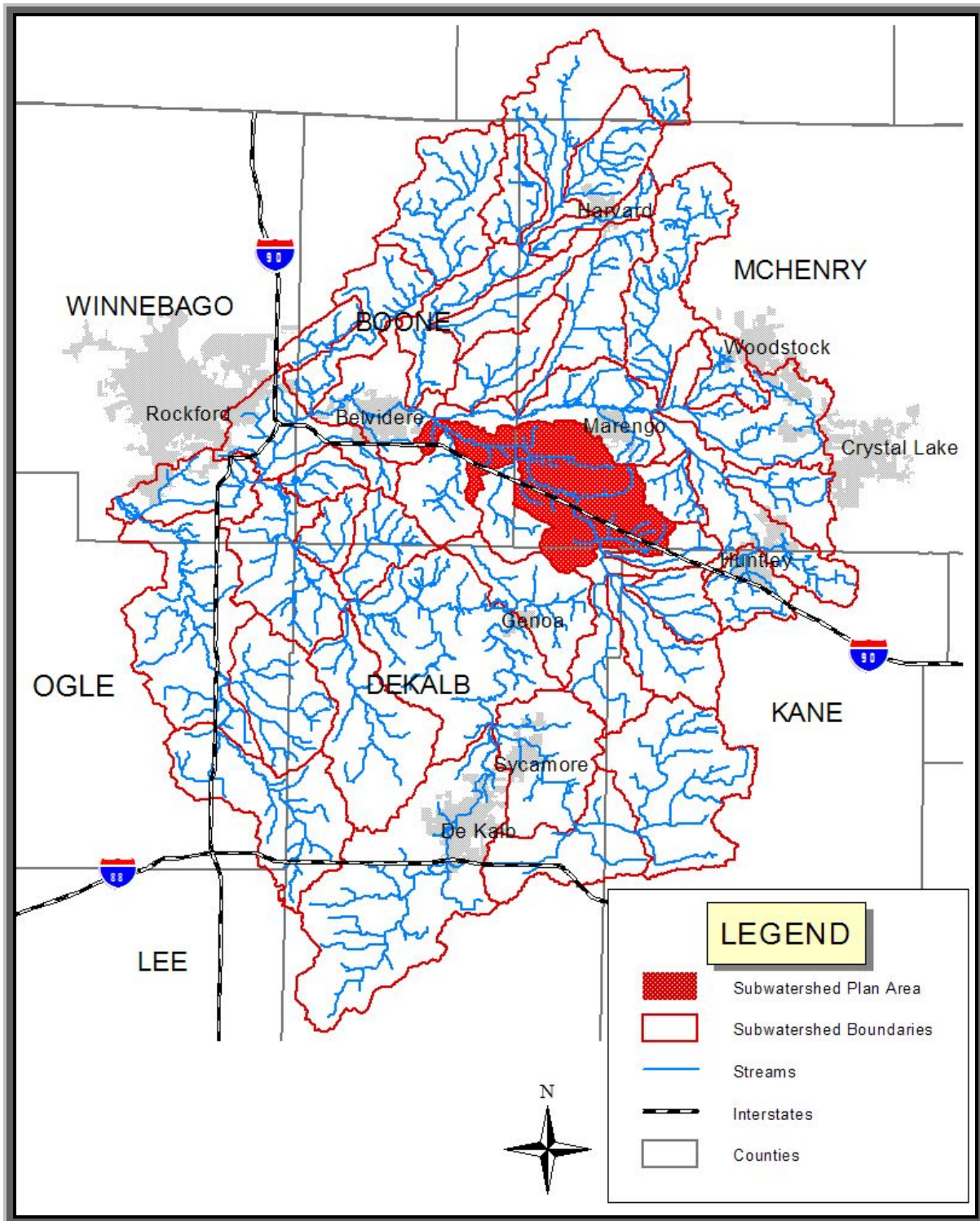


# LOWER COON CREEK SUBWATERSHED PLAN



May 2005

PREPARED BY THE  
KISHWAUKEE RIVER ECOSYSTEM PARTNERSHIP

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## Introduction

This report is intended to serve as an interim report of existing natural resource conditions and concerns within the **Lower Coon Creek** subwatershed. It also establishes a framework for identifying strategies and recommendations that should be implemented to protect and enhance those natural resources.

Any protection strategies must be developed and implemented with awareness that agriculture has historically been, and will remain, a dominant land use in the Kishwaukee River Watershed, while at the same time recognizing that the amount of land undergoing urban development is rapidly increasing. In order to develop feasible, cost effective strategies that will be accepted and implemented, it is critical that the concerns and issues affecting all stakeholders in the subwatershed be considered. The recommendations contained in this report are intended to spark interest in watershed protection and promote cooperation amongst stakeholders, whether it is at the federal, state, local, or individual landowner level. Only by working together can we create and implement a plan that will provide a benefit to the entire Kishwaukee River watershed and maintain a high quality of life for those who live, work, or play here.

This natural resource information was obtained from various public sources, as well as from input from those stakeholders participating to date in this planning effort. If during the course of reviewing this information, you should find erroneous or out of date information, please contact the Kishwaukee River Ecosystem Partnership so that the plan can be kept current and relevant. Your local knowledge and participation is key to achieving our goal of protecting the character of the watershed and our way of life.

For more detailed information on the data used to compile this report, please refer to the Kishwaukee River GIS Dataset or website produced by the Kishwaukee River Ecosystem Partnership. <http://krep.bios.niu.edu>



## **Summary of Subwatershed Features:**

### **Location**

The Lower Coon Creek subwatershed drains 56.4 square miles in McHenry and Boone Counties. The stream system generally flows northwest from the McHenry / DeKalb County Line into the Kishwaukee River. It receives flow from the Upper Coon Creek, Harmony Creek, Hampshire Creek, and Burlington Creek subwatershed's.

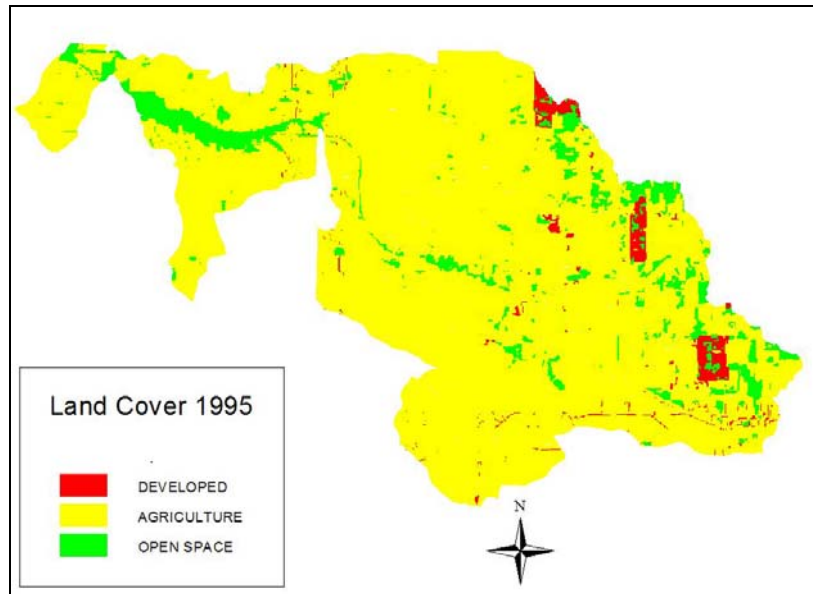
### **Stream and Stream Corridor Characterization**

Lower Coon Creek and its tributaries are characterized as moderate to low gradient, sand and gravel bottom stream channels that were partly channelized (ditched & straightened) in the early 20<sup>th</sup> century. The main stem has retained many of its natural instream features such as pool-riffle sequences. The overbank areas along the main stem are dominated by low-quality forests and grasslands (pastures). There are countless field tile outlets into the main stem stream from the adjacent agricultural fields.

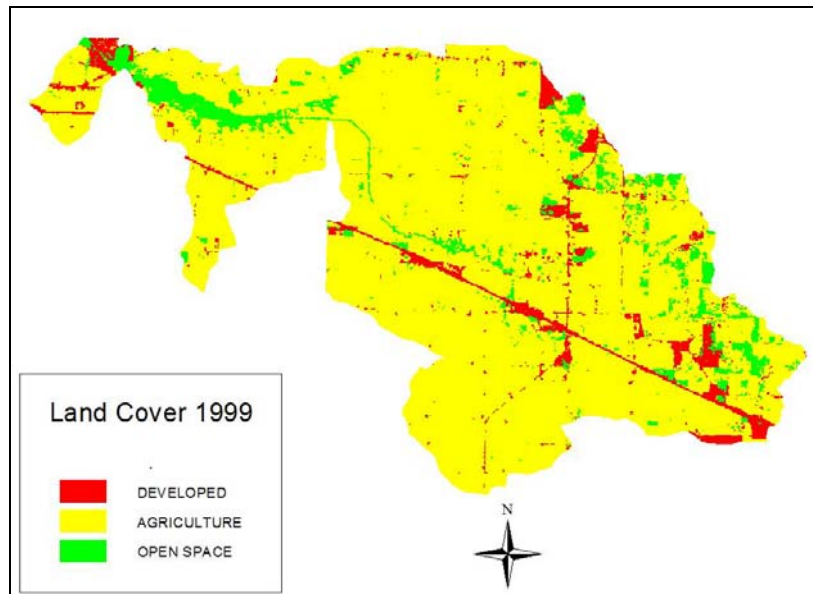
- 72 % of all Lower Coon Creek stream channels are channelized (average of all Kishwaukee subwatershed's is 72%)
- 42% of the main stem of Lower Coon Creek is channelized (low compared to the 59% subwatershed average)

## Land Cover

Below are simplified Land Cover maps for the subwatershed according to the 1995 and 1999 Illinois Department of Natural Resources GIS land cover datasets.



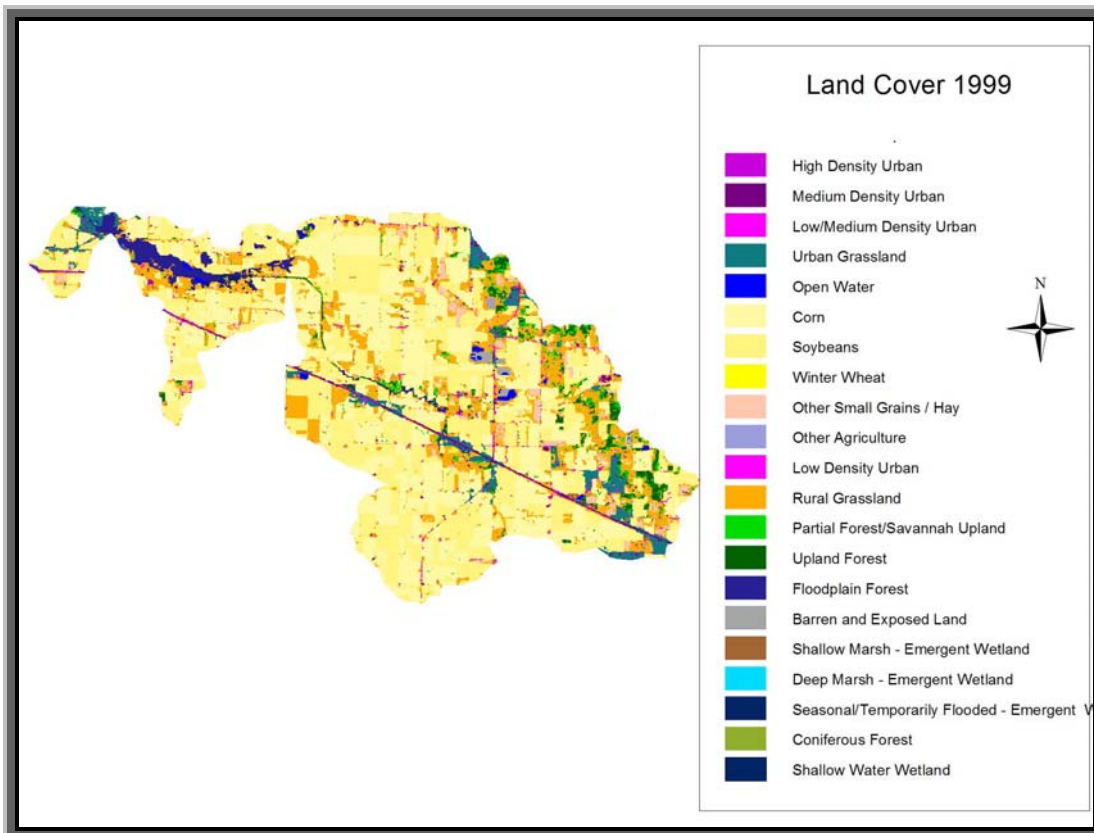
Basic Land Use 1995	Percentage of Subwatershed
Developed Land (urban areas, subdivisions, etc.)	2.3%
Agricultural Land (row crops, pasture, etc.)	89.9%
Open Space (forests, wetlands, etc.)	7.8%



Basic Land Use 1999	Percentage of Subwatershed
Developed Land (urban areas, subdivisions, etc.)	6.1%
Agricultural Land (row crops, pasture, etc.)	86.8%
Open Space (forests, wetlands, etc.)	7.1%

### 1999 Land Cover for the Lower Coon Creek Subwatershed

Land Cover Classification	Area (acres)	Percent
High Density Urban	21.1	0.06%
Medium Density Urban	422.0	1.17%
Low/Medium Density Urban	0.0	0.00%
Urban Grassland	1,178.5	3.26%
Open Water	158.8	0.44%
Corn	12,951.9	35.86%
Soybeans	11,381.5	31.51%
Winter Wheat	17.2	0.05%
Other Small Grains	836.7	2.32%
Double Cropped Wheat/Soy		0.00%
Other Agriculture	24.3	0.07%
Low Density Urban	441.2	1.22%
Rural Grassland	6,138.0	16.99%
Partial Forest/Savanna Upland	579.8	1.61%
Upland Forest	774.6	2.14%
Floodplain Forest	846.3	2.34%
Barren and Exposed Land	136.7	0.38%
Shallow Marsh/Wet Meadow	129.8	0.36%
Deep Marsh	4.0	0.01%
Seasonally/ Temp Flooded Wetland	69.5	0.19%
Coniferous Forest	11.1	0.03%
Shallow Water Wetland	0.0	0.00%
Swamp	0.0	0.00%
<b>TOTAL</b>	<b>36,123</b>	<b>100.00%</b>

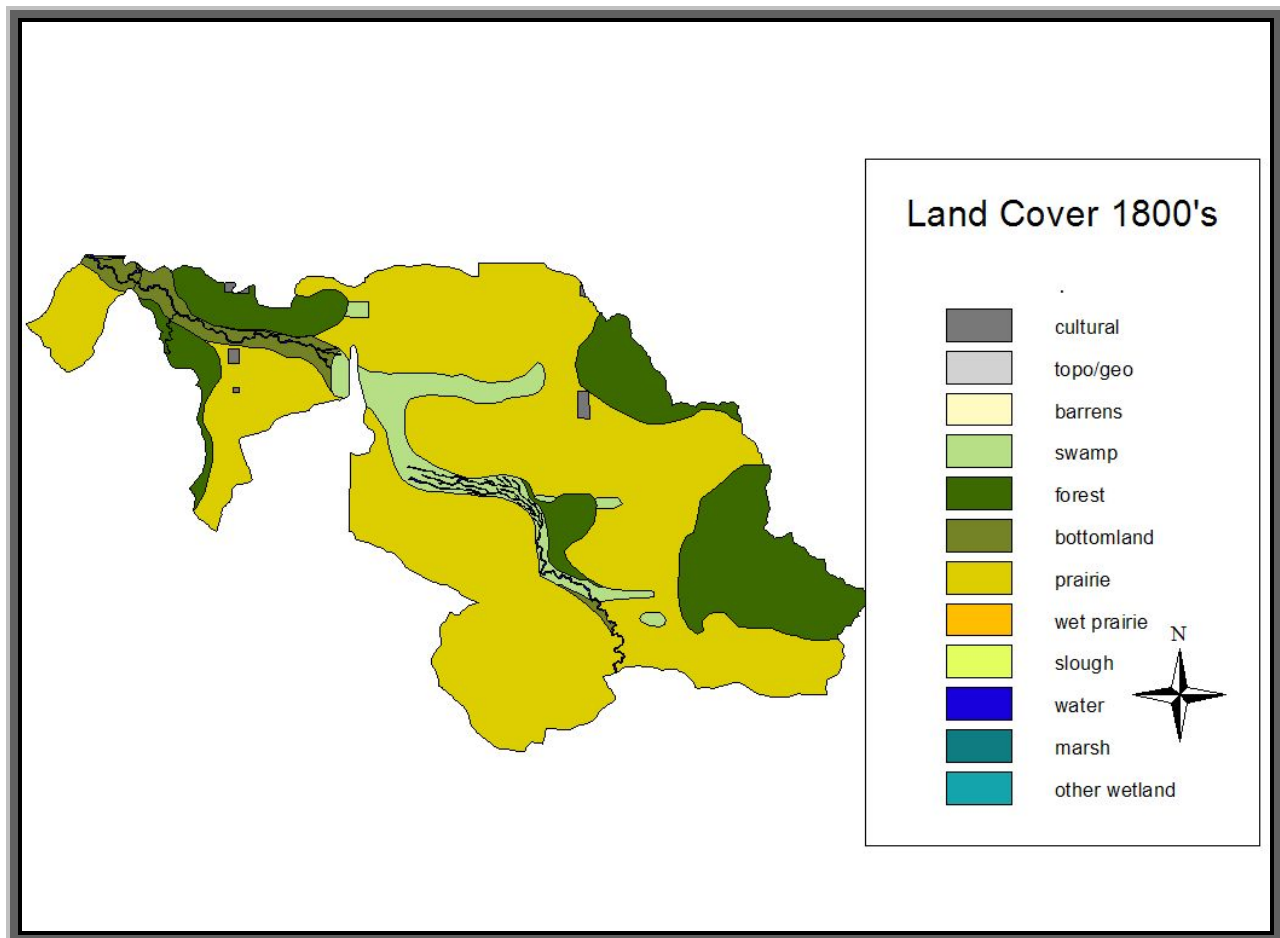


## Historic Land Cover

The following is a tabulation of the estimated land cover for the subwatershed in the 1820's.

Land Cover Type	Acreage	Percentage of Total
Bottomland	1,156.3	3.2%
Prairie	25,020.2	69.3%
Forest / Woodland / Savanna	7,316.2	20.3%
Swamp	2,286.7	6.3%
Water	219.5	0.6%
Developed	124.7	0.3%

Source: IL Dept. of Natural Resources



## Hydric Soils

Hydric soils are thought to underlie a significant portion of the subwatershed. About 30% of the subwatershed soils are likely hydric in nature (based on analysis of NRCS STATSGO data). Even though hydric soils make up about 30% of the subwatershed, wetlands make up less than 3.3% of the subwatershed. Hydric soils are a key indicator to the existence of pre-settlement wetlands.

There are more than 700 acres of hydric soils in the floodplain along the main stem at the McHenry - Boone County line currently drained and used for row crops. There is also a 1,200-acre hydric soil complex being farmed near Route 23 & I-90.

## Wetlands

The National Wetlands Inventory (NWI) has identified 300 existing wetlands in the subwatershed, ranging in size from 0.001 acres to more than 73 acres. NWI wetlands account for 1,177 acres, or about 3.26% of the subwatershed land surface.

<b>NWI Wetlands in the Lower Coon Creek Subwatershed</b>		
Wetland Type	Number of Wetlands	Total Area (Acres)
Bottomland Forest	38	391
Deep Marsh	8	10.0
Shallow Marsh / Wet Meadow	149	483
Open Water Wetlands	81	137.5
Perennial	3	6.5
Unknown	21	150.0
<b>Total</b>	<b>300</b>	<b>1177</b>

Of the 1,177 acres of NWI wetlands in the subwatershed, nearly 700 acres are found within the along the stream in the lower 1/3 of the subwatershed. However, it should be recognized that the NWI maps are only one means of identifying the presence, location and extent of potential wetland areas. The absence of a NWI wetland designation in a given area does not preclude that area from still having wetlands subject to governmental regulations. It should be also noted that the NWI typically under-represent the amount of wetlands present in the northeastern Illinois landscape.



## **Biological Resources of the Lower Coon Creek Subwatershed:**

Other than fisheries data from the Illinois Natural History Survey, KREP was unable to obtain specific documentation on the species of flora and fauna that have been surveyed within the subwatershed. Fish surveys indicate that the fishery is still very good in the subwatershed. One factor which probably contributes to this is good fishery is the lower percentage of channelization (42%) in the main stem, which means there is likely more in-stream natural habitat to support a larger, more diverse fishery.

The McHenry County Conservation District has completed an inventory of breeding birds: reptiles and amphibians; and butterflies within the subwatershed. Information on these databases can be obtained from the MCCD by calling (815) 338-6223.

### **Fish**

In the mid-1980's, the Illinois State Water Survey conducted fishery investigation in Riley Township to help locate sites for Smallmouth Bass habitat improvement / streambank stabilization projects. Due to the presence of a robust Smallmouth Bass population, which numerous age-classes of fish, and many adult bass in the 3 to 5 pound range, no habitat projects were proposed or implemented.

## FISH OF THE LOWER COON CREEK SUBWATERSHED

Total Species of Fish Documented in the Subwatershed: 34  
(12 species not collected in last 30 yrs)

Scientific	Common Name	Year	Pollution Intolerant
<i>Etheostoma zonale</i>	banded darter	1997	YES
<i>Notropis dorsalis</i>	bigmouth shiner	1995	
<i>Pomoxis nigromaculatus</i>	black crappie	1965	
<i>Rhinichthys atratulus</i>	blacknose dace	1995	YES
<i>Notropis heterolepis</i>	blacknose shiner	1965	YES
<i>Percina maculata</i>	blackside darter	1997	
<i>Fundulus notatus</i>	blackstripe topminnow	1995	
<i>Lepomis macrochirus</i>	bluegill	1990	
<i>Pimephales notatus</i>	bluntnose minnow	1997	
<i>Hybognathus hankinsoni</i>	brassy minnow	1965	
<i>Culaea inconstans</i>	brook stickleback	1965	
<i>Umbra limi</i>	central mudminnow	1990	
<i>Campostoma anomalum</i>	central stoneroller	1965	
<i>Luxilus cornutus</i>	common shiner	1995	
<i>Semotilus atromaculatus</i>	creek chub	1990	
<i>Moxostoma erythrurum</i>	golden redhorse	1997	
<i>Lepomis cyanellus</i>	green sunfish	1997	
<i>Nocomis biguttatus</i>	hornyhead chub	1997	
<i>Etheostoma nigrum</i>	johnny darter	1995	
<i>Micropterus salmoides</i>	largemouth bass	1965	
<i>Etheostoma microperca</i>	least darter	1995	YES
<i>Hypentelium nigricans</i>	northern hog sucker	1997	YES
<i>Esox lucius</i>	northern pike	1965	
<i>Carpiodes cyprinus</i>	quillback	1965	
<i>Etheostoma caeruleum</i>	rainbow darter	1965	YES
<i>Notropis rubellus</i>	rosyface shiner	1965	YES
<i>Notropis ludibundus</i>	sand shiner	1995	
<i>Moxostoma macrolepidotum</i>	shorthead redhorse	1997	YES
<i>Moxostoma anisurum</i>	silver redhorse	1997	YES
<i>Micropterus dolomieu</i>	smallmouth bass	1965	YES
<i>Phoxinus erythrogaster</i>	southern redbelly dace	1990	YES
<i>Cyprinella spiloptera</i>	spotfin shiner	1997	YES
<i>Catostomus commersoni</i>	white sucker	1965	
<i>Ameiurus natalis</i>	yellow bullhead	1997	

## Mussels

### MUSSELS OF THE LOWER COON CREEK SUBWATERSHED

Scientific	Common Name	Collection Date
<i>Fusconaia flava</i>	Wabash Pigtoe	1997
<i>Lasmigona complanata</i>	White Heelsplitter	1997

Source: Illinois Natural History Survey

## Birds

No information available except Threatened & Endangered Species data (refer to next section).

## Reptiles / Amphibians

### REPTILES / AMPHIBIANS OF THE LOWER COON CREEK SUBWATERSHED

Scientific Name	Common Name	Collection Date
<i>Chelydra serpentina</i>	snapping turtle	Unknown
<i>Emydoidea blandingii</i>	Blanding's turtle	Unknown

Source: Illinois Natural History Survey

## Threatened & Endangered Species:

There are currently two recorded Federal or State threatened and endangered (T&E) species of plants and animals listed for the subwatershed. However, as additional biotic surveys of the subwatershed are implemented, the potential for undocumented T&E species to be located remains.

### *Reptiles*

Scientific	Common	Status	Source
<i>Emydoidea blandingii</i>	Blandings Turtle	Threatened	INHS

### *Fish*

Scientific	Common	Status	Source	Date
<i>Notropis heteropsis</i>	Blacknose shiner	Endangered	INHS	1965

INH = Illinois Dept. of Natural Heritage  
INHS = Illinois Natural History Survey  
MCCD = McHenry County Conservation District

## Water Quality:

There is not a significant amount of historic water quality data available for the subwatershed. However, the IEPA publishes water quality reports every other year and the latest report was released in 2002. This report provides general water quality ratings that are derived from the IEPA's Intensive Basin Survey (IBS), which is a survey of the watershed done on a five-year cycle. The last IBS completed in the Kishwaukee River Watershed was in 1997. Lower Coon Creek was considered impaired under the IEPA guidelines. Though the creek is considered to be in "full support" of aquatic life, the stream is considered "non-support" for swimming.

Records indicate that there is an Ambient Water Quality Monitoring Network (AWQMN) station in the subwatershed, located on Harmony Road. The following summary data for this station was published in a 1999 report by the IEPA.

Mean Total Phosphorus (mg/l)	Mean Dissolved Phosphorus (mg/L)	Percent Dissolved Phosphorus
0.08	0.04	53.3%

Inorganic Nitrogen (lb/year/acre)	Total Phosphorus (lb/year/acre)	Dissolved Phosphorus (lb/year/acre)	Total Suspended Solids (lb/year/acre)
12.61	0.28	0.17	57.72

The latest 303(d) report, published in 2002, lists both Upper Coon Creek and Lower Coon Creek as being impaired by pathogens in the water. There is no source listed, meaning that the IEPA could not say for certain what was causing the pollution.

Based on the published ratings and results in these published reports, the water quality in Lower Coon Creek is considered marginal.

## Existing Development in the Lower Coon Creek Subwatershed:

### Population Data (2000 Census):

Total Population: 4,577

Population Density: 81 persons per square mile

There are no municipalities within the subwatershed. The closest municipality is Marengo, which is right on the northeast fringe of the subwatershed.

### Miscellaneous Development Data

Development, defined as non-natural, non-agricultural land cover according to the IDNR 1999 Land cover, accounts for only 2,199 acres, or 6.1% of the 36,123 acre subwatershed. There are about 118 miles of paved roads in this small subwatershed, which equates to around 2.1 miles (11,080 feet) of roadway for every square mile of subwatershed. There are about 368 wells recorded within the subwatershed, or 6.5 per square mile, which is normal for an agricultural subwatershed occupied by large farmsteads.

### Point Source Discharges

There are no known permitted point source discharges within the Lower Coon Creek subwatershed.

### Drainage Districts

There is one drainage district that is known to have historically operated in this subwatershed, having channelized areas downstream of Jackson Road. Although inactive for a number of years, the District is moving towards becoming more active, possibly in response to the Crow's Foot initiative that encompasses much of the Drainage District.

## Dams

There are no known dams on perennial streams in the subwatershed, although large debris jams are known to frequently occur along the main stem.

## Development Growth in the Lower Coon Creek Subwatershed:

The population in the Lower Coon Creek subwatershed grew from 3,608 in 1990 to 4,577 in 2000 (U.S. Census Data). This represents a 27% increase in population over the last ten years, which indicates that the population growth is relatively low (average subwatershed growth is 33.5%). The amount of land developed increased by 1,358 acres (161%) between 1995 and 1999. (source: IDNR Land Cover Data, 1995 and 1999). There have been some discussions about a potential interchange constructed at I-90 and Illinois Route 23 which could spark rapid development of the central part of this subwatershed.

There are no municipal treatment plants within the subwatershed and none are likely to be constructed in the future. Wastewater treatment in the subwatershed is composed entirely of septic systems.

## Existing Watershed Restoration and Preservation Efforts:

### Protected Open Space

There are 3 protected open space areas in the subwatershed:

Name	Acres	Owner
Coon Creek (unnamed)	88	IDNR
Sewell Site	201	Boone Co. Conservation Dist.
Kishwaukee River / Coon Creek Macro Site	767	McHenry Co. Conservation Dist.
Coral Woods	51	McHenry Co. Conservation Dist.
WRP parcel (privately owned ,no public access)	160	Federal Easement through Wetland Reserve Program
TOTAL	1267	

There are eight parcels enrolled in the Conservation Reserve Program (CRP), protecting an additional 62 acres in the form of filter strips and hardwood forest.

The total amount of protected open space is 1329 acres, or 3.7% of the subwatershed.

The Boone and McHenry County Conservation Districts are actively working to create a large conservation area(s) along the lower reach of Coon Creek and the Kishwaukee River. This area has also been referred to as the Crows Foot Conservation Area. The Crows Foot is a feasibility study commissioned by the districts to develop a long term vision for the effort to preserve open space and restore elements of the high-quality wetlands that once dominated this part of the subwatershed.

Boone County Conservation District, McHenry County Conservation District, IDNR and the NRCS (through WRP) have protected about 1,267 acres in the lower reach of the subwatershed. This protected open space will increase as funds become available. The Districts have more willing landowners than funds to purchase land.

### **Local Watershed Organizations / Preservation Groups**

- Friends of the Kishwaukee River
- The Concerned Citizens for Coon Creek

There is a group of local landowners, called the Concerned Citizens for Coon Creek, which is actively working in Lower Coon Creek subwatershed to improve the drainage and environmental conditions of the creek.

### **Existing Plans / Strategies to Protect the Watershed**

As part of its initial planning efforts, the Concerned Citizens for Coon Creek in 1999 secured funding to prepare a preliminary watershed Plan for the Coon Creek Watershed. This 24-page document provided a broad overview of the major issues being experienced in the watershed, and identified goals and objectives dealing with

- stream corridor management,
- land use planning,
- stream corridor protection,
- water quality enhancement,
- Best Management Practices, and
- public participation

While this information was presented to landowners and units of government through the Coon Creek Watershed, most of the subsequent activity in watershed planning has been focused in the McHenry County area.

In 2000, the Concerned Citizens for Coon Creek secured funding from the Illinois Department of Natural Resources Conservation 2000 program to have a stream management plan prepared for the McHenry County section of Coon Creek. This plan was developed to educate landowners on appropriate stream corridor management practices, as well as to be the basis for implementing environmentally sensitive debris blockage removal.

In 2002, the Concerned Citizens for Coon Creek secured funding from the McHenry County Community Development Block Grant program to begin debris jam removal from Coon Creek. The work funded under this grant was completed in spring 2003. A new grant request was submitted to McHenry County in the summer of 2003. A major participant in these debris removal projects is the McHenry County Conservation District, which contributed labor and equipment to remove debris along reaches of Coon Creek owned by the District.

## **Natural Resource Concerns:**

Upon inspecting the available watershed data, the Kishwaukee River Ecosystem Partnership has identified the following natural resource concerns:

### **Natural Resource Concerns:**

- Major urban development is being pursued by the Village of Hampshire in watershed areas upstream of this subwatershed.
- Listed on Illinois Environmental Protection Agency 303(d) List for pathogens in the water column.
- Existing water quality data or visual observation suggests streams in the subwatershed are receiving excessive amounts of nutrients (phosphorus in particular). There may be a lack of effective nutrient management plans / over application of fertilizers.
- Most of the subwatershed wetlands have been drained and/or filled in, increasing surface runoff and decreasing infiltration. This has changed both the hydrology and water quality characteristics of the stream system and degrades the ecosystem used by native plants and animals.
- Quality of remaining upland and riparian habitats appears to be in decline.
- No hydric soils data for Boone County portion of subwatershed
- High quality fishery is under threat by agricultural non-point source pollution from within the subwatershed and upstream tributaries, as well as urban non-point source pollution (Hampshire Creek subwatershed) and municipal point source (Hampshire Wastewater Treatment Plant).

## **Recommendations:**

Below are the Kishwaukee River Ecosystem Partnership's recommendations to achieve these goals for the subwatershed. These recommendations are intended to provide the local stakeholders with ideas and strategies that they can implement to preserve, protect and enhance the natural resources.

### **Primary Actions to Needed Protect the Watershed:**

- Assist with the Crows Foot project and restoration of the acquired parcels. Will help establish connectivity of natural areas at the Boone-McHenry County line and the main stem near I-90.
- Where local landowners do not favor acquisition of land by natural resource agencies, promote alternative land management practices and programs to increase wildlife habitat and improve the quality of water leaving private agricultural lands.
- Work with Boone County to update their Comprehensive Plan to expand Environmental Corridors to include all stream corridors, not just those with mapped floodplain. Areas designated as an environmental corridor should be restricted from development activities.

### **Other Recommended Actions:**

- Increase landowner cooperation to expand natural stream buffers to at least 100 feet on either side of channel; Converting cropland within 100 feet of the stream channel to filter strips could increase the natural buffer area along the channel and its tributaries by 437 acres. Work with SWCD's and NRCS to encourage landowners to enroll in Conservation Reserve Program (CRP).
- Encourage better water table management techniques to increase infiltration reduce excess storm runoff directly into stream channels.
- Promote conservation alternatives to sale of land to Districts for local landowners concerned about conservation.(Easements, Conservation Reserve Program (CRP), WRP)
- Work with SWCD, NRCS and local landowners to implement conservation tillage and nutrient management plans.
- Coordinate the protection of remaining undeveloped parcels with wetlands, in the floodplain, along the tributaries, or with high quality open space for acquisition, conservation easements, or other conservation practices.