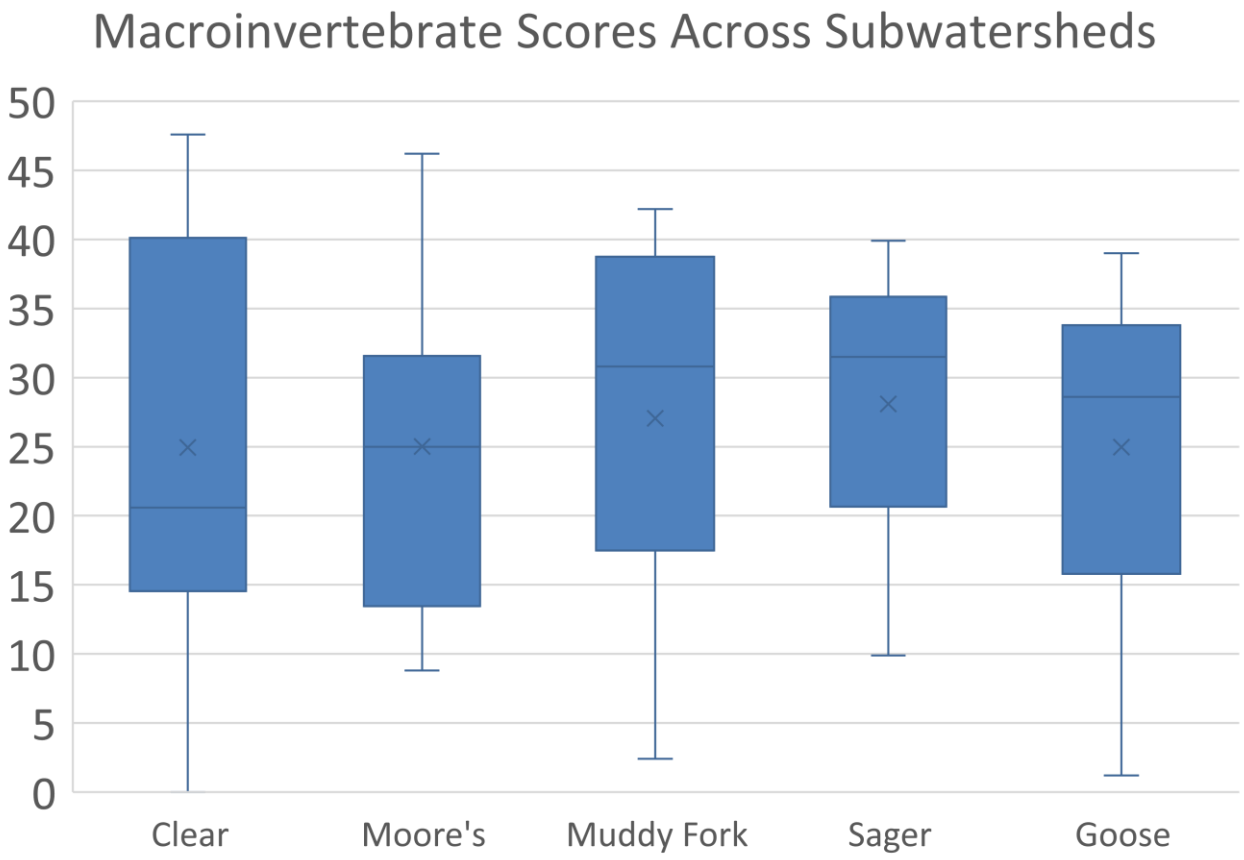
Subwatershed	% Urban	% Pasture	% Forest
Clear	40.6	28.8	21.5
Moore's	4.6	56.9	33.5
Muddy	2.9	66.8	25.9
Sager	30.5	54.5	11
Goose	11.5	56.2	25.9



d Cover Database (NLCD) 2011 for priority subwatersheds
ver Muddy Fork, Moore's Creek, Sager Creek, and Goose
within the UIRW.

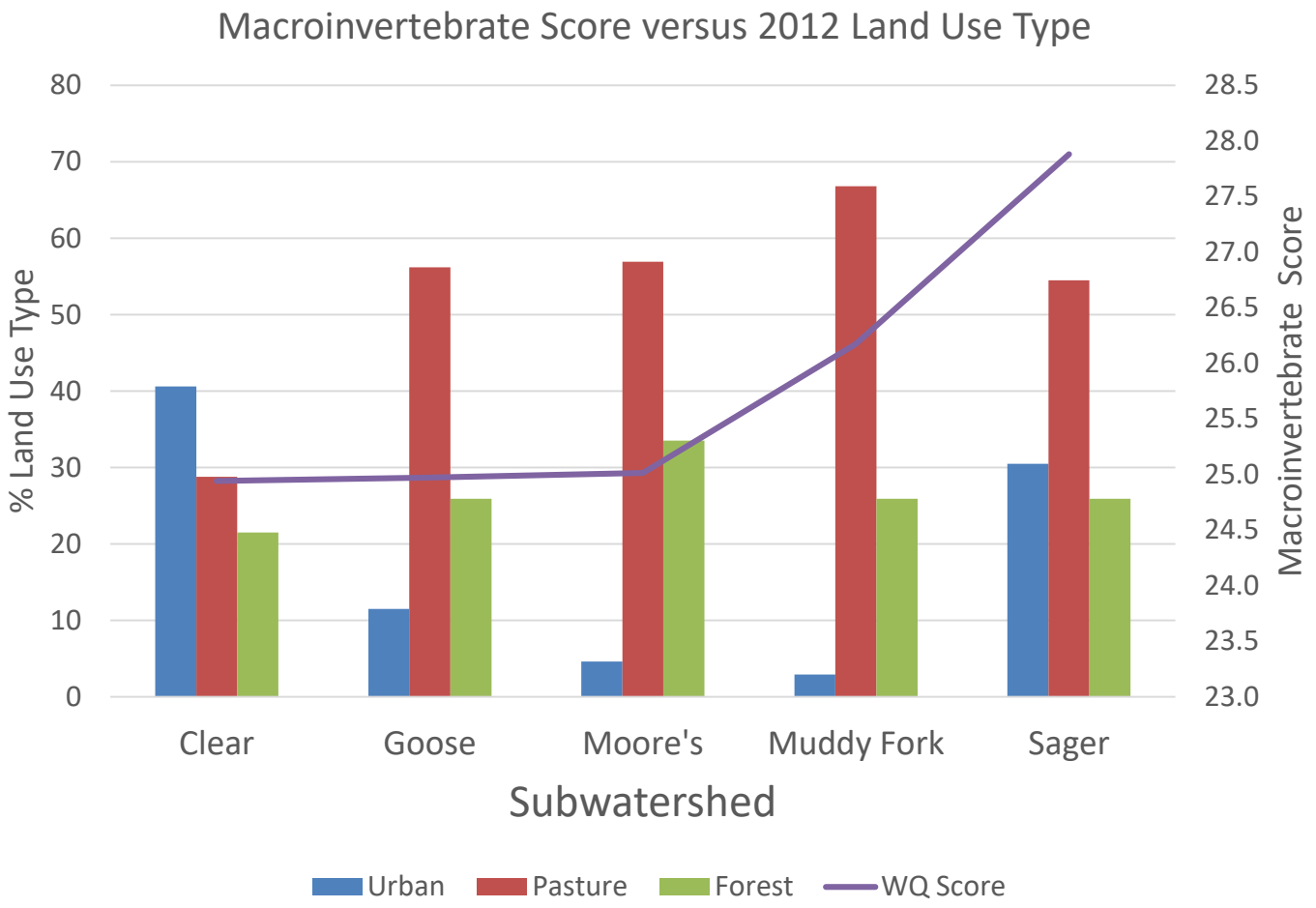
Result: Land Use Assessment

ILLINOIS River WATERSHED PARTNERSHIP



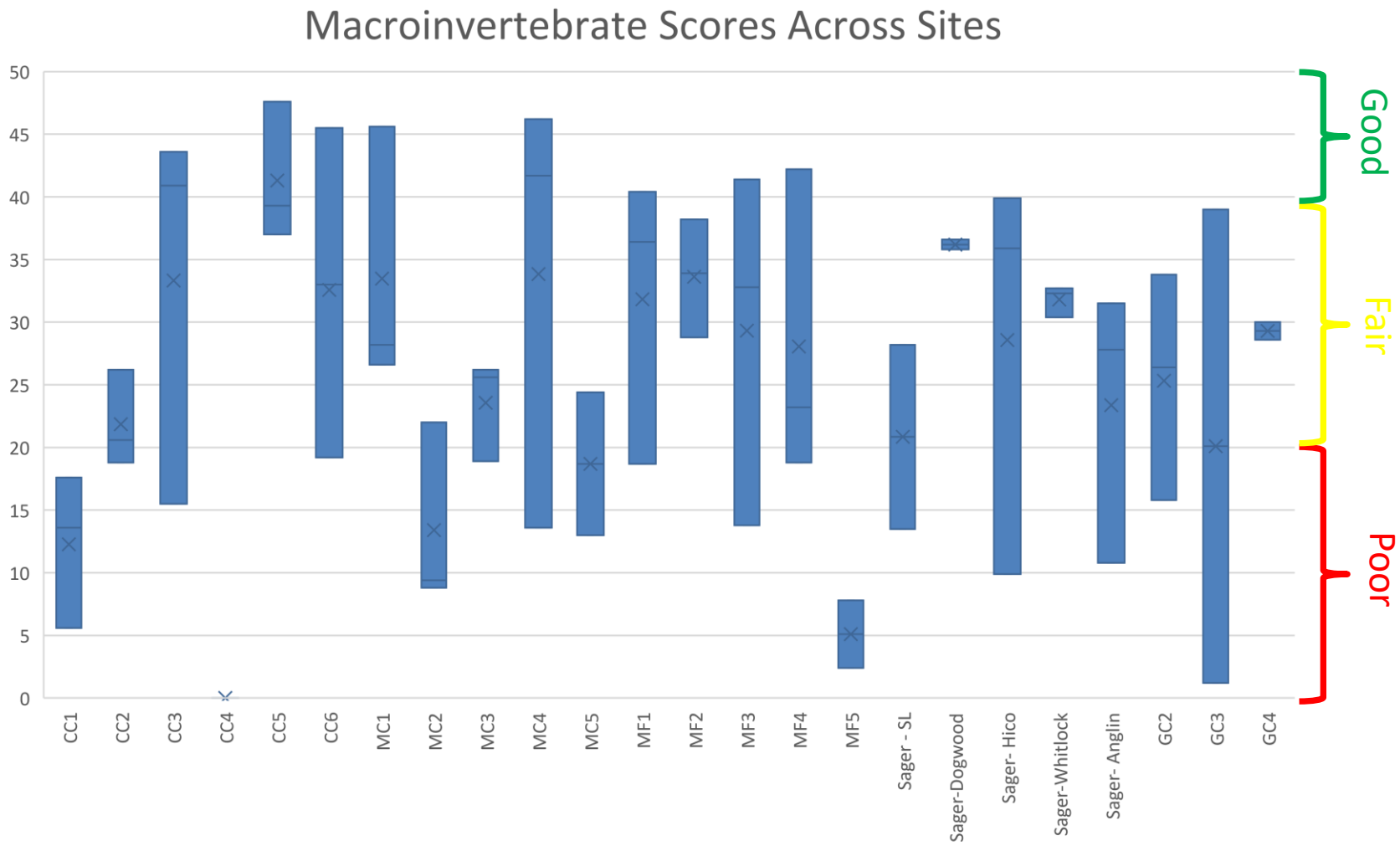
Results: No apparent differences across subwatersheds

ILLINOIS River
WATERSHED PARTNERSHIP



Result: No trend across land use types

ILLINOIS River WATERSHED PARTNERSHIP



Results: Wide Variation Among Sites

ILLINOIS River WATERSHED PARTNERSHIP

Clear Creek Assessment

Table 1. Average 2018 seasonal water quality rating for the Clear Creek watershed.

Spring	
Summer	
Fall	

Figure 1. Spring 2018 WQ (Water Quality) rating for sampling sites within the Clear Creek watershed.

Figure 2. Summer 2018 WQ rating for sampling sites within the Clear Creek watershed.

Figure 3. Fall 2018 WQ rating for sampling sites within the Clear Creek watershed.

Results: Some sites are very consistent

ILLINOIS River WATERSHED PARTNERSHIP

Muddy Fork Assessment

Table 1. Average 2018 seasonal water quality rating for the Lower Muddy Fork watershed.

Spring	●
Summer	●
Fall	●

Figure 1. Spring 2018 WQ rating for sampling sites within the Lower Muddy Fork watershed.

Figure 2. Summer 2018 WQ rating for sampling sites within the Lower Muddy Fork watershed.

Figure 3. Fall 2018 WQ rating for sampling sites within the Lower Muddy Fork watershed.

Results: Some sites are very consistent

ILLINOIS River WATERSHED PARTNERSHIP

Moore's Creek Assessment

Table 1. Average 2018 seasonal water quality rating for the Moore's Creek watershed.

Spring	🔴
Summer	🟡
Fall	🟡

Figure 1. Spring 2018 WQ rating for sampling sites within the Moore's Creek watershed.

Figure 2. Summer 2018 WQ rating for sampling sites within the Moore's Creek watershed.

Figure 3. Fall 2018 WQ rating for sampling sites within the Moore's Creek watershed.

Results: Some sites are very consistent

ILLINOIS River WATERSHED PARTNERSHIP

- Continue to collect macroinvertebrate data at each site
  - Any funders out there…?
- Add in water quality data
- What's going on at Moore's Creek?
- Identify and build relationships with landowners at high priority sites
- Leverage Riparian Restoration funding to install BMPs

Next Steps

ILLINOIS River WATERSHED PARTNERSHIP

ILLINOIS River
WATERSHED PARTNERSHIP

Thank you for your time!

Nicole Hardiman, Ph.D.
director@irwp.org
479-422-1014