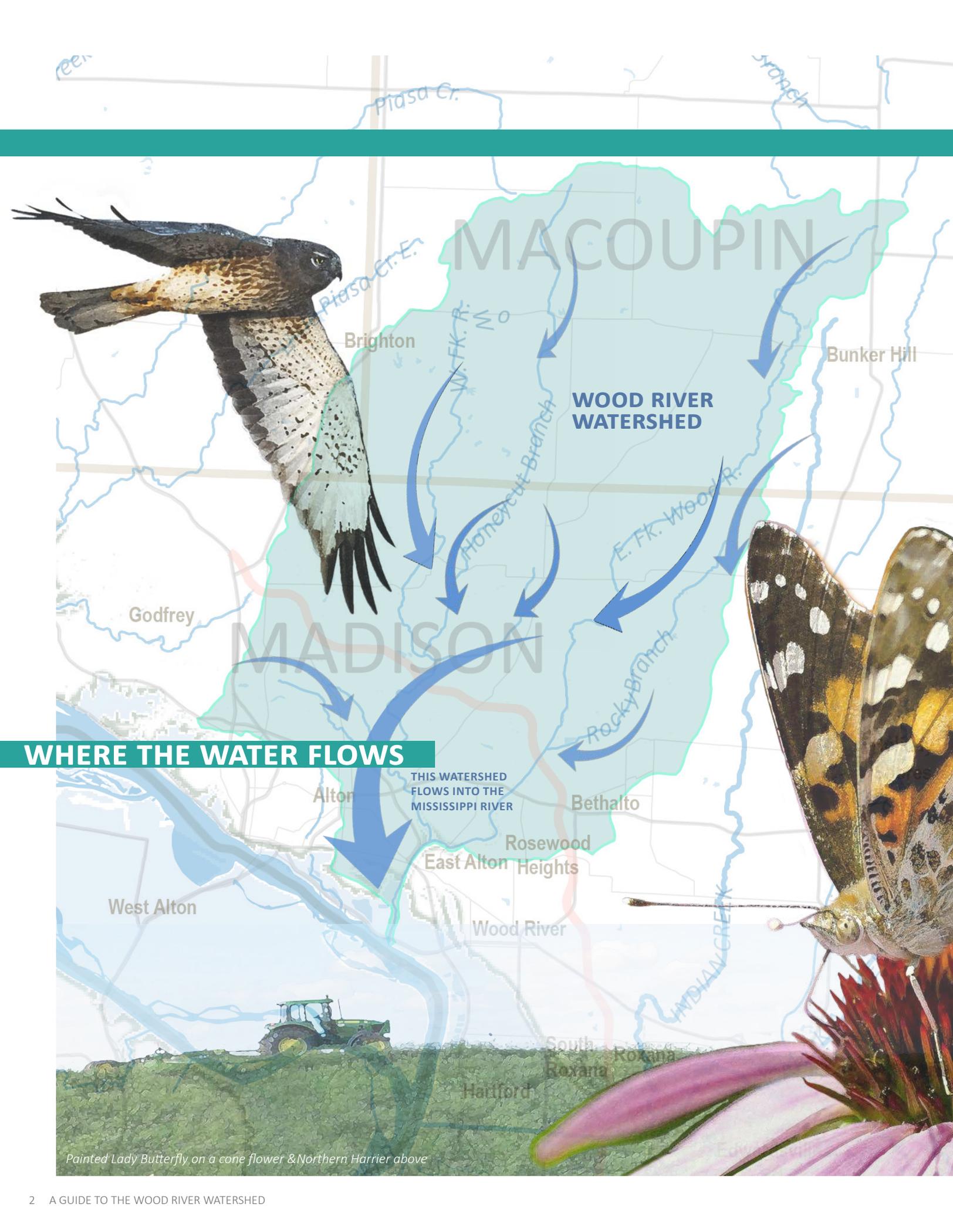


A Guide to the Wood River Watershed



MADISON, JERSEY, & MACOUPIN COUNTIES ILLINOIS



MACOUPIN

MADISON

WOOD RIVER WATERSHED

WHERE THE WATER FLOWS

THIS WATERSHED FLOWS INTO THE MISSISSIPPI RIVER

Alton

Bethalto

Rosewood
East Alton Heights

West Alton

Wood River

South Roxana
Roxana

Harford

Painted Lady Butterfly on a cone flower & Northern Harrier above

WHAT IS A WATERSHED?

A watershed is an area of land that drains into a common waterbody, such as a creek. Think of it like a bathtub: when a drop of water hits anywhere in the tub, it eventually finds its way to the drain (the lowest point). The rim of the bathtub is like the watershed boundary—any drop falling inside it will eventually reach the main drain, a creek or river.

Healthy watersheds mean that people have clean drinking water, flooding in appropriate locations, thriving wildlife, and recreation opportunities.

THE WOOD RIVER WATERSHED & THE PLAN

Water in the Wood River watershed generally flows north to south and east to west. Water flow starts in Macoupin County and moves south and west through Alton to the Mississippi River.

Funding for the Wood River Watershed-Based Plan was provided, in part, by the Illinois Environmental Protection Agency (IEPA) through Section 604(b) of the Clean Water Act via Financial Assistance. Additional funding and staff time was provided by Madison County to address flooding issues alongside water quality issues.

The planning process involved surveys, public meetings, technical analysis, and recommendations formed by a technical advisory committee and a stakeholder committee. The plan is a voluntary document that provides guidance to governments and residents on flood reduction and water quality in the Wood River watershed. The document can be found on the HeartLands Conservancy webpage.

Goals of the plan are:

- Improve surface and ground water quality.
- Reduce flooding and mitigate flood damage.
- Promote environmentally sensitive development.
- Support healthy wildlife habitat.
- Develop organizational frameworks.
- Conduct education and outreach.

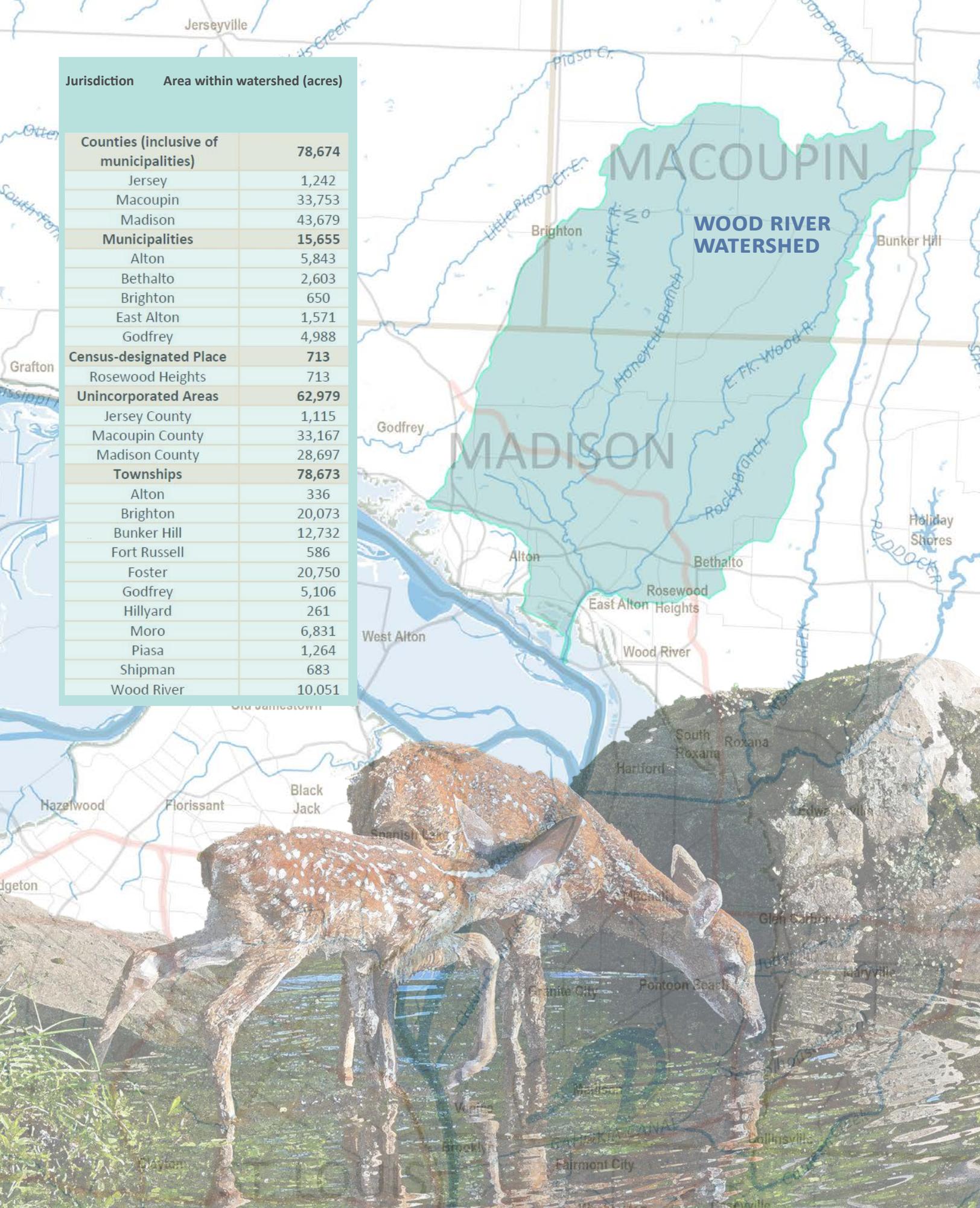
See page 30 of the watershed plan.

WATERSHED PLANNING PROCESS

Early on and throughout the planning process, Madison County and the planning team sought guidance from more than 250 people and more than 25 entities. Interviews were conducted with townships, municipalities, and County Board members. Small group meetings allowed attendees to provide locations of floods and other issues on large paper maps, and give detailed input on stormwater issues in the watershed.

Stakeholder input was of crucial importance in the planning process. Feedback from key stakeholders and the public was used in identifying issues, selecting Critical Area locations and specific project locations, and exploring opportunities for further outreach and education.

Jurisdiction	Area within watershed (acres)
Counties (inclusive of municipalities)	78,674
Jersey	1,242
Macoupin	33,753
Madison	43,679
Municipalities	15,655
Alton	5,843
Bethalto	2,603
Brighton	650
East Alton	1,571
Godfrey	4,988
Census-designated Place	713
Rosewood Heights	713
Unincorporated Areas	62,979
Jersey County	1,115
Macoupin County	33,167
Madison County	28,697
Townships	78,673
Alton	336
Brighton	20,073
Bunker Hill	12,732
Fort Russell	586
Foster	20,750
Godfrey	5,106
Hillyard	261
Moro	6,831
Piasa	1,264
Shipman	683
Wood River	10,051





HISTORICAL WOOD RIVER WATERSHED & CULTURE

THE WOOD RIVER WATERSHED is located northeast of St. Louis, Missouri, in Madison, Macoupin, and Jersey Counties, Illinois. Three-hundred fifty-five miles of streams drain 78,500 acres of land.

The Wood River watershed is an archaeological hot-spot. Cahokia, a pre-Columbian Native American city about 23 miles southwest of the watershed, covered about six square miles at its population peak (1200s CE) and was the largest and most influential urban settlement in Mississippian culture. Many earthen mounds were built by those people in and around Cahokia, including some in the Wood River watershed.

Fourteen (14) mound sites have been identified in this watershed. They are all located in the southern portion in Madison County. These mound sites primarily exist where the West Fork and East Fork of Wood River converge, but several also occur along the East Fork north of I-255.

Once dominated by open oak-hickory forest with upland prairies, bison, woodcocks, elk, and bears were prevalent wildlife in the watershed before colonial settlement.

Much of the forest land was timbered and nearly all of the prairie was converted to agriculture and pasture land. What remains are remnants of woodlands along streams and ponds and small remnants of prairies. While much has changed about the Mississippi and Wood River channels, the mouth of the Wood River along the Mississippi River was the site of the Lewis & Clark Expedition's Camp Dubois, where they spent five months directing operations and collecting supplies. The land was later valued for its coal deposits and many areas were mined.

In 1892, Franklin Olin settled in this watershed and started the Olin's Equitable Powder Company, which produced explosives for this area's coal mines and limestone quarries. Soon after, the Olin family expanded this industry to supply ammunition to the World War I effort, and eventually ammunition to World War II. Clearly, this watershed has a long history of innovative American industry and exploration that continues to this day.

ADDITIONAL FEATURES OF THE WATERSHED INCLUDE:

- 35% of the watershed is deciduous forest.
- A total of 6% of the land in the watershed is in a designated floodplain.
- 22% of the watershed is developed.
- Only 1.5% of the watershed is woody wetland.

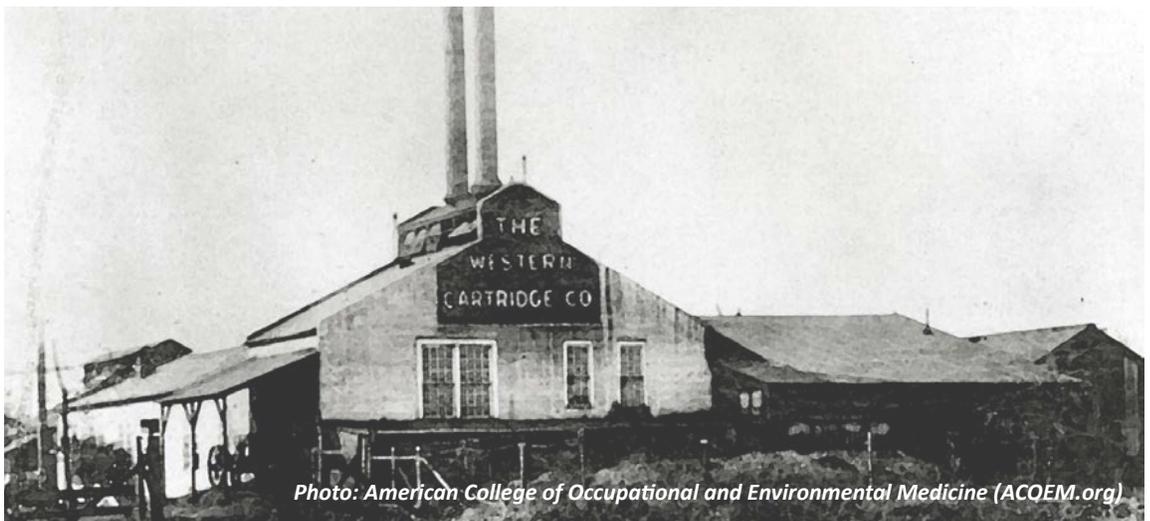


Photo: American College of Occupational and Environmental Medicine (ACOEM.org)



White Tail Deer

WHAT ARE SOME OF THE CAUSES OF WATER POLLUTION IN THE WOOD RIVER WATERSHED?

- *Soil erosion contributes nearly 82,000 tons of sediment to streams and waterways.*
- *An estimated 58% of sediment in the watershed comes from streambank erosion (pg. 42)*
- *48% of phosphorus comes from cropland (pg. 43)*
- *East Fork Wood River, West Fork Wood River, and Wood River all have low levels of dissolved oxygen, which is bad for fish and other water dwellers (pg. 44).*
- *Fecal coliform is the main pollutant in Wood River Creek caused by failed and poor maintenance of private sewage systems, waste from livestock on farms, and infiltration into/out of aging pipes (pg. 43).*

Information in the Wood River Watershed Plan are on page 42 and in the pages noted above.

CONDITIONS

More than 45,950 residents live in the Wood River watershed. Today, 42% of the land is used for farming, most of which is row-crop agriculture. There are five municipalities, twelve townships, three counties, and one levee district located within the watershed. Changes to the waterways and the landscape have contributed to declining surface water quality and flooding issues.

Abandoned mines, both surface and underground, may threaten water quality and land use within this watershed. There are 70 mines in Jersey County, 88 mines in Macoupin County, and several in Madison County, many of which reside in this watershed. Underground mines have caused subsidence, which is the sinking of the Earth's surface, making them potentially dangerous. While many abandoned mines pose limited environmental risks in this watershed, they may still present problems in the future if land restoration does not occur.

The amount of both developed land, such as subdivisions and shopping areas, and farmland has increased over the past 20 years by 7%. Developed land, and its impervious surfaces (e.g., asphalt, roofs) is expected to continue to increase over the next 20 years. As a result, farmland and forests will decrease and the land available to absorb rainwater will also decrease. Low-impact development practices (e.g., conserving open spaces and floodplains in development) and land restoration (i.e. pervious pavement, rain gardens, stream restoration, and drainage basins) will be required to filter pollutants from the water, reduce erosion, and manage flooding. The economic success of this region is highly dependent on the land, and that success can only continue with healthy lands and waters.



Character Image of Development

COSTS OF FLOODING

Many issues exist in the Wood River watershed that harm the future vitality of its ecosystem, water quality, and quality of life.

FLOODING AND STREAMFLOW

Rain makes stormwater, which flows into streams and sometimes causes flooding. Floods can be both positive and negative.

While general flooding inside floodplains helps recharge aquifers (underground sources of water), revegetate the land, and clear natural debris (all positive events), when development occurs inside the floodplain, flooding worsens downstream and outside the floodplain, causing further damage.

A flash flood is a rapid rise of water along a stream or low-lying area, usually occurring with heavy rainfall over a short period of time. Flash flooding is the most dangerous type of flooding because of the high potential to cause damage. Besides “flash” rainfall events, pipes and other stormwater infrastructure are often too small for the size of the watershed’s storms. Maintenance has not kept up with needs.

Flooding and water pollution can have significant impacts on the watershed’s residents.

Flooding has also caused stress, loss of property access, lost business income, crop damage, and expensive replacement costs of buildings.

Flooding can cause pollution to migrate throughout the watershed. Water pollution in streams, rivers, and ponds can pose health risks, such as skin rashes, pinkeye, respiratory infections, and hepatitis. Pollution can make fish unsafe to eat and rivers unpassable for barges and shipping.

In 2019, a community Flood Survey was conducted in the Wood River watershed and found:

- 23% of respondents experienced flooding in the past 10 years.
- Respondents reported 69 floods/year outside federally designated floodplains.
- Flooding caused \$12.8 million in damages over the last 10-year time span.

More information in the watershed plan (pg. 44-45), Appendix B, pages 25-26.



Fantailed Darter

WATER QUALITY

Clean drinking water is the primary concern with water quality. Humans and animals need clean water to survive but the water in the Wood River watershed is being negatively affected by several pollutants. Large amounts of fecal coliform, or bacteria found in human and animal feces is found in large amounts in the water, particularly Wood River creek. High fecal coliform levels creates unsafe drinking water conditions for residents.

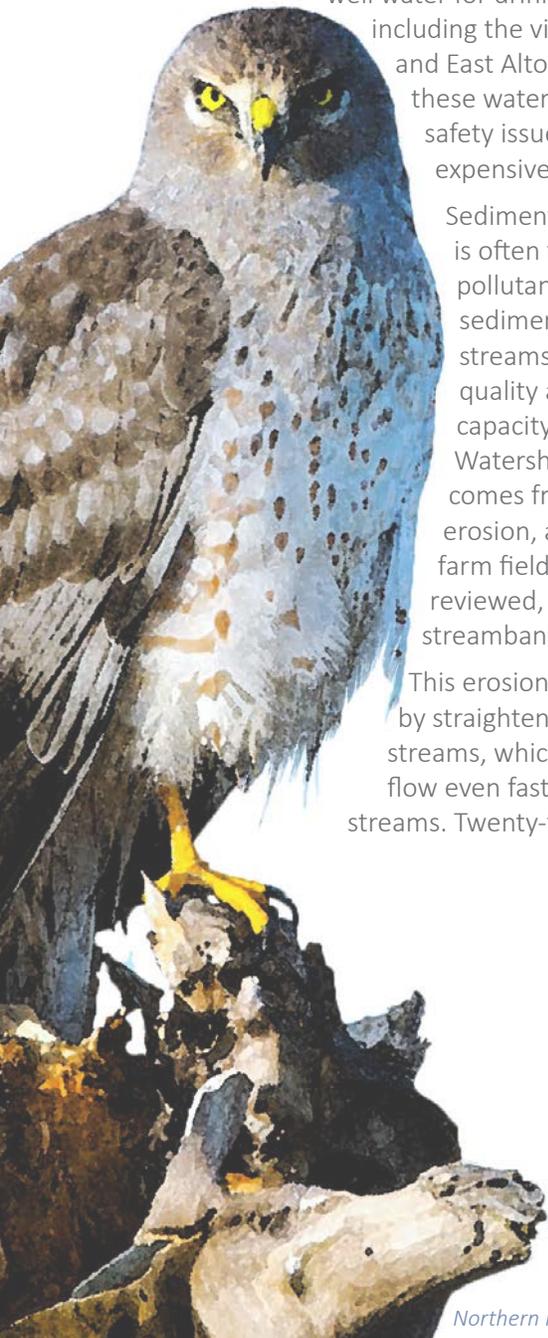
In the watershed, many people and communities use well water for drinking water supply, including the villages of Bethalto and East Alton. Contamination of these water sources is a life-safety issue and can be very expensive to fix.

Sediment from soil erosion is often forgotten as a pollutant. Too much sediment in lakes and streams causes poor water quality and reduced storage capacity. In the Wood River Watershed, sediment mainly comes from streambank erosion, as well as gullies and farm fields. Of the streams reviewed, 56% have severe streambank erosion.

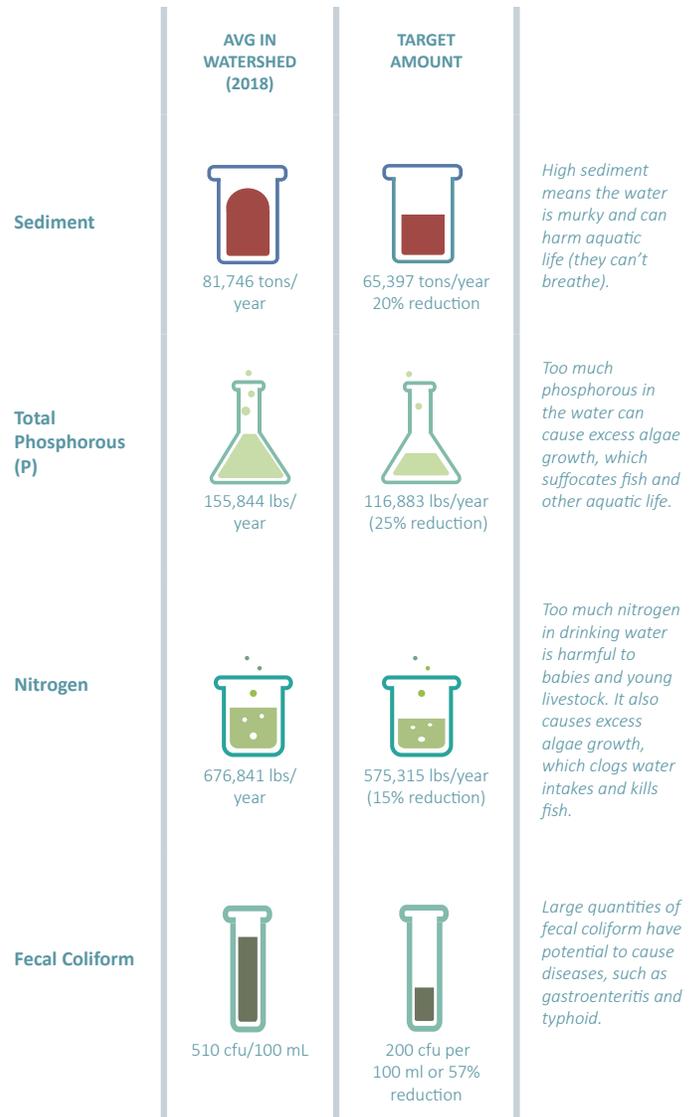
This erosion is made worse by straightened (channelized) streams, which cause water to flow even faster and erode the streams. Twenty-three percent of

assessed streams are highly channelized in the Wood River watershed. Fallen trees in the streams, or logjams, can cause additional erosion problems by forcefully pushing the water into the streambanks. Lakes with too much sediment are shallow, reducing the amount of storage capacity, but too much sediment can also damage the lake shoreline and dam. Briarwood Lake's dam, for example, is close to failure as a result of too much sediment in the lake causing erosion of the dam.

Sediment from soil erosion also carries phosphorus and nitrogen, two main parts of fertilizers, with it into streams and lakes. In large amounts, these two elements can cause algae to grow in excess on the surface of lakes and streams. This algae can be harmful to humans and pets and also reduces the oxygen level in the water resulting in fish die-offs.



Northern Harrier



RIPARIAN CONDITION

Just as water is essential for wildlife, many plants grow only in areas with more water, such as wetlands and riparian areas (the land area on either side of a stream or lake).

Healthy riparian areas are important because they:

- Slow flooding;
- Filter pollutants out of water;
- Reduce erosion along streambanks;
- Provide habitat for wildlife like birds, mammals, amphibians, reptiles, and fish; and
- Offer recreation and scenic beauty, providing health and wellness for people.

Today, 11% of the watershed's riparian areas are in poor condition, while 57% are in fair condition and may be at risk of future degradation. Invasive species, such as bush honeysuckle, have degraded riparian areas. In other cases, riparian areas have been cleared to create more cropland.

Riparian condition is discussed on page 88 of Appendix A, pg. 48 of the watershed plan.

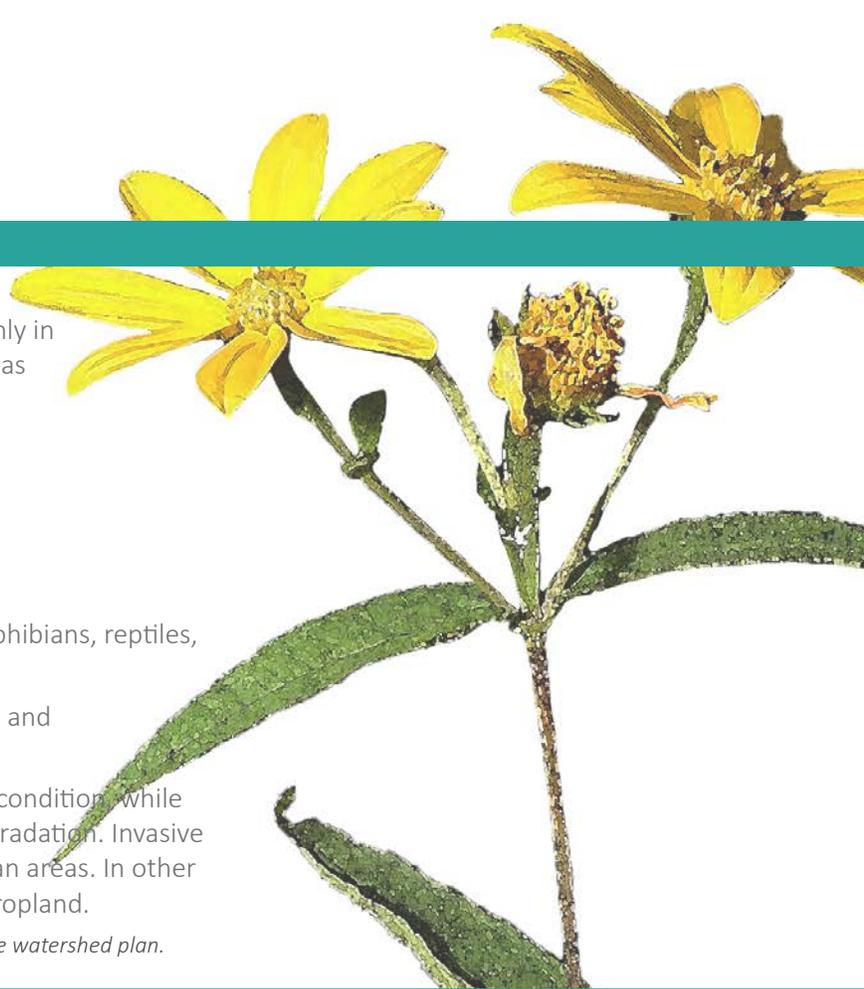
WILDLIFE

Wildlife can be a good indicator of stream health because it reflects the conditions of multiple factors in the environment (see Appendix A pg. 65). The following are just some of the critical and characteristic species in the watershed:

- Franklin's Ground Squirrel
- Monkeyface Mussel
- Indiana Bat (Federally endangered)
- Freckled madtom (fish)
- Northern Harrier
- Barn Owl
- Bald Eagle
- Ornate Box Turtle (State-Threatened)
- Pileated Woodpecker
- Fantailed Darter
- Painted Lady Butterfly
- Woodland Sunflower
- White Tailed Deer

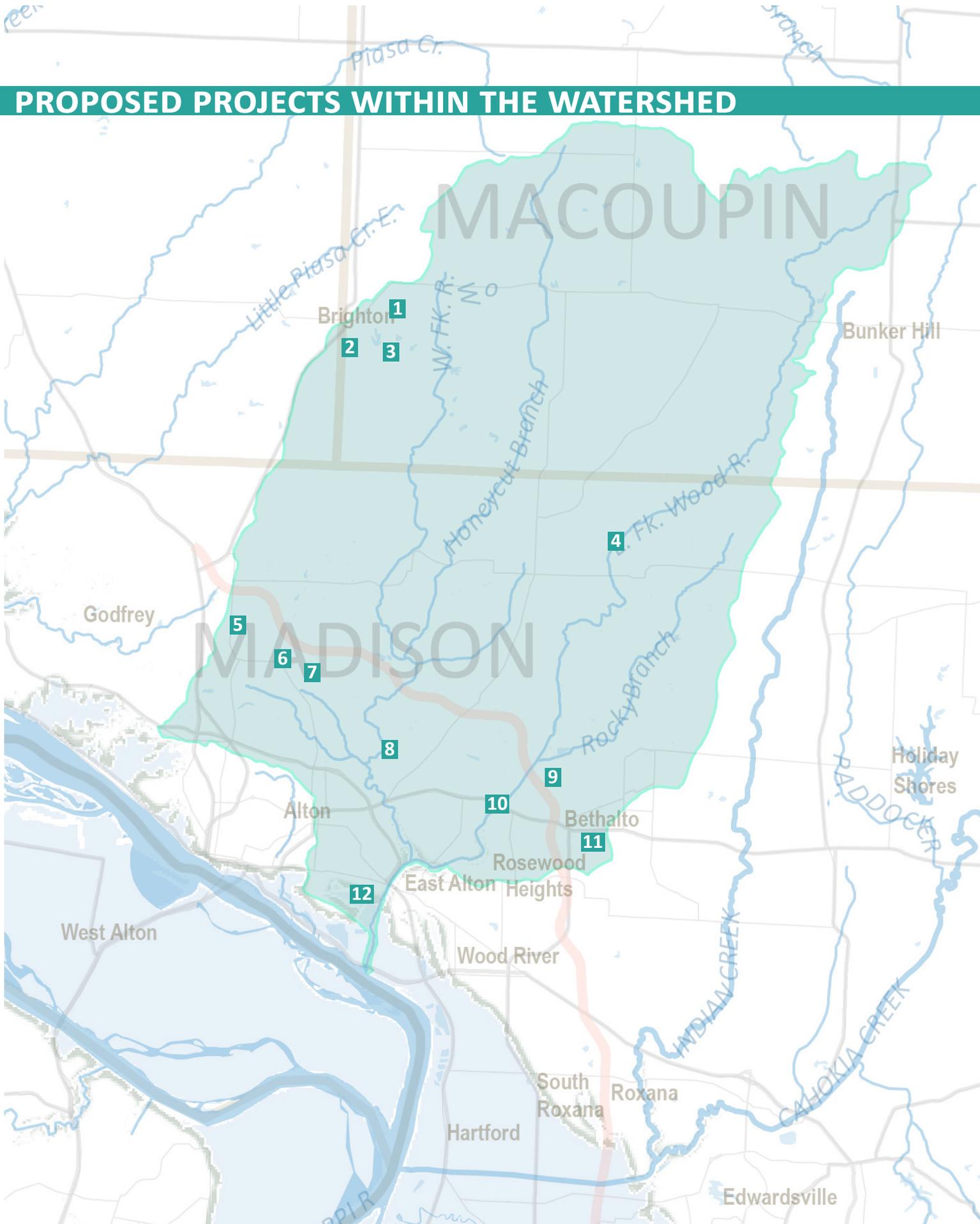
Invasive species, such as bush honeysuckle and wintercreeper, are threats to natural areas and riparian areas because they crowd out native plants and trees that protect streambanks from erosion.

See page 48 of the watershed plan for more information about wildlife habitat issues and invasive species.



Ground Squirrel & Woodland Sunflower

PROPOSED PROJECTS WITHIN THE WATERSHED



PROJECT IDENTIFICATION

Twelve specific project locations were identified in the watershed. These projects address life safety issues and multiple goals of the plan by implementing a variety of Best Management Practices.

Jurisdictions and watershed groups can use this short list to help communities and landowners in the watershed address needs identified in the stakeholder engagement process.

SPECIFIC PROJECT LOCATIONS

Specific project locations are only the sites of potential projects. Projects suggested are voluntary, not mandatory, and each one warrants further outreach and assessment. Individual landowners with a stake in the projects may not have been consulted. The sites identified are for outreach purposes only and serve as a place to begin plan implementation.

- [1] Countryview Lake Drive Flooding (Brighton)**
- [2] Village of Brighton Flooding**
- [3] Briarwood Lake Dam (Brighton)**
- [4] Honeycut Branch | East Fork Wood River Erosion (Foster Township)**
- [5] Pearl | Isabel | Gladys Street Flooding and Sanitary Sewer Overflow (Godfrey)**
- [6] Humbert and Wick-Mor Road Flooding (Godfrey)**
- [7] Savannah Trace Subdivision (Godfrey)**
- [8] Harris Land and Woods Station Road Flooding (Alton)**
- [9] Bethalto Sports Complex Flooding**
- [10] Erosion and Flooding at Route 111 (Cottage Hills)**
- [11] St. Louis Regional Airport | Stuart Road Flooding (Bethalto)**
- [12] Chessen Lane Flooding (Alton)**

LIST OF SPECIFIC PROJECT LOCATIONS

HOW CAN YOU GET INVOLVED?

The cumulative actions of individuals and communities across the watershed can make a big difference in the health of people, wildlife, and the environment.

If you would like to help promote healthy water quality and reduce flooding in the watershed, there are several ways to get involved.

If you are a landowner, farmer, or land manager, you can make planting decisions that improve soil health and water quality. The Madison County Soil and Water Conservation District (SWCD) can provide assistance on topics including fertilizers, tillage, seed mixes, cover crops, crop rotation, woodland improvement, erosion control, and more. Find out more by contacting madisoncoswcd@gmail.com or calling 618-656-7300 ext. 3.

If you are a homeowner, you can contact HeartLands Conservancy about the Conservation@Home program, which offers guidance in designing your yard for wildlife and stormwater management. Find out more at <https://www.heartlandsconservancy.org/conservationhome.php>.

If you live next to a creek, pond, or lake, you can protect the trees that grow on its banks - and plant more! This will prevent soil erosion and make pleasant, shady habitat for aquatic creatures. Find out more at <https://greatriversgreenway.org/design-guidelines/environmental/streambank-planting/>.

If you are interested in learning more about stream health, you can join Illinois RiverWatch to volunteer to assess stream health using citizen science. This program, locally based out of the National Great Rivers Research and Education Center (NGREC) in East Alton, trains people to measure flow and collect aquatic insects in their neighborhood streams, and then interpret the results to find out how healthy the stream is. Find out more at <http://www.ngrrec.org/Riverwatch/>.

1 Countryview Lake Drive Flooding (Brighton)

Description of Problem: Heavy rainfall causes water to run off from a farm field north of the subdivision, flooding streets and yards on Countryview Lake Drive. The runoff has also caused severe erosion.

Possible Solution: A partnership should be formed with the farmer and subdivision to construct basins, grassed waterways, and swales to slow water runoff, reduce erosion, and direct the water to a creek to the east of the subdivision.

2 Village of Brighton Flooding

Description of Problem: There are two areas of flooding issues near Rte. 111, which runs through the heart of Brighton, IL. One area is near the Casey's General Store on the east side of Rte. 111. Ditches running parallel to the road frequently overflow causing water to pond in the road right of way.

The other area of concern is near Belvedere Circle on the west side of Rte. 111. Stormwater runoff from the farm fields to the north and west flow to a recently rocked ditch that borders Belvedere Circle. The increased rainfall causes the ditch to overflow, flooding yards and roads.

Possible Solution: Stormwater culverts and pipes along Rte. 111 need to be improved to move water away from the highway. Basins and swales could be constructed to capture and release stormwater at a slower rate. Partner with farmers on water and sediment control basins and grassed waterways to help slow water coming from their fields. Drainage ditches should be widened and revegetated.

3 Briarwood Lake Dam (Brighton)

Description of Problem: Briarwood Lake is a privately owned lake that is close to failure due to erosion. The lake has been filling with sediment, causing decreased water storage and increased erosion of the banks, dam, and spillway.

Possible Solution: Rock (riprap) needs to be installed on the dam, shoreline, and on the emergency spillway. Planting local grasses with deep roots will help reduce gullies. Install swales and basins at the inlet of the lake to capture runoff. Restore the upstream streambanks to prevent bank erosion from entering the lake. Dredging the lake sediment may be required to prevent failure.

4 Honeycut Branch | East Fork Wood River Erosion (Foster Township)

Description of Problem: Honeycut Branch and East Fork Wood River near Fosterburg are experiencing severe streambank and channel erosion caused by faster water flows and decreased riparian zone.

Possible Solution: The riparian zone on both sides of the streams should be widened with local plants, like oaks and hickories. The critical wetland area needs to be created and restored to capture and slow runoff. The banks of the streams should be reshaped to a less steep slope and protected with riprap and local plants.

5 Pearl | Isabel | Gladys Streets Flooding and Sanitary Sewer Overflow (Godfrey)

Description of Problem: Stormwater runoff from a farm field causes frequent flooding of Pearl, Isabel, and Gladys Streets. The flood water has also damaged cars, garages, and basements. The stormwater and sewer pipes in this area have been listed as having frequent overflow issues by the United States Environmental Protection Agency (USEPA).

Possible Solution: All stormwater and sewer pipes should be replaced to meet demands and prevent any sewer overflow. A water detention basin, or an appropriately sized pond to capture the runoff from the field could be constructed near the edge of the farm field. The water could also be routed to the south to avoid the subdivision area and allowed to flow to the street drainage ditches.

6 Humbert and Wick-Mor Road Flooding (Godfrey)

Description of Problem: At the intersection of Humbert Road and Wick-Mor Drive, stormwater is causing flooding of the road and blocking access to homes in the Wick-Mor subdivision, which only has one point of entry and exit. Stormwater flows through the backyards of several houses and connects with Black Creek.

Possible Solution: Install a larger culvert under Wick-Mor Drive, as well as vegetated swales and detention ponds upstream of the problem area to slow the release of stormwater. Install rain barrels and rain gardens to reduce the peak flows of higher rain events.

7 Savannah Trace Subdivision (Godfrey)

Description of Problem: The Savannah Trace Subdivision experiences flooding that has overtopped the road and entered the basement of some homes. During flooding, water is unable to drain into an unnamed creek and Black Creek, causing backups.

Possible Solution: Improve or increase the size of stormwater pipes and culverts in the subdivision. Install swales and detention ponds upstream to slow the stormwater. Install rain barrels and rain gardens to reduce runoff.

LIST OF SPECIFIC PROJECT LOCATIONS

8 Harris Land and Woods Station Road Flooding (Alton)

Description of Problem: At the junction of West Fork Wood River and two other streams, flooding occurs that overtops Harris Lane and Woods Station Road. The streams also have severe erosion.

Possible Solution: Harris Lane and Woods Station Road need to be raised to above the natural floodplain. The banks of the streams should be sloped and planted with local plants, and all critical wetland areas should be restored. Farmers should be encouraged to practice no-till planting and cover crops to help slow runoff.

9 Bethalto Sports Complex Flooding

Description of Problem: The Bethalto Sports Complex and Steve Bryant Community Park are located where East Fork Wood River and Rocky Branch meet and flood often.

Possible Solution: The critical wetland areas upstream need to be restored to capture runoff. The bridge downstream needs to be cleared of all logjams to prevent backups. Since the parks are in the floodplain, meanders should be restored in the streams upstream to create natural flooding areas away from the parks.

10 Erosion and Flooding at Route 111 (Cottage Hills)

Description of Problem: The straightened East Fork Wood River flows under Rte. 111 and the bridge is causing a pinch point in the stream. This has caused severe erosion of the streambank and flooding.

Possible Solution: The logjams need to be removed and kept clear to prevent backups. The critical stream reach areas need to be meandered and banks planted with the local plants to reconnect the stream to its natural flooding area.

11 St. Louis Regional Airport drains towards the Village of Bethalto

Description of Problem: Water runoff from the St. Louis Regional Airport drains through surrounding neighborhoods contributing to flooding. Residents had to be rescued from flood waters on Virginia and Stuart St.

Possible Solution: Dry basins and underground detention should be installed to capture runoff. Where allowed, grass near the airport should be replaced with local, deep-rooted plants to slow runoff.

12 Chessen Lane Flooding (Alton)

Description of Problem: The intersection of Chessen Lane and Vinegar Works Rd. floods multiple times per year. The flood water prevents traffic from entering this industrial area.

Possible Solution: Construct detention ponds and basins to capture the runoff from the impervious surfaces. Improve stormwater infrastructure to convey water away from the roads and allow for safe passing during heavy rainfall.



Ornate Box Turtle (State-Threatened)



White Tail Deer

BEST MANAGEMENT PRACTICES



PREVENTIVE & POLICY-BASED ACTIONS: COMMUNITIES, COUNTIES, TOWNSHIPS, UNITS OF GOVERNMENT

There are many ways for the community and residents to improve water quality and reduce flood impacts in the Wood River Creek Watershed. This list is a sample of possible actions and not a comprehensive list.

For more detailed information and resources, see the Wood River Creek Watershed Plan.

PROTECTION, RESTORATION, AND MANAGEMENT OF NATURAL AREAS

Conserving, restoring, and managing open spaces, particularly natural areas, is a particularly useful way to reduce negative impacts to water quality and flooding. Communities and counties can protect steep slopes, wetlands, and riparian areas through their comprehensive plans, ordinances, and subdivision regulations. In addition, natural areas often provide excellent public recreation areas for hiking, walking, wildlife observation, biking, and paddling.

STORMWATER INFRASTRUCTURE

Stormwater infrastructure does not typically have a dedicated source of funding like sewer or water infrastructure. Possible solutions for financing stormwater infrastructure (including green infrastructure) and management include a stormwater utility, property or sales taxes, special assessment districts, municipal bonds and state grants, and low interest loans through the state revolving fund.

Likewise, storm drains require regular maintenance and cleaning to prevent clogging and backflow.

NATURAL RESOURCE CONSERVATION POLICIES, SUCH AS RIPARIAN AREA (STREAMSIDE) VEGETATION POLICIES

A riparian buffer is an undisturbed, naturally vegetated strip of land adjacent to a body of water (typically a stream). Among their many benefits, riparian buffers improve water quality, reduce erosion, store floodwater, and provide habitat for wildlife. A riparian buffer ordinance protects a riparian area from clearcutting, new development, and other disturbances and promotes planting new native plants and trees.

HeartLands Conservancy has developed a model riparian buffer ordinance that communities can adopt. Email info@heartlandsconservancy.org for information.

BEST MANAGEMENT PRACTICES



ON-THE-GROUND ACTIONS FOR RESIDENTS, HOMEOWNERS, FARMERS, & LANDOWNERS

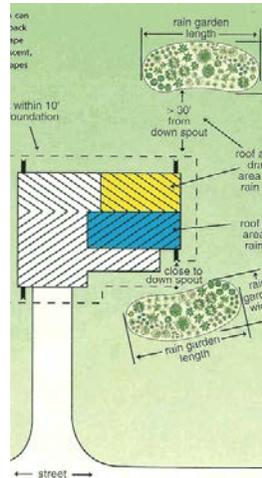
Further resources can be found in the Wood River Creek Watershed Plan.

NUTRIENT MANAGEMENT PLANS
Farmers use Nutrient Management Plans to address manure disposal and manage fertilizer. The goal is to supply plants with the ideal amount of nutrients, minimize runoff, and improve soil condition.

COVER CROPS
A cover crop is a plant that is used primarily to slow erosion, improve soil health, smother weeds, control pests and diseases, increase biodiversity, and add other benefits on a farm or large garden. In many research studies, corn yields were between 3 and 10 % higher after cover crops were planted.

CONSERVATION TILLAGE
Conservation tillage is a soil management technique that leaves at least 30% of the soil surface covered by residue after planting. This planting method increases water infiltration thanks to a more stable soil structure.

GRASSED WATERWAYS
Grassed waterways are broad, shallow, shaped channels designed to carry rainwater across farmland without causing soil erosion. The grass cover and root system in the waterway slows the water flow and protects the channel from eroding.



ACTIONS FOR COMMUNITIES, SUBDIVISIONS, & BUSINESSES

BIOSWALES & VEGETATIVE SWALES
A bioswale is essentially a ditch or shallow depression designed to remove sediment and pollution from rainwater runoff. The gently sloping trough is filled with native vegetation, providing a path for water to run through slowly rather than rushing into the storm sewer or stream.

The plants and soil in the bioswale slow and clean the water before it enters the stream or ground.

DETENTION BASINS
A detention basin is an excavated area installed near streams to protect neighborhoods and subdivisions against flooding and erosion by storing water and slowly releasing it. They require regular maintenance, which is typically the responsibility of a homeowners association.

SINGLE PROPERTY FLOOD REDUCTION STRATEGIES
Basement flooding is typically caused by improper site grading, sewer backup, and infiltration through basement walls. Possible solutions for homeowners include regrading the site, downspout disconnection, incorporating rain gardens, and reducing impervious pavement in the yard.

STREET TREES
Street trees are trees planted in the public right-of-way, typically the area between the street and sidewalk or house. Street trees capture and filter rainwater, reduce air pollution, and increase property values.



ACTIONS FOR FORESTS

WATER AND SEDIMENT CONTROL BASINS (WASCOB)

WASCOBs are earthen basins constructed to trap sediment and water. The basins help prevent sediment from reaching streams and reduce gully erosion.

SEPTIC SYSTEM MAINTENANCE

Failing septic systems are expensive to replace or repair, and improper maintenance is the most common cause of system failure. When septic systems fail, untreated waste is released posing risk to the community's health and contaminating water wells.

TIMBER STAND IMPROVEMENT (TSI)

TSI involves periodic cutting in an immature stand of trees to stimulate growth. The best way to determine if a forest is suitable for TSI is to have a professional forester assess the stand. TSI helps native trees thrive and helps absorb stormwater more effectively.

INVASIVE SPECIES REMOVAL

Invasive species are plants or animals that are not native to our area and are likely to cause harm to the environment and the economy. Invasive species are one of the greatest threats to natural resources in Illinois. When invasive plants choke out the native plants, it can

cause erosion problems due to their shallow roots. Removing invasive plants, and replacing them with native species, can significantly improve environmental health, stormwater retention, and reduce erosion.



ACTIONS FOR STREAMS, PONDS, & LAKES

LOGJAM REMOVAL

Logjams are a natural occurrence, and provide beneficial habitat for fish and wildlife. However, logjams can also have negative consequences; they can increase the impacts of flooding by causing water to back up and over the banks. Logjam removal should only be performed after a thorough inspection.

STREAM/LAKE DREDGING

Periodically, sediment will accumulate in ponds to the point that they become too shallow to effectively capture water. Although sediment must be tested prior to removal, it can usually be disposed of in a landfill or spread on land elsewhere and be reseeded. Occasionally a permit is needed for dredging.

SHORELINE/STREAMBANK STABILIZATION AND CHANNEL RESTORATION

There are several different ways to stabilize eroding streams and shorelines. Some methods include stonetoe protection, two-stage channels, and structures (typically made of rock) that slow the flow of water to prevent further erosion.

PONDS AND WETLANDS

Wetlands are among the most effective ways to remove pollution from stormwater and can also help with flood control. Native plants on the edge of ponds and wetlands help protect against erosion, provide critical habitat, and reduce nuisance animals, such as Canada Geese.

RIPARIAN BUFFERS

Riparian buffers are the undisturbed, native vegetation areas next to a stream. They protect the stream, support wildlife, reduce erosion, provide recreational space, and filter water pollutants.



Madison County Watershed Plans

www.co.madison.il.us/departments/planning_and_development

