

# Hurricane Creek Watershed Implementation Plan

## Recommendations

### Introduction

Several years ago the Hurricane Creek watershed was selected for participation in the Illinois Pilot Watershed Program. Local organizing efforts showed there was interest in improving the natural resources in the watershed and a resource planning committee was formed of landowners and operators within the basin, local representatives of state and federal agencies involved with conservation of natural resources, and coordinators from the Embarras River Management Association and the Embarras River Ecosystem Partnership. A local planning committee (LPC) was formed of landowner representatives from within the watershed; a Technical Advisory Committee (TAC) consisting of state, federal and county professionals, specializing in resource and conservation practices was also formed.

A fundamental objective of the Planning Committee was to develop a Watershed Implementation Plan (WIP) for the natural resources in Hurricane Creek watershed. A basic planning document has been developed by the LPC and will soon be presented to the public for their review and comments. Once the LPC approves the plan, we hope to unite private citizens, public groups and government agencies to address the resource problems related to areas within the watershed. The plan will provide an opportunity to secure funding for implementation of conservation practices in the watershed over the next five years. The amount of funding is contingent on several factors, including state appropriations; the amount of funding could be enhanced if combined with other sources.

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#### **Resource Concerns developed by local landowners/operators (rank ordered):**

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| 1. Flooding                                     | 10. Wildlife Habitat Preservation              |
| 2. Erosion Control (structures)                 | 11. Sediment Deposits                          |
| 3. Log Jams and Obstructions                    | 12. Rural Water Supply and Quality             |
| 4. Scour Erosion                                | 13. Loss of Natural Character                  |
| 5. Streambank Erosion                           | 14. Endangered Species (impacts on projects)   |
| 6. Future Development                           | 15. Drainage                                   |
| 7. Increased Incentives to Retire Marginal Land | 16. Private Property Rights                    |
| 8. Channel Capacity Maintenance                 | 17. Wetlands                                   |
| 9. Water Quality                                | 18. Wildlife (destruction to private property) |
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Members of the various federal, state and county agencies met at a Pilot Watershed Workshop in Springfield, IL. One of the outcomes of the workshop was a list of agency concerns for the Pilot Watersheds. The list of agency concerns follows.

#### **Resource Concerns developed by local agency personnel (unranked):**

- Availability of funding – in general for planning
- Public education about watershed resources
- Public education about agency programs
- Simplify process for landowners to access and participate in agency programs
- Citizen participation in the pilot program, with an opportunity for everyone to have an equal voice in prioritizing how watershed issues will be addressed
- Land use conversions and their destabilizing effect on the watershed
- Current tilling practices and the need to adopt no-till on highly erodible soil types
- The need to identify and prioritize critical watershed areas
- The need for stabilizing critical areas in the watershed ( i.e., eroding stream banks and general landscape)
- Separation of streams from floodplains
- The need to restore the hydrological function of streams
- In-stream nitrate levels and sedimentation, and need to adopt BMP's to reduce these levels
- Loss of grassland/upland habitat
- Address technical needs from forestry perspective; also technical needs for wildlife habitat

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## **Problem Statement**

*Human occupancy of any area causes changes in numerous parts of local ecosystems. These changes result in degradation of natural areas and place stresses on the physical and biological components of the system. We must strive to maintain, as much as we can, the natural characteristics of the watershed, while at the same time, provide for the economic needs and quality-of-life aspirations of residents within the watershed.*

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## **Mission Statement**

*To improve and enhance the watershed, by using Best Management Practices (BMP) to conserve the natural resources and the well-being of the environment, through partnerships, cooperation and education.*

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## **Recommendations**

*Attempt to expand and revise selected voluntary cost-share programs, for more flexibility and technical assistance to aid landowners/operators in establishing and maintaining soil conservation and water quality practices on agricultural and non agricultural lands.*

*Assist landowners in focused problem identification and remediation.*

*All Practices in which cost sharing will be received will be enacted and constructed under direction of properly trained authorities and maintained by best management practices.*

### **Land Use**

1. Update GIS coverage for land use, parcel ID, conservation implementation tracking and scientific monitoring.
2. Use current Digital Ortho Photo Quads for the mapping base.

### **Waterbodies**

1. Intensive surveying of the stream channel should continue.
2. Determine the extent and severity of logjams on Hurricane Creek. Any logjam removal should be accompanied with stream channel protection as needed.
3. Determine the location, extent and conditions of constructed levees along the stream system.
4. All in-stream practices should be investigated to determine feasibility and consequences of the action.

### **Groundwater**

1. Limited groundwater with unknown future contamination possibilities deserves consideration and investigation.

### **Hydrologic Modifications**

1. A survey should examine the extent and effects of hydrologic modifications throughout the watershed

### **Storm water Management**

1. Encourage implementation of practices that will assist in responsible routing of storm water to local tributaries.

### **Drainage**

1. Develop permanent easements for floodplain protection, most notably in lower Hurricane Creek.
2. Reconnect floodplains to the streams by removing or infiltrating constructed levees, or raising water levels using riffle structures.
3. Remove land falling within the floodplains from agricultural production and replace with perennial grasses, trees, and wetlands.

### **Soil Erosion**

1. Concentrate any land treatment alternatives on sloping ground (>5% slope areas) for most effective land treatment application. In other words, the "flat" land doesn't really produce much sediment that reaches the Embarras River.
2. If needed, select a "pilot" subwatershed and concentrate land treatment or structural control efforts here. From this "base" a better estimate as to effectiveness of these controls could be made for the remainder of the entire watershed.

3. Select highly visible or locally “known” eroding sites for demonstration areas, particularly if streambank stabilization is included as part of the project. Easier to “point” at these to show how “effective” local efforts have been.
4. If structural measures are used, remember they generally will “control” the sediment produced from all types of erosion above them in their subwatershed.
5. Streambank stabilization projects “attack” the sediment production problem the most directly, but sometimes cost more per foot for construction.

### **Riparian Corridors**

1. Identify and designate reaches of riparian corridors in need of remediation.
2. Establish corridors of native vegetation at least 100' wide (per streambank) on all perennial stream reaches.

### **Wetlands**

1. Obtain planning assistance from the Soil & Water Conservation District. Seek solutions that address problems and utilize natural solutions, such as riparian reforestation and wetland reconstruction.
2. Leave a buffer zone of uncut timber at least 100 feet wide along streams and wetlands. Supplement this buffer with filter strips.
3. To the maximum extent possible, reserve floodplains for natural flood storage, water quality protection and wildlife (and its major habitat here – bottomland forest).
4. Limit floodplain development to compatible uses such as compatible recreation and forestry. Avoid incompatible uses such as home sites, businesses, flood-sensitive crops, etc.

### **Designated use Support/Impairments**

1. Upland practices such as no-till, application of various government programs, contour farming, terracing, and grassed waterways.
2. Riparian buffer strips. 100% riparian protection is recommended. These areas should be planted with trees or perennial grasses based on historical land cover.
3. In-stream practices such as bank stabilization using willow posts, stream barbs, stone toe protection, and lunker structures. Most importantly, constructed riffles for grade control in areas where down cutting is found.

### **Water Chemistry**

1. Reports indicate total nitrate levels higher than the Embarras River basin-wide mean, thus, nitrate reduction should be recommended.
2. Possible measures may include the upland practices mentioned earlier, livestock exclusion, riparian buffers, and constructed wetlands.
3. These wetlands are constructed at field borders adjacent to the stream.
4. Field tiles are interrupted and redirected into the constructed wetland.
5. Overland flow may also be directed to the constructed wetland.
6. Water from field runoff should be “naturally processed” within the wetland to reduce nutrient levels and allow sediment to settle out before entering the stream.

### **Sediment Chemistry**

1. Conservation farming practices may reduce dieldrin concentrations in stream sediment.
2. Riparian buffers and constructed wetlands may also be of value here.
3. Technical resources that work with sediment chemistry should be consulted for more specific practices.

### **Stream Habitat**

1. Implement BMP's for sediment-reduction practices.
2. Prevent any further channelization and dredging practices in the watershed.
3. Exclude all livestock from riparian areas and the stream.
4. Add grade stabilization (i.e., pool-riffle sequences) where required to reduce streambed degradation.

### **Fish and Macroinvertebrates**

1. Implement sediment-reduction practices .
2. 100% riparian protection.
3. Implement in-stream practices, where needed, for sediment reduction and grade control.
4. 100% livestock exclusion from the streams and riparian zones.

## **Wildlife:      Natural Communities/Wildlife Habitat:**

### **Goals:**

- *Restore natural landscape patterns and processes to non-ag lands, thereby increasing and enhancing native plant communities and improving wildlife habitat quality.*
- *Reduce habitat fragmentation, correct/reverse natural community degradation, control exotic species, and restore fire to fire-dependent communities and habitats.*
- *Encourage enrollment of CRP-eligible land in Hurricane Creek, above the moraine. Work with NRCS/FSA to make this area higher priority for sign-up eligibility. The land eligible will need to be delineated.*
- *Encourage enrollment of CRP-eligible land or use of voluntary conservation easements in bottomlands (below the moraine) for reforestation or grassland establishment where appropriate, based on pre-settlement vegetation.*

### **Woodlands**

1. Avoid converting existing woodland to other habitats.
2. Add any needed habitat features or structures in existing open land.
3. Plan property developments in open areas too, and near existing roads or other disturbances.
4. Leave the largest possible wooded area undisturbed by residences, pets, noise, livestock and roads.
5. Enhance species diversity by planting additional native trees and shrubs.
6. Eliminate mowing in woodlands.
7. Fence selected woods areas from grazing. Eliminate woodland grazing wherever possible.
8. Plan all development in existing openings and where it will least impact existing woodlands.

### **Grasslands**

1. Plant additional permanent, high-quality grassland habitat.
2. Convert existing grasslands (especially fescue) in selected areas to better grasses.
3. Develop additional old field areas.
4. Renovate existing old fields by mowing, tillage or other disturbance.
5. Avoid mowing and disking during nesting season.
6. Mow or till areas needing renovation; disk strips to promote use by quail and other ground-nesting birds.
7. Disk in August or September to avoid nesting wildlife.
8. Create a scheduled rotation for disturbance, leaving some grassland habitat completely undisturbed each year.

### **Fragmentation**

1. Efforts and programs that increase the acreage of permanent natural vegetation and wildlife habitat (e.g. tree plantings) should focus on tracts adjacent to or near existing habitat
2. Attempts should be made to connect nearby areas of vegetation by establishing permanent vegetation connecting them.
3. Efforts should be made to consolidate small plantings into tracts at least 10 acres in size (this can occur across ownership boundaries).
4. Creating habitat areas of 50 acres or more by creating new or adding to existing vegetation should be a high priority for forests and grassland (both native and introduced).
5. Wetlands will also benefit from larger sizes but locating several smaller wetlands within 1/8 – 1/4 of a mile of each other, or existing wetlands, can be beneficial for wetland wildlife and vegetation.
6. River bottom (floodplain) wetlands are particularly valuable and special efforts should be made to restore these valuable habitats.
7. Create 1 area of quality forest wildlife habitat at least 100 acres/year and 1 area of at least 500 acres in watershed.
8. Create 1 area of quality grassland wildlife habitat at least 100 acres/year and 1 area of at least 400 acres in watershed.
9. Encourage thicket, late successional fields on small (<5a) and/or isolated tracts.

### **Degradation**

1. Local DNR staff should assist landowners in identifying management needs, developing a management plan, and providing technical assistance in plan implementation.
2. The DNR EcoTeam should assist landowners in plan execution.
3. Sources of planting stock, some available at no cost through the IDNR, can be made available.
4. Several demonstration sites should be established throughout the watershed, illustrating the types of management that should occur, while assisting local participants in addressing their own areas.
5. Identify and control invasive species on 100 acres of upland oak-hickory woodland per year.

### **Exotic Species Invasion**

1. Initiate an awareness program for the primary exotic species of concern in the watershed, through education of all agency staff and cessation of planting of any of these species.
2. Develop identification guides and control guidelines for landowners, and hold field days to demonstrate the level of problem, plants involved, and control measures.
3. Attempt to implement exotic species control on 100 acres/year in the watershed utilizing IDNR EcoTeam.
4. Continue programs for the conversion of fescue plantings to diverse grass and forb mixtures.
5. Expand programs to include the conversion of autumn olive or honeysuckle-infested fields and forest to native shrub and tree species.
6. Attempt to provide 5 demonstration areas for exotic species control projects/year.
7. Attempt to convert 50 acres/year of fescue to native prairie or tame cool season grass/legumes.

### **Lack of Fire**

1. Train all agency staff and interested landowners in prescribed burning.
2. Develop a watershed level "cache" of tools to assist with prescribed burning in the Pilot area.
3. Train a "hot shot" crew that could conduct prescribed burns in the watershed with the assistance of the landowner. (Perhaps the local fire protection district staff can be enlisted for assistance).
4. Local DNR staff can assist with the technical details of burning in the watershed (timing, season, frequency) since some of these will vary based on several factors.
5. After suitable training, county level agency staff should be able to assist with this as well.
6. Initiate periodic prescribed burning on 50 acres of grasslands and 50 acres of oak-hickory woodland/year.

### **Threatened & endangered species**

1. Surveys for these species should be conducted in all suitable habitats in the watershed. This work can be carried out in a manner similar to the fish and aquatic insect surveys funded through the IDNR and performed by the Illinois Natural History Survey.
2. Management recommendations, based on the results of these surveys, should emphasize protection of existing populations and habitat creation and enhancement in adjacent or nearby areas.
3. Plans should be developed, by the Natural Heritage staff with input from other interested parties.

### **Natural Heritage Resources**

1. As the last example of its type in the entire area, Sargent's Woods is protected through a lasting conservation agreement. A vegetation survey should be performed and, based on this information, a management plan developed and implemented.
2. Two geological natural areas would benefit from protection efforts and increased educational or interpretive uses.

### **Socio-Economic/Human Resources**

It would benefit the watershed and the Pilot Watershed Program if a social profile were collected, using those people whom either own land, reside in the watershed or work the ground in the watershed.

## **Goals and Objectives of the WIP**

Through implementation of the plan, we hope to improve conditions of the watershed in the following areas.

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| <ol style="list-style-type: none"> <li>1) <b>Flooding</b></li> <li>2) <b>Erosion Control</b></li> <li>3) <b>Water Quality and Water Courses</b></li> <li>4) <b>Best Management Practices</b></li> </ol> | <ol style="list-style-type: none"> <li>5) <b>Wildlife Habitat</b></li> <li>6) <b>General Health of the Environment</b></li> <li>7) <b>Economics</b></li> </ol> |
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**If you have any comments or questions about the recommendations or the plan, please contact Mr. Robert Catey, Chair of the Local Planning Committee, at (217) 923-5459.**