VFC Index - Watershed (Plan)

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WATERSHED MANAGEMENT PLAN

Turkey Creek/Askren/Round Prairie Ditch

Prepared by:

Tipton County Soil & Water Conservation District

June, 2003

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Section 1. INRODUCTION

1.1 **Location & Maps**

The Turkey Creek/Askren/Round Prairie Watershed (abbreviated "Round Prairie Watershed") is located in the northeast portion of Tipton County and encompasses the Town of Windfall. The Round Prairie Watershed (Hydrologic Unit Code 05120107010060) drains approximately 15,361 acres, and represents approximately 9% of the total land area of Tipton County (166,660 acres). This watershed is a headwater tributary to Wildcat Creek, which is a contributor to the Wabash River.

1.1.1 Regional Watershed Map

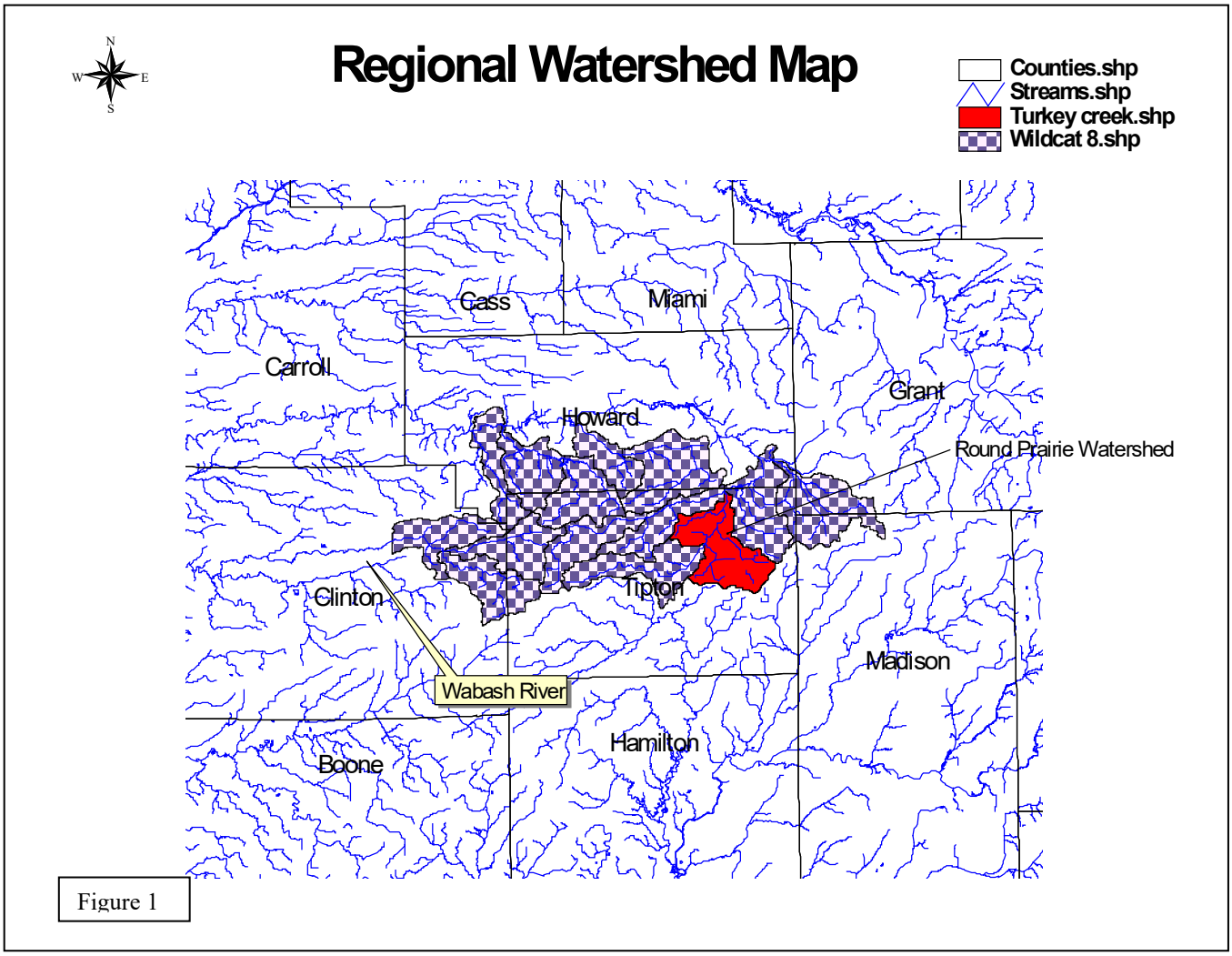


Figure 1

1.1.2 Local Watershed Map

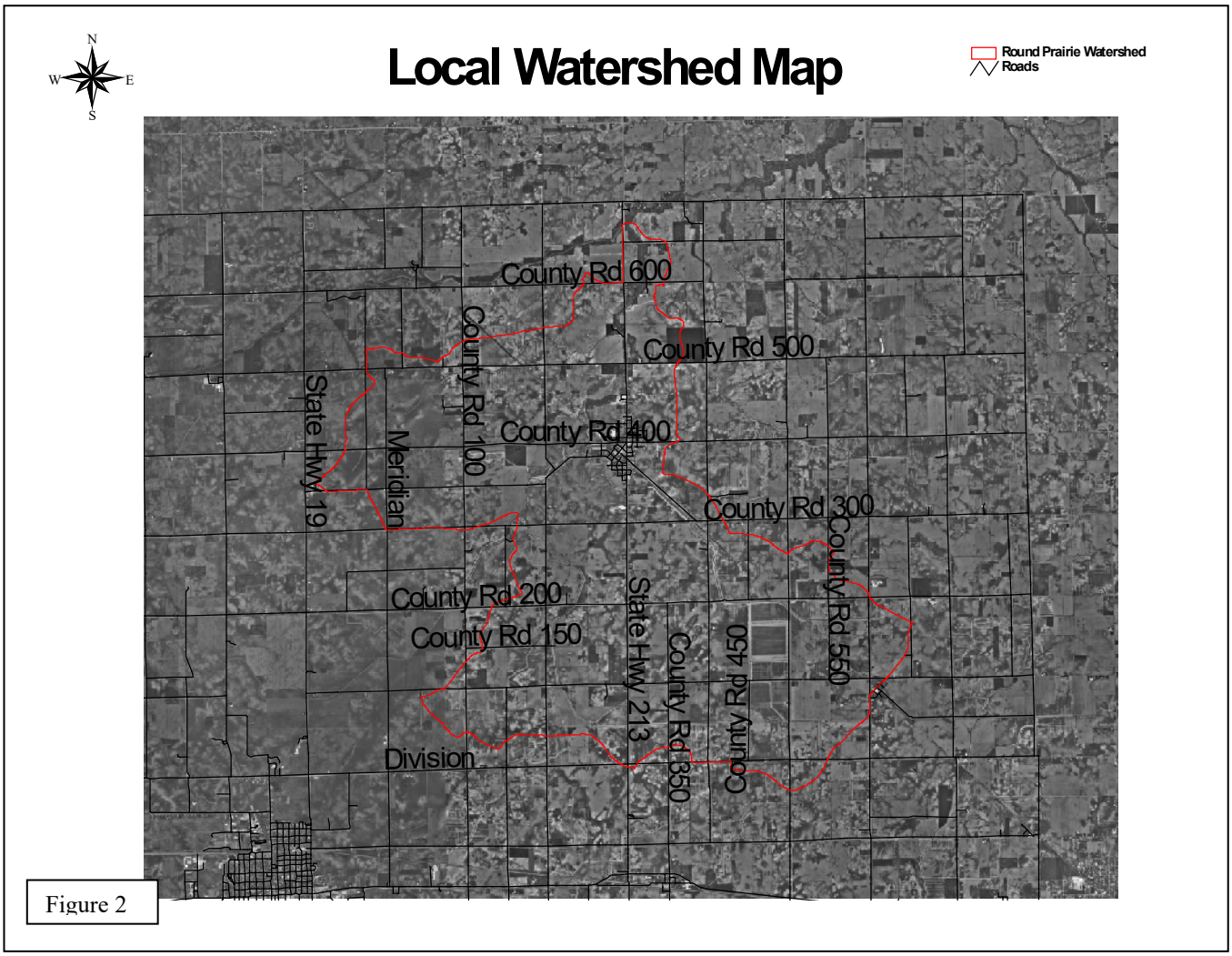


Figure 2

1.2 **Description & History**

1.2.1 Waterways: Approximately 23 miles of perennial and intermittent streams are located in the watershed, for which agricultural drainage is their primary human use. All of the streams are classified as "county legal drains" and are maintained by local drainage boards. The drainage boards maintain a 75' right-of-way easement on both sides of all legal drains. Their primary function is to ensure adequate drainage. See *Figure 3* at right.

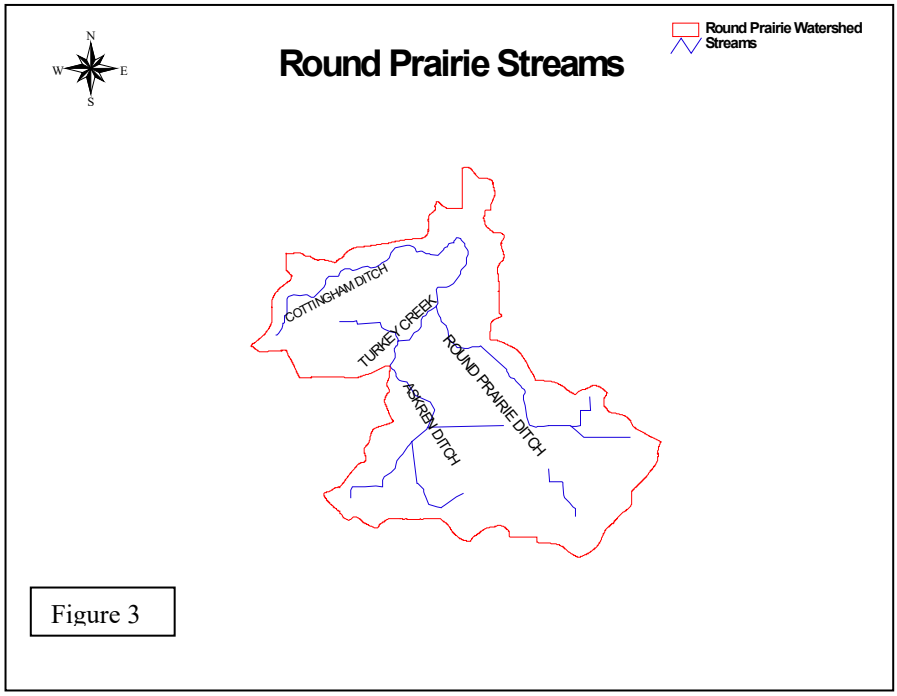


Figure 3

1.2.2 Topography & Hydrology: Tipton County and the Round Prairie watershed lie on a

depositional plain of low relief called the "Tipton Till Plain". Glaciation from the late Wisconsin glacial period is the chief factor responsible for the landforms of the area. Relief in topography is strongest along breaks between the nearly level uplands and the bottomland along streams. Due to the low relief, natural drainage is poor throughout the area. Marshes and swamps were common before drainage systems of open ditches and sub-surface tiles were installed. In most areas, this drainage is essential to the production of crops. Source- *Tipton County Soil Survey*

1.2.3 Water Supply/Groundwater: According to information from the *Indiana Geological Survey*, Tipton County, and the Round Prairie watershed, are situated in the Silurian-Devonian Aquifer, comprised mostly of carbonate-rock aquifers. See *Figure 4*.

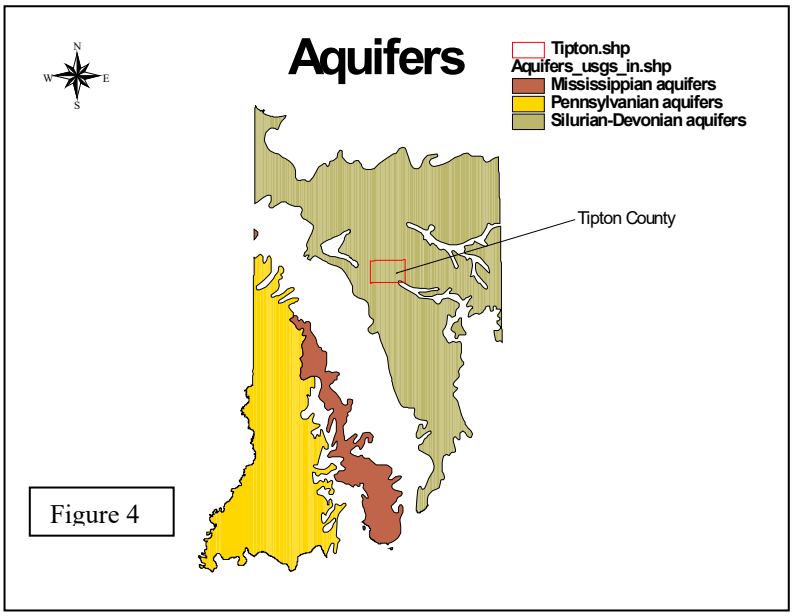


Figure 4

Water supply for agricultural, industrial , and residential use is derived solely from well supplies. (See *Figure 5*) Approximately 80 wells are located in the watershed, and there are no surface drinking water intakes located in the watershed or Tipton County. Average depth to suitable drinking water source is approximately 115 feet. All public water supplies come from deep wells dug into sand and gravel formations underlying glacial till. The town of Windfall is served by a public drinking water supply from 2 large capacity wells located within the city limits. Well #1 is drilled to a depth of 160 feet and produces approximately 280 gallons per minute, Well #2 is 151 feet deep and produces approximately 272 gallons per minute. The wells serve approximately 350 customers. The Windfall Water Utility has initiated a well-head protection program and manages access to the source wells. Public water supplies are monitored according to state requirements and periodic adjustments to treatment and distribution are made as needed. Utility managers indicate that there have not been any problems noted with contaminates in source groundwater.
Source- *Tipton County Soil Survey and conversations with Terry Cooper, Windfall Utilities.*

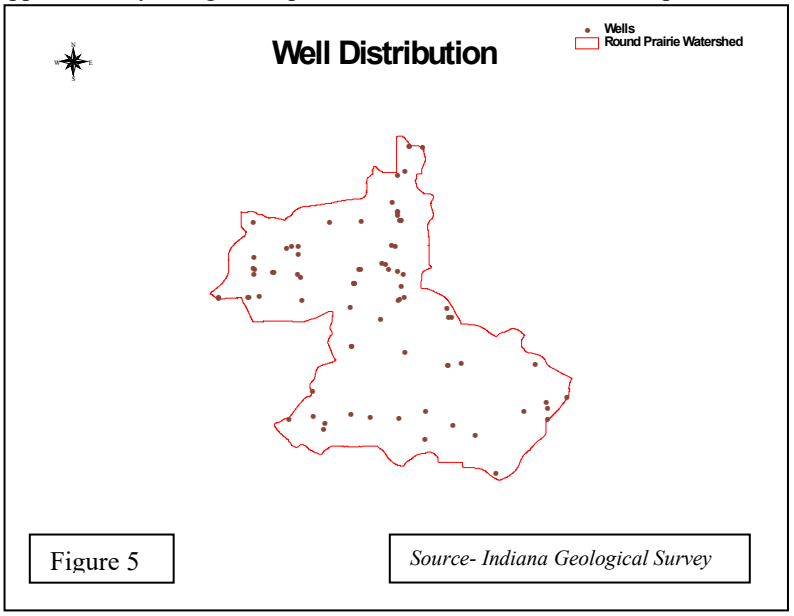


Figure 5

Source- Indiana Geological Survey

1.2.4 Soils: The *Patton-Del Rey-Crosby* association is the most prevalent soil formation in the round Prairie watershed. This association is situated in depressional areas and on slight rises and low flats. The landscape is characterized by very little relief and many depressions. Slopes range from 0-2% percent. The association is characterized by the following traits:
Nearly level, poorly drained and somewhat poorly drained soils that formed in silty sediments, in silty and sandy sediments, or in a thin mantle of silty material and underlying loamy and clayey glacial till, on lake plains and till plains.

*Patton soil*s- poorly drained in depressional areas with very dark gray silty clay loam surface and gray, mottled, firm subsoil.

Del Rey soils- somewhat poorly drained on low flats and till plains with a dark grayish/brow surface layer and brow and grayish brow, mottled, firm silty clay loam subsoil.

Crosby soils- somewhat poorly drained on slight rises and till plains with a dark grayish brown silt loam surface layer and a grayish brown, mottled, firm silty clay loam subsoil.

The Sloan-Tuscola-Strawn association is prevalent immediately adjacent to Round Prairie. Slopes range from 0-12 percent and most areas are drained by streams or open ditches. This association is characterized as follows: *Nearly level to moderately sloping, very poorly drained, moderately well drained, and well drained soils that formed in alluvium,in stratified silty, loamy, and sandy sediments over loamy glacial till, or in loamy glacial till; on flood plains, and till plains.* Source- *Tipton County Soil Survey*

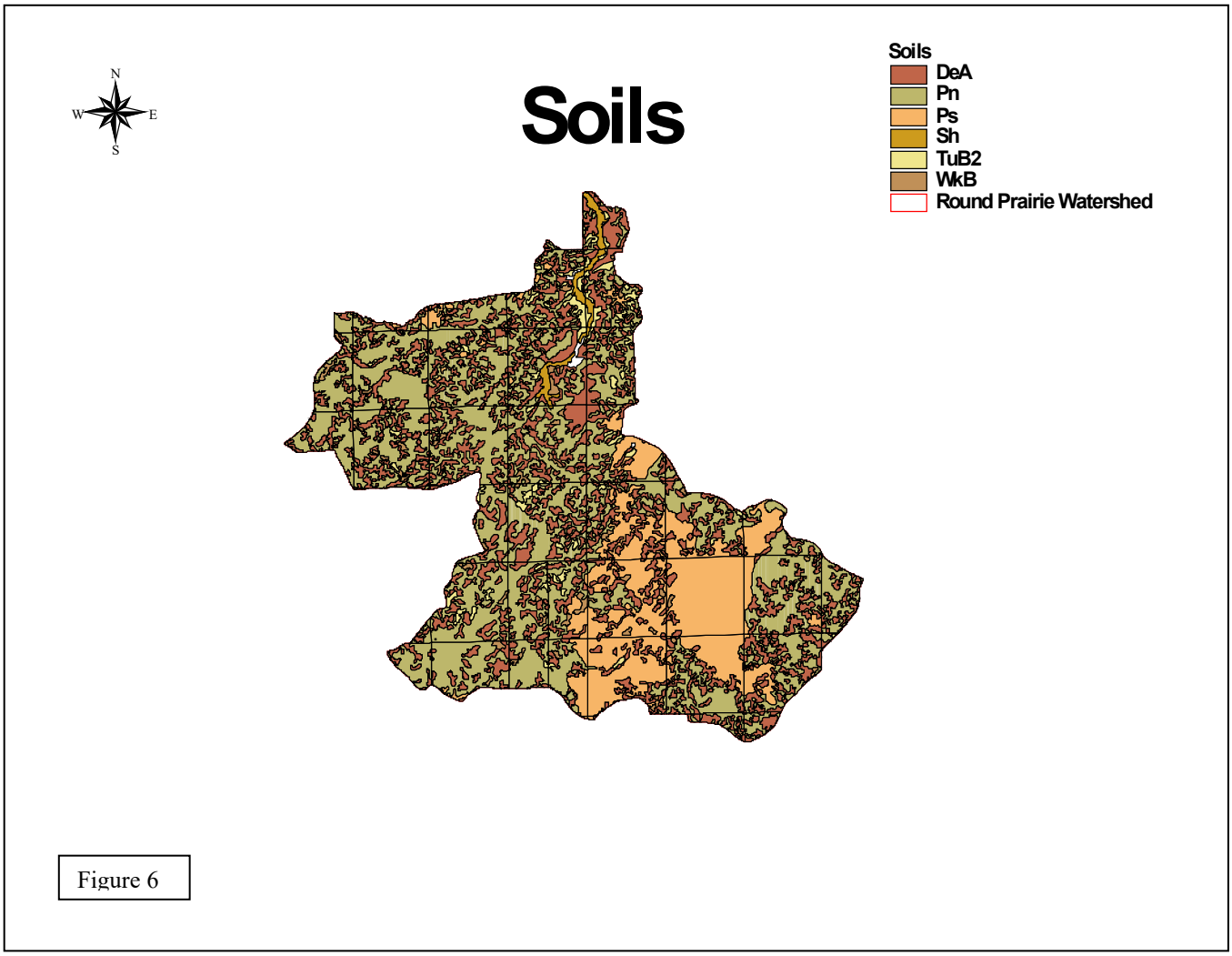


Figure 6

1.2.5 Demographics: There are five Census 2000 block groups that intersect the area of the Round Prairie watershed. These six blocks account for a total of 59,527 acres, of which, 25% comprises the area of the Round Prairie watershed. According to this estimate, the total population for watershed is approximately 975 people. Approximately 25% fall at or below poverty levels, approximately 42 percent have obtained a high school degree, and less than 6 percent have received a bachelor's degree. The area has little ethnic diversity, with approximately 99 percent of the population being white.

1.2.6 History: "Tipton county (and the Round Prairie Watershed) was originally a hunting ground for the Miami, Delaware, and Potawatomi Indians. In 1826, the Indians ceded all of northwest Indiana, including the land that makes up Tipton County. The county was established by the legislature in 1844. It was one of the last counties in the state to be settled. The poorly drained, nearly level soils of the county could not be farmed until the wetness was reduced by ditches and tile. The county has been transformed from a swampy prairie and dense forest to one of the most productive agricultural counties in Indiana." Source- *Soil Survey of Tipton County, Indiana*

1.2.7 Landuse: Landuse in the Round Prairie watershed and Tipton County is dominated by row crop agriculture, as indicated by *Figure 7*. Source "Indiana Agricultural Statistics 1998-1999"

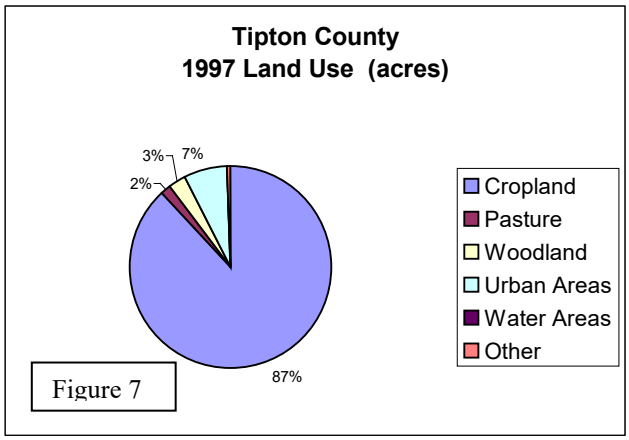


Figure 7

Land-use distribution in the Round Prairie watershed, according to information from the Tipton County Assessor's Office, is represented in *Figure 8*, below.

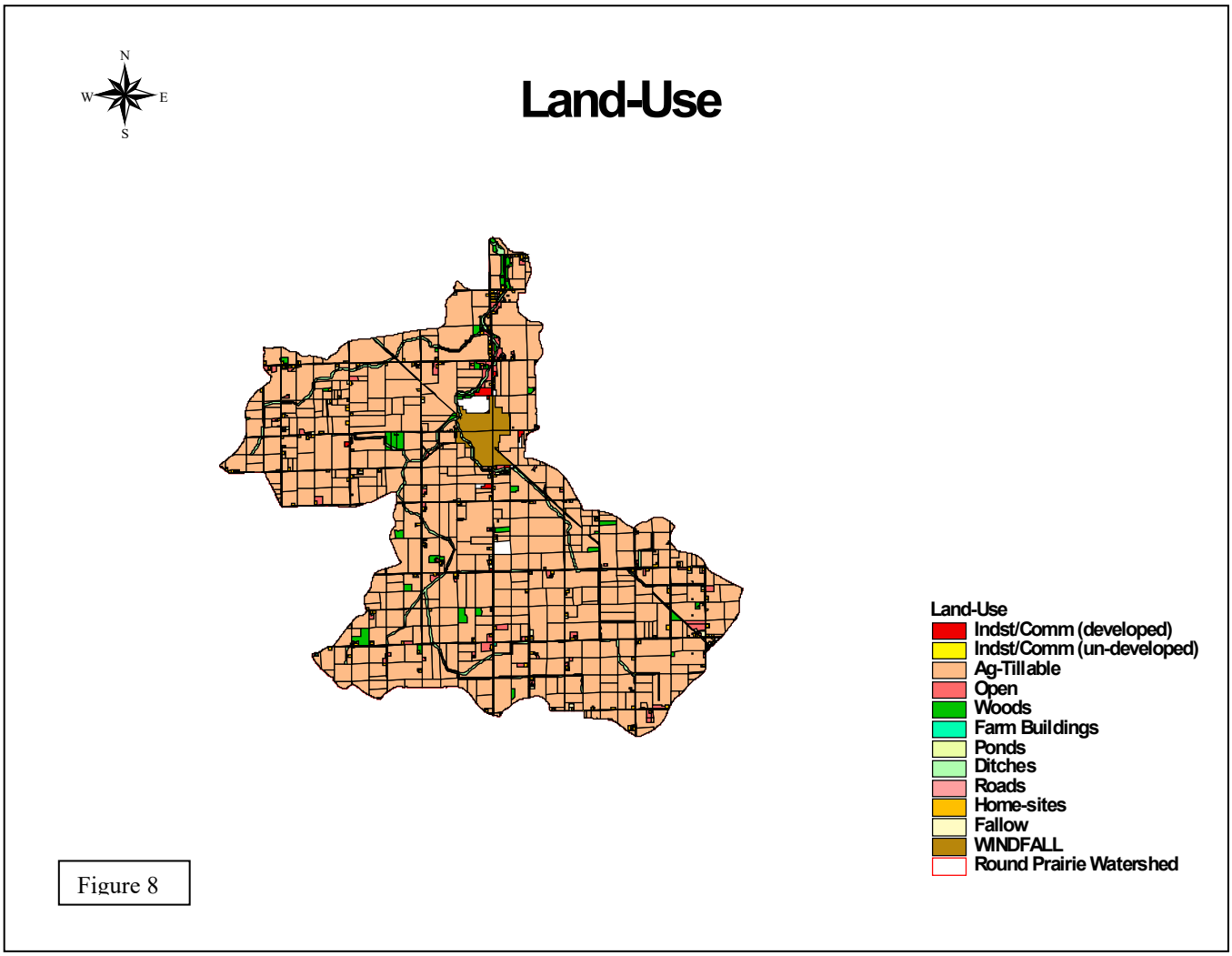


Figure 8

1.2.7.1 Agriculture: Row crop production of corn and soybeans is both the primary land use and main industry in the watershed and in Tipton County. *Figure 9* illustrates the production of crops in Tipton County. Source "Indiana Agricultural Statistics 1996 - 2000"

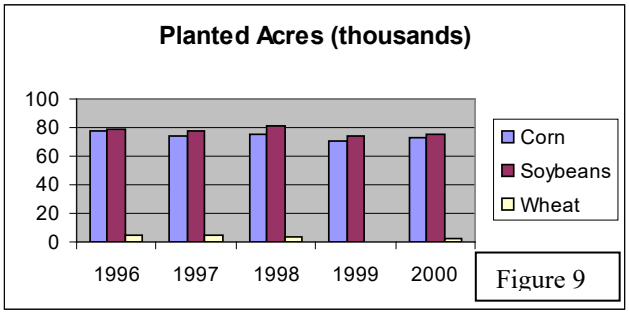


Figure 9

1.2.7.2 Livestock: According from sources at USDA and Purdue University Cooperative Extension, livestock numbers in the County and the watershed have been steadily declining in recent years. This trend can be directly be seen in the graph in *Figure 10* which depicts the number of cattle over a six year period. See Section 2.4 for further discussion.

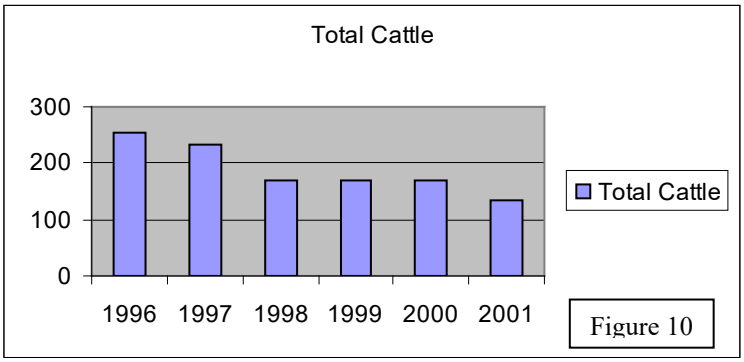


Figure 10

1.2.7.3 Tillage Systems: According to information from the Purdue University *Indiana T by 2000 Watershed Soil Loss Transects* data, conventional tillage systems are still the most widely used throughout the watershed, although more *minimum till* systems appear to be becoming incorporated into local farming methods. *Figures 11 & 12* display information from the Purdue University *Indiana T by 2000 Watershed Soil Loss Transects* collected for the Wildcat Creek 11-digit HUC watershed, of which the Round Prairie watershed is a subset.

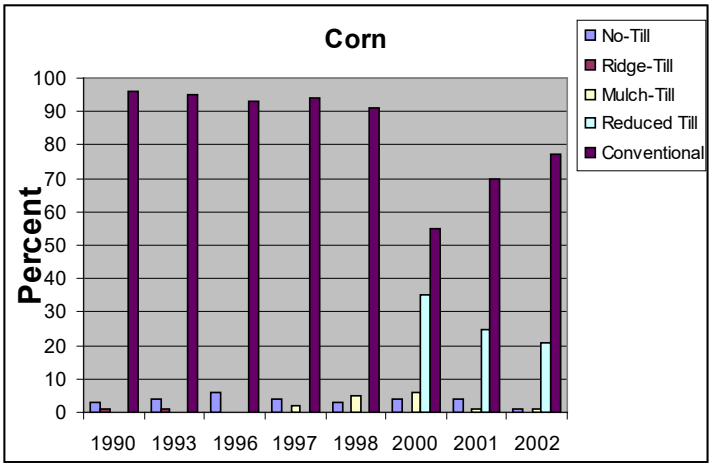


Figure 11

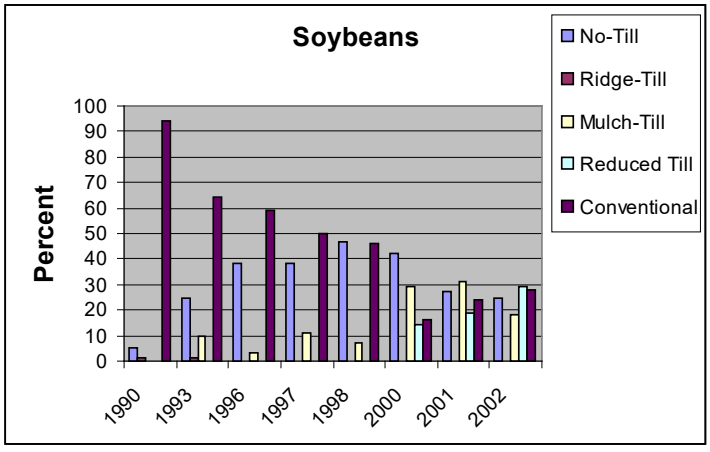


Figure 12

1.2.7.4 GAP Analysis: The US Fish & Wildlife Service has compiled land cover information known as the "GAP" data. GAP is the acronym used to refer to the Gap Analysis Program of USGS. It could also refer to the fact that GAP is a geographic approach to planning.

Figures 13 & 14 depict the major land-cover forms and their distribution, as mapped in the watershed.

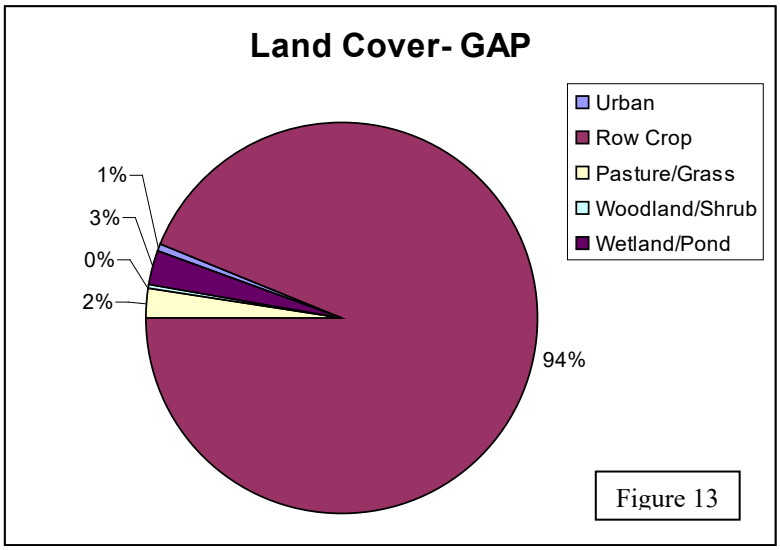


Figure 13

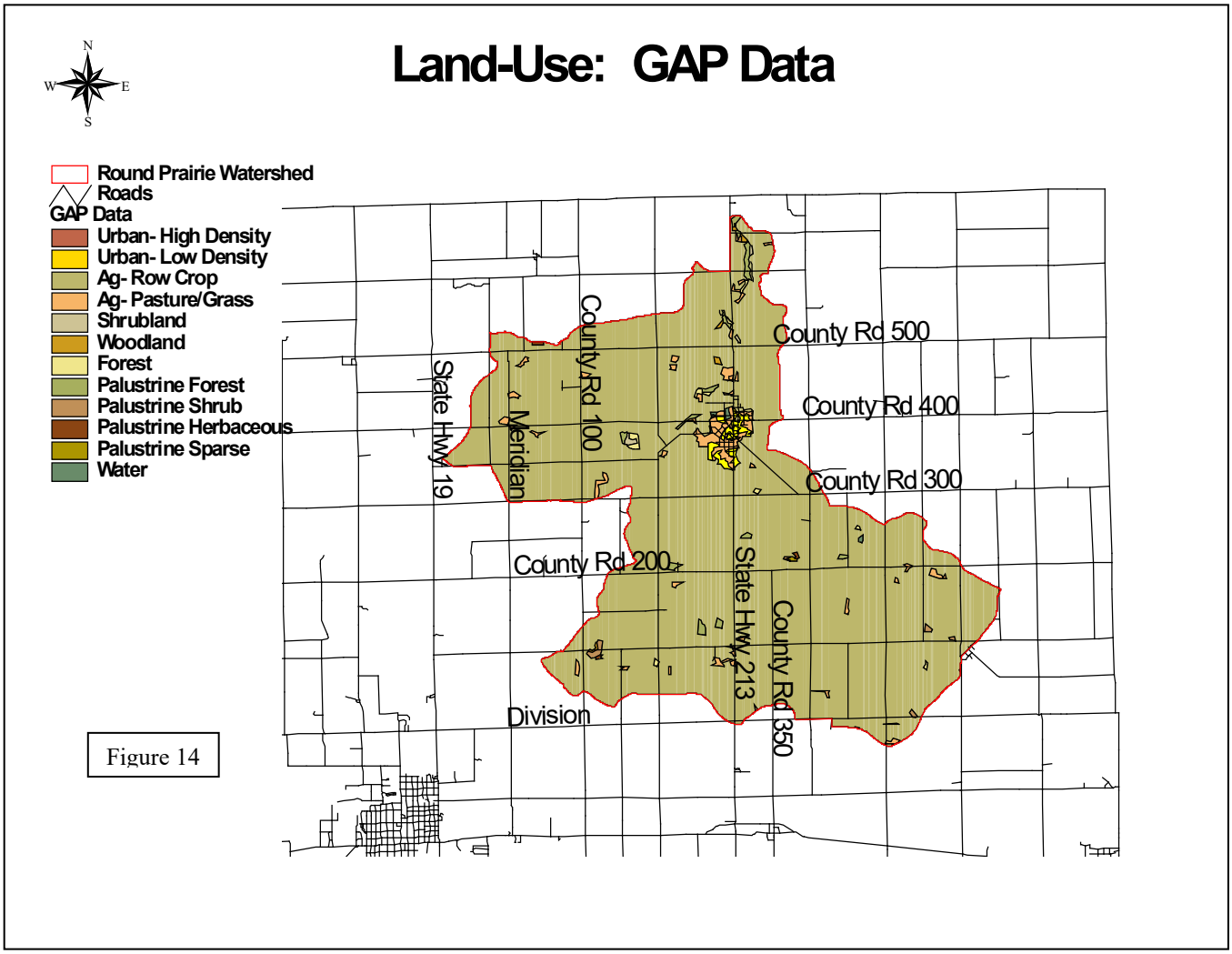


Figure 14

1.2.7.5 Wetlands: According to the US Fish & Wildlife Service "National Wetland Inventory" maps, wetlands are distributed throughout the watershed as represented in *Figures 15 & 16*. According to the National Wetland Inventory map information, approximately 68 wetland polygons are identified in the Round Prairie watershed totaling approximately 165 acres.

Four major types of wetlands are represented in the watershed.

Palustrine Emergent (PEM)

Palustrine Forested (PFO)

Palustrine Scrub/Shrub (PSS)

Palustrine Unconsolidated Bottom *Open Water* (PUB)

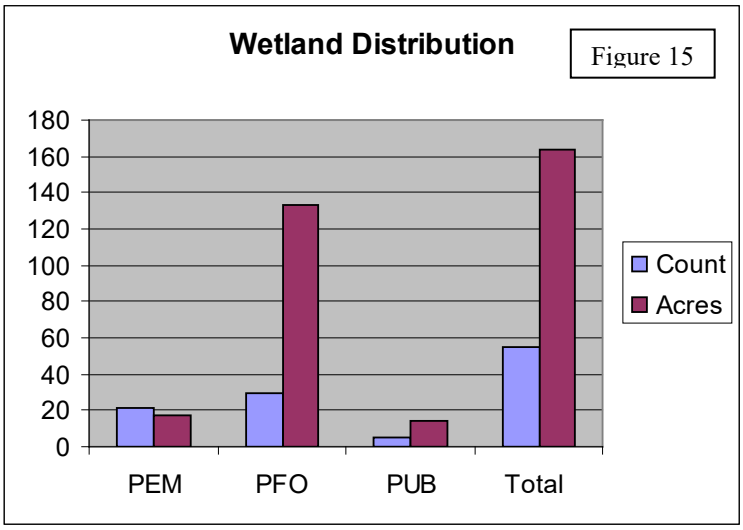


Figure 15

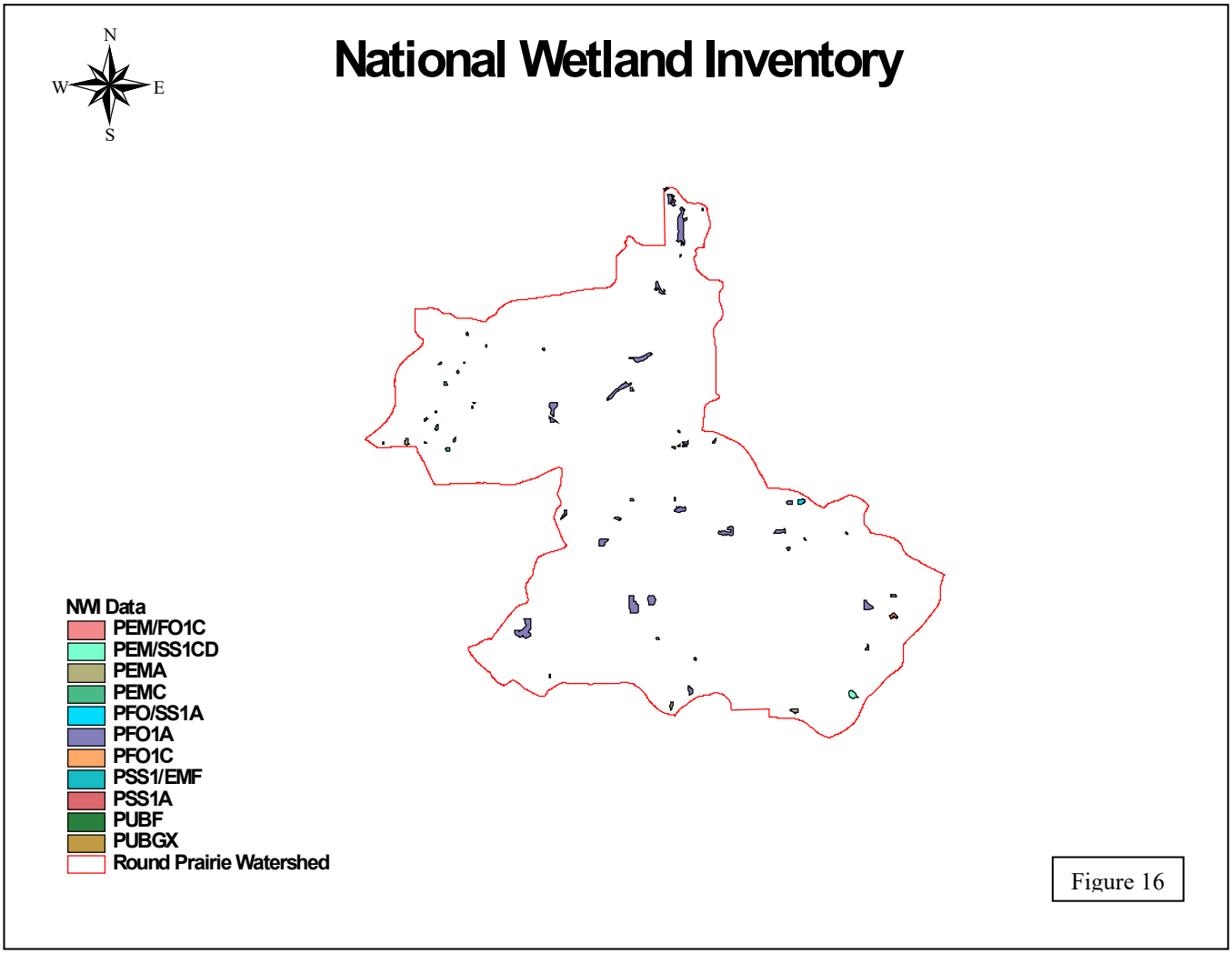


Figure 16

1.2.8 Recreation: Outdoor recreational opportunities directly within the Round Prairie watershed are limited. There are no publicly accessible forests, wilderness areas, lakes, or reservoirs in the watershed.

According to information from the Indiana Department of Natural Resources *Statewide Comprehensive Outdoor Recreation Plan* (SCORP 2000), The Round Prairie watershed falls into the management unit Region 5, which is composed of Tipton, Howard, Fulton, Cass, Miami, and Wabash counties. SCORP 2000 identifies the following recreational lands available to the public in Region 5:

	# Sites	# Acres
Federal Recreational Lands	4	3,485
State Recreational Lands	24	16,797
County Recreational Lands	6	595
Municipal Recreational Lands	92	1,447
Township Recreational Lands	2	13
Other Public Lands	9	33
Commercial Recreational Lands	21	1,059
Private Recreational Lands	29	2,605
TOTAL	187	26,033

Figure 17

1.2.9 Threatened & Endangered Species: According to information from the Indiana Department of Natural Resources, Heritage Trust Database, "For the Turkey Creek-Askren-Round Prairie Ditch watershed, there is an historical record of the state endangered bird, *Laterallus jamaicensis*, Black Rail, documented in 1936 near the town of Windfall, Section 15, T22N, R5E".

Black Rail

1.2.10 Permitted Discharge Facilities: "The State of Indiana's efforts to control the direct discharge of pollutants to waters of the State were inaugurated by the passage of the Stream Pollution Control Law of 1943. The vehicle currently used to control direct discharges to waters of the State is the NPDES (National Pollutant Discharge Elimination System) Permit Program. This was made possible by the passage of the Federal Water Pollution Control Act Amendments of 1972 (also referred to as the Clean Water Act). These permits place limits on the amount of pollutants that may be discharged to waters of the State by each discharger. These limits are set at levels protective of both the aquatic life in the waters which receive the discharge and protective of human health.

The purpose of the NPDES permit is to control the point source discharge of pollutants into the waters of the State such that the quality of the water of the State is maintained in accordance with the standards contained in 327 IAC 2. The NPDES permit requirements must ensure that the minimum amount of control is imposed upon any new or existing point source through the application of technology-based treatment requirement contained in 327 IAC 5-5 2. According to 327 IAC 5-2-2, "Any discharge of pollutants into waters of the State as a point source discharge, except for exclusions made in 327 IAC 5-2-4 is prohibited unless in conformity with a valid NPDES permit obtained prior to discharge." This is the most basic principal of the NPDES permit program."
Source- IDEM (www.in.gov/idem/water/npdes)

According to information from IDEM and the USEPA *Envirofacts* website (www.epa.gov/enviro/html), only two NPDES permitted discharge facilities exist in the watershed. Their information is summarized in the table below:

Permit #	Facility Name	Location	Permit Type	Owner Type	Status
INU000170	Voris Seeds, Inc.	Windfall	Un-permitted	Private	Active

IN0040762	Windfall City STP	Windfall	Standard	Public	Active

Figure 18

1.2.11 Indiana Water Quality Report- 2000 305(b): Section 305(b) of the federal Water Pollution Control Act (Clean Water Act most recently amended in 1987) requires states to prepare and submit to the USEPA a water quality assessment report of state water quality every two years. The report indicates that the Indiana State Department of Health has issued a general fish consumption advisory for carp, in all Indiana rivers and streams. The 2000 305(b) report provides the following information on Overall Use Support for the Round Prairie watershed:

ID	Waterbody	Size in Miles	Aquatic Life	Fish Consumption	Contact Recreation	Cause/Stressor
INB0716_00	Turkey/Askren/Round Prairie Ditches	14.4	Full Support	Not Assessed	Full Support	None

Figure 19

1.2.12 Indiana List of Impaired Waterbodies- 2002 303(d) List: No streams in the Round Prairie watershed are listed as "impaired". However, the Wildcat Creek mainstem, to which the Round Prairie watershed is a tributary, is listed for Cyanide, Lead, Nitrates, and *E. coli* contamination.

1.2.13 Unified Watershed Assessment: "The Clean Water Action Plan, released by the President in February 1998, presents a plan and certain incentives directed toward accelerating the control of non-point source pollution in America. States have been requested, as one of the 111 Action Items presented in the Plan, to prepare a Unified Watershed Assessment (UWA). This Assessment is to be developed through the cooperation of state, federal, and local agencies and the public, hence the term "Unified". The Guidance for completing the UWA, published by the USEPA in June 1998, charged the USDA Natural Resources Conservation Service (NRCS) and the state water quality agency (IDEM) with convening the assessment process. What sets this assessment apart from other lists and reports regarding watersheds is the involvement of numerous organizations, the participation of all states, and the recognition of both impaired and healthy watersheds." *Source-* Unified Watershed Assessment for Indiana

The UWA establishes the Wildcat basin as a priority for restoration funding. The 11-digit hydrologic unit area (watershed) in which the Round Prairie watershed is located, has been given a high priority for restoration, based on the following information:

11Digit Hydrologic Unit	Mussel Diversity & Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery
	nd	nd	nd	nd	4
	Eurasion Milfoil Infestation Satus	**Lake Trophic Status**	**Critical Biodiversity Resource**	**Aquifer Vulnerability**	**Population Using Surface Water Drinking**
05120107010	nd	3	2	5	2
	Residential Septic System Density	**Density of Livestock**	**% Cropland**	**Mineral Extraction Activities**	
	4	2	5	3	
1= Lowest Concern 5=Highest Concern nd=No Data					

Figure 20

For complete results of the UWA, priority area maps, and explanation of evaluation procedures, see **Appendix #5**.

1.3 **Purpose & Objectives**

This watershed management plan was developed for the following reasons:

- Improve water quality in Tipton County

- Promote adoption of voluntary conservation.
- Provide a forum to identify and discuss local watershed resources and concerns.
- Identify and seek funding to address priority concerns.

1.3.1 Development Process: The Round Prairie watershed was selected for plan development through a prioritization process. This process is detailed in **Appendix #1 (Watershed Prioritization).** This watershed management plan (Plan) was developed by a stepwise process driven by local interests to reflect the water quality concerns of local stakeholders. A watershed team was assembled from members of the community and residents of the watershed in the early stages of the project. At the first public meeting to introduce the project, a questionnaire survey of the participants was conducted to evaluate local opinions of water quality and it's importance. Results of the survey closely mirrored priority issues and action items developed later in the planning process. Full results of the survey are included as **Appendix #3**. Once the team was assembled, the following events occurred in sequential order to develop the Plan. Quarterly watershed team meetings and monthly Steering Committee meetings provided the forum to undertake the process.

- Introduction of project, background of watershed resources, group dynamics, and ground-rules for participation.
- Identification of water quality concerns important to local stakeholders via Nominal Group Technique.
- Assessment of water quality conditions in context of concerns identified above, which provided reference points for next steps. Incorporated information from many sources.
- Presentation of results of assessment and discussed sources/causes.
- Development of goals and solutions to concerns identified above via brainstorming and team consensus.
- Draft plan that incorporates all steps above.
- Implement plan; develop projects that address goals/solutions identified above.

1.3.2 Group Structure/Partnership:

To ensure the Plan was developed in a manner reflective of the community's priorities, needs, and resources, the Planning Group, or watershed team, was assembled to provide input and direction to the Plan. The entire local public was invited to participate in the Plan development, with the intent of having broad representation of local interests reflected in the team composition. All planning decision-making was conducted at public meetings. Decisions were reached through group consensus with equal representation given to each participant. A five person Steering Committee was assembled from the group at-large. The Steering Committee met monthly and provided decision-making, direction, and assisted with the collection of information. The principles of *Coordinated Resource Management* were discussed at the first public meeting and were adopted to guide the process.

The following groups and organizations provided representation to the watershed team and contributed to the Plan development:

- Local Farmers, Developers, & Landowners
- Tipton County Soil & Water Conservation District
- Tipton County Surveyor-s Office
- Tipton County Health Department
- IMPACT Co-op
- USDA-NRCS

1.3.3 Vision & Mission Statements: A Vision statement describes what the group wants to look like or be like in the future, and the desired future conditions of the watershed. A Mission statement is intended to describe why the group exists, what is their business, who they are, what they offer, and who they serve. The Steering Committee developed the following Vision & Mission Statements to define the group's identity and purpose through a consensus process:

Vision: "The Turkey Creek/ Askren/Round Prairie Ditch watershed maintains safe water quality and a healthy aquatic community, while supporting a variety of human uses and needs."

Mission: "Promote the use of voluntary conservation, education, and stewardship to improve the water quality in the Turkey Creek/Askren/Round Prairie Ditch watershed."

1.3.4 Outreach Efforts: Membership for the watershed planning team and community involvement were solicited in a variety of ways. The goal of the outreach process was to promote awareness of the project to as many different sectors of the community as possible to encourage broad representation and participation. Outreach efforts included:

- Approximately 500 targeted mailings to watershed residents. Utilized County Surveyor drainage assessment records.
- Articles in the Soil & Water Conservation District newsletter.
- Personal contacts and invitations to "key" individuals from SWCD Supervisors.
- Phone calls to "key" individuals from coordinator.
- Repeated articles in two local newspapers.
- Presentations and project updates delivered at regular meetings of the *Upper White River Watershed Alliance*.
- Developed a brochure for distribution at local events.

Section 2. IDENTIFYING PROBLEMS

2.1 Problem Identification: At the second public planning meeting, participants identified what they perceived to be the greatest threats to water quality in the watershed.

2.1.1 Nominal Group Technique: The planning team accomplished problem identification by using the Nominal Group technique. The first step of this process is to is to brainstorm all potential water quality threats and discuss each. The ideas are recorded and the group determines which ones require further clarification, or if combining is appropriate. Once the issues are recorded per group consensus, participants rank them in terms of highest priority by assigning points to each.

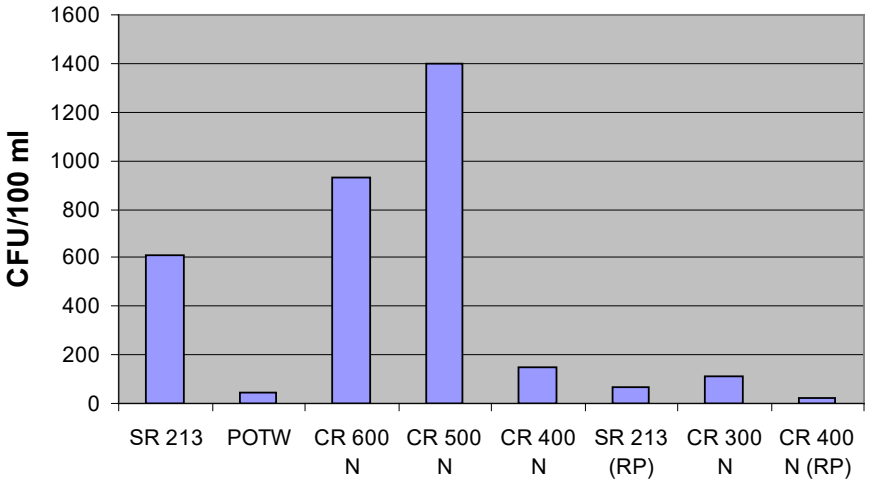
2.1.2 Results: The water quality issues and their associated water quality pollutants, to be discussed in this plan are indicated below, and are listed in terms of priority:

1. Failing Septic Systems- *Pathogens, nutrients*
2. Runoff & Sedimentation- *Sediment, nutrients, pesticides*
3. Animal Waste- *Pathogens, nutrients*

2.2 **Failing Septic Systems.** Planning group participants determined, through brainstorming and consensus exercises, that failing residential septic systems is the number one water quality issue facing the Round Prairie watershed. Fecal bacteria/pathogenic contamination and nutrient loading of waterways from these failed systems are the primary pollutants of concern.

2.2.1 Assessment. The Steering Committee met on February 20, 2003, to discuss methods to assess and characterize the extent of the water quality problem resulting from failed septic systems. Since no new water quality data is to be collected under the scope of this project, assessment methods target the collection of data from existing sources. The goal of the assessment procedure is to collect evidence that will identify causes and sources of pollution resulting from failed septic systems, and

Figure 21



to identify priority areas in which to concentrate remediation efforts.

2.2.1.1 IDEM Data: The Indiana Department of Environmental Management, Surveys Section, provided the following information concerning *E. coli* levels in the Round Prairie watershed. Samples were collected at eight different locations in the watershed on August 14, 1998. *Figure 21* above depicts the results of the *E. coli* sampling. Note that the levels at three of the sampling locations exceeds the Indiana water quality standard of **235** colonies per 100/ml.

E. coli is a bacterium found in the intestinal tracts of warm blooded animals, and is often used as an indicator for the presence of fecal material in water. Fecal material can contain various bacteria and pathogens capable of causing illness in humans. It is often difficult and expensive to differentiate the origin of *E. coli*, whether from human, livestock, or wildlife sources.

Additionally, the *Unified Watershed Assessment* indicates a concern level of four out of five (5=Highest Concern) for the parameter of "Residential Septic System Density" in the watershed.

2.2.1.2 Geology & Hydrology: In the *Hoosier Environmental Council* publication "Watershed Restoration Toolkit: *A Citizen's Guide to Improving Water Quality*", a table discussing septic systems and soil suitability indicates that approximately 54% of Tipton County residents rely on on-site wastewater disposal systems (septics) and **100%** of the county area contains soils having "severe" limitations for septic systems.

According to information from the USDA *Soil Survey for Tipton County, Indiana*, the dominant soil association in the Round Prairie watershed is the *Patton-Del Rey-Crosby Association*. In the description of this soil association, the *Soil Survey* says "The major soils are generally unsuited or poorly suited to dwellings and sanitary facilities, mainly because of wetness and ponding. Slow or moderately slow permeability also is a problem." The table below indicates septic tank suitability and water table information, by predominant soil type.

Soil Name	Suitability for Septic Tank Absorption Fields	High Water Table	
		Depth	Months Affected
Patton	Severe: ponding, percs slowly	+0.5 - 2.0	Mar - Jun
Del Rey	Severe: wetness, percs slowly	1.0 - 2.5	Jan - May
Crosby	Severe: wetness, percs slowly	1.0 – 3.0	Jan - Apr

Source- *Soil Survey for Tipton County, Indiana*

Figure 22

2.2.1.3 County Health Department Information: Indiana State Septic law (410 IAC 6-8.1) gives local health departments authority to require more information and use more strict guidelines than the State requires. In approximately May, 1996, the Tipton County Health Department initiated the following requirements (Chapter 51, county code) before issuance of a local septic permit:

- a detailed soil evaluation by a qualified soil scientist
- installation of perimeter drains
- appropriate set-back distances from: wells, public water supplies, water lines, lot lines, streams/ditches/tiles, dwellings
- appropriate system design and sizing, including: trenches, absorption fields, settling & distribution tanks
- installation of access manholes to allow for inspection.

Additionally, in 1990, the Tipton County Plan Commission adopted the Sub-Division Control Ordinance, as part of the Tipton County Comprehensive Plan. This ordinance established a minimum lot size of one acre, which allows for more room to install septic systems and provides space for contingency in case of system failure. Prior to 1996, there were few local requirements concerning septic system installation, and very little enforcement of state or local regulations.

These new requirements affect only the construction of new homes, the addition of a bedroom to an existing home, or, in some cases, as a requirement by a loan institution. Consequently, the majority of older homes in the watershed have not been affected by the new requirements. The county Health Department can also take action, at the direction of the County Commissioners, if there is direct evidence of system failure. This most commonly occurs when the homeowner reports a problem with flushing the toilet, or a neighbor reports sewage visible on the ground surface. In these instances, compliance with the county and state requirements may not always be possible,

due to existing site constraints. Consequently, flexibility with the requirements is provided and a "best possible solution" approach is applied to the system repair.

Due to recordkeeping issues, no information on new system installation, system repairs or modifications, or system failures in the watershed were available.

Also of note, the Tipton County Health Department is currently operating with no valid local ordinance governing septic systems. The validity of the current county ordinance (3-41-3), was challenged in litigation. Apparently, no written approval of the county ordinance was ever received by the county from the State Department of Health. Therefore, in June, 2002, the Indiana Court of Appeals ruled that the ordinance was invalid per state requirements. The Health Department is currently using the authority of Indiana state law and the requirements of "Indiana State Department of Health- Residential Sewage Disposal Systems" (410 IAC 6-8.1) to administer it's program. This state rule is scheduled to be updated soon, with the addition of new requirements. Tipton County plans to wait for the adoption of this state rule, and then develop a new county ordinance that reflects the updated state regulations. A request for ordinance approval from the State Department of Health is planned.

Source- Interview with Nolan Pyke, Tipton County Sanitarian

2.2.1.4 Survey of Homes in Watershed: Representatives from the Tipton County Health Department indicate that a significant potential for septic system failure is present in homes older than 30 years, unless major system repairs or replacements have occurred. According to information obtained from the Tipton County Assessor's office, there are approximately 6,370 dwellings in unincorporated Tipton County. Of these, 4,707 were built prior to 1973. This indicates a potential for approximately 74% of the residential dwellings in the county to have sub-standard functioning septic systems. Best estimates from civil township records, applied as a percentage of area in the watershed, indicate approximately 344 homes older than 30 years are located in the Round Prairie watershed.

2.2.1.5 Volunteer Monitoring: The Tipton Soil & Water Conservation District has been conducting volunteer water quality monitoring at sites in the County in cooperation with the Cargill Seed Company. No Quality Assurance/Quality Control plan was developed as part of the SWCD project. Samples are collected from bridges by using buckets. 3 mL of the sample are extracted from the bucket and added to a *Coliscan* media container via the use of a pipet. The *Coliscan* media and mixed sample are poured into a Petri dish for incubation, usually 48 hours. *E. coli* colonies are counted according to *Coliscan* instructions following the incubation period. *E. coli* levels in Turkey Creek were sampled using this procedure in April and May of 2003. The results are as follows:

Sample Date	Stream	Location	E. coli cfu/100 ml
4/12/03	Turkey Creek	CR 500 N at SR 213	799
4/12/03	Turkey Creek	600 N east of SR 213	832.5
5/20/03	Turkey Creek	CR 500 N at SR 213	3630*
5/20/03	Turkey Creek	600 N east of SR 213	5181*

Figure 23

* The tester indicates that the procedure for counting the number of bacterial colonies is very color subjective, particularly differentiating between single and multiple colonies. He included the count of "blue" colonies in the results of this sample, per the instructions of the test. These blue clusters were not included in the sample on 4/12/03. He indicated that more training would help to improve test accuracy.

2.2.1.6 Sewers: The Town of Windfall is served by a sanitary sewer system. A sewage treatment plant services approximately 350 customers in the town. The STP has a 130,000 gallon per day design capacity and is currently operating at approximately 70% capacity. The storm sewers and sanitary sewers are segregated and there are no Combined Sewer Overflow discharges. *Source*- conversations with Terry Cooper, Windfall Utility Department.

2.2.2 Causes: According to information from local Health Department officials, the causes of septic system failure, and subsequent bacterial and nutrient pollution of waterbodies, can be attributed to the following:

- No system or "straight pipe" discharge through tile lines.
- Sub-standard system with no, improper, or undersized settling tank and absorption field.
- Overloaded leach field due to clogged lines from lack of maintenance or from unsuitable soil types.

- Systems with direct interaction with ground water resulting from high water tables and lack of, or inadequate perimeter drains.

2.2.3 Sources: Although the only true method to identify direct sources of failing septic systems is to conduct a dye test of the individual system, common sources of the causes of failure listed above are found in homes over 30 years old. Additionally, septic systems installed prior to 1996, when the county started to thoroughly review septic system installation, may be at risk of failure.

2.2.4 Priority Areas: Priority areas for focusing septic system improvement efforts in the watershed include the approximately 344 homes that are older than thirty years in unincorporated county areas.

2.3 **Run-off & Sedimentation**: Planning group participants determined, through brainstorming and consensus exercises, that run-off and sedimentation is the number two water quality issue facing the Round Prairie watershed. Sediment and attached chemicals and nutrients are the primary pollutants of concern.

2.3.1 Assessment: The Steering Committee met on February 20, 2003, to discuss methods to assess and characterize the extent of the water quality problem resulting from run-off. Since no new water quality data is to be collected under the scope of this project, assessment methods target the collection of data from existing sources. The goal of the assessment procedure is to collect evidence that will identify causes and sources of pollution resulting from run-off to waterbodies, and to identify priority areas in which to concentrate remediation efforts.

2.3.1.1 Soil & Slope: Information from the *Tipton County Soil Survey*, and conversations with the USDA, Natural Resources Conservation Service, District Conservationist, indicate that *Patton* silty clay loam is the most prevalent soil type in the watershed. *Patton* soils typically have slopes ranging from 0-2%. The "erosion hazard" for *Patton* soils is listed as "slight".

2.3.1.2 Land Cover: Data from the US Fish & Wildlife Service "GAP" analysis of land cover types indicates that with approximately 14,754 acres, "Row Crop Agriculture" is the dominant land cover type in the Round Prairie watershed. *(See Section 1.2.6.4)*

According to information from the Purdue University *Indiana T by 2000 Watershed Soil Loss Transects* data, the vast majority of fields within the Wildcat Creek watershed, of which the Round Prairie is a subset, are eroding at an annual soil loss rate below 'T". Soil Loss Tolerance (T), expressed in tons/acre/year, is an important criteria when we begin our management to control soil loss. "T" - Soil Loss Tolerance - is the maximum amount of soil loss, in tons/acre/year , that a given soil type can tolerate and still permit a high leva1 of crop production to be sustained economical1y and indefinitely. Erosion at a rate at or below 'T" indicates sustainable soil loss rates where soil formation is greater than soil loss. Erosion above "T" means that soil is eroding from an area faster than it regenerates, often times indicating non-sustainable land use or activity.

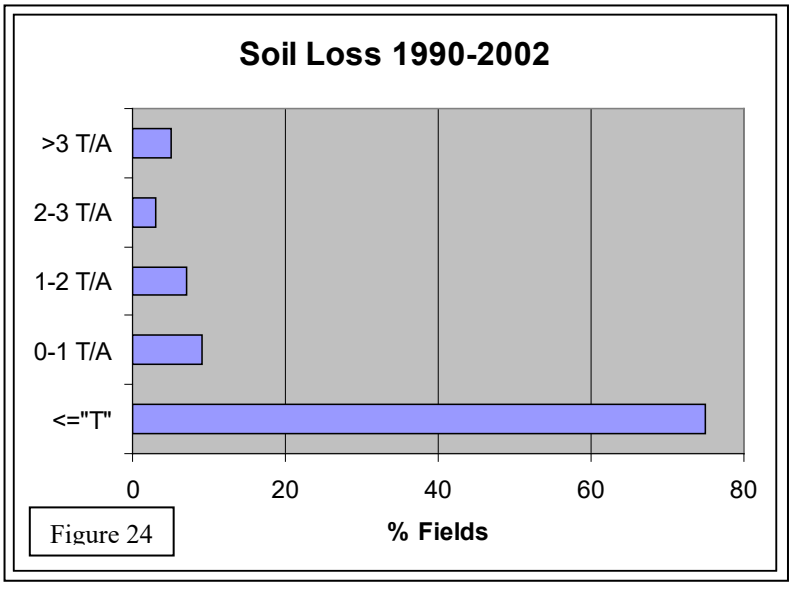


Figure 24

Figure 24 displays information from the Purdue University *Indiana T by 2000 Watershed Soil Loss Transects* collected for the Wildcat Creek 11-digit HUC watershed, of which the Round Prairie watershed is a subset, from 1990-2002.

Due to topography changes in the central portions of the Wildcat Creek watershed, the actual percentage of fields eroding below "T" in the Round Prairie watershed is most likely somewhat higher.

Discussions with USDA Natural Resources Conservation Service and Indiana Department of Natural Resources local field representatives, indicate that the most prevalent row crop farming method is conventionally tilled corn followed by reduced tilled soybeans. Using the IDEM tool "*Estimating Load Reductions for Agricultural and Urban BMP's*", the approximately 14,574 acres of row crops farmed in this method in the watershed can be expected to lose approximately 0.46 tons of sediment per year per acre, or contribute approximately **6,700 tons of sediment** every year to receiving waterways.

2.3.1.3 Existing Conservation: According to information from the local Natural Resource Conservation Service and Farm Service Agency offices, conservation practices in the watershed consist predominantly of Conservation Reserve Program (CRP) filter strips along ditches and waterways. Approximately 13 miles of CRP filter strips currently exist along the banks of approximately 23 miles of perennial and intermittent streams (46 miles of banks). Existing land-use data from the Tipton County Assessor's Office indicate that approximately 6 miles of banks in the watershed are adjacent to lands in which filter strip installation is not possible, these include land uses such as: home-sites, woods, commercial, town, roads, farm buildings, etc. According to these estimates, approximately **32% of the banks** in the watershed are currently enrolled in Conservation Reserve Program filter strips. Local NRCS staff estimate that the most common width of filter strips in the watershed is approximately 30 feet. *Figure 25* below depicts the breakdown of existing CRP practices, and their distribution, as mapped in the watershed.

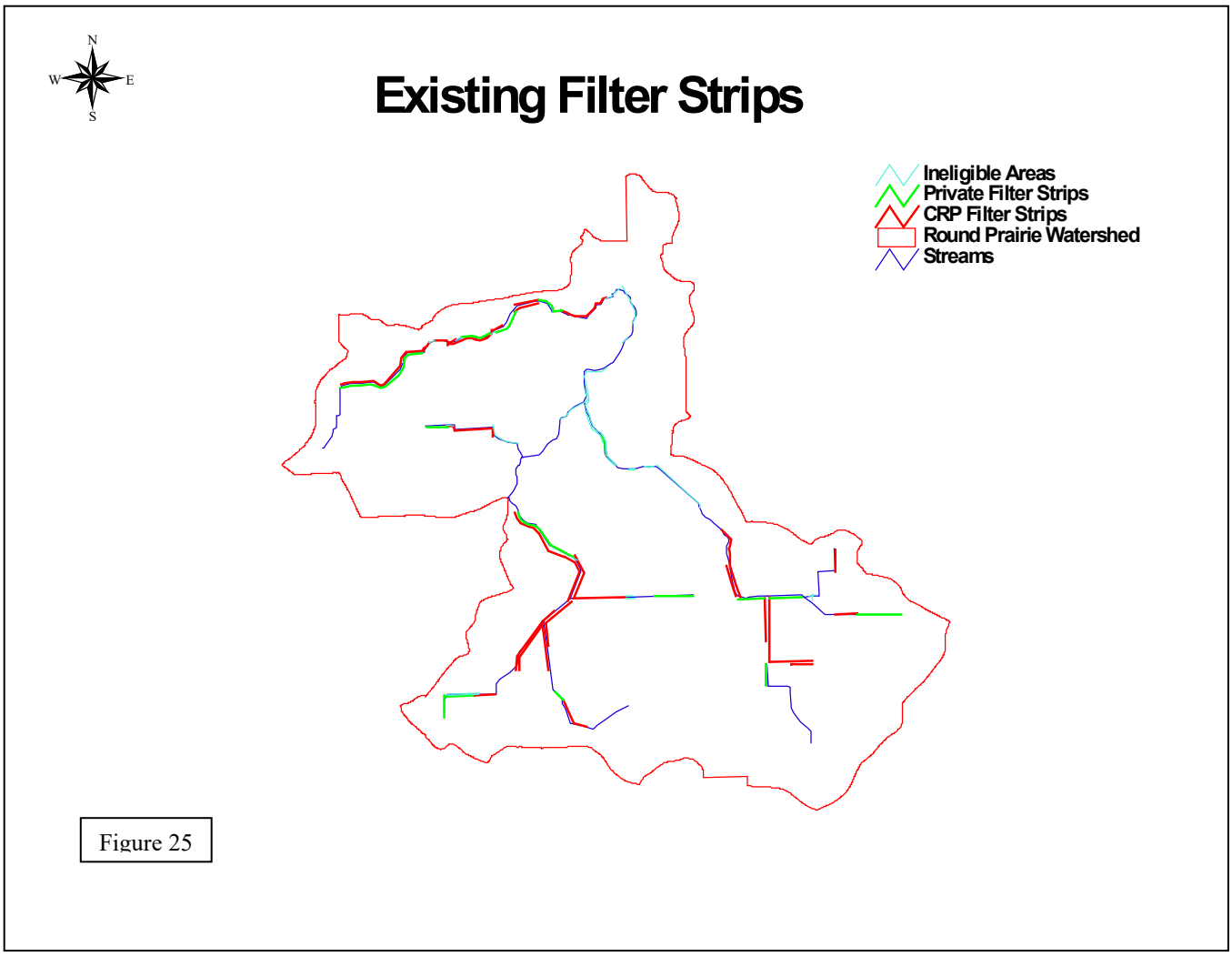


Figure 25

2.3.1.4 Site sampling: Throughout the watershed, many farmers and landowners have established filter strips or buffers along streams and ditches privately, or without participation in existing CRP or other conservation programs. To assess the extent of these private filter strips, an inventory was conducted by the project coordinator and representatives from the Steering Committee at all road crossings of streams and ditches in the watershed. According to this inventory, approximately 6 miles of private filter strips are located in the watershed. The

inventory also indicated that stream-bank erosion was present at 21 of the 84 banks inventoried. Full results of the inventory are available in Appendices (Round Prairie Assessment.mdb). Location of the data collection sites is displayed in *Figure 26* below.

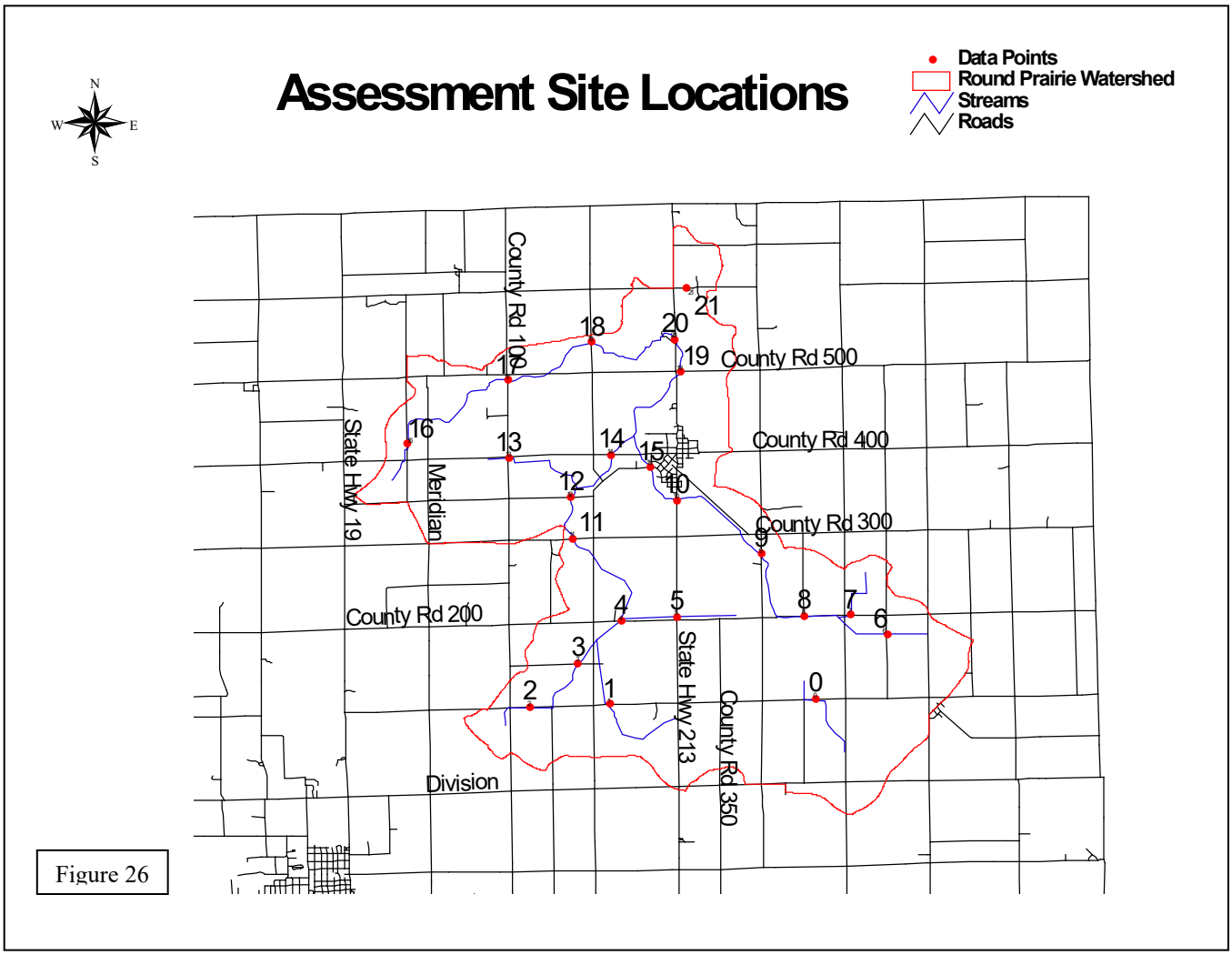


Figure 26

2.3.1.5 Impervious Surface: According to information from the Tipton County Assessors office, the following table depicts the amount of potentially "impervious surface" present in the watershed. Large areas of impervious surface can contribute to water quality problems, including: heavy metals, nutrients, oil & grease, salts, and increased flow rates in receiving waters.

Home Sites	Towns	Industrial/Commercial	Roads	Total % of Watershed Area
196 acres	291 acres	37 acres	310 acres	5%

Figure 27

Figure 28 below, depicts the distribution of impervious surfaces within 100 feet of a waterway.

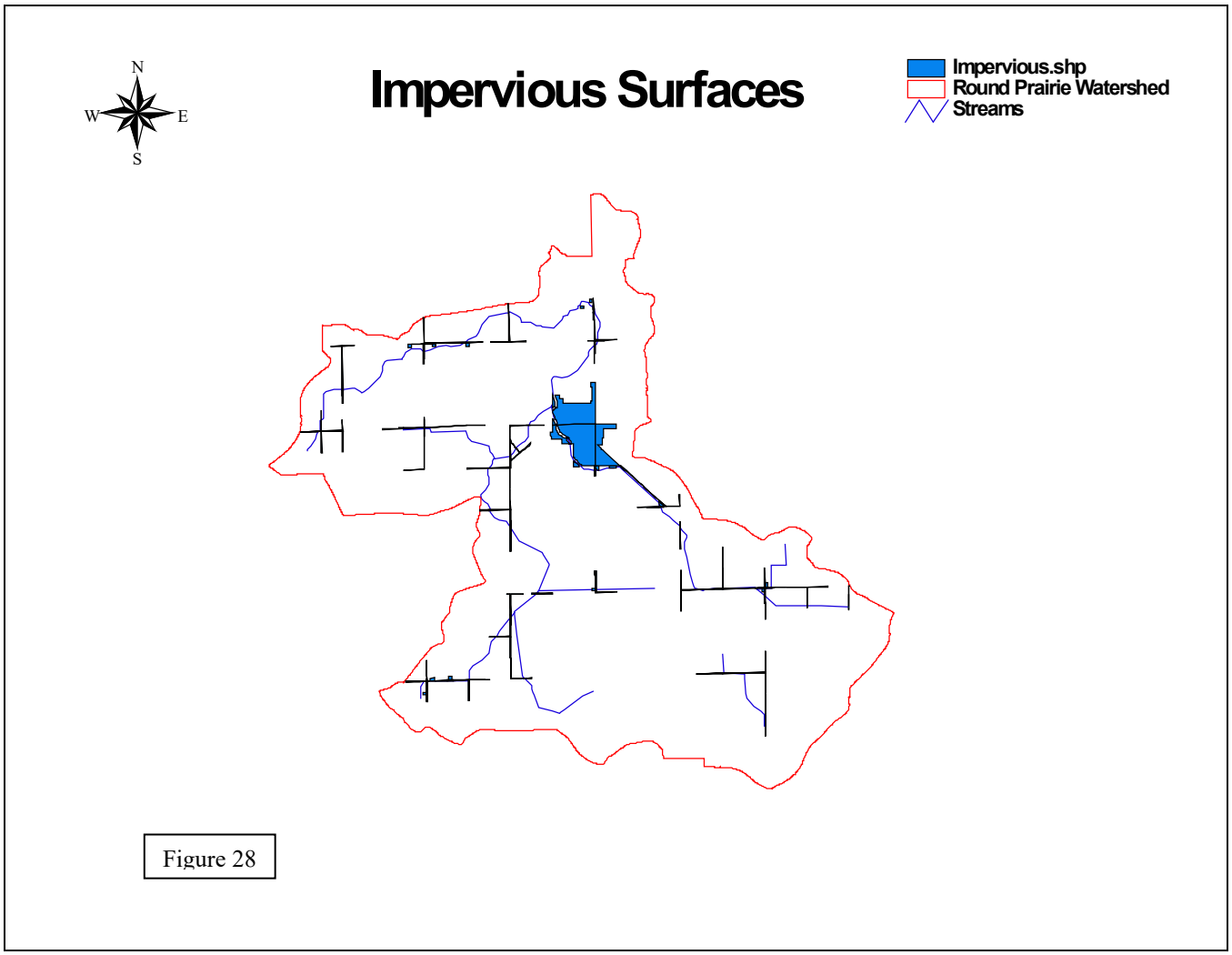


Figure 28

Additionally, sources from the Indiana Department of Natural Resources, Division of Soil Conservation, indicate that there have been few, if any, requests for Indiana Urban Erosion Control (Rule 5) development permits in the watershed area within the last five years.

2.3.1.6 Fertilizer Run-off: The following table, based on matrices in the Purdue Extension publication- *Guide for Watershed Partnerships,* estimate available nutrients in the watershed based on fertilizer sales and livestock manure. It is important to note that this information does not include nutrients available from other sources, such as septic system discharge, Combined Sewer Overflow events, and residential fertilizer sales.

Nutrients From Fertilizer

Fraction of County in Watershed	**x Total Nutrients (tons)***		**x 2,000 lbs/ton**	**Nutrients in Watershed (lbs)**	
9%	**Nitrogen**	**P_2O_5**		**Nitrogen**	**P_2O_5**
.09	3000	3220	X 2,000	540,000	579,600

Figure 29

* Source- Office of Indiana State Chemist. *Indiana Fertilizer Tonnage Reports*: January 1- December 31, 2001

2.3.1.7 Pesticide Run-off: Pesticides are applied by farmers to limit crop loss from insect predation and weed competition. According to estimates from the Purdue University Extension publication- *A Guide for Watershed Partnerships*, approximately 1% of the pesticides applied end up in our waterways. Using the following matrix taken from the *Guide,* pesticide loading for the Round Prairie Watershed were estimated as presented below.

Crop Type	Crop Acres in Watershed**	X	Pesticide Type	Fraction of acres treated in the state (2000 figures)*	X	Average Rate of application (lbs per acre) (2000 figures)*	=	Estimated amount of pesticide applied (lbs)
Corn	6,298	X	Atrazine	.80	X	1.41	=	7100
			Metolachlor	.41		1.5		3873
			Acetochlor	.26		2.01		3291
			Primisulfuron	.8		.02		100
			Cyanazine	--		--		
			Insecticides:					
			Tefluthrin	.13		.10		81.8
			Chlorpyrifos	.08		1.04		524
Soybeans	6,540	X	Glycophosphate	.71		.97		4504
			Chlorimuronethyl	.19		.01		12.4
			2,4,D	.14		.46		421
			Imazethapyr	.09		.04		23.5
			Paraquat	--		--		
Total Pesticide Applied in Watershed (lbs)								**19,930.7**
Approximate Amount of Herbicides Transported to Waterways								**199.3 lbs**

Figure 30

*Source- 2000-2001 Indiana Agricultural Statistics
**Source- 2000-2001 Indiana Agricultural Statistics (# acres crop type in County x 6% area in watershed x 94% watershed area in crops)

2.3.2 Causes: The predominant sources of run-off and sedimentation in the watershed appear to be from row crop agricultural fields, simply because this type of land usage dominates the geographic area. Run-off from urban and residential sources is minimal, due to their small percentage of land use in the watershed (approx. 5%).

2.3.3 Sources: Although the topography is relatively flat and erosion potential is low, the widespread use of conventional tillage systems (particularly used for corn production) appears to be the most significant source of mobilized sediment and attached pollutants.

2.3.4 Priority Areas: The use of filter strips along waterways is an effective method of minimizing the effects of run-off from conventionally tilled fields. Priority areas for addressing run-off and sedimentation are any areas adjacent to waterways that do not currently have filter strips (approximately 33 miles of eligible banks). Additionally, any agricultural fields using conventional tillage systems for crop production will be considered priority areas.

2.4 **Animal Waste**: Planning group participants determined, through brainstorming and consensus exercises, that storage, handling, and disposal of animal waste is the third priority quality issue facing the Round Prairie watershed. Nutrients and pathogens are the primary pollutants of concern.

2.4.1 Assessment: The Steering Committee met on February 20, 2003, to discuss methods to assess and characterize the extent of the water quality problem resulting from the storage, handling, and disposal of animal waste. Since no new water quality data is to be collected under the scope of this project, assessment methods target the collection of data from existing sources. The goal of the assessment procedure is to collect evidence that will identify causes and sources of pollution resulting from animal waste, and to identify priority areas in which to concentrate remediation efforts.

2.4.1.1 Livestock Operations Inventory: Indiana's confined feeding rule (327 IAC 16), applies to livestock producing operations with more than 300 cattle, 600 swine or sheep, or 30,000 fowl. According to records from the Indiana Department of Environmental Management, which administers the confined feeding regulations, there are two operations in the watershed which fall under the regulatory requirements. Using aerial photography and records from the Farm Service Agency, local NRCS and IDNR staff estimate that there are only seven other livestock operation in the watershed which is not subject to the confined feeding rule. Hog production is the most common form of livestock operations in the watershed. (See Section 1.2.6.1 for discussion of county-wide livestock trends) Data from these sources estimate the following breakdown of livestock present in the watershed:

Beef Cattle	Dairy Cattle	Swine	Fowl	Sheep
36	0	3,894	0	50

Figure 31

Based on the above estimates, the amounts of nutrients produced by livestock in the watershed were calculated using the matrices in the Purdue University Extension publication- *Guide for Watershed Partnerships:*

Livestock	# Head*	x Avg. Manure Produced	= Amount Manure Produced	Fraction Nutrients in lb. Manure		Lbs. N in Manure	Lbs. P in Manure
				Nitrogen	Phosphorus		
Beef Cattle	36	75 lb/day	2,700	.008	.0065	21.6	17.55
Dairy Cattle		115 lb/day		.0045	.002		
Hogs	3,894	11.7 lb/day	45,559	.0045	.004	205	18.2

Figure 32

Local NRCS staff indicate that storage of hog manure occurs most commonly under livestock buildings and is most often combined with lagoon systems. Application of manure is predominantly "knifed" or injected into agricultural fields, with some spraying through irrigation systems. Manure from cattle is typically scraped off concrete pads and spread onto fields with "honey-wagons". IDNR staff indicate that although the actual numbers of livestock present in the watershed are relatively low, significant amounts of manure are applied to fields in the watershed from livestock production sources residing outside the watershed area.

2.4.1.2 Livestock Access to Waterways: To assess the extent of livestock with direct access to streams and waterways, an inventory was conducted by the project coordinator and representatives from the Steering Committee at all road crossings of streams and ditches in the watershed. According to this inventory, only one area was identified where cattle had direct access to the stream. (Full results of the inventory are available in Appendix #3)

2.4.2 Causes: Typically, the causes of nutrient and pathogenic pollution to waterways resulting from livestock operations are associated with the storage, handing, and application of manure. Manure can leak or spill from storage pits, lagoons, tanks, etc. , improper application of manure can contaminate surface or ground water, and manure over-application can adversely impact soil productivity.

2.4.3 Sources: In the Round Prairie watershed, the primary livestock operations fall under the regulatory authority of IDEM's Confined Animal Feeding rule (327 IAC16). This regulatory program requires operators of livestock facilities to address issues such as: storage sufficiency, storage facility design criteria, acreage available for application, separation and setback requirements, a manure management plan detailing soil testing and application rates and areas, and adequate tracking and record-keeping. This would indicate that the majority of manure sources in the watershed are sufficiently addressed to minimize run-off the waterbodies. However, local farmers indicate that since manure is trucked in from outside sources, suitable application areas are often difficult to obtain.

2.4.4 Priority Areas: Local farmers indicate that fields in close proximity to livestock operations inevitably receive the heaviest loads of manure, due to the greater time and expense associated with long distance hauling. These fields are considered the highest priority areas in which to direct remediation efforts. Additionally, the one location in which livestock access to waterways was identified in the inventory is also considered high priority.

2.5 Pollutant Loads:

2.5.1 Agricultural Lands: NRCS staff indicate that the most prevalent row crop farming method is conventionally tilled corn followed by reduced tilled soybeans. Using the *Revised Universal Soil Loss Equation* (RUSLE), the approximately 14,574 acres of row crops farmed in this method in the watershed can be expected to lose approximately 0.46 tons of sediment per year per acre, or contribute approximately **6,700 tons of sediment** every year to receiving waterways. If farming methods were changed to no-till corn followed by no-till soybeans, the annual soil loss rate would be reduced to a mere 0.12 tons per year, and result in approximately 4,900 tons of soil saved every year, a reduction of erosion by 73%. Additionally, by using the IDEM tool "*Estimating Load Reductions for Agricultural and Urban BMP's*", approximately 3,037 pounds of phosphorus and approximately 6,059 pounds of nitrogen would be prevented from entering waterways.

According to the information examined in Sections 2.3.1.4 and 2.4.1.4, available nutrients in the watershed from agricultural sources are as follows:

	Nitrogen (lbs)	Phosphorus (lbs)
From Fertilizer	540,000	579,600
From Manure	226.5	35.75
TOTAL	**540,226.5**	**579,635.75**

Figure 33

2.5.2 Urban/Residential Lands: Using the IDEM *"Urban Runoff BMP Pollutant Load Reduction Worksheet"*, the following tables estimate potential pollutant loading , and potential for pollutant load reduction if "Vegetated Filter Strips" were employed as a "Best Management Practice" (BMP) in the contributing areas. Contributing areas were based on land-use information provided by the Tipton County Assessor's Office.

Land-Use	Sewered	Un-Sewered
Commercial	329 acres	
Industrial		
Institutional		
Transportation		310 acres
Multi-Family		
Residential		212 acres
Agriculture		13,239 acres
Vacant		
Open Space		647 acres

Parameter	Pre-BMP Loading (lbs/yr)	Post BMP Loading (lbs/yr)	Load Reduction (lbs/yr)
BOD	79,683	39,443	40,240
COD	750,510	450,306	300,204
TSS	2,873,220	775,769	2,097,451
Lead	882	485	397
Copper	233	U	U
Zinc	2,148	859	1,289
TDS	3,421,462	U	U
TN	41,886	25,132	16,754
TKN	18,367	U	U
DP	1,365	U	U
TP	3,325	1,820	1,504
Cadmium	9	U	U

U= Removal Efficiency for the Particular BMP and Constituent Unavailable.

Figure 34

Section 3 GOALS & SOULTIONS

3.1 **Failing Septic Systems**

3.1.1 Discussion & Rational: At the Work Team meeting held on April 4, 2003, the planning group attempted, through a consensus exercise, to define a goal, develop a list of alternatives/solutions, and develop action items to address this topic based on the information made available though the assessment process. The group agreed that enough information was collected (see Section 2.2) to determine that there is a significant threat to water quality from failed septic systems in the watershed. However, the group felt that more specific information is needed before definitive remediation actions can be employed. Particularly, the group believes that existing information on *E. coli* levels in the watershed streams is not sufficient to adequately characterize the extent or the sources of the contamination. The group believes that more intensive *E. coli* sampling is needed to establish water quality trends and to pin-point areas

in need of remediation. Since data collection of this sort was not included in the scope of this project, the group focused planning efforts on strategies to gather more information.

3.1.2 Alternatives: The following alternatives were discussed by the Work Team:

- Intensive *E. coli* sampling/monitoring project to establish trends and pin-point areas in most need of remediation.
- Voluntary compliance- free diagnosis of potential problems for homeowners via dye test combined with cost share for system upgrade or repair.
- Inventory of all homes in the watershed located within 500 feet of a receiving stream. These homes have greatest potential for presence of "straight pipe" discharges.
- Demonstration of alternative technology systems in the watershed. Evaluate the effectiveness of non-traditional septic systems to facilitate wide-spread use in situations where traditional septic systems are limited.

3.1.3 GOAL: "Comprehensively define extent and sources of pollution resulting from failed septic systems prior to developing and implementing a remediation strategy."

3.1.3 Recommendations & Action Items:

Recommendation #1: Conduct and intensive *E. coli* monitoring project in surface waters of the watershed to identify reaches of streams most subject to bacterial pollution, account for seasonal and stream flow variations, and to establish a water quality baseline for future remediation efforts. Use existing SWCD volunteer monitoring program as a springboard (See Section 2.1.1.5).

Action Item: Establish a series of sampling locations at strategic points along streams which will provide for a reach-by-reach analysis of *E. coli* concentrations. *Target Date:* 1/1/05. *Technical Assistance:* Tipton County Soil & Water Conservation District, Tipton County Health Department, Tipton County Surveyor's Office. *Estimated Cost:* $500.

Action Item: Develop a sampling schedule and list of water quality sampling parameters, including: *E. coli*, water temperature, flow, pH, Dissolved Oxygen, etc. Develop a Quality Assurance/Quality Control Plan for collection and analysis of data. *Target Date:* 1/1/05. *Technical Assistance:* Tipton County Soil & Water Conservation District, Tipton County Health Department, Tipton County Surveyor's Office, Indiana Department of Environmental Management. *Estimated Cost:* $2,000.

Action Item: Apply for funding to conduct *E. coli* monitoring project. *Technical Assistance*: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Tipton County Health Department. *Target Date:* 10/1/05. *Potential Funding Sources*: Tipton County Foundation, Environmental Fund for Indiana, Section 319 Grant (IDEM), IPALCO Golden Eagle Grants, corporate sponsorships, Lake & River Enhancement (IDNR), Water Quality Special Research Grants (CSREES). *Estimated Cost*: $20,000 per year of sampling.

Action Item: Conduct Monitoring Project. Develop database to chart and record water quality parameters by site. *Target Date:* 10/1/08. *Technical Assistance*: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Tipton County Health Department, private consultants. *Estimated Cost*: $20,000 per year of sampling.

Action Item: Analyze results of monitoring project. Develop remediation recommendations based on findings. *Target Date:* 10/1/08. *Technical Assistance*: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Tipton County Health Department, Indiana Department of Environmental Management, private consultants. *Estimated Cost*: $20,000 per year of sampling.

Recommendation #2: Conduct an inventory of all homes located within 500 feet of a receiving stream in the watershed.

Action Item: Develop inventory protocols, including: use of maps and aerial photographic data, use of County Assessor data, field collection data, use of GPS/GIS mapping, location of drainage tiles, record-keeping and data management, etc. *Target Date:* 1/1/05. *Technical Assistance*: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Tipton County Health Department,

Tipton County Assessors Office, Tipton County Commissioners, private consultants. *Estimated Cost*: $4,000.

Action Item: Hire staff/contractor and/or assign local personnel to conduct inventory. *Target Date:* 12/1/05. *Technical Assistance*: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Tipton County Health Department, Tipton County Assessors Office, Tipton County Commissioners, private consultants. *Potential Funding Sources*: Tipton County Foundation, Environmental Fund for Indiana, Section 319 Grant (IDEM), IPALCO Golden Eagle Grants, corporate sponsorships, Lake & River Enhancement (IDNR), Water Quality Special Research Grants (CSREES), Tipton County Commissioners. *Estimated Cost*: $18,000

Action Item: Analyze data and prepare a report of homes at "high risk" for pollution of surface waters resulting from improperly treated septic system waste. *Target Date:* 1/1/06. *Technical Assistance*: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Tipton County Health Department, Tipton County Assessors Office, private consultants. *Estimated Cost*: $5,000.

Recommendation #3: Develop an incentive based demonstration of new or non-traditional technology for septic systems that focuses on systems with problem soils or high water tables. Evaluate for wide-spread use in problem areas.

Action Item: Locate and target two home-sites in the watershed with systems that have failed due to problem soils and/or insufficient drainage of high water tables. *Target Date*: 1/1/05. *Technical Assistance*: Tipton County Health Department, Tipton County Soil & Water Conservation District. *Estimated Cost*: $5,000

Action Item: Determine the best available on-site technology suitable for correcting the failed system. Potential technology includes: re-circulating sand filters, mound systems, drip-irrigation systems, perimeter sub-surface drainage, constructed wetland systems, etc. *Target Date*: 1/1/06. *Technical Assistance*: Tipton County Health Department, Tipton County Soil & Water Conservation District. *Estimated Cost:* $5,000.

Action Item: Acquire a grant or low interest loan funding to subsidize the replacement of the failed systems with the most suitable technology. *Potential Funding Sources*: Indiana State Revolving Fund Loan Program (IDEM), Section 319 Grant (IDEM), Tipton County Foundation Grant, Water Quality Cooperative Agreements (USEPA). *Target Date*: 1/1/07 *Estimated Cost*: $2,000

Action Item: Hire engineers to design the replacement systems and contractors to install the new on-site technology. Secure any required state or local permits (eg. NPDES, Section 404/401, Groundwater discharge permit, local septic permit, etc.) *Target Date*: 1/1/08. *Estimated Cost*: $40,000.

Action Item: Conduct post installation inspection and monitoring of the systems to determine effectiveness of the new technology. Utilize dye test and *E. coli*/nutrient monitoring. *Technical Assistance:* Tipton County Health Department, Tipton County Soil & Water Conservation District, private consultants. Target Date: 1/1/09. *Estimated Cost:* $5,000.

Action Item: Conduct outreach program in the watershed and county to publicize the results. *Technical Assistance*: Tipton County Health Department, Tipton County Soil & Water Conservation District, Tipton County Commissioners, Purdue Cooperative Extension Service, Rural Community Assistance Program. *Target Date*: 1/1/10. *Estimated Cost*: $7,000.

Recommendation #4: Develop a "Voluntary Compliance" program that offers free septic system diagnosis and cost share toward system repair, upgrade or replacement.

Action Item: Develop a program that offers free septic system diagnosis to residents in the watershed by using dye testing or similar methods. Target areas and homes identified through the efforts of Recommendations #1 and #2. *Technical Assistance*: Tipton County Health Department. *Target Date:* 1/1/04. *Estimated Cost*: $2,000

Action Item: Acquire a grant or low interest loan funding to subsidize the repair, upgrade, or replacement of failed systems. Target areas and homes identified through the efforts of Recommendations #1 and #2. When appropriate, utilize non-traditional systems evaluated through the efforts of Recommendation #3. Create a low interest loan program that ties the loan to the property in the form of a lien. Secure any required state or local permits prior to conducting repair activities. *Potential Funding Sources*: Indiana State Revolving Fund Loan Program (IDEM), Section 319 Grant (IDEM), Tipton County Foundation Grant, Water Quality Cooperative Agreements (USEPA), Rural Community Assistance Program, Tipton County Commissioners, Tipton County Council. *Target Date*: 1/1/07 *Estimated Cost*: $200,000

3.2 Run-Off and Sedimentation

3.2.1 Discussion & Rational: At the Work Team meeting held on April 4, 2003, the planning group attempted, through a consensus exercise, to define a goal, develop a list of alternatives/solutions, and develop action items to address this topic based on the information made available though the assessment process. Discussion centered on practicable ways in which sedimentation of waterways could be reduced from agricultural lands. Although the information presented in Section 2.5.1 indicates that the most effective method for reducing sediment loads to receiving streams is to adopt wide-spread use of "no-till" tillage systems, the group believes that due to significant economic risks for farmers, adoption of no-till practices on the majority of watershed agricultural land is unlikely. However, the group decided to encourage the adoption of no-till by facilitating local discussion and conducting educational activities.

The group decided that the most plausible means to reduce sedimentation in the watershed is to facilitate the installation of grassed filter strips adjacent to streams and ditches. The group felt that existing conservation cost share programs provide an adequate incentive for landowners to remove these lands from agricultural production and establish grassed filter strips. However, the group believes that the addition of additional locally based incentive programs may be necessary to facilitate wide-spread use. Information in Section 2.3.1.3 indicates that currently, approximately 59% of banks currently have some level of filter strip protection. The group also believes that the installation of filter strips will help to improve water quality by providing setback distances for pesticide, manure, and fertilizer applications, as well as reducing erosion of stream-banks.

3.2.2 Alternatives: The following alternatives were discussed by the Work Team:

- Install filter strips along 100% of available banks.
- Develop an intense publicity/marketing program to encourage adoption of filter strips.
- Develop a locally based cost share incentive program in addition to existing CRP program.
- Encourage greater use of no-till tillage systems, particularly no-till corn.

3.2.3 GOAL #1: "Reduce sedimentation of waterways from agricultural sources by installing grassed filter strips adjacent to streams and ditches along 100% of eligible banks."

GOAL #2: "Reduce sediment and nutrient loads to waterways by encouraging greater use of no-till corn."

3.2.4 Recommendations & Action Items:

Recommendation #1: Establish the Round Prairie Watershed as a local priority area for NRCS EQIP funding.

Action Item: Submit the following statement to local NRCS personnel for inclusion on EQIP local ranking criteria for Water Quality resource concern: "Are the acres for contract located within the Round Prairie 14 digit HUC area, for which a Watershed Management Plan has been developed?" **Completed- 1/2003.**

Recommendation #2: Install filter strips along 100% of eligible banks (approximately 8.4 miles of banks).

Using the IDEM tool "*Estimating Load Reductions for Agricultural and Urban BMP's*", load reductions for sediment, nitrogen and phosphorus resulting from the installation of filter strips per Recommendation #1 are estimated as follows:

21 miles of banks installed = 10.5 miles of streams/ 23 total stream miles = 45% of watershed area (15,361 acres) = 6,912 contributing acres.

Sediment Load Reduction (ton/year)	33

Phosphorus Load Reduction (lb/year)	164
Nitrogen Load Reduction (lb/yr)	304

Figure 35

Action Item: Develop a cost share assistance program to subsidize filter strip establishment. Utilize existing programs such as CRP, EQUIP, Encourage the development of a local match program, using ditch assessment funds or local grants, to further subsidize landowner portion. *Technical Assistance*: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service. *Target Date:* 1/1/06 *Estimated Cost*: $2,000

Action Item: Develop a marketing program to publicize cost share assistance program and benefits of filter strips. Target landowners with no existing buffers. Marketing materials include:

- Informational bulletins and targeted mailings.
- Billboard advertising.
- Press releases and feature articles; case studies.
- Display for use at city & county events.
- Organized luncheons or breakfasts.
- Phone calls and/or personal visits to candidates.

Technical Assistance: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, Purdue Cooperative Extension Service, private contractors. *Target Date:* 6/1/06. *Potential Funding Sources*: Tipton County Foundation, Environmental Fund for Indiana, Section 319 Grant (IDEM), IPALCO Golden Eagle Grants, corporate sponsorships, Lake & River Enhancement (IDNR). *Estimated Cost*: $15,000.

Action Item: Establish approximately 21 miles of filter strips or buffers in eligible areas along streams and ditches. *Technical Assistance*: Tipton County Surveyor, Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, private contractors. *Target Date:* 1/1/08. *Potential Funding Sources*: Tipton County Foundation, Environmental Fund for Indiana, Section 319 Grant (IDEM), IPALCO Golden Eagle Grants, CRP (NRCS), EQUIP (NRCS), local ditch assessments revenues, corporate sponsorships, Lake & River Enhancement (IDNR). *Estimated Cost*: $12,000 (approx. $150 per acre).

Recommendation #3: Encourage the adoption of "no-till" tillage systems for the production of corn.

Action Item: Develop a list of all producers in the watershed currently using no-till systems for corn production. Facilitate dialogue between these individuals and other potential no-till users via the creation of a "No-till Corn Work Group". Conduct periodic meetings of the work group to share successes, experiences, discuss problems, and promote greater use of no-till corn. *Technical Assistance*: Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, Purdue Cooperative Extension Service, Conservation Tillage Information Center (CTIC). *Target Date:* 1/1/05. *Estimated Cost*: 2,000

Action Item: Develop one or more no-till corn demonstration fields. Host periodic field days at the demonstration fields to illustrate production oriented topics associated with no-till corn production, such as: yields, production costs & time, soil properties, pesticide and nutrient inputs, etc. *Technical Assistance*: Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, Purdue Cooperative Extension Service, Conservation Tillage Information Center (CTIC). *Target Date:* 1/1/05. *Estimated Cost*: $2,000

Action Item: Publish regular no-till corn related articles resulting from activities in Recommendations #1 and #2, in local media; including SWCD newsletters, local newspapers, and Purdue Extension

publications. *Technical Assistance*: Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, Purdue Cooperative Extension Service, Conservation Tillage Information Center (CTIC). *Target Date:* 1/1/05. *Estimated Cost*: $1,000

Action Item: Establish a list of well respected producers successfully using no-till corn systems that are available to custom plant for neighbors that are willing to experiment with no-till corn. This will minimize equipment costs and reduce risk for new participants. *Technical Assistance*: Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, Purdue Cooperative Extension Service, Conservation Tillage Information Center (CTIC). *Target Date:* 1/1/05. *Estimated Cost*: $1,000

3.3 Animal Waste

3.3.1 Discussion & Rational: At the Work Team meeting held on April 4, 2003, the planning group attempted, through a consensus exercise, to define a goal, develop a list of alternatives/solutions, and develop action items to address this topic based on the information made available though the assessment process. Group discussion focused on the declining numbers of livestock operations in the watershed and in the county; due mostly to declining commodity prices and competition from large-scale production facilities. This trend is also discussed in Sections 1.2.6.1 and 2.4.1.1. Group members commented that most current livestock operations fall under the IDEM Confined Animal Feeding program, and that manure storage and disposal is conducted in a manner that minimizes water pollution. The group felt that the most important issue related to livestock production is livestock with direct access to waterways, and the resulting bank erosion, sedimentation, nutrient and pathogenic water quality problems. Although assessment efforts identified only one such operation in the watershed, the group felt compelled to concentrate efforts toward the remediation of this operation. The group also recognized the increasingly difficult and expensive task of locating and transporting animal waste to suitable fields for application. The group suggested the exploration of on-site waste treatment and disposal systems to eliminate off-site application.

3.3.2 Alternatives: The following alternatives were discussed by the Work Team:

- Fencing
- Alternative water sources
- Alternative waste storage/disposal systems
-

3.3.3 GOAL #1 "Reduce sediment, nutrient, and pathogenic contamination of waterways by the exclusion of all livestock from streams and ditches."

GOAL #2 "Reduce the potential for nutrient overloading of fields and potential for manure run-off to waterways by exploring the potential for on-site animal waste treatment and disposal."

3.3.4 Recommendations & Action Items:

Recommendation #1: Establish the Round Prairie Watershed as a local priority area for NRCS EQIP funding.

Action Item: Submit the following statement to local NRCS personnel for inclusion on EQIP local ranking criteria for Water Quality resource concern: "Are the acres for contract located within the Round Prairie 14 digit HUC area, for which a Watershed Management Plan has been developed?" **Completed- 1/2003.**

Recommendation #2: Exclude all livestock from streams and ditches.

Action Item: Contact landowner/operator of facility with cattle accessing Round Prairie and encourage exclusion of livestock by installing fencing and developing alternative water sources. *Technical Assistance*: Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, Purdue Cooperative Extension Service. *Target Date:* 1/1/05.

Action Item: Utilize existing incentive programs to facilitate the exclusion of livestock to Round Prairie. *Technical Assistance*: Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service. *Target Date:* 1/1/05. *Potential Funding Sources*: Conservation Reserve Program (NRCS), EQUIP (NRCS), Lake & River Enhancement (IDNR). *Estimated Cost*: $8,000.

Recommendation #3: Facilitate the development of alternative on-site manure storage/treatment/disposal facilities.

Action Item: Locate and contact a livestock producer willing to consider an alternative manure management system for demonstration purposes. *Technical Assistance*: Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, Purdue Cooperative Extension Service. *Target Date:* 6/1/05.

Action Item: Determine the best available on-site technology suitable for storing, treating, and disposing on animal waste on-site. Potential technology includes: constructed wetland systems, drip-irrigation systems, re-circulating filters, etc. *Target Date*: 1/1/06. *Technical Assistance*: Tipton County Soil & Water Conservation District, Indiana Department of Natural Resources-Division of Soil Conservation, USDA-Natural Resources Conservation Service, Indiana Department of Environmental Management, private consultants. *Estimated Cost:* $5,000.

Action Item: Acquire a grant or low interest loan funding to subsidize the installation of an alternative animal waste treatment system. *Potential Funding Sources*: Indiana State Revolving Fund Loan Program (IDEM), Section 319 Grant (IDEM), Tipton County Foundation Grant, Water Quality Cooperative Agreements (USEPA), EQUIP (USDA/NRCS). *Target Date*: 1/1/07

Action Item: Hire engineers to design the replacement systems and contractors to install the new on-site technology. Secure any required state or local permits (eg. NPDES, Section 404/401, Groundwater discharge permit, local permits, etc.) *Target Date*: 1/1/08. *Estimated Cost*: $150,000.

Action Item: Conduct post installation inspection and monitoring of the system to determine effectiveness of the new technology. *Technical Assistance:* Tipton County Health Department, Tipton County Soil & Water Conservation District, USDA/NRCS, IDNR, IDEM, private consultants. Target Date: 1/1/09. *Estimated Cost:* $5,000.

Action Item: Conduct outreach program in the watershed and county to publicize the results. *Technical Assistance*: Tipton County Health Department, Tipton County Soil & Water Conservation District, Tipton County Commissioners, Purdue Cooperative Extension Service, Rural Community Assistance Program. *Target Date*: 1/1/10. *Estimated Cost*: $7,000.

Section 4. MEASURING PROGRESS

4.1 **Failing Septic Systems**: Progress toward Plan completion and meeting the Group's goal for failing septic systems will be measured against the following milestones, in order of importance:

1. Development of a comprehensive *E. coli* monitoring project per Recommendation #1 in Section 3.1.3. *E. coli* levels established as a result of this project will be used as the primary benchmark indicator on which to base future remediation efforts.
2. Completion of a home-site inventory per Recommendation #2 in Section 3.1.3. Results of the inventory will provide baseline data of the home-sites in the watershed with the greatest potential to affect water quality via failed septic systems. The establishment of this data will be used as an indicator on which future remediation efforts will be based, particularly, the numbers of these priority home-sites that participate in septic system evaluation and repair, per Recommendation #4 in Section 3.1.3.
3. Installation of an alternative septic system demonstration project, per Recommendation #3 in Section 3.1.3. Monitoring of the effectiveness of this new technology will be conducted as part of the demonstration project. Pre-treatment and post-treatment *E. coli* levels and nutrient levels will be evaluated. Success of the alternative technology will be evaluated against these parameters. Success of the demonstration project will also be

measured by the numbers of people targeted and reached through the demonstration project's education and marketing component.

4. Development and implementation of the "Voluntary Compliance" program per Recommendation #4 in Section 3.1.3. Success of this program will be measured against the numbers of priority home-sites, as identified as a result of Recommendation #2 in Section 3.1.3, evaluated and repaired. Additionally, *E. coli* levels in surface waters downstream of repaired systems will be monitored using the procedures established by Recommendation #1 in Section 3.1.3, and compared against the benchmark levels. Project success will be accomplished when follow-up *E. coli* monitoring results in surface waters are below the Maximum Contaminant Level of 235 cfu/100 ml, or current water quality standard.
5. Operation & Maintenance: All data collected and/or practices installed per the above Recommendations, will be evaluated and maintained by the Tipton County Soil & Water Conservation District, or, by the appropriate responsible entity, as dictated by the specifics of the particular project.

4.2 Run-Off & Sedimentation: Progress toward Plan completion and meeting the Group's goal for addressing run-off and sedimentation in the watershed will be measured against the following milestones, in order of importance:

1. Establishment of the Round Prairie as a local priority area for NRCS EQIP funding**. Completed 1/2003.**
2. Installation of grassed filter strips along approximately 8.4 miles of banks in the watershed, per Recommendation #2 in Section 3.2.4. Load reductions for sediment, nitrogen, and phosphorus from each installed filter strip will be calculated by using the IDEM tool "*Estimating Load Reductions for Agricultural and Urban BMP's*". Total load reductions for the 21 miles of filter strips area estimated as follows:

Sediment Load Reduction (ton/year)	33
Phosphorus Load Reduction (lb/year)	164
Nitrogen Load Reduction (lb/yr)	304

Figure 36

Success of the filter strip program will also be measured by the numbers of people targeted and reached through the program's education and marketing component.
3. Success criteria for encouraging the adoption of "no-till" corn, per Recommendation #3 in Section 3.2.4 include: development of the "No-Till Corn Work Group" and numbers of participants, development of "no-till" corn demonstration fields and number of participants at associated field days (load reductions for sediment, nitrogen, and phosphorus from each installed demonstration field will be calculated by using the IDEM tool "*Estimating Load Reductions for Agricultural and Urban BMP's*"), and numbers of educational publications published in local media.
4. Operation & Maintenance: All data collected and/or practices installed per the above Recommendations, will be evaluated and maintained by the Tipton County Soil & Water Conservation District, or, by the appropriate responsible entity, as dictated by the specifics of the particular project.

4.3 Animal Waste: Progress toward Plan completion and meeting the Group's goal for addressing animal waste in the watershed will be measured against the following milestones, in order of importance:

1. Establishment of the Round Prairie as a local priority area for NRCS EQIP funding**. Completed 1/2003.**
2. Exclusion of livestock from Round Prairie from site identified in the watershed inventory (see Appendix #3 for results). Load reductions for Chemical Oxygen Demand and Phosphorus will be calculated by using the IDEM tool "*Estimating Load Reductions for Agricultural and Urban BMP's*") following installation of appropriate exclusion BMP's.
3. Installation of an alternative on-site manure facility per Recommendation #3 in Section 3.3.4. Load reductions for Chemical Oxygen Demand and Phosphorus will be calculated by using the IDEM tool "*Estimating Load Reductions for Agricultural and Urban BMP's*") following installation of appropriate exclusion BMP's. Effectiveness of the technology will be evaluated by monitoring pre-treatment and post-treatment effluent characteristics. Success of the demonstration project will also be measured by the numbers of people targeted and reached through the program's education and marketing component.
4. Operation & Maintenance: All data collected and/or practices installed per the above Recommendations, will be evaluated and maintained by the Tipton County Soil & Water Conservation District, or, by the appropriate responsible entity, as dictated by the specifics of the particular project.

Section 5. FUNDING SOURCES

The table below depicts potential funding sources and contact information for recommended projects.

SOURCE	CONTACT INFO.

Section 319	IDEM. (317) 232-0019 www.ai.org/idem/owm
Section 205(j)	IDEM. (317) 232-0019 www.ai.org/idem/owm
Tipton County Foundation	
IPALCO Golden Eagle Grants	(317) 736-8994 www.ipalco.com/aboutipalco/news/03-30-99.html
Section 104(b)(3)	IDEM. (317) 232-0019 www.ai.org/idem/owm
Environmental Quality Incentives Program (EQIP)	NRCS. (317) 290-3200 www.in.nrcs.usda.gov
Conservation Reserve Program (CRP)	NRCS. (317) 290-3200 www.in.nrcs.usda.gov
Lake & River Enhancement (LARE)	(317) 233-3870 www.state.in.us/dnr/soilcons
State Revolving Fund (SRF)	IDEM. (317) 232-0019 www.ai.org/idem/owm
Water Quality Special Research Grants	Cooperative State Research Education & Extension Service (CSREES). USDA. (202) 401-5971
Chemical Emergency Preparedness & Prevention Technical Assistance Grants	USEPA- (202) 260-0030 www.epa.gov/ceppo
Pesticide Environmental Stewardship Grants	USEPA. (703) 308-7035 www.pesp.org
Watershed Protection & Flood Prevention Program	USDA, NRCS (202) 720-3534 www.ftw.nrcs.usda.gov/programs.html
Watershed Assistance Grants	USEPA (202) 260-4538 www.epa.gov/owow/wag.html
Water Quality Cooperative Agreements	USEPA (202) 260-9545 www.epa.gov/owm/wm042000.htm

Figure 37

Section 6. ADMINISTRATIVE

6.1 **Plan Evolution/Progress Reports**- The Tipton County Soil & Water Conservation District will be the primary record-keeper and responsible entity for the watershed management plan. The document will be reviewed biennially by the SWCD to determine if established goals are being met according to the specified schedule and to make any adjustments or updates based on new information. The results of the biennial evaluation will be made available to stakeholders in the watershed via SWCD Board meetings, newsletters, direct mailings, and/or articles in local press.

6.2 **Contact Information-** If you have any questions regarding the intent or content of this plan, please contact:

Randy Jones, Project Coordinator or Tipton County Soil & Water Conservation District
317/933-4169 765/ 675-2316
rcjones@franklinisp.net

6.3 **Distribution List-** Hard copies and electronic versions, as well as the GIS information, of this watershed management plan will be available at:

Tipton County Soil & Water Conservation District
243 Ash Street, Suite B.
Tipton, IN 46072.
765/ 675-2316

Hard copies will be provided to the following:

Tipton County Commissioners Tipton County Surveyor's Office
Tipton County Health Department Tipton Economic Development Council

6.4 **Calendar of Events:**

This watershed management plan was developed according to events summarized in the table below:

DATE	EVENT	OUTCOME
7/01	Developed topographic & aerial watershed maps.	Used for prioritization and informational purposes.
7/31/01	Watershed Prioritization Committee Meeting	Selected 4 14-digit watersheds for plan development.
8/23/01	"Kick-Off" event at Cargill luncheon	Introduced project to local citizens. Developed informational flyer.
10/3/01	Science Club presentation	Conducted workshop at local high school to explain project.
8/02	Supplemental SWCD Newsletter	Distributed informational newsletter/meeting invitation announcing project to approx. 500 watershed residents.
8/02	Press releases	Sent press releases to local media announcing watershed meeting and explaining project.
8/02	Identified key watershed group participants	Invited to participate through personal contacts from SWCD supervisors and target mailings.
9/10/02	Public meeting	Held first meeting to introduce project to public, provide watershed resource overview, group ground rules, and process.
10/02	Developed GIS based mapping and data collection system.	Includes spatial coverages for watershed resources.
11/02	Researched existing water quality & resource data.	Gathered & summarized data from existing local, state, & federal sources.
12/5/02	Steering Committee Meeting	Presented plan for watershed development to, solicited input for plan goals, timeline, actions, etc..
12/02	SWCD Newsletter, Press Releases	Distributed articles on project status and announced public meeting.
1/14/03	Public Meeting	Conducted meeting to identify and prioritize local concerns via Nominal Group Technique procedures and discuss assessment procedure.
2/20/03	Steering Committee Meeting	Developed procedures for watershed assessment.
3/03	Identified potential assessment collection sites.	Located sites with SWCD staff for assessment data collection.
3/03	County Health Dept. meetings	Met with local personnel to collect resource data.
3/03	Watershed Inventory	Conducted watershed inventory w/ Steering Committee members.
3/03	Began drafting Watershed Management Plan	
3/03	Press Releases, target mailings	Distributed articles on project status and announced public meeting.
4/7/03	Public Meeting	Presented results of assessment and identified goals, solutions, and tasks through consensus process.
4/03	Continued updating/revising Management Plan	
5/03	Submit Draft Watershed Management Plan to SWCD for comments	
5/03	Submit Draft Watershed Management Plan to IDEM for comments	
5/03	Revise plan based on comments.	
5/16/03	Steering Committee Meeting	Review/revise Goals and recommendations. Develop Vision & Mission statements.
5/19/03	Revise WMP based on Steering Committee comments.	
5/27/03	Submit draft plan for SWCD and IDEM comment.	
7/03	Submit Final Plan.	

Figure 38

6.5 Table of Acronyms

ACRONYM	DEFINITION
BMP	Best Management Practice
CES	Cooperative Extension Service
CRP	Conservation Reserve Program
EQIP	Environmental Quality Incentives Program
HUC	Hydrologic Unit Code
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
LARE	Lake and River Enhancement
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
SWCD	Soil & Water Conservation District
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Service
WMP	Watershed Management Plan

Figure 39

6.6 **Appendices:**

1. 14 digit HUC Prioritization Process Results
2. Issues Prioritization- Nominal Group Technique Results
3. Survey Results
4. Site Assessment Results
5. GIS Portable File

Appendix #1

Watershed Prioritization Meeting
Summary

When: July 31, 2001

Where: Tipton County Foundation Center

Participants:

George Tebbe-	SWCD Supervisor
Kurt Fettig-	SWCD Supervisor
Judy Baird-	SWCD Staff
Gail Peas-	IDNR
Luther Cline-	Tipton County Surveyor
Nolan Pyke-	Tipton County Health Department
Keith Shoettmer-	Citizen at Large
Mark Raver-	First National Bank

Facilitator: Randy Jones

Purpose:

Choose four 14-digit watersheds in Tipton County in which to conduct comprehensive watershed management planning.

Criteria:

Two watersheds must lie in the Wildcat Creek 8-digit watershed, and two watersheds must lie in the Upper White River 8-digit watershed.

Method:

Systematically discuss the 29 14-digit watersheds that are fully or partly contained within Tipton County and include or exclude based on resource issues identified by the participants. The method relied heavily on knowledge of local issues and resources by the participants. The list of resource issues or criteria was not prior conceived or limited to allow maximum flexibility and creativity by the participants.

Results:

1. Cicero Creek- Bacon Prairie Creek/Buscher Ditch *(Upper White River)*
   HUC#: 05120201080060
2. Cicero Creek- Buck Creek/Campbell Ditch *(Upper White River)*
   HUC#: 05120201080040
3. Turkey Creek- Askren/Round Prairie Ditch *(Wildcat Creek)*
   HUC#: 05120107010060
4. Mud Creek Headwaters *(Wildcat Creek)*
   HUC#: 05120107010030

14-Digit Name	Included	Reason
Bear Creek- West Fork Bear Creek	No	Small size, small portion within county
Cicero Creek- Bacon Prairie Cr/Buscher Dt	**YES**	Size, canning factory, heterogeneous topography, Town of Hobbs
Cicero Creek- Buck Creek-Campbell Dt	**YES**	Industrial park, housing developments, Buck Creek fish kills, poultry, size
Cicero Cr- Dixon Cr- Crum Dt	No	Few livestock operations, homogenous topography
Cicero Cr- Tobin Dt	No	Small size, small portion within county
Cicero Cr- Weasel Dt	No	Small size, small portion within county
Cox Dt- Chrity/Kingin Dt	No	No towns, few livestock
Duck Cr- Lamberson Dt	No	Small size, small portion within county
Duck Cr- Little Duck Cr	No	Small size, small portion within county
Duck Cr- Polywog Cr	No	More diverse issues in Bacon Prairie Creek, TOUGH DECISION
Duck Cr- Todd Dt	No	Small size, small portion within county
Kilmore Cr- Shanty Cr	No	Small size, small portion within county
Kilmore Cr- Stump Dt	No	Small size, small portion within county
Kokomo Cr- Headwaters	No	Larger portion of watershed out of county, **Good potential for Wildcat Group**
Kokomo Cr- Lower	No	Small size, small portion within county
Little Cicero Cr- Bennett Dt-Taylor Cr	No	Small size, small portion within county
Little Cicero Cr- Teter Br	No	Small size, small portion within county
Little Wildcat Cr- East & West Forks	No	No towns, few livestock
Little Wildcat Cr- Lower	No	Small size, small portion within county
Middle Fork Dt	No	Small size, small portion within county
Mud Cr- Headwater	**YES**	Recent drainage reconstruction, Sharpsville, livestock, HEADWATER
Mud Cr- North Cr	No	No towns
Prairie Cr- Rearce/McKinzie Dt	No	Small size, small portion within county
Sugar Cr- Mallot Dt	No	Not in Wildcat or Upper White river
Swamp Cr	No	Small size, small portion within county
Turkey Cr- Askren/Round Prairie Dt	**YES**	Windfall, livestock, recent drainage maintenance in upper, wooded corridor in lower reach, streambank erosion.
Turkey Cr- Headwaters	No	No towns, few livestock
Wildcat Cr- Honey Cr	No	Small size, small portion within county
Wildcat Cr- Mud Cr-Irwin Cr	No	No towns, most of main stem out of county

NOTE: Bolded watersheds had good merits and passed the initial cut. Discussion focused mainly on subtle differences between these nine watersheds.

Wildcat Watershed Planning Meeting
1/15/02
Meeting Summary

Meeting Publicity:

1. Mailed invitations to Steering Committee members, past participants and persons identified as "key" stakeholders.
2. Sent press release to Tipton & Kokomo papers announcing meeting and explaining project purpose & strategy. Included map of target watersheds.
3. Drafted announcement for inclusion in SWCD newsletter.

Attendance:

Matt Jarvis, NRCS	Roger Gunning
Amy Henniger, IDEM	Chris Kelley
Judy Baird	Nolan Pyke, Tipton Co. Health Dept.
John Hussey	George Tebbe
Bill Findley	Tim Salsberry
Howard Heath	Jim Stinson, Kokomo Tribune

Agenda:

1. Project Purpose & Strategy
2. Focus Watershed Areas
3. "Impaired Waters"
4. Identify Priorities
5. Watershed Inventory
6. Next Steps

Methods:

Information presented at the last public meeting was briefly reviewed. Answers to last meeting's survey questions were distributed. Participants were asked to review the answers, particularly focusing on the question "**What do you feel are the most critical threats to water quality in your area?"**.

The whole group was asked to brainstorm any additional ideas they had concerning the question, to offer clarification of stated issues, or to combine like ideas. These statements were recorded on a flip chart. Once this was completed, the participants were given 4 sticky notes, worth one point apiece, and asked to rank the recorded issues in terms of priority. The results are listed below:

1.	Failing Septic Systems	19 points
2.	Run-off	8 points
3.	Sediment	4 points
4.	Animal Waste	1 point

Survey Results:

Question #1: **"Why is water quality important to you?"**

- "Safe drinking water."
- "Drinking water, fish/wildlife habitat, recreation."
- "Safety, need for survival."
- "Water is a limited resource."
- "Health of family, quality of life."
- "Safe drinking water, Keep IDEM & govt. bodies out of Tipton County as much as possible." (ha! ha!)
- "We all like to have clean drinking water."
- "I want to leave the environment in as good condition as possible."
- "We all use it at some point, in some way. Our business is dealing with water (ditch maintenance). We must balance human needs with wildlife needs. Try to keep pollutants from being a permanent fixture in a particular system."
- "Water is part of the total environment."

Question #2: **"What do you feel are the most critical threats to water quality in your area?"**

- "Septic systems."
- "Sediment, Pesticides/herbicides (esp. residential use), failing septic systems."
- "Concentrated housing with own (individual) septic systems. Any operation located near a point source. Livestock operations not managed properly or not following regulations."
- "Urban growth- failure of septic systems due to soil type."
- "Residential over application of fertilizers. Old septic systems."
- "Surface run-off from chemicals & waste. Human waste into streams/ditches from older homes w/o septic systems. Wildlife waste. Low or lack of high water in ditches."
- "Septic tanks."
- "Sewage. Livestock run-off. Fertilizers. Chemicals."
- "Soil erosion, stagnation, human waste, run-off in heavy rains."
- "Run-off directly into flowing streams & ditches from fields, streets, & roads."

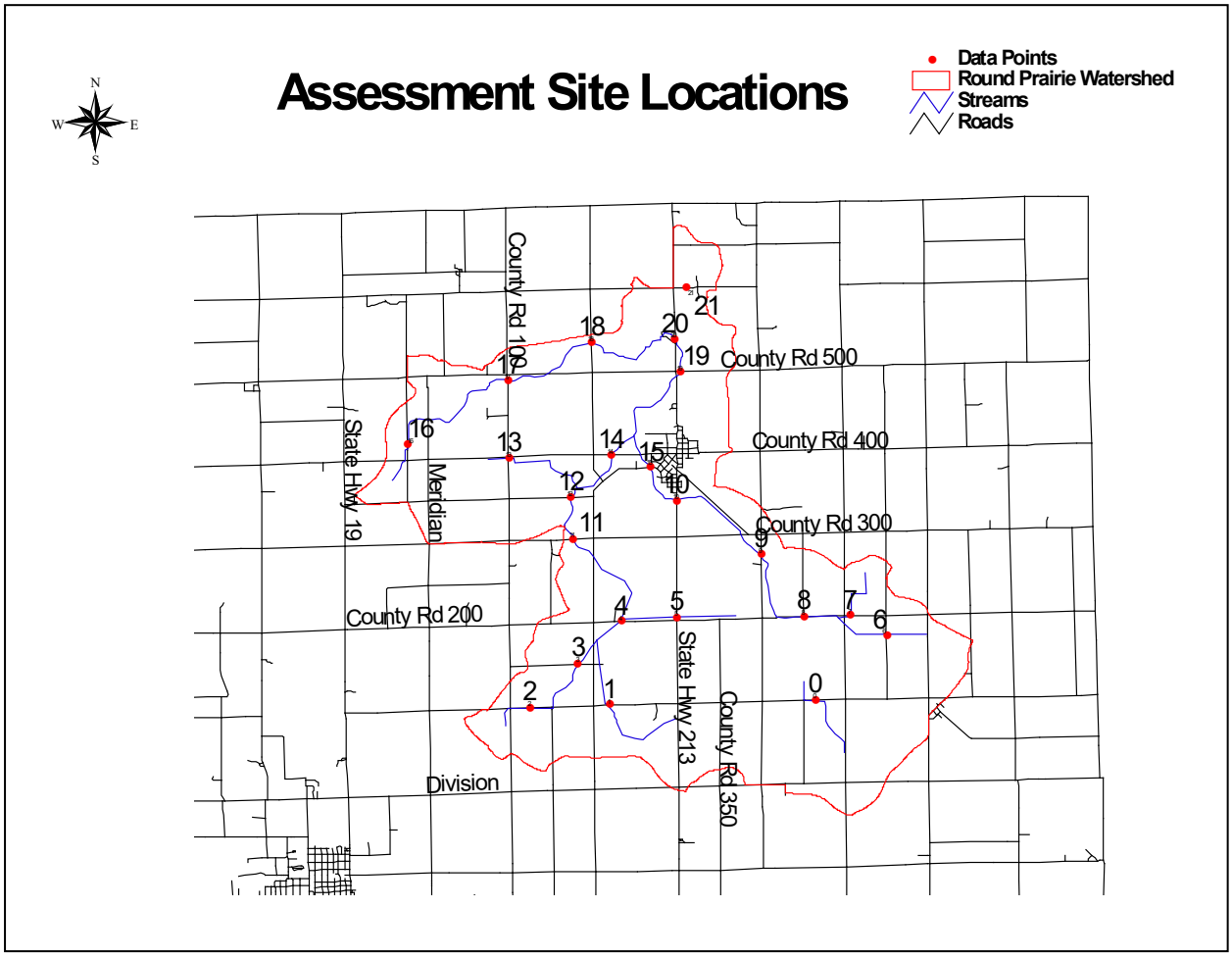
Question #3: **"What do you think we can do locally to improve or protect water quality?"**

- "Streambank filter strips."
- "Buffer streams. Address failing septic systems (replacement & maintenance). Public education."

- "Reduce housing, specify acreage per home. Clean-up septic systems improperly installed or out of date. Livestock operations- make sure they are following their management plans; make improvements where needed."
- "Getting sub-division located on municipal sewage plant."
- "More filter strips along open ditches."
- "Correct & appropriate ag. herbicide applications. Cap & close open wells. Community awareness & education."
- "Check tile ditches to see if pollution is coming from them."
- "We used filter strips along open ditches. We are using more contact chemicals."
- "Use approved erosion control methods. Keep streams free of obstructions. Try to get people to bring waste systems into compliance."
- "Finish dredging & straightening Turkey Creek at the last ½ mile where it has never been dredged."

Instructions for Viewing Assessment Data

1. Requires *Microsoft Access* database program.
2. Open Round Prairie Assessment.mdb file
3. Double click on Round Prairie Form
4. Site numbers correspond to sampling locations in the map below.
5. Scroll through records to view site specific conditions at each sampling point.
6. Double Click on the photo icons to view site photos.



- "Mapped CRP" data was obtained by using aerial photographic information from the Farm Service Agency (FSA). Length of existing filter strips were estimated by drawing the filter strips on GIS based aerial photos and measuring with GIS tools.

- "Private Filter Strips" for the purposes of this report, were considered anything existing on the land that were not identified on FSA aerial photographs.

- Blank fields indicate a non-presence.

Unified Watershed Assessment

SPONSORED BY:

Robert Eddleman, *State Conservationist, Natural Resources Conservation Service USDA*
Matt Rueff, *Assistant Commissioner, Office of Water Management, Indiana Department of Environmental Management*
&
The Indiana W.A.T.E.R. Committee (Watershed Agency Team for Enhancing Resources)

Agricultural Research Service ~ Conservation Technology Information Center (CTIC)
EPA Watersheds & Wetlands Branch ~ Indiana Association of Soil & Water Conservation Districts ~ IDEM Office of Water Management ~ IDNR Executive Office
IDNR Division of Entomology ~ IDNR Division of Nature Preserves
IDNR Division of Fish & Wildlife ~ IDNR Division of Forestry
IDNR Division of Outdoor Recreation ~ IDNR Division of Reclamation
IDNR Division of State Parks & Reservoirs ~ IDNR Division of Soil Conservation
IDNR Division of Water ~ Illinois-Indiana Sea Grant Program
Indiana Geological Survey ~ Indiana University ~ Indiana Water Resources Research Center
Indiana Farm Bureau ~ Indiana State Dept. of Health ~ City of Indianapolis
Indiana Department of Transportation ~ Indiana Office of the Commissioner of Agriculture
Office of the Indiana State Chemist ~ Purdue Cooperative Extension
USDA Rural Development ~ Sierra Club, Hoosier Chapter ~ US Army Corps of Engineers
USDA Farm Service Agency ~ US Geological Survey ~ US Office of Surface Mining
USDA Natural Resources Conservation Service ~ US Fish & Wildlife Service
US Forest Service

Unified Watershed Assessment Workgroup:

IDEM ~ NRCS ~ IDNR ~ Indiana Geological Survey ~ USGS ~ Purdue University ~ ORSANCO

****** Changes from FFY 1999: All 8-digit watersheds in the state are now considered Category I.**
See Map #2 for 11-digit watersheds which have been prioritized for funding during FFY 2001. ****

BACKGROUND

The Clean Water Action Plan, released by the President in February 1998, presents a plan and certain incentives directed toward accelerating the control of nonpoint source pollution in America. States have been requested, as one of the 111 Action Items presented in the Plan, to prepare a Unified Watershed Assessment (UWA). This Assessment is to be developed through the cooperation of state, federal, and local agencies and the public, hence the term "Unified". The Guidance for completing the UWA, published by the USEPA in June 1998, charged the USDA Natural Resources Conservation Service (NRCS) and the state water quality agency (IDEM) with convening the assessment process. What sets this assessment apart from other lists and reports regarding watersheds is the involvement of numerous organizations, the participation of all states, and the recognition of both impaired and healthy watersheds.

1998

The Unified Watershed Assessment, a requirement of the Clean Water Action Plan of 1997, is a multi-agency effort to prioritize watershed restoration needs in each state and tribe. In Indiana, a workgroup appointed by the Watershed Agency Team for Enhancing Resources (WATER Committee) developed the first Assessment in September 1998 for FFY 1999-2000 in accordance with EPA guidelines.

In the first version of the UWA, the workgroup ranked the 8-digit hydrologic unit watersheds according to the **present condition of the water** in lakes, rivers, and streams. The data provided information about the water column, organisms living in the water, or the suitability of the water for supporting aquatic ecosystems. Each layer of data was partitioned by percentiles into 5 scores, with "1" being indicative of good water quality or minimum impairment, and "5" indicating heavily impacted or degraded water quality.

Scores for each 8-digit watershed were compiled, and the watersheds were sorted into four categories as required by the USEPA guidance. The four categories are as follows:

I. Watersheds in need of restoration: waters do not meet designated uses or other natural resource goals. 25% or more of the waters that have been assessed do not meet state water quality standards. (Note that in some watersheds, only a very small percentage of waters have been recently assessed.)

II. Watersheds that on average meet state water quality goals and require attention to sustain water quality. In most of these watersheds, there is habitat which is recognized as critical for threatened or endangered species.

III. Watersheds with pristine or sensitive aquatic systems on federal or state managed lands.

IV. Watersheds with insufficient data to make an assessment.

The Assessment targeted 11 eight-digit hydrologic units for restoration funding during 1999-2000.
(Little Calumet-Galien, Kankakee, Iroquois, St Joseph-Lake Michigan, St Marys, Wildcat, Upper White, Eel-Big Walnut, Lower White, Patoka, Middle Ohio-Laughery, and Highland-Pigeon.)

1999

During summer 1999 the workgroup used additional layers of information to identify the **resource concerns and stressors** for each of the 361 11-digit watersheds in Indiana. Examination of the human activities that have the potential to impact the ecosystem will help planners to focus on those areas where restoration may be most critical. Organizations can identify opportunities to use their programs and resources to address those areas.

This focusing process will illuminate areas where the interests of two or more partner agencies may converge. It is intended that this will lead to more effective allocation of resources for restoration and protection activities. At the local level, this information can assist groups to prioritize watershed activities and provide some discussion points for planning.

This amended assessment has the following benefits:

- Provides a logical process for targeting funds, which may be expanded or updated without changing the basic framework.
- Provides information at a finer resolution (11-digit hydrologic units) to agencies and local groups interested in watershed assessment.
- Identifies data gaps.
- Can be used as a compliment to other assessments, such as the 305(b) Report and 303(d) List.

Targeting Funds

In order to target the allocation of FFY 2001-2002 Section 319 funds made available through the Clean Water Action Plan, 11-digit hydrologic units with the greatest indication of existing or potential problems have been given a higher priority (See Map # 2.) ***Based on the additional information gathered in this iteration of the UWA, all watersheds in the state are now considered to be in Category I.***

Watersheds (11-huc) with two or more scores of 5, one score of 5 and two or more scores of 4, or three or more scores of 4 (in any category) have been given a higher priority. Note that there are significant gaps in data, especially for water quality, and this assessment should be evaluated in the context of available local information. This funding targeting process is known to be imperfect but uses the best information available to us at this time.

Future Years

Each year, the NPS Program will lead a workgroup to evaluate and update the UWA as needed. Additional data will be added as it becomes available, and existing data will be updated.

This amendment and future amendments will be made available in print format and on the Internet.

Parameters Used to Characterize Eleven-digit Hydrologic Units in Indiana for the Unified Watershed Assessment [2000~2001]			
Data Layer	**What it tells us**	**How the Data Was Scored**	**Source**
Lake Fishery	Large mouth bass harvest information for lakes only; a measure of fish diversity and fish community health. Score indicates quality of recreational fishery resource.	To arrive at a score, the catch per hour (CPH) for fish equal to or greater than 12 inches in length was determined for each sampling event. If multiple data were present for the same waterbody, then the data were averaged. The data were then grouped by 11 digit HUC watershed. If there were multiple data points within an 11 digit HUC, then the CPH were averaged for the 11 digit HUC. CPH data were then scored through a simple rank and percentile function. The percentiles were divided into 5 equal areas and scored 1 through 5, with a score of 5 representing the area of most concern or worst fishery status.	DNR fisheries surveys of Indiana Lakes & Reservoirs from 1972 to 1994 (Jed Pearson, Fisheries Biologist, IDNR Division of Fish & Wildlife).
Eurasian Milfoil	Lakes affected with Eurasian Water Milfoil, an invasive exotic; this is an indicator of the impact of recreational use by boats.	The original data were organized by lake name and were scored on a scale of 1 to 5, with a score of 5 representing the worst case infestation. The data were assigned to 11 digit HUCs (based on location of lakes). The original scores were modified by rounding them to whole numbers.	Lakes or reservoirs which are reported to contain *Myriophyllum spicatum* as of June 1997 (Gwen White, Biologist, IDNR Division of Soil Conservation).
ALUS [Aquatic Life Use Support]	The >livability= of the water column for aquatic life; whether the waterbody meets designated use for aquatic life; made up of many metrics related to physical, chemical, and biological characteristics of the water. The 303(d) listed waters which did not support aquatic life were included in this assessment.	ALUS data were evaluated by comparing the ratio of “fully supporting” to “not supporting” and “partially supporting.” This ratio was then scored as follows: Score = 1, if ratio was 30< support/(part + non support). Score = 2, if ratio was 10< support/(part + non support) <= 30. Score = 3, if ratio was 1< support/(part + non support) <= 10. Score = 4, if ratio was 0.3< support/(part + non support) <= 1. Score = 5, if ratio was support/(part + non support) <= 0.3	Aquatic Life Use Support (ALUS) is determined from evaluation of chemical and physical water data, and assessment of the aquatic life which is found in the waterbodies sampled. NOTE: Four units (5120201-2-3-9) were fully assessed in 1997; mIBI & QHEI are included in the ALUS layer for those units. [IDEM Assessment Branch data assessed by Surveys and Biological Assessment Sections; obtained through Linda Schmidt, 305(b) Coordinator, IDEM Planning Branch, Water Quality Standards Section.]

Parameters Used to Characterize Eleven-digit Hydrologic Units in Indiana for the Unified Watershed Assessment [2000~2001]			
Data Layer	**What it tells us**	**How the Data Was Scored**	**Source**
Recreation (Body contact)	Whether the waters meet designated recreational uses for full-body contact; based on E. coli and other measures. The 303(d) listed waters which did not support recreation were included in this assessment.	E. coli data were evaluated by comparing the ratio of "fully supporting" to "not supporting" and "partially supporting." This ratio was then scored as follows: Score = 1, if ratio was 30< support/(part + non support). Score = 2, if ratio was 10< support/(part + non support) <= 30. Score = 3, if ratio was 1< support/(part + non support) <= 10. Score = 4, if ratio was 0.3< support/(part + non support) <= 1. Score = 5, if ratio was support/(part + non support) <= 0.3	IDEM Planning Branch, Water Quality Standards Section (305b Report, 1998 electronic update, Coordinator, Linda Schmidt). Data prepared by the IDEM Assessment Branch, Surveys Section.
Lake Trophic Scores	Lake condition based on trophic scores, containing several metrics; an indicator for the rate at which a lake is aging due to inputs of nutrients and other factors.	Lake trophic scores for each 11 digit HUC were reduced to a single score for each watershed through deriving a "weighted average" based on lake acreage. The lake trophic scores were then scored through a simple rank and percentile function. The percentiles were divided into 5 equal areas and scored 1 through 5, with a score of 5 representing the area of most concern or highest trophic status.	Percentile scores from the available trophic points (0 to 75) for public lakes that have been sampled. [Data gathered through the Indiana Clean Lakes Program, under the direction of Bill Jones, Indiana University, through Carol Newhouse, IDEM Assessment Branch, Biological Assessment Section.]

Parameters Used to Characterize Eleven-digit Hydrologic Units in Indiana for the Unified Watershed Assessment [2000~2001]			
Data Layer	**What it tells us**	**How the Data Was Scored**	**Source**
Stream Fishery	Measure of the small mouth bass community in streams. Score indicates recreational stream fishery resource.	If a sampling location spanned more than one 11 digit HUC, then the data were attributed to each of the 11 digit HUCs associated. If multiple data points occurred for a single 11 digit HUC, the data points were averaged to arrive at a single data point for the 11 digit HUC. The UWA scoring was based on the catch per unit effort (CPE). This is further defined as the number of fish caught divided by the amount of time electrical current was flowing through the water (shock time). The CPE data for the 11 digit HUCs were then scored through a simple rank and percentile function. The percentiles were divided into 5 equal areas and scored 1 through 5, with a score of 5 representing the area of most concern or worst fishery status.	Small mouth bass catch per unit effort for all sizes in IDNR fisheries surveys of Indiana streams from 1970 to 1994 (Stuart Shipman, Fisheries Biologist, IDNR Division of Fish & Wildlife).
Critical Biological Resources	Level of concern for reported endangered and threatened species and critical biological communities.	All reports of endangered and threatened species and critical biological communities were considered equal for this assessment; the number of reports was summed for each 11 digit HUC, and the results were divided as follows: 300 to 600, score of 5 (maximum concern); 150 to 299, score of 4; 75 to 149, score of 3; 1 to 74, score of 2; zero reports, score of 1 (lowest concern).	Cloyce Hedge, Indiana Natural Heritage Data Center, IDNR Division of Nature Preserves
Mussel Diversity	Incidence of fresh water mussel beds, with consideration given to the rarity and diversity of the species found. In this case "no data" may have meant no record, or may have meant that there were no mussels found.	Sample locations were associated with 11 digit HUCs. If a data point applied to more than one 11 digit HUC, then the data point was applied to each of the affected 11 digit HUCs. For 11 digit HUCs with multiple data points, the data points were summed for the 11 digit HUC. Mussel diversity data were then scored through a simple rank and percentile function. The percentiles were divided into 5 equal areas and scored 1 through 5, with a score of 5 representing the area of least degradation or highest need for protection. **Note: This data can be viewed in two ways:** Sample locations showing greatest diversity are presumably indicative of better water quality; but they are also most in need of protection. Sample locations showing least diversity are more degraded, and therefor require restoration. Care should be taken in interpreting this data.	Value of streams for supporting mussels based on a ranking system which incorporates number of sites and rarity of the species in 1997. (Cloyce Hedge, Indiana Natural Heritage Data Center, IDNR Division of Nature Preserves)

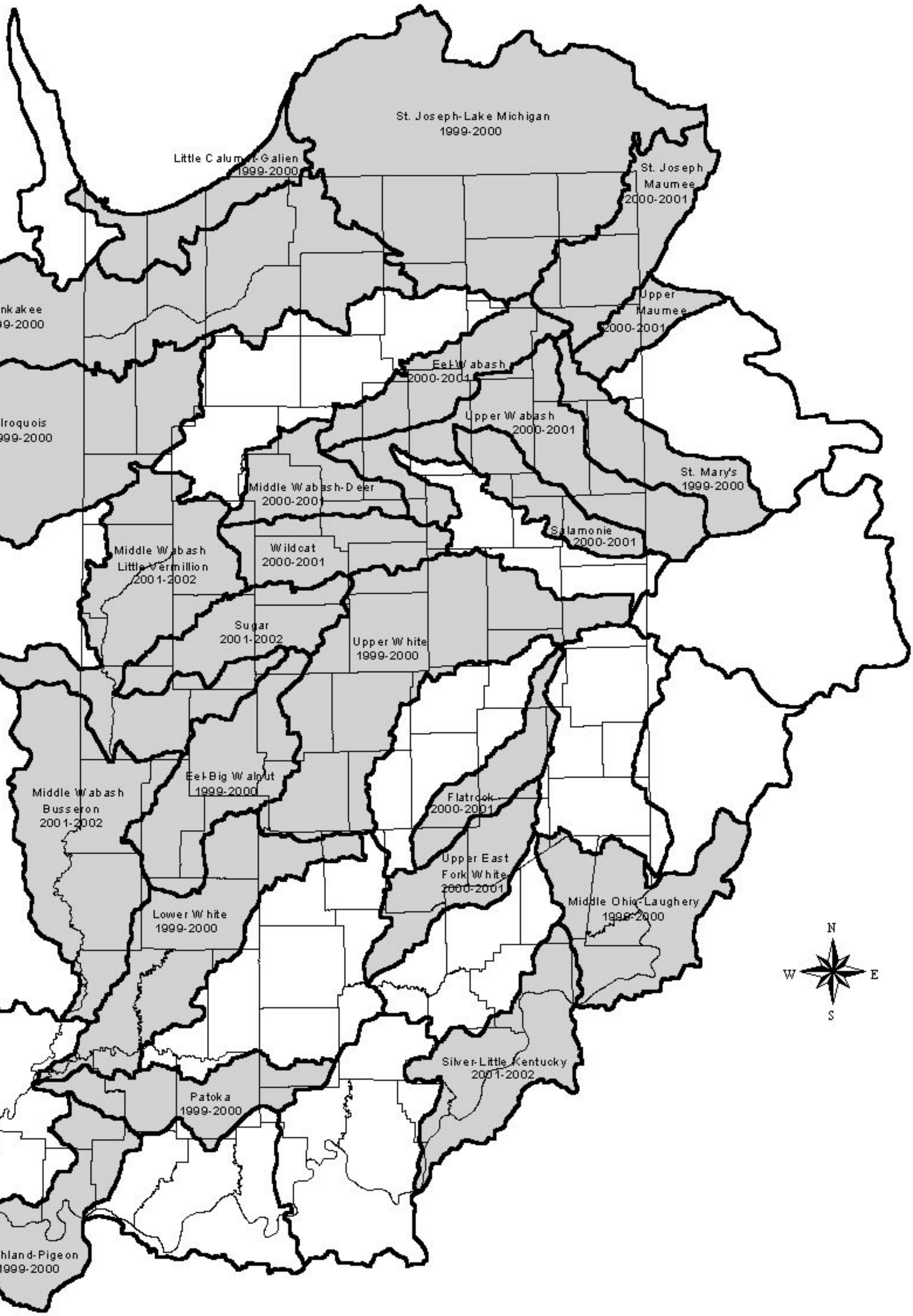
Parameters Used to Characterize Eleven-digit Hydrologic Units in Indiana for the Unified Watershed Assessment [2000~2001]			
Data Layer	**What it tells us**	**How the Data Was Scored**	**Source**
Aquifer Vulnera-bility	Level of concern regarding protection of groundwater for drinking and other uses.	The UWA scoring was based on a ranking of from 1 to 5 with a score of 5 representing the most sensitive or vulnerable. The ranking was based on the sensitivity of aquifers and the degree of connectivity between the aquifers and surface water in each setting. The ranking is a subjective and relative procedure.	Dr. Ed Hartke, Indiana Geological Survey
Surface Drinking water intakes	Level of concern regarding drinking water protection in regards to surface water.	The UWA scoring was based on the number of drinking water supply intakes in each 11 digit HUC. A score of 1 (least concern) was given to all 11 digit HUCs that contained no intakes. The remaining 11 digit HUCs were scored by a simple rank and percentile function. The 11 digit HUCs were divided into four (4) percentiles and scored 2 through 5, with a score of 5 representing the highest number of intakes and the most concern.	Original data was supplied for IDEM and pertain to surface water drinking water intakes only. The locations of the intakes were spatially joined with the 11 digit HUC coverage.
Septic System Density	The density of private septic systems; may indicate potential surface water and groundwater quality problems.	EPA has stated that a density of greater than 40 septic systems per square mile is a potential water quality problem. Based on this, it was decided that all 11 digit HUCs with a septic density of greater than 40 units per square mile would be given a score of 5 (most concern). A simple rank and percentile function was performed on the remaining 11 digit HUCs in order to score them from 1 through 4, with a score of 1 representing the least concern. The percentiles were divided into 4 equal areas to score the remaining 11 digit HUCs.	The original data were derived from the 1990 Census at the census tract level. Septic numbers per county were converted to a septic density, then extrapolated to the 11 digit HUCs associated with each county.

Parameters Used to Characterize Eleven-digit Hydrologic Units in Indiana for the Unified Watershed Assessment [2000~2001]			
Data Layer	**What it tells us**	**How the Data Was Scored**	**Source**
Urban-ization	Reflects the potential for impacts on a watershed due to runoff from developed areas.	All 11 digit watersheds with a relative 0 % urbanization area compared to the whole watershed were assigned a score of "1." The U.S. EPA document "Rapid Watershed Planning Handbook," prepared by the Center for Watershed Protection, October 1998 states that "research generally indicates that certain zones of stream quality exist, most notably at about 10% impervious cover, where sensitive elements are lost from the stream system." This 10% provided a cutoff for 11 digits of lower concern; hence, all 11 digit HUCs with between 1 and 10% urbanization were given a score of "2." The remaining 11 digit HUCs were scored with a simple rank and percentile function. Percentiles were divided into 3 equal areas and given a score ranging from 3 through 5, with a score of 5 representing the areas of most concern.	The original data for this scoring was the 1992 Gap Analysis Project image of the state of Indiana. Areas noted as "impervious," "high density residential," and "low density residential" were used as an indicator of urbanization. From this image, the percentage of urbanization for each 11 digit HUC was determined.
Livestock Production	Reflects the potential for livestock production impacts on a watershed.	The number of each livestock category is reported by county. These results were apportioned to the 11 digit watersheds occurring in each county by area. Note that in the case of concentrated livestock operations, this may have led to some errors. Local verification of this data is encouraged. The number of swine, poultry, cattle, and sheep animal units in each 11 digit watershed were related to the area of the watershed to determine the density of livestock production. A simple rank and percentile function was used to rank the watersheds from 1 to 5, with 5 representing the greatest potential for impact.	Original data from 1997 Census of Agricultural, USDA-NASS, and Indiana Agricultural Statistics Service.

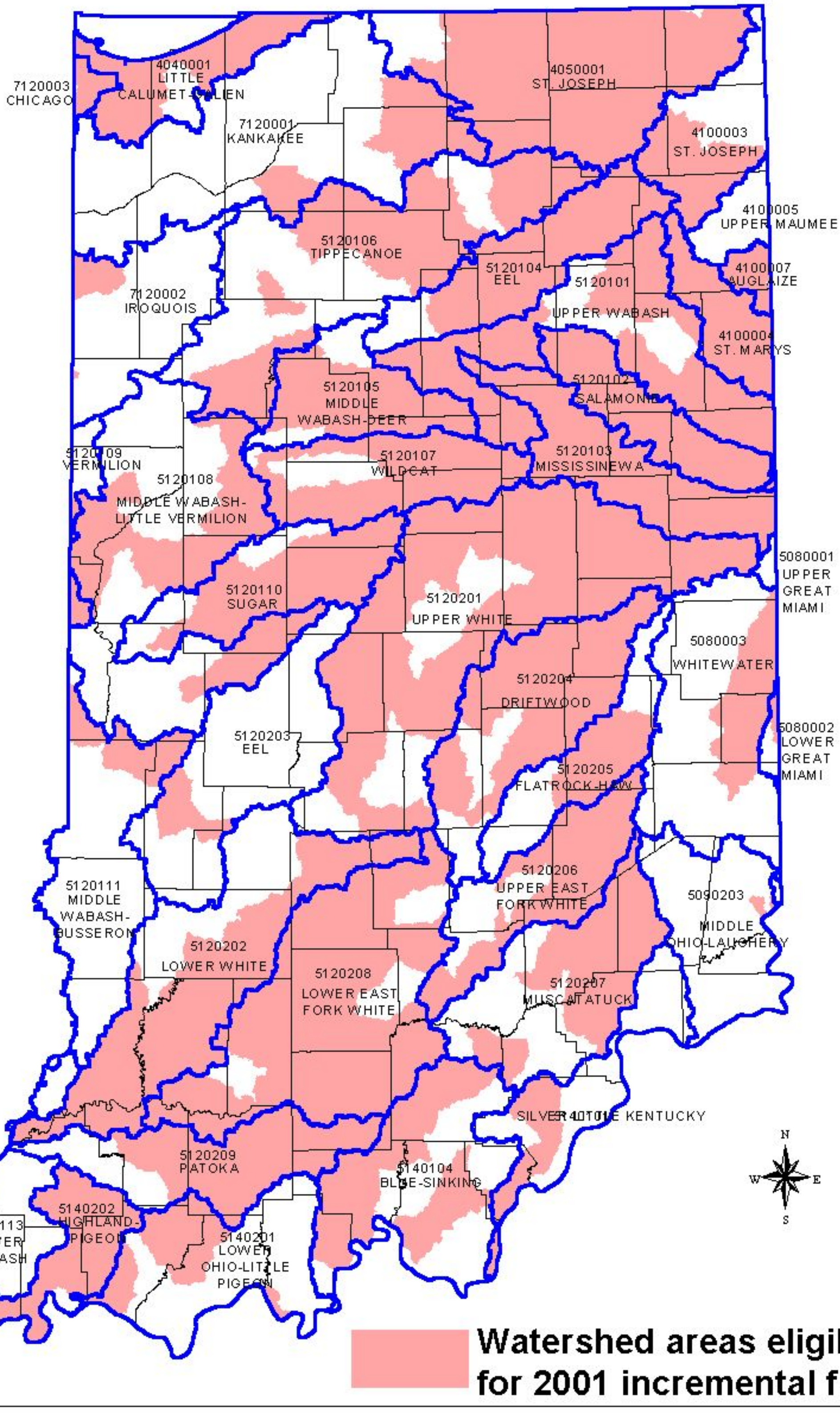
Parameters Used to Characterize Eleven-digit Hydrologic Units in Indiana for the Unified Watershed Assessment [2000~2001]			
Data Layer	**What it tells us**	**How the Data Was Scored**	**Source**
Crop Production	Reflects the potential for crop production impacts on a watershed.	The number of acres in each crop category is reported by county. These results were apportioned to the 11 digit watersheds occurring in each county by area. Note that where only part of a county is in agricultural land use, this may have led to some errors. Local verification of this data is encouraged. The number of acres of row crop land (corn, soybeans, and small grains) was calculated as a percentage of the area of the watershed, and the results (using a rank and percentile function) scored from 1 to 5, with 5 representing the greatest potential for impact.	Original data from 1997 Census of Agricultural, USDA-NASS, and Indiana Agricultural Statistics Service.

Parameters Used to Characterize Eleven-digit Hydrologic Units in Indiana for the Unified Watershed Assessment [2000~2001]			
Data Layer	**What it tells us**	**How the Data Was Scored**	**Source**
Mineral Resource Extraction	Reflects the potential for mineral resource extraction impacts on a watershed.	The coal mining data were normalized by comparing the mining area to the total area for each 11 digit HUC. These percentages were then scored. A score of 1 (least concern) was automatically given to any 11 digit HUC with a "0" mining area percentage. The remaining scores were derived through a simple rank and percentile function, dividing the resulting scores into four (4) equal areas and scoring 2 through 5, with a score of 5 representing the most concern. The oil and gas well data were assigned to 11 digit HUCs based on well-density per county and the percentage of 11 digit HUC in the county. This spatial estimation process may create a high degree of error. However, more fine-tuned spatial information was not available at the time of the scoring. The well-density (wells per square mile) for each 11 digit HUC were then determined. A score of "0" (least concern) was automatically given to each 11 digit HUC with a well-density of 0 wells per square mile. The remaining 11 digit HUCs were then scored by a simple rank and percentile function. The percentiles were divided into 4 equal areas and then assigned a score ranging from 2 to 5, with a score of 5 representing areas of highest concern. The UWA score for this category takes the mining scores and the oil/gas scores and combines them into one overall mineral resource extraction score. To arrive at this overall score, both sets of scores for each 11 digit HUC were simply averaged. This process was determined to be the most straightforward; however, it must be noted that effect of data errors or assumptions from the original data sets may not be fully understood.	Mining data (coal) and Oil & Gas well data were obtained from the Indiana Geological Survey.

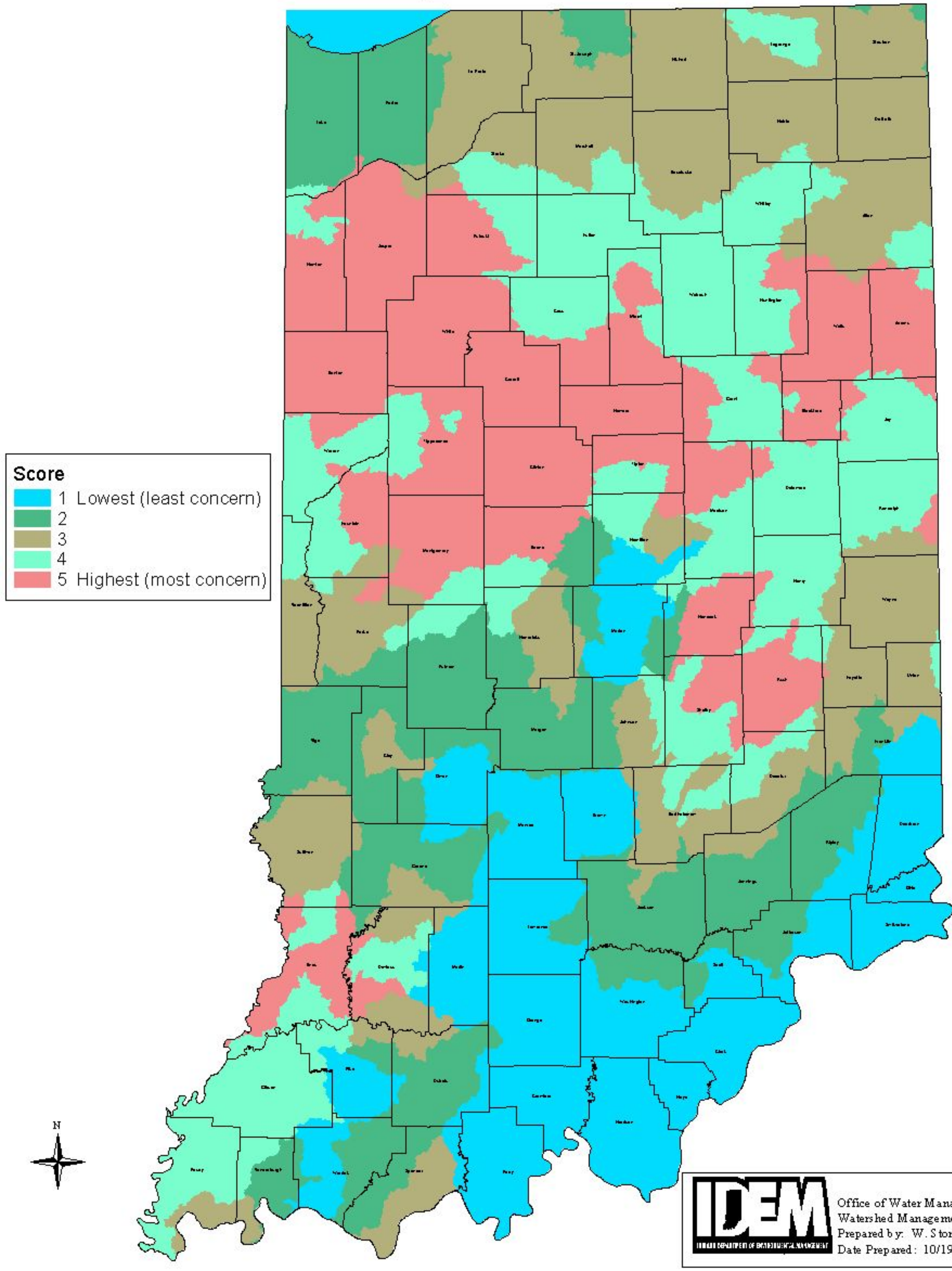
1999 and 2000: UWA Priority Watersheds



2001 Incremental Funding Priority Watersheds



Unified Watershed Assessment
Cropland Pressure



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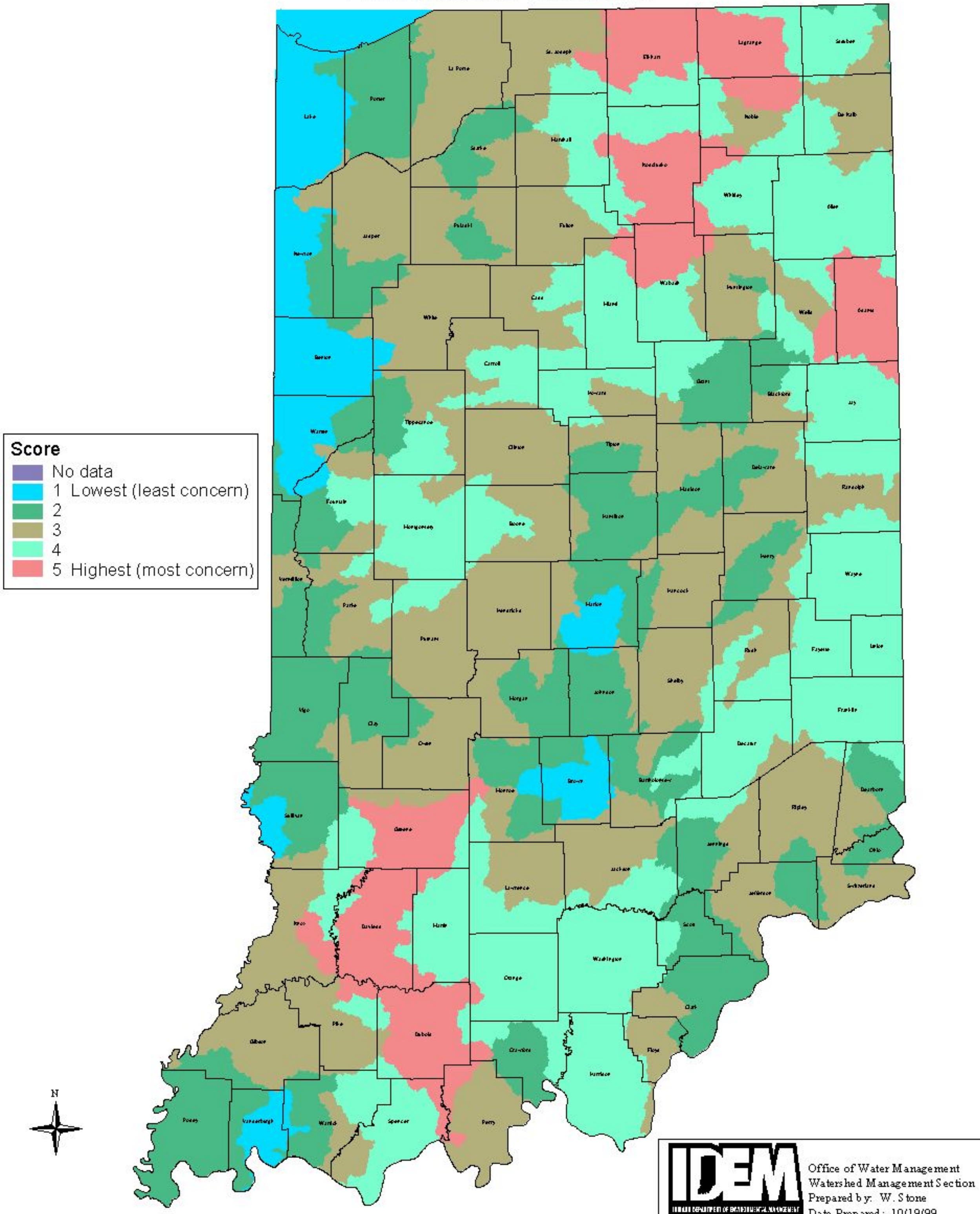
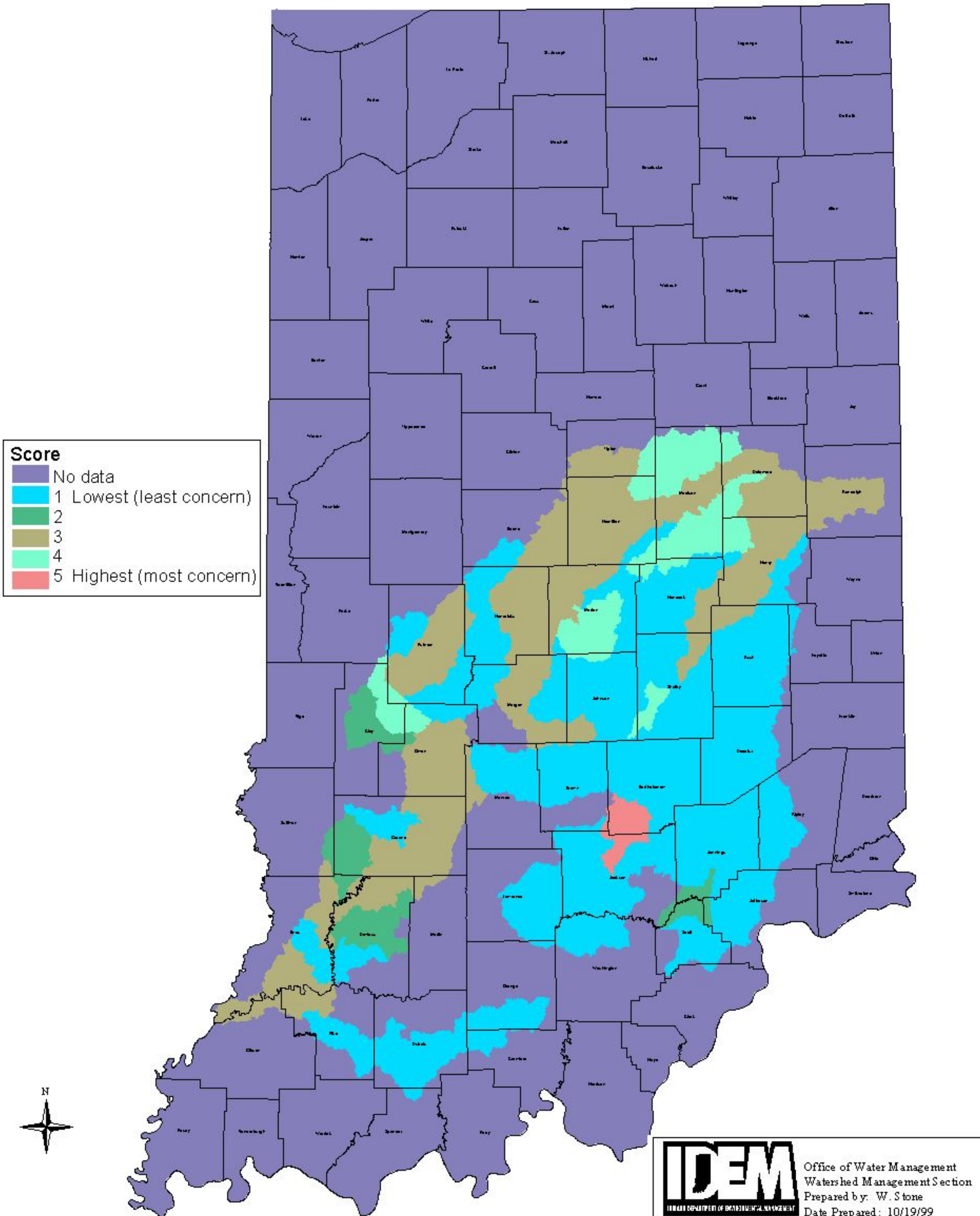
Date Prepared: 10/19/99

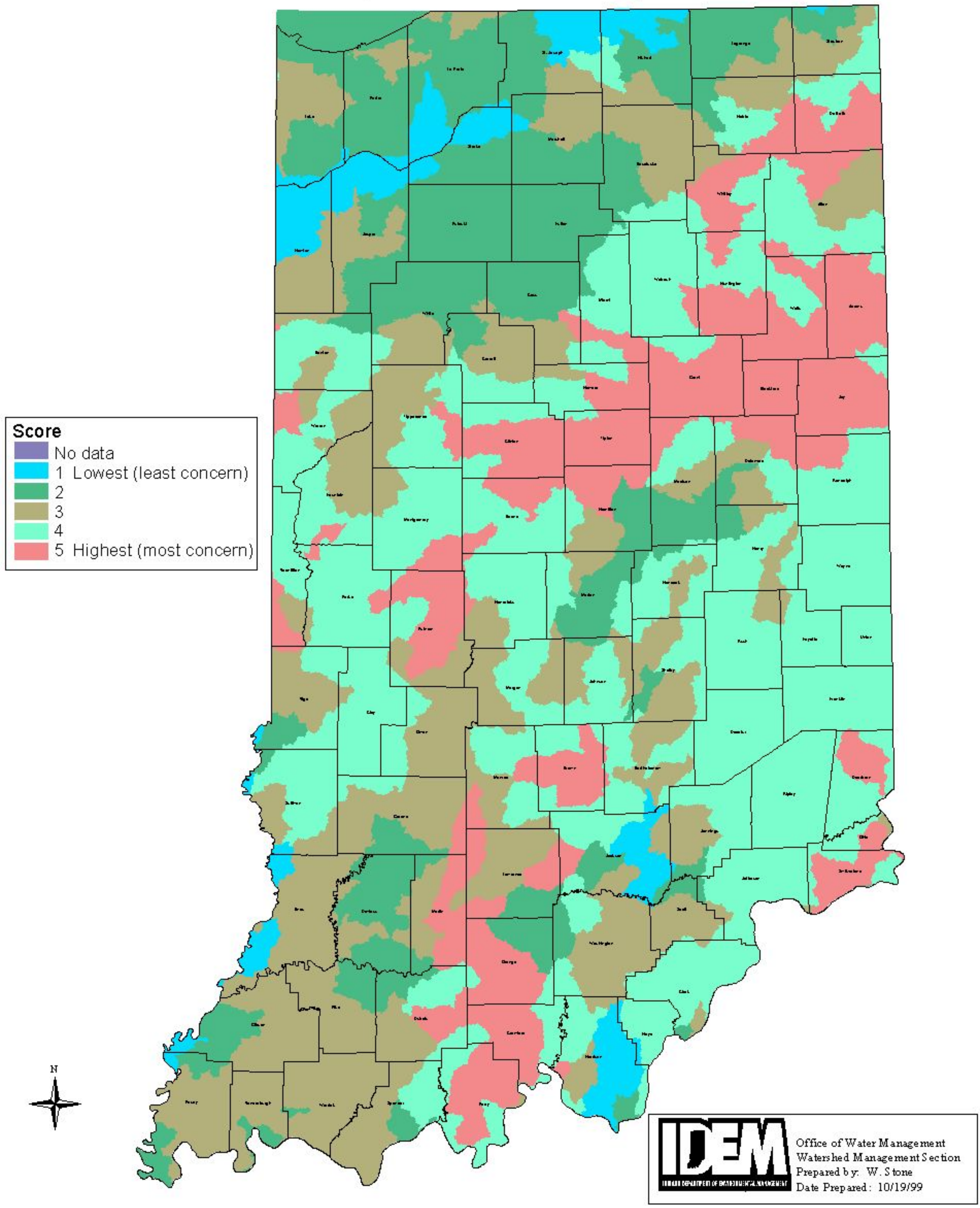
Unified Watershed Assessment
Livestock Pressure



Unified Watershed Assessment
Aquatic Life Use Support



Unified Watershed Assessment
Aquifer Vulnerability



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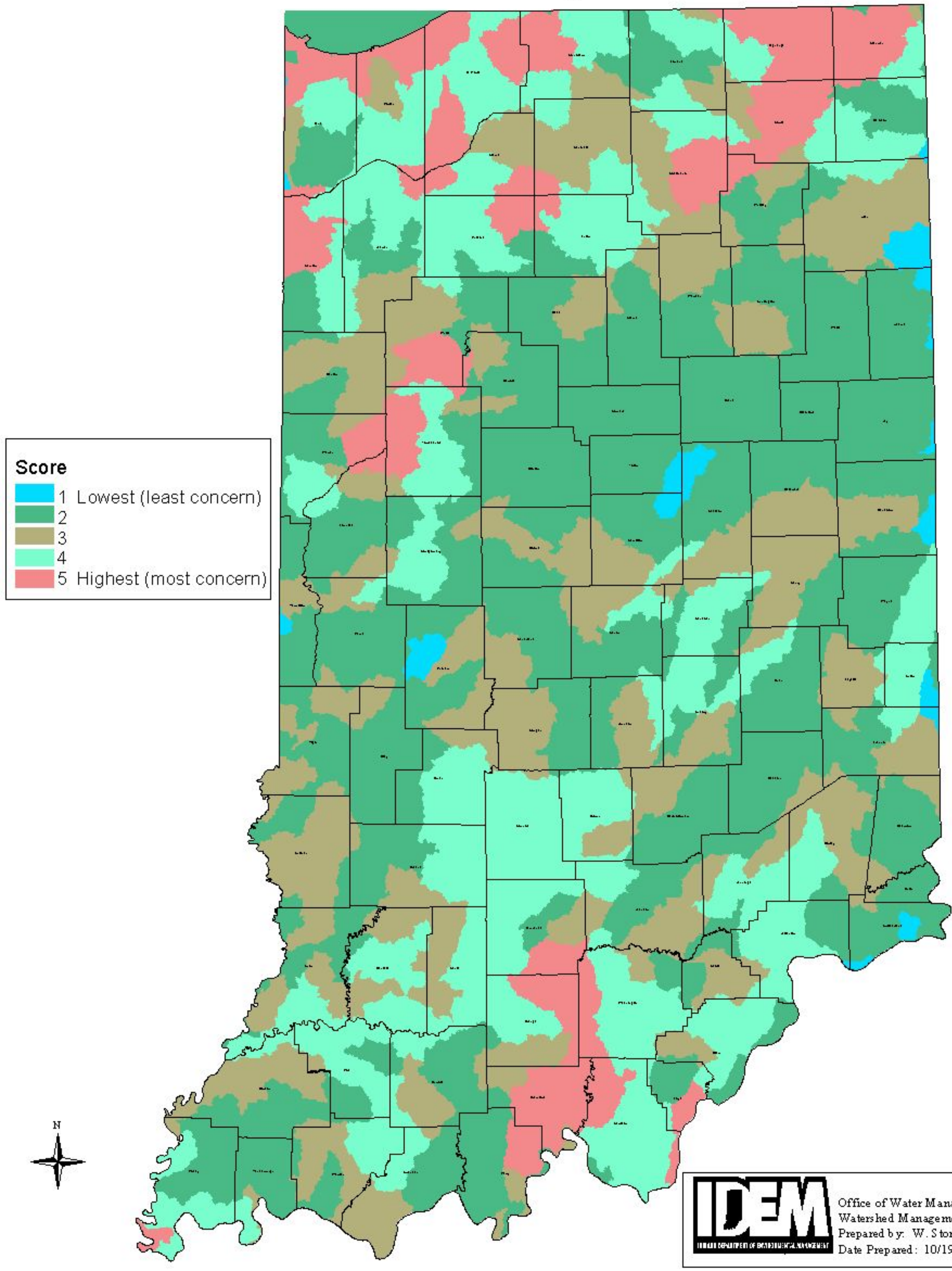
Unified Watershed Assessment
Critical Biodiversity Resources



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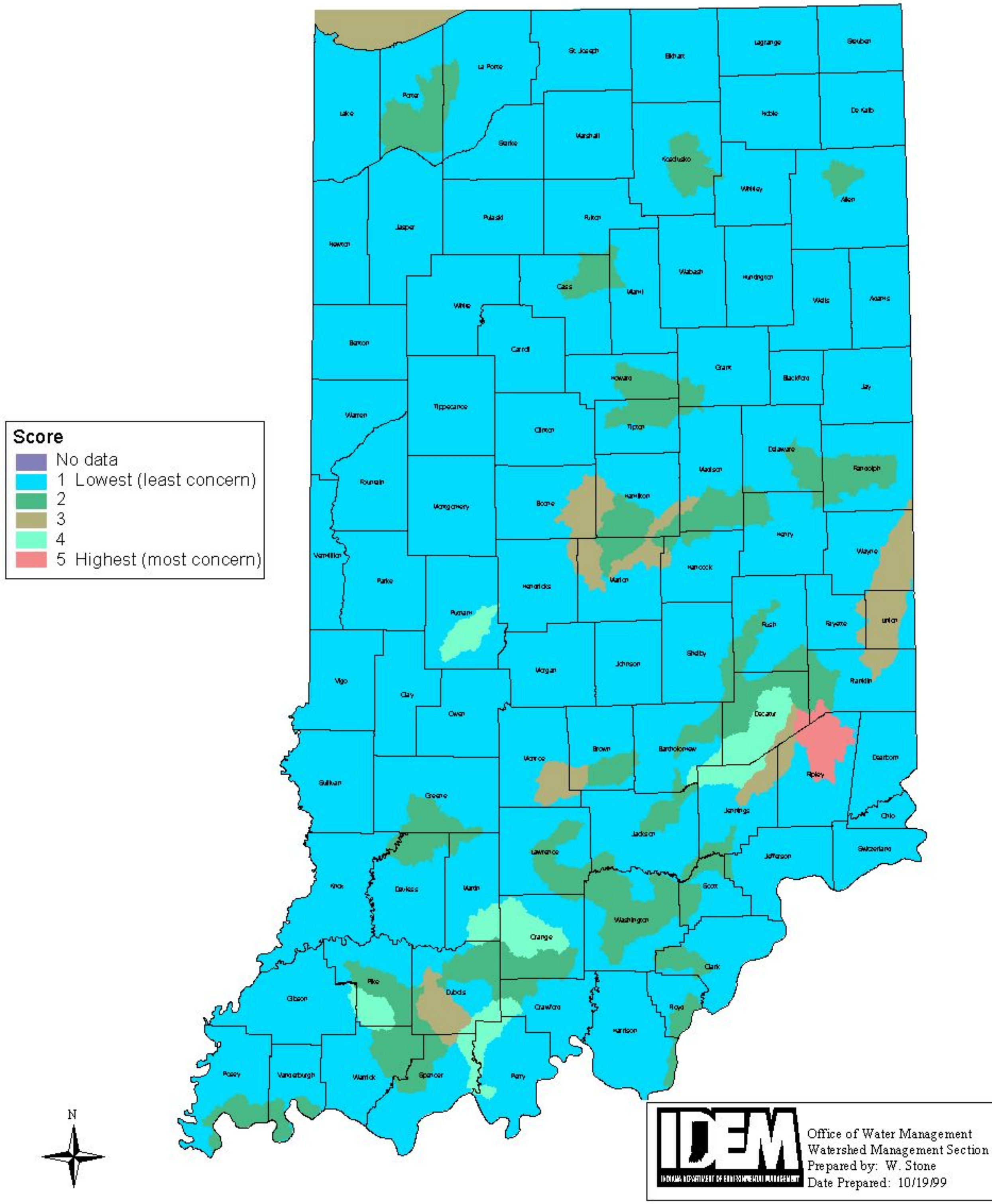
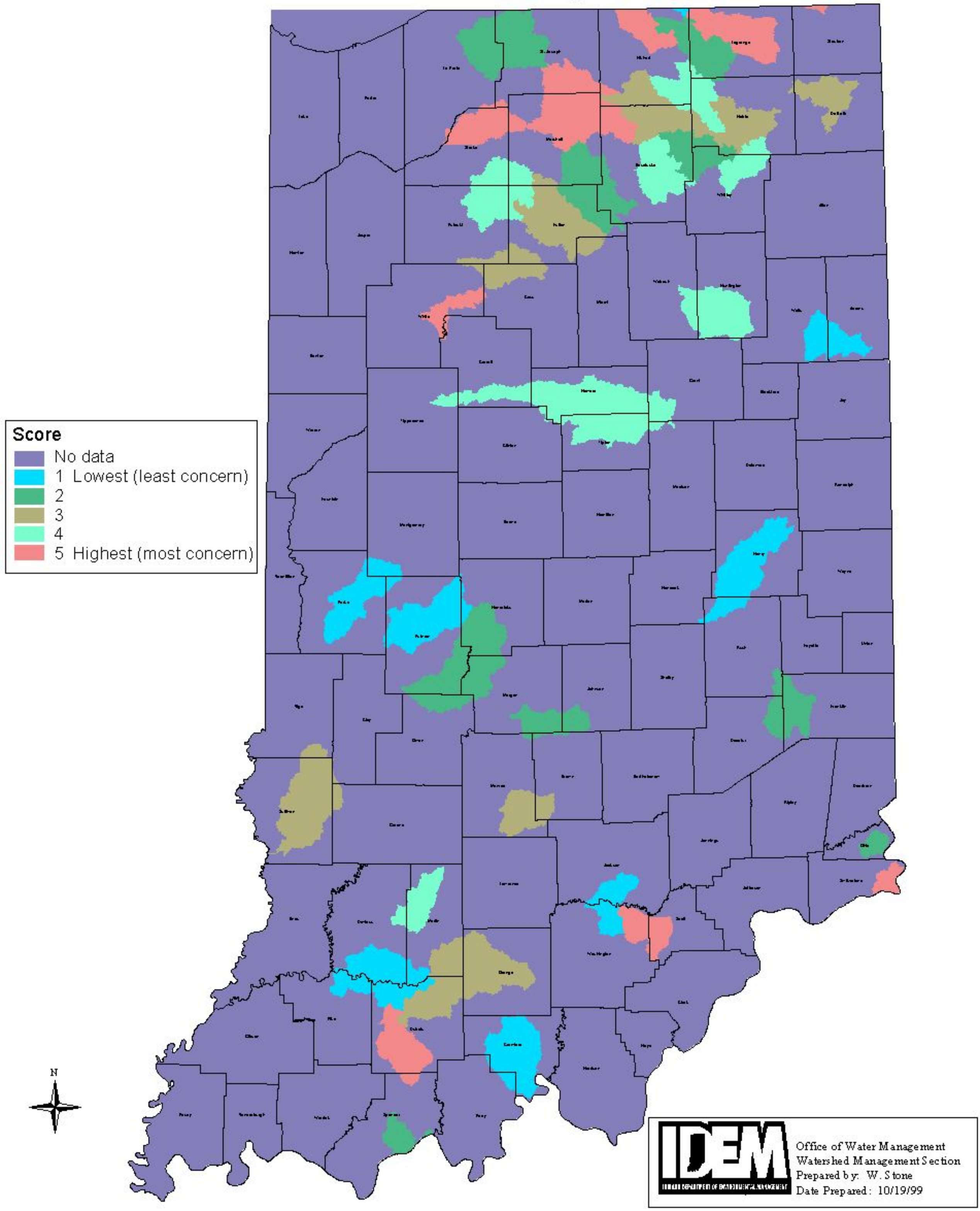
Unified Watershed Assessment
Drinking Water Intakes - Surface Water



Unified Watershed Assessment
Lake Fishery



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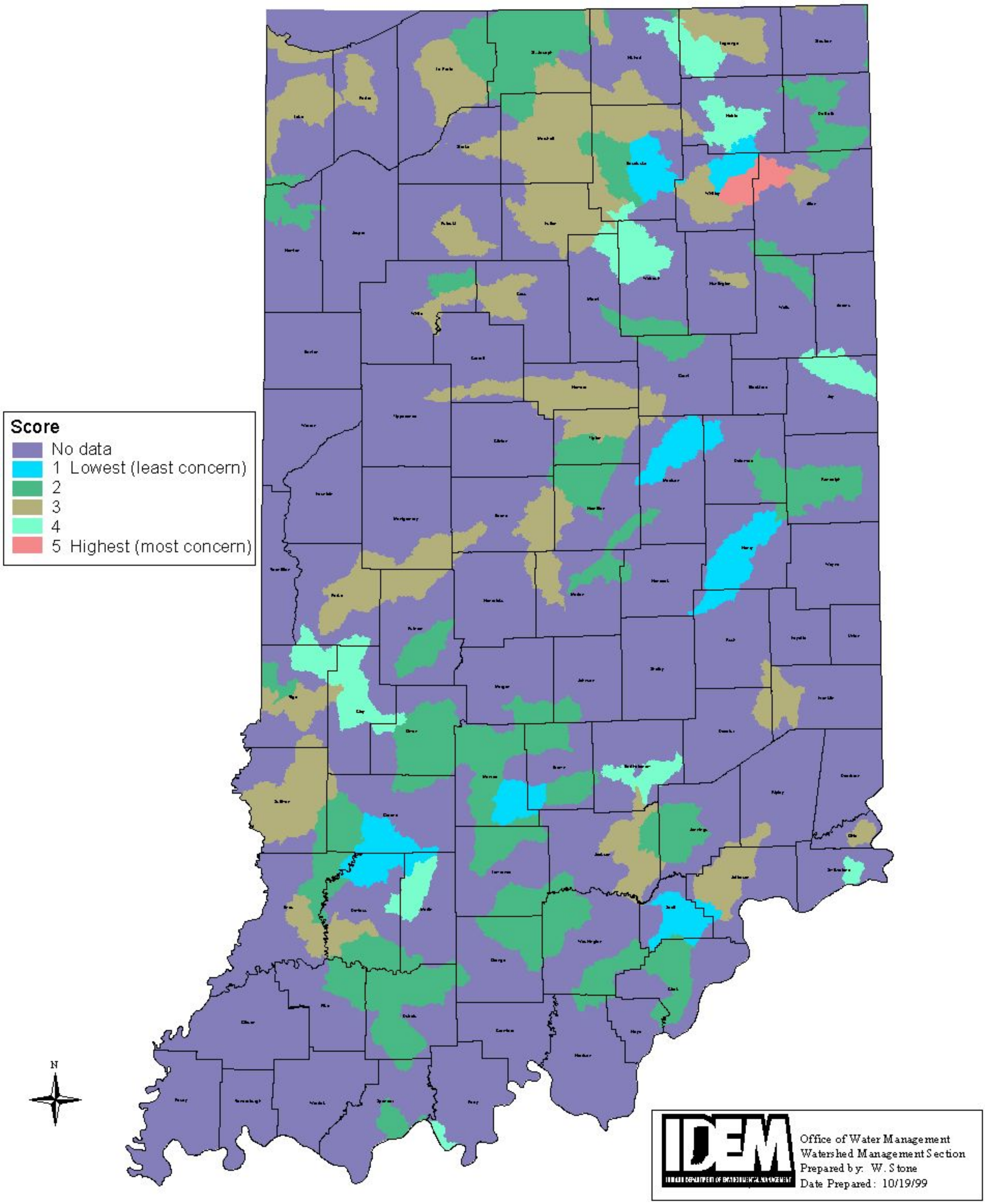
Unified Watershed Assessment
Lake Trophic Status



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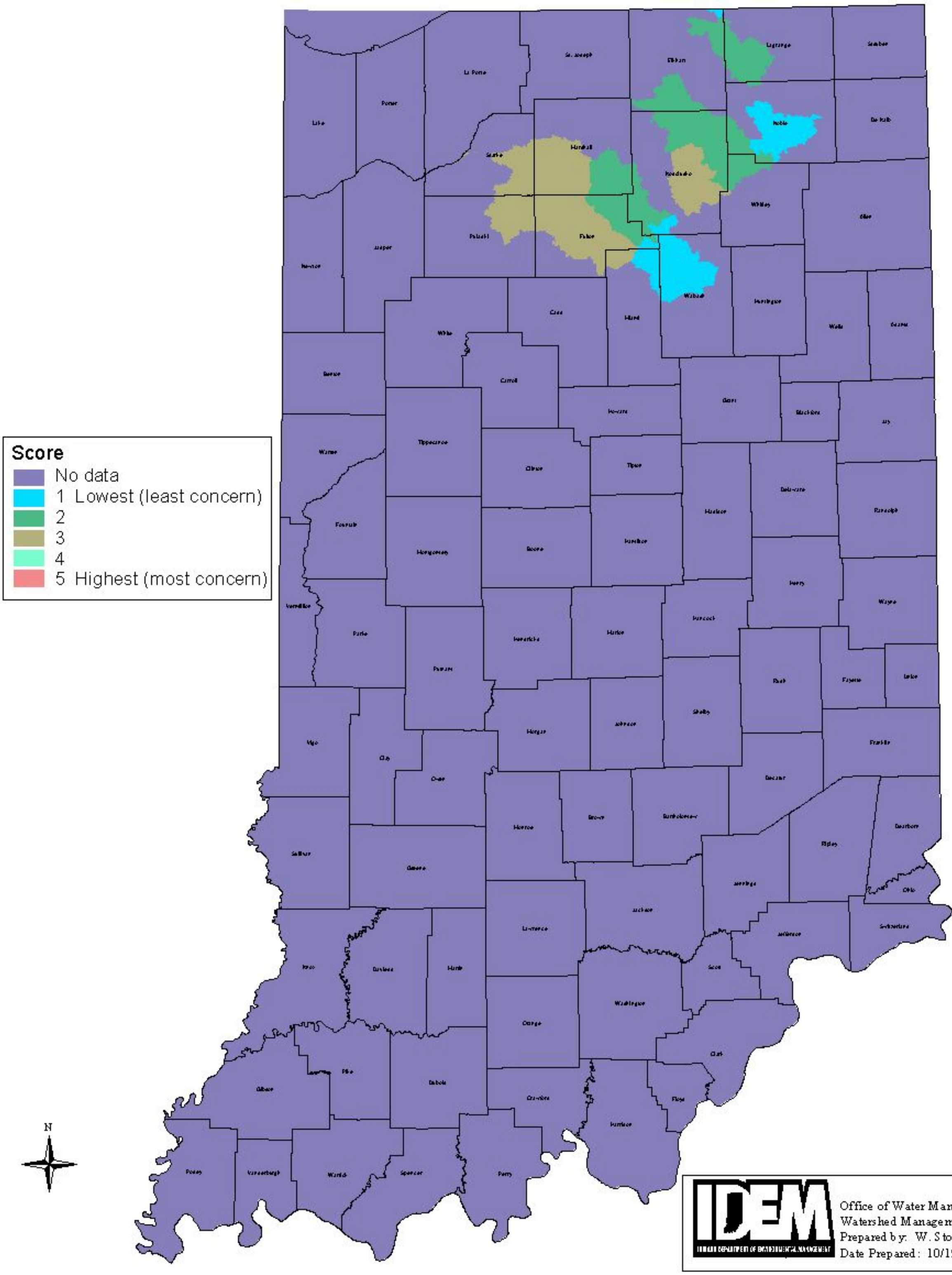
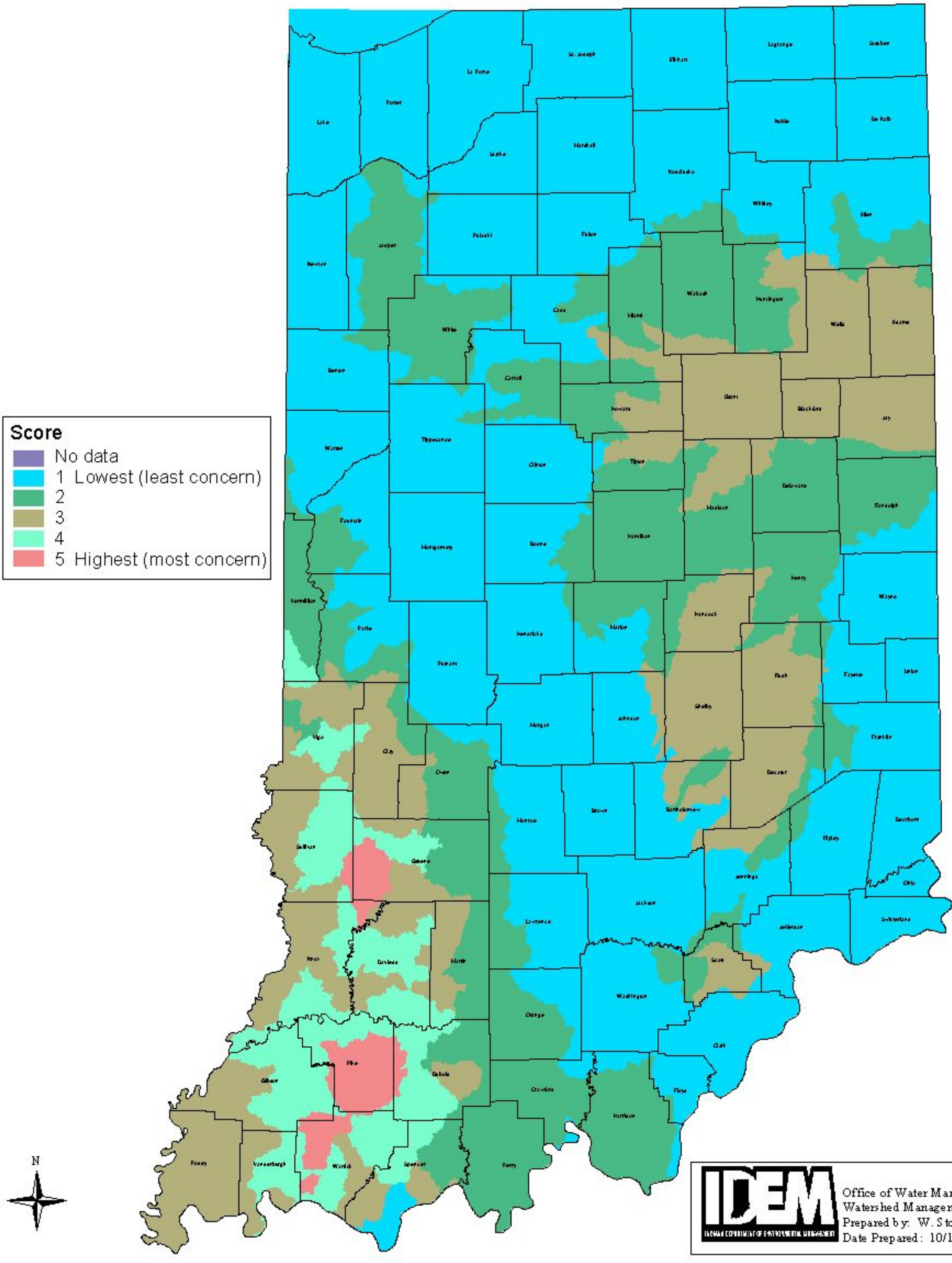
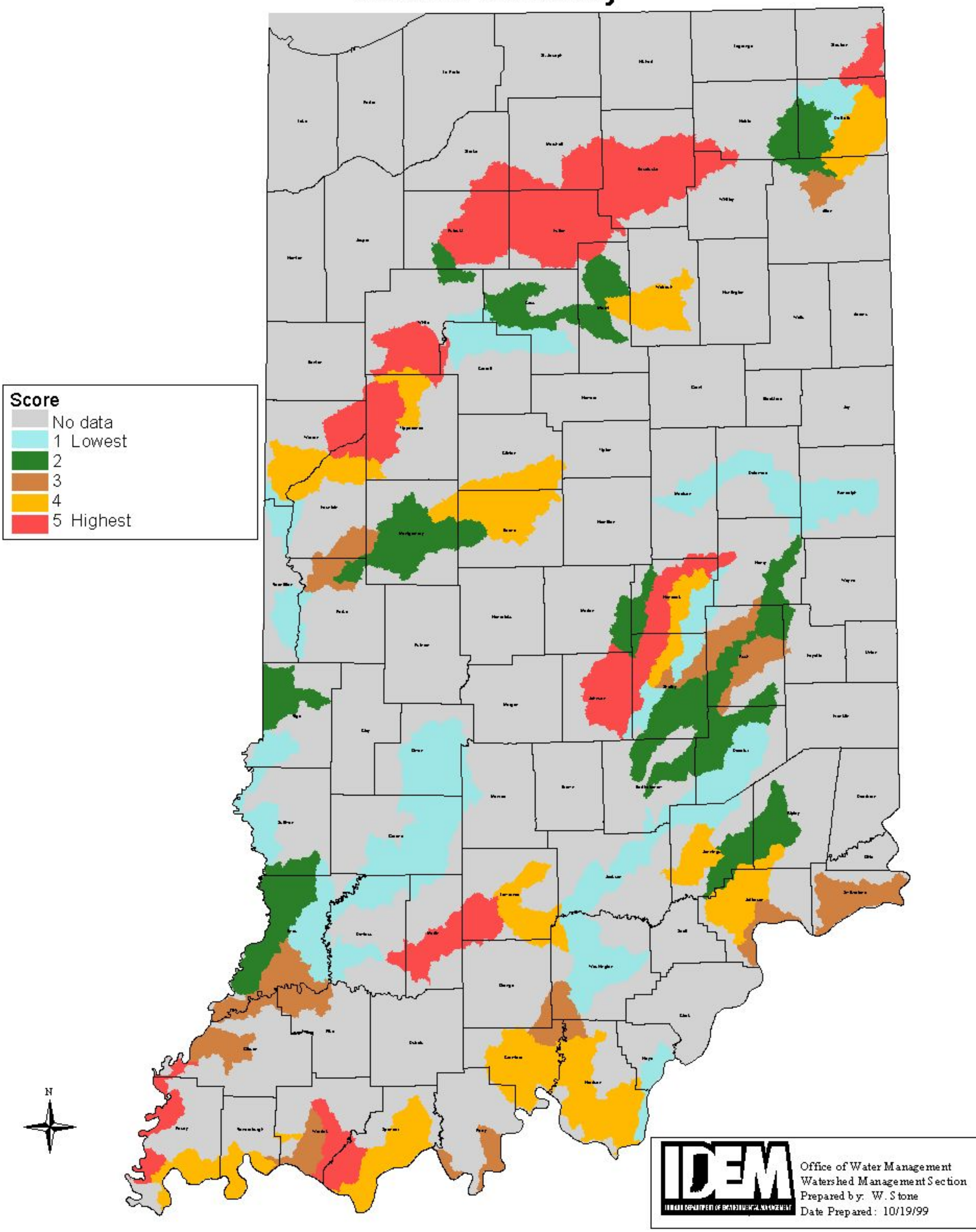
Unified Watershed Assessment
Milfoil Invasion Status



Unified Watershed Assessment
Mineral Resource Extraction



Unified Watershed Assessment
Mussel Diversity



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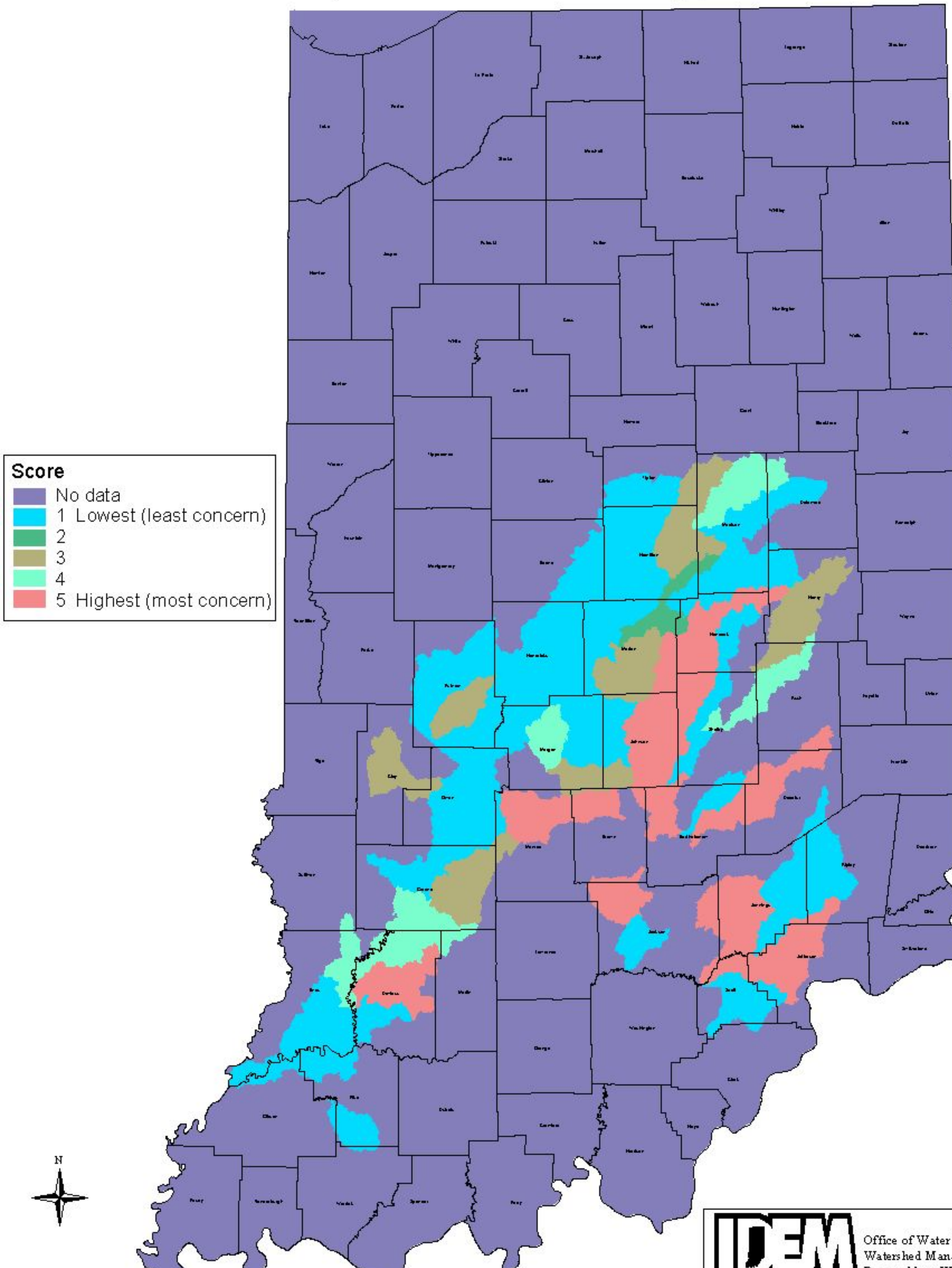
Date Prepared: 10/19/99

Unified Watershed Assessment
Aquatic Recreation Support



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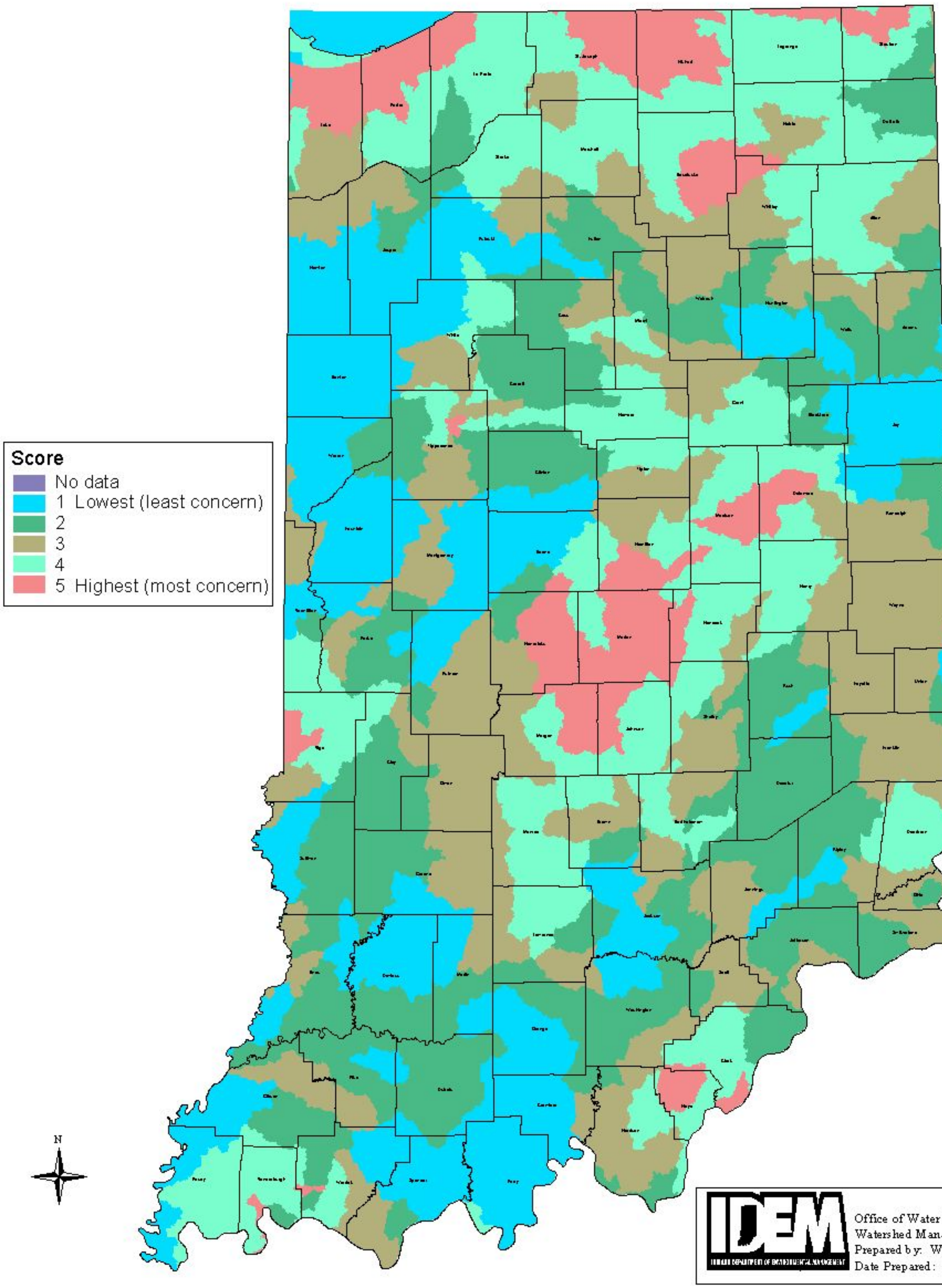
Watershed Management Section
Prepared by: W. Stone
Date Prepared: 10/19/99

Unified Watershed Assessment
Residential Septic System Density



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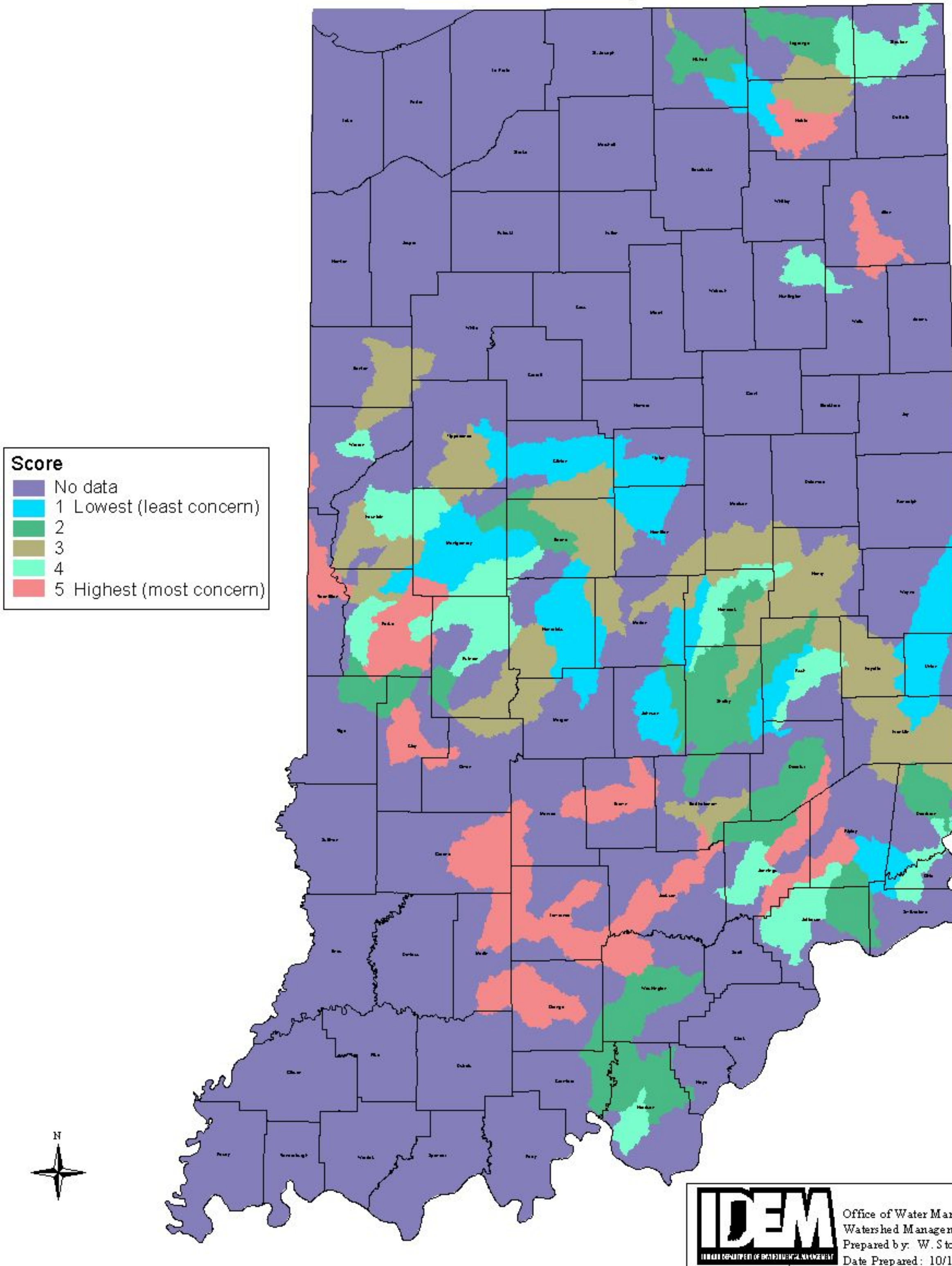
Office of Water Management
Watershed Management Section
Prepared by: W. Stone
Date Prepared: 10/19/99

Unified Watershed Assessment
Stream Fishery



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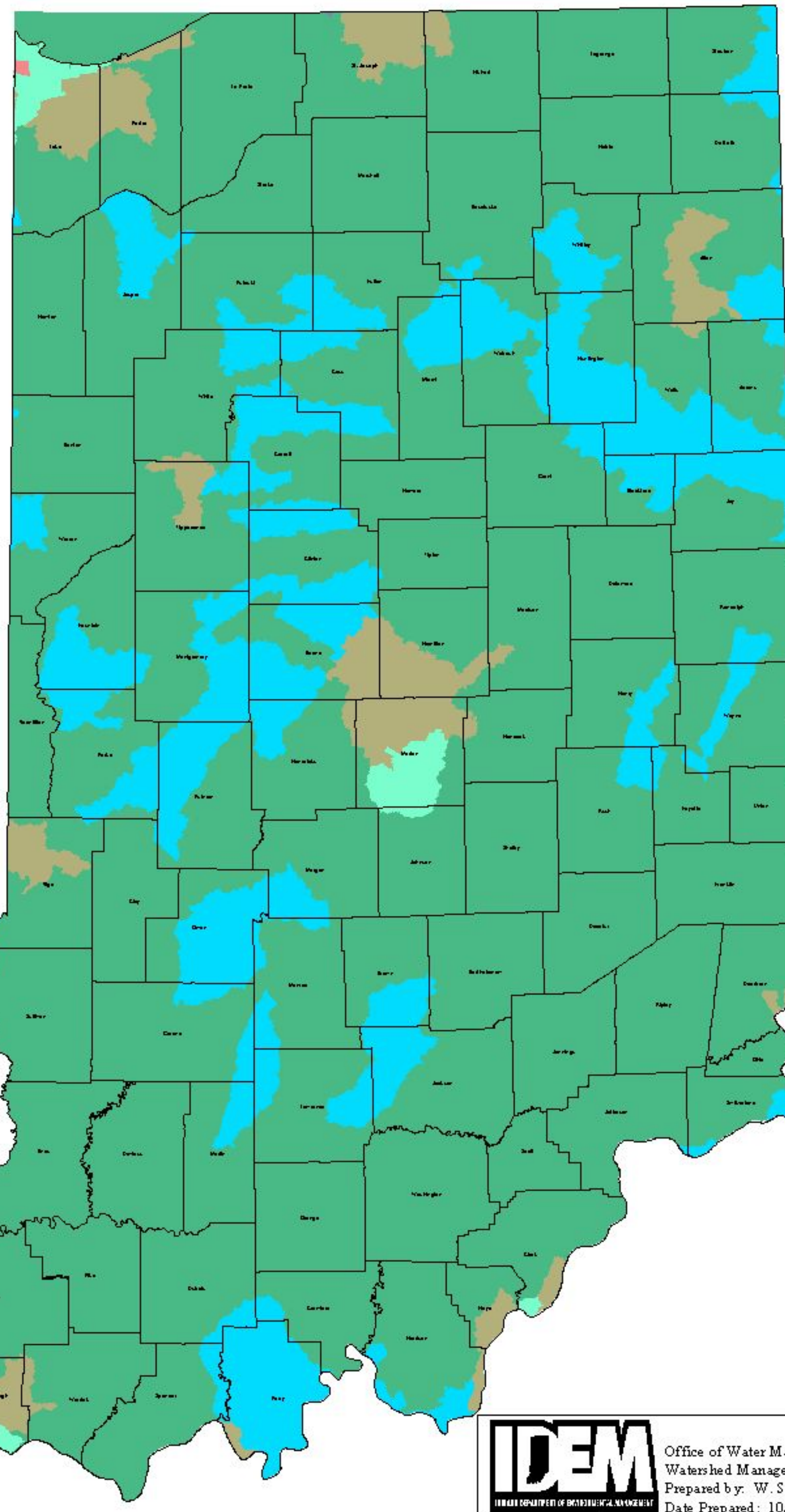
Watershed Management Section
Prepared by: W. Stone
Date Prepared: 10/19/99

Unified Watershed Assessment
Urbanization Pressure



Score

- No data
- 1 Lowest (least concern)
- 2
- 3
- 4
- 5 Highest (most concern)

N

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Office of Water Management
Watershed Management Section
Prepared by: W. Stone
Date Prepared: 10/19/99

Wildcat Watershed

N
W E
S

Carroll

Howard

Tippecanoe

Grant

050

020

030

010

040

Madison

Tipton

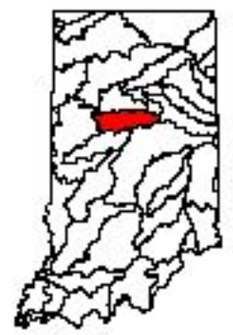
Clinton

County Boundary
Streams
11-digit HUC Boundary
Watershed Boundary

7 0 7 14 Miles

IDEM

Office of Water Management
Data Management Section
Prepared By: Jennifer Krol
Date Prepared: 11\01\99



HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Calumet-Galien	04040001010	nd	nd	nd	nd	nd	nd	nd	1	nd	4	nd	1	1	1	1
	04040001020	nd	nd	nd	nd	nd	nd	3	5	2	4	4	4	1	2	1
	04040001030	nd	nd	nd	nd	nd	nd	3	4	3	4	5	3	1	2	1
	04040001040	nd	nd	nd	nd	nd	nd	nd	5	2	4	5	3	2	2	1
	04040001050	nd	nd	nd	nd	nd	nd	3	3	2	4	5	3	2	2	1
	04040001060	nd	nd	nd	nd	nd	nd	nd	5	3	4	5	2	2	2	1
	04040001070	nd	nd	nd	nd	nd	nd	nd	5	2	4	5	2	3	3	1
	04040001080	nd	nd	nd	nd	nd	nd	nd	5	2	4	5	3	2	2	1
	04040001090	nd	nd	nd	nd	nd	nd	nd	5	3	4	5	2	3	3	1
	04040001100	nd	nd	nd	nd	nd	nd	nd	4	3	4	4	2	3	3	1
St Joe LM	04050001020	3	nd	nd	nd	nd	nd	nd	1	5	1	4	1	2	2	1
	04050001080	nd	nd	nd	nd	5	nd	3	2	1	1	4	2	2	2	1
	04050001090	nd	nd	nd	nd	nd	nd	nd	5	2	1	5	2	4	3	1
	04050001100	nd	nd	nd	nd	1	2	2	5	1	1	4	2	5	3	1
	04050001110	nd	nd	nd	4	nd	nd	nd	5	3	1	4	2	4	3	1
	04050001120	nd	nd	nd	2	5	nd	3	5	2	1	4	2	5	4	1
	04050001130	nd	nd	nd	nd	nd	nd	nd	3	1	1	5	2	5	3	1
	04050001140	nd	nd	nd	nd	2	3	4	4	2	1	4	2	5	3	1
	04050001150	nd	nd	nd	nd	5	nd	nd	4	1	1	5	2	5	3	1
	04050001160	nd	nd	nd	3	nd	nd	2	2	1	1	5	3	5	3	1
	04050001170	nd	nd	nd	3	nd	nd	nd	5	3	1	4	2	5	3	1
	04050001180	nd	nd	nd	5	3	2	4	5	4	1	3	2	3	3	1
	04050001190	nd	nd	nd	1	4	nd	nd	3	2	1	4	2	4	3	1
	04050001200	nd	nd	nd	nd	3	3	3	4	3	1	4	2	4	3	1
	04050001210	nd	nd	nd	2	nd	nd	nd	2	2	1	5	2	5	3	1
	04050001220	nd	nd	nd	nd	nd	nd	3	2	1	1	5	3	5	3	1
	04050001230	nd	nd	nd	nd	nd	nd	nd	2	4	1	5	2	5	3	1
	04050001240	nd	nd	nd	nd	nd	nd	2	4	1	1	5	3	3	2	1
	04050001280	nd	nd	nd	nd	nd	nd	2	2	2	1	5	nd	3	2	1

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
St Joe Maumee	04100003020	nd	nd	nd	nd	nd	nd	nd	3	3	3	4	1	2	2	1
	04100003030	nd	nd	nd	nd	nd	nd	2	2	4	3	3	1	2	2	1
	04100003050	5	nd	nd	nd	nd	nd	nd	4	4	3	2	1	3	3	1
	04100003060	4	nd	nd	nd	nd	nd	nd	2	5	3	2	2	3	3	1
	04100003070	4	nd	nd	nd	nd	nd	2	4	5	3	4	2	3	3	1
	04100003080	1	nd	nd	nd	3	nd	2	2	4	3	2	2	3	3	1
	04100003090	2	nd	nd	nd	nd	nd	nd	4	5	3	4	2	4	3	1
	04100003100	3	nd	nd	nd	nd	nd	3	3	5	4	4	3	4	3	1
St Marys	04100004030	nd	nd	nd	nd	nd	nd	nd	1	5	4	1	1	5	5	3
	04100004040	nd	nd	nd	nd	nd	nd	nd	2	5	4	2	2	5	5	3
	04100004050	nd	nd	nd	nd	nd	nd	nd	2	5	4	3	2	5	5	3
	04100004060	nd	nd	nd	5	nd	nd	nd	3	4	4	4	3	4	3	2
Upper Maumee	04100005010	nd	nd	nd	nd	nd	nd	nd	3	3	4	3	2	4	3	1
	04100005020	nd	nd	nd	nd	nd	nd	nd	1	5	4	3	1	3	3	1
Auglaize	04100007100	nd	nd	nd	nd	nd	nd	nd	1	2	4	1	1	4	3	1
	04100007120	nd	nd	nd	nd	nd	nd	nd	1	4	1	2	1	4	4	2
Upper Great Miami	05080001110	nd	nd	nd	nd	nd	nd	nd	1	4	1	2	2	3	5	1
Lower Great Miami	05080002070	nd	nd	nd	nd	nd	nd	nd	2	4	1	1	2	4	4	1
	05080002080	nd	nd	nd	nd	nd	nd	nd	1	4	1	2	2	4	3	1
	05080002090	nd	nd	nd	nd	nd	nd	nd	2	4	2	4	2	2	1	1

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

	11 Digit Hydrologic Unit	Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Whitewater	05080003010	nd	nd	nd	nd	nd	nd	nd	2	4	2	3	2	4	3	1
	05080003020	nd	nd	nd	nd	nd	nd	nd	2	4	2	3	1	4	3	1
	05080003030	nd	nd	nd	nd	nd	nd	nd	2	4	2	3	2	4	3	1
	05080003040	nd	nd	nd	3	nd	nd	nd	3	4	2	3	2	4	3	1
	05080003050	nd	nd	nd	nd	2	nd	3	2	4	2	2	2	4	3	2
	05080003060	nd	nd	nd	3	nd	nd	nd	2	4	2	3	2	4	2	1
	05080003070	nd	nd	nd	1	nd	nd	nd	4	4	2	3	2	4	3	1
	05080003080	nd	nd	nd	3	nd	nd	nd	3	4	2	3	2	4	1	1
Middle Ohio-Laughery	05090203030	nd	nd	nd	2	nd	nd	nd	2	5	2	4	2	2	1	1
	05090203040	nd	nd	nd	nd	nd	nd	nd	2	4	2	4	2	3	1	1
	05090203050	nd	nd	nd	4	nd	nd	nd	2	4	2	4	3	2	1	1
	05090203060	nd	nd	nd	nd	nd	nd	nd	3	4	2	2	2	3	2	1
	05090203070	nd	nd	nd	1	nd	nd	nd	3	4	2	3	2	3	1	1
	05090203080	nd	nd	nd	4	nd	nd	nd	2	4	2	3	2	2	1	1
	05090203100	nd	nd	nd	nd	nd	nd	nd	2	3	2	3	2	2	1	1
	05090203110	nd	nd	nd	nd	2	nd	3	2	5	2	2	2	2	1	1
	05090203130	nd	nd	nd	nd	nd	nd	nd	2	5	2	3	2	3	1	1
	05090203150	3	nd	nd	nd	5	nd	nd	2	4	2	3	1	3	1	1
	05090203170	nd	nd	nd	nd	nd	nd	nd	2	2	2	3		3	1	1
	05090203180	3	nd	nd	nd	nd	nd	4	1	5	2	3	2	3	1	1
	05090203190	3	nd	nd	nd	nd	nd	nd	2	5	2	2	2	3	1	1
	05090203200	3	nd	nd	nd	nd	nd	nd	2	5	2	2	2	3	1	1
	05090203210	3	nd	nd	nd	nd	nd	nd	1	5	2	2	1	3	1	1
Upper Wabash	05120101010	nd	nd	nd	nd	nd	nd	nd	1	5	2	1	1	4	4	3
	05120101040	nd	nd	nd	nd	nd	nd	nd	2	4	2	1	1	5	5	3
	05120101050	nd	nd	nd	nd	nd	nd	4	2	5	2	1	1	4	4	3
	05120101060	nd	nd	nd	nd	1	nd	nd	2	5	2	2	1	5	5	3
	05120101070	nd	nd	nd	nd	nd	nd	nd	2	4	2	2	2	3	5	3
	05120101080	nd	nd	nd	nd	nd	nd	nd	2	5	2	1	1	4	5	3
	05120101090	nd	nd	nd	nd	nd	nd	3	2	4	2	3	2	2	4	2

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
	05120101100	nd	nd	nd	nd	nd	nd	nd	3	4	2	4	2	4	3	1
	05120101110	nd	nd	nd	nd	nd	nd	2	2	5	2	3	2	4	5	3
	05120101120	nd	nd	nd	4	nd	nd	nd	2	4	2	3	2	3	5	3
	05120101130	nd	nd	nd	nd	nd	nd	nd	2	5	2	2	1	3	4	2
	05120101140	nd	nd	nd	nd	nd	nd	nd	2	4	2	2	1	3	4	2
	05120101150	4	nd	nd	nd	nd	nd	nd	2	4	2	2	2	4	4	2
	05120101160	2	nd	nd	nd	nd	nd	nd	2	4	2	4	2	4	5	2
	05120101170	nd	nd	nd	nd	nd	nd	nd	2	5	2	3	2	4	5	3
	05120101180	2	nd	nd	nd	nd	nd	nd	3	2	1	4	2	3	4	1
Salamonie	05120102010	nd	nd	nd	nd	nd	nd	nd	2	5	1	1	2	4	4	3
	05120102020	nd	nd	nd	nd	nd	nd	nd	2	5	1	1	1	4	5	3
	05120102030	nd	nd	nd	nd	nd	nd	nd	2	5	1	2	1	2	5	3
	05120102040	nd	nd	nd	nd	4	nd	nd	3	5	2	1	1	3	4	2
Mississinewa	05120103010	nd	nd	nd	nd	nd	nd	nd	2	4	2	2	2	4	4	2
	05120103020	nd	nd	nd	nd	nd	nd	nd	2	5	2	1	2	4	4	2
	05120103030	nd	nd	nd	nd	nd	nd	nd	2	5	2	4	2	3	4	2
	05120103040	nd	nd	nd	nd	nd	nd	nd	2	5	2	2	2	3	5	3
	05120103050	nd	nd	nd	nd	nd	nd	nd	2	5	2	4	2	2	4	3
	05120103060	nd	nd	nd	nd	nd	nd	2	2	4	2	3	2	4	4	3
Eel Wabash	05120104010	nd	nd	nd	nd	nd	nd	5	2	4	2	4	2	4	4	1
	05120104020	nd	nd	nd	nd	4	nd	1	3	5	2	4	2	4	4	1
	05120104030	nd	nd	nd	nd	nd	nd	3	2	5	2	3	1	4	4	1
	05120104040	nd	nd	nd	nd	nd	nd	nd	3	4	2	3	2	5	4	2
	05120104050	nd	nd	nd	nd	nd	2	4	3	4	2	3	1	5	4	2
	05120104060	2	nd	nd	nd	nd	nd	nd	2	4	2	2	1	4	5	2
	05120104070	nd	nd	nd	nd	nd	nd	nd	3	2	2	3	2	4	4	2

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Middle Wabash-Deer	05120105010	2	nd	nd	nd	nd	nd	3	2	2	2	2	2	3	4	1
	05120105020	1	nd	nd	nd	nd	nd	nd	2	3	2	2	1	3	5	1
	05120105030	1	nd	nd	nd	nd	nd	nd	3	2	2	2	1	3	5	1
	05120105040	nd	nd	nd	nd	nd	nd	nd	2	4	2	4	2	4	5	2
	05120105050	nd	nd	nd	nd	nd	nd	nd	2	3	2	2	2	4	5	2
	05120105060	nd	nd	nd	nd	nd	nd	nd	2	4	2	4	1	3	5	1
	05120105070	nd	nd	nd	nd	nd	nd	nd	3	4	2	3	1	3	5	1
Tippecanoe	05120106010	5	nd	nd	nd	2	3	nd	5	3	2	5	2	5	3	1
	05120106020	5	nd	nd	nd	4	4	1	5	3	2	5	2	5	3	1
	05120106030	5	nd	nd	nd	nd	nd	2	3	2	2	4	2	5	3	1
	05120106040	5	nd	nd	nd	2	3	3	4	2	2	3	2	4	4	1
	05120106050	5	nd	nd	nd	3	4	3	4	2	2	2	2	3	4	1
	05120106060	5	nd	nd	nd	4	4	nd	5	2	2	3	2	3	4	1
	05120106070	5	nd	nd	nd	nd	nd	nd	2	2	2	1	1	3	4	1
	05120106080	5	nd	nd	nd	nd	nd	3	4	2	2	1	2	2	5	1
	05120106090	nd	nd	nd	nd	3	nd	nd	2	2	2	2	1	3	4	1
	05120106100	2	nd	nd	nd	nd	nd	nd	2	2	2	4	1	3	5	1
	05120106110	nd	nd	nd	nd	nd	nd	nd	4	2	2	1	2	3	5	1
	05120106120	nd	nd	nd	nd	nd	nd	nd	3	2	2	1	2	3	5	2
	05120106130	nd	nd	nd	nd	nd	nd	2	2	2	2	4	1	3	5	2
	05120106140	nd	nd	nd	nd	5	nd	3	2	2	2	4	2	3	5	2
	05120106150	5	nd	nd	nd	nd	nd	nd	5	3	2	3	2	3	5	2
Wildcat	05120107010	nd	nd	nd	nd	4	nd	3	2	5	2	4	2	3	5	3
	05120107020	nd	nd	nd	nd	4	nd	3	2	4	2	4	2	4	5	2
	05120107030	nd	nd	nd	nd	nd	nd	nd	2	4	2	2	1	3	5	1
	05120107040	nd	nd	nd	1	nd	nd	nd	2	5	2	2	2	3	5	1
	05120107050	nd	nd	nd	nd	nd	nd	nd	2	3	1	5	2	3	4	1

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]																
11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for Drinking Water	Residential Septic System Density	Degree of Urbanization	Density of Livestock	% Cropland	Mineral Extraction Activities
Middle Wabash-Little Vermilion	05120108010	4	nd	nd	nd	nd	nd	nd	4	3	1	4	3	3	5	1
	05120108020	nd	nd	nd	3	nd	nd	nd	4	4	1	3	2	4	5	1
	05120108030	5	nd	nd	nd	nd	nd	nd	5	3	1	2	2	2	4	1
	05120108040	nd	nd	nd	3	nd	nd	nd	3	4	1	1	2	1	5	1
	05120108050	nd	nd	nd	nd	nd	nd	nd	2	3	1	1	2	1	5	1
	05120108060	nd	nd	nd	4	nd	nd	nd	2	4	1	1	2	1	4	1
	05120108070	4	nd	nd	nd	nd	nd	nd	3	3	1	1	2	3	5	1
	05120108080	4	nd	nd	nd	nd	nd	nd	4	4	1	1	2	1	4	1
	05120108090	1	nd	nd	nd	nd	nd	nd	2	4	1	3	2	2	4	2
	05120108100	nd	nd	nd	4	nd	nd	nd	2	3	1	1	2	4	5	1
	05120108110	nd	nd	nd	3	nd	nd	nd	2	4	1	1	1	2	4	2
	05120108120	nd	nd	nd	nd	nd	nd	nd	2	5	1	1	1	2	4	2
	05120108140	nd	nd	nd	5	nd	nd	nd	3	4	1	1	2	3	3	2
	05120108150	1	nd	nd	nd	nd	nd	nd	2	4	1	2	2	2	3	2
	05120108160	nd	nd	nd	4	nd	nd	3	2	5	1	1	1	4	4	1
	05120108170	nd	nd	nd	5	nd	nd	nd	2	4	1	2	1	3	2	2
	05120108180	nd	nd	nd	5	1	nd	3	2	4	1	2	2	3	3	1
	05120108190	nd	nd	nd	4	nd	nd	nd	2	4	1	3	2	2	3	2
	05120108200	1	nd	nd	nd	nd	nd	nd	2	3	1	4	2	2	3	2
Vermi lion	05120109080	nd	nd	nd	nd	nd	nd	nd	2	5	1	1	1	1	4	1
	05120109090	nd	nd	nd	nd	nd	nd	nd	2	4	1	1	2	1	5	1
	05120109100	nd	nd	nd	5	nd	nd	nd	2	4	1	3	2	2	4	2

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]																
11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for Drinking Water	Residential Septic System Density	Degree of Urbanization	Density of Livestock	% Cropland	Mineral Extraction Activities
Sugar	05120110010	4	nd	nd	3	nd	nd	nd	2	5	1	1	1	3	5	1
	05120110020	4	nd	nd	2	nd	nd	nd	3	4	1	1	2	4	5	1
	05120110030	nd	nd	nd	nd	nd	nd	nd	2	4	1	1	1	3	5	1
	05120110040	2	nd	nd	1	nd	nd	nd	2	4	1	1	1	4	5	1
	05120110050	2	nd	nd	1	nd	nd	nd	4	4	1	3	2	4	5	1
	05120110060	3	nd	nd	3	nd	nd	nd	3	4	1	1	1	3	3	1
Middle Wabash-Buseron	05120111010	nd	nd	nd	nd	nd	nd	nd	1	5	1	1	2	3	3	2
	05120111020	nd	nd	nd	nd	nd	nd	nd	2	5	1	4	2	2	3	4
	05120111030	nd	nd	nd	2	nd	nd	4	3	4	1	4	2	2	2	3
	05120111040	2	nd	nd	nd	nd	nd	nd	2	3	1	4	3	2	2	3
	05120111050	2	nd	nd	nd	nd	nd	2	3	3	1	5	3	2	2	2
	05120111060	nd	nd	nd	nd	nd	nd	3	2	3	1	4	2	2	2	4
	05120111070	2	nd	nd	nd	nd	nd	3	2	3	1	5	2	2	2	3
	05120111090	nd	nd	nd	nd	nd	nd	nd	3	1	1	3	1	2	2	3
	05120111100	1	nd	nd	nd	nd	nd	nd	3	2	1	3	2	2	2	3
	05120111120	1	nd	nd	nd	nd	nd	nd	2	1	1	1	2	1	3	3
	05120111130	nd	nd	nd	nd	nd	nd	nd	2	4	1	1	2	2	3	3
	05120111150	1	nd	nd	nd	nd	nd	3	3	3	1	1	2	1	3	3
	05120111160	nd	nd	nd	nd	3	nd	3	3	4	1	2	2	2	3	4
	05120111170	nd	nd	nd	nd	nd	nd	nd	2	1	1	2	2	3	4	3
	05120111180	2	nd	nd	nd	nd	nd	nd	2	1	1	3	2	3	5	3
	05120111190	2	nd	nd	nd	nd	nd	nd	3	3	1	2	2	3	4	3
	05120111200	2	nd	nd	nd	nd	nd	nd	2	3	3	3	2	3	5	3

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

	11 Digit Hydrologic Unit	Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Lower Wabash	05120113010	nd	nd	nd	nd	nd	nd	nd	2	1	3	1	1	3	5	3
	05120113020	2	nd	nd	nd	nd	nd	nd	3	1	3	1	2	3	5	3
	05120113030	nd	nd	nd	nd	nd	nd	nd	2	1	3	1	1	3	5	3
	05120113040	nd	nd	nd	nd	nd	nd	nd	2	1	3	1	2	3	4	3
	05120113050	3	nd	nd	nd	nd	nd	nd	3	2	3	1	2	3	4	3
	05120113060	nd	nd	nd	nd	nd	nd	nd	3	1	3	1	1	3	4	3
	05120113080	5	nd	nd	nd	nd	nd	nd	3	1	3	1	1	2	4	3
	05120113090	nd	nd	nd	nd	nd	nd	nd	2	2	3	1	2	2	4	3
	05120113100	5	nd	nd	nd	nd	nd	nd	4	3	3	1	2	2	4	3
	05120113110	nd	nd	nd	nd	nd	nd	nd	2	3	3	4	2	2	4	3
	05120113120	5	nd	nd	nd	nd	nd	nd	4	2	3	1	1	2	4	3
	05120113130	nd	nd	nd	nd	nd	nd	nd	5	2	4	1	1	2	4	3
Upper White	05120201010	1	3	nd	nd	nd	nd	2	3	4	4	3	2	3	4	2
	05120201020	nd	3	nd	nd	nd	nd	nd	3	3	4	4	2	3	4	2
	05120201030	nd	4	nd	nd	nd	nd	nd	3	2	4	5	2	2	4	2
	05120201040	1	3	1	nd	nd	nd	nd	2	3	4	5	2	2	4	2
	05120201050	nd	4	4	nd	nd	nd	1	2	4	4	4	2	3	5	3
	05120201060	nd	4	3	nd	nd	nd	nd	1	5	4	3	2	3	5	2
	05120201070	nd	3	3	nd	nd	nd	nd	2	2	4	4	2	2	3	2
	05120201080	nd	3	1	1	nd	nd	2	2	5	4	3	2	2	4	2
	05120201090	nd	3	1	nd	nd	nd	nd	3	3	4	5	3	2	1	2
	05120201100	nd	4	1	3	nd	nd	nd	3	2	4	4	2	3	4	2
	05120201110	nd	1	2	3	nd	nd	2	4	2	4	5	3	2	1	2
	05120201120	nd	3	1	3	nd	nd	3	3	4	4	4	3	3	2	2
	05120201130	nd	4	3	nd	nd	nd	nd	2	2	4	5	4	1	1	1
	05120201140	nd	1	1	nd	nd	nd	nd	2	3	4	5	2	2	2	1
	05120201150	nd	3	1	1	nd	nd	nd	2	4	4	5	2	3	3	1
	05120201160	nd	3	4	nd	nd	nd	nd	3	4	4	4	2	2	2	1
	05120201170	nd	3	3	nd	2	nd	2	2	4	4	4	2	2	2	1
	05120201180	nd	nd	nd	nd	nd	nd	nd	3	3	3	3	1	3	2	1

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Lower White	05120202010	nd	1	5	nd	nd	nd	2	4	4	3	4	2	2	1	1
	05120202020	1	3	1	nd	nd	nd	2	4	3	3	3	1	3	1	2
	05120202030	nd	1	1	nd	nd	nd	nd	2	3	3	2	2	5	2	4
	05120202040	1	3	3	5	nd	nd	nd	4	3	3	3	2	5	2	2
	05120202050	1	3	4	nd	nd	nd	1	3	2	3	1	2	5	3	3
	05120202060	nd	2	nd	nd	nd	nd	2	2	3	3	2	2	4	2	5
	05120202070	1	3	4	nd	nd	nd	2	2	3	3	1	2	4	5	4
	05120202080	nd	2	5	nd	nd	nd	nd	4	2	3	1	2	5	4	4
	05120202090	1	1	1	nd	nd	nd	3	3	3	3	2	2	5	5	3
	05120202100	3	3	1	nd	nd	nd	nd	4	3	1	2	2	3	4	4
Eel-Big Walnut	05120203010	nd	1	nd	nd	nd	nd	nd	2	4	1	2	1	3	4	1
	05120203020	nd	3	1	4	1	nd	nd	3	5	1	3	2	3	2	1
	05120203030	nd	1	1	nd	1	nd	nd	1	4	1	1	1	3	2	1
	05120203040	nd	3	1	2	nd	nd	nd	2	3	1	2	1	3	2	1
	05120203050	nd	3	3	nd	nd	nd	2	2	5	1	3	2	3	2	1
	05120203060	nd	1	1	3	2	nd	nd	3	3	1	3	2	3	2	1
	05120203070	nd	4	nd	nd	nd	nd	nd	2	4	1	3	2	2	2	2
	05120203080	nd	2	3	5	nd	nd	4	2	4	1	2	2	2	3	3
	05120203090	nd	nd	nd	nd	nd	nd	nd	2	4	2	2	2	3	2	3
Driftwood	05120204010	nd	3	3	3	1	nd	1	3	4	2	4	2	2	4	2
	05120204020	1	3	nd	3	nd	nd	nd	2	4	2	3	2	3	5	3
	05120204030	3	1	4	2	nd	nd	nd	4	4	2	2	2	3	5	3
	05120204040	4	1	1	2	nd	nd	nd	4	3	2	4	2	3	5	3
	05120204050	1	4	1	2	nd	nd	nd	2	2	2	3	2	3	4	3
	05120204060	5	1	5	4	nd	nd	nd	4	4	2	4	2	3	5	3
	05120204070	2	1	5	1	nd	nd	nd	2	4	2	5	2	2	2	2
	05120204080	5	1	5	2	nd	nd	nd	4	3	2	4	2	3	4	3
	05120204090	5	1	5	1	nd	nd	nd	3	4	2	4	2	2	3	1
	05120204100	nd	1	5	nd	nd	nd	nd	3	4	2	4	2	2	3	1

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

	11 Digit Hydrologic Unit	Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Flatrock	05120205010	2	1	nd	3	nd	nd	nd	2	3	2	3	1	3	4	2
	05120205020	3	1	nd	4	nd	nd	nd	2	4	2	2	2	3	5	3
	05120205030	nd	1	nd	nd	nd	nd	nd	2	4	2	1	2	4	5	3
	05120205040	2	1	nd	1	nd	nd	nd	2	4	2	2	2	4	5	3
	05120205050	2	1	nd	2	nd	nd	nd	3	3	2	3	2	3	4	3
	05120205060	nd	1	1	nd	nd	nd	nd	2	3	2	3	2	2	3	2
Upper east Fork White	05120206010	2	1	5	nd	nd	nd	nd	2	4	2	2	2	4	4	3
	05120206020	nd	1	nd	3	nd	nd	4	2	3	2	4	2	2	3	1
	05120206030	1	1	nd	2	nd	nd	nd	2	4	2	2	2	4	3	3
	05120206040	1	1	nd	5	nd	nd	3	2	1	2	2	2	3	2	1
	05120206050	nd	5	nd	nd	nd	nd	nd	2	4	2	3	2	3	3	1
	05120206060	1	1	1	5	nd	nd	nd	2	2	4	1	2	3	2	1
Muscatatuck	05120207010	4	1	5	4	nd	nd	3	4	4	4	2	2	3	2	1
	05120207020	2	1	1	5	nd	nd	nd	4	4	4	1	2	3	2	1
	05120207030	nd	2	5	nd	nd	nd	nd	2	2	4	3	2	2	2	2
	05120207040	nd	1	1	nd	nd	nd	1	3	3	4	3	2	2	1	3
	05120207050	nd	1	1	5	nd	nd	nd	3	4	4	2	2	3	2	2
	05120207060	2	1	1	nd	nd	nd	nd	4	4	4	2	2	3	2	1
	05120207070	4	1	5	4	nd	nd	2	4	3	4	3	2	2	2	1
	05120207080	nd	1	5	nd	nd	nd	2	3	3	4	3	2	2	2	1
	05120207090	nd	nd	nd	nd	nd	nd	3	3	1	4	2	2	4	2	1
	05120207100	nd	nd	nd	nd	5	nd	nd	2	3	4	2	2	4	2	2
	05120207110	nd	1	nd	nd	1	nd	nd	3	3	4	1	2	4	2	1
Lower East Fork white	05120208010	1	1	nd	5	nd	nd	2	4	4	4	1	2	4	2	1
	05120208020	4	1	nd	5	nd	nd	2	5	2	4	3	2	4	1	1
	05120208030	nd	1	nd	nd	nd	nd	nd	3	5	4	2	1	3	2	1
	05120208040	4	1	nd	5	nd	nd	nd	2	3	4	4	2	3	1	1
	05120208050	nd	1	nd	5	nd	nd	nd	4	5	4	3	2	1	1	1
	05120208060	nd	1	5	nd	nd	nd	nd	4	4	4	1	1	3	2	1

HYDROLOGIC UNIT SCORES for Each Parameter Used in the Unified Watershed Assessment [2000-2001]

11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
	05120208070	nd	nd	nd	nd	nd	nd	2	3	5	4	2	1	1	1	1
	05120208080	nd	nd	nd	nd	3	nd	1	4	4	4	4	2	2	1	1
	05120208090	nd	nd	nd	nd	nd	nd	2	4	3	4	4	2	3	1	1
	05120208100	5	nd	nd	5	nd	nd	nd	4	3	4	3	2	4	1	2
	05120208110	nd	nd	nd	5	nd	nd	nd	4	5	4	3	1	4	1	2
	05120208120	5	nd	nd	nd	nd	nd	nd	4	5	4	2	2	4	1	2
	05120208130	nd	nd	nd	nd	4	nd	4	3	3	4	1	2	4	1	3
	05120208140	5	nd	nd	nd	nd	nd	nd	3	3	4	2	2	4	1	3
	05120208150	nd	nd	nd	nd	nd	nd	2	5	2	4	2	2	4	1	1
	05120208160	nd	nd	nd	5	3	nd	nd	4	5	4	1	2	4	1	2
	05120208170	nd	nd	nd	nd	1	nd	2	4	2	4	2	2	5	3	4
Patoka	05120209010	nd	1	nd	nd	nd	nd	nd	3	5	4	1	2	4	1	2
	05120209020	nd	nd	nd	nd	3	nd	2	2	4	4	2	2	5	2	2
	05120209030	nd	1	nd	nd	nd	nd	nd	2	5	4	2	2	5	2	3
	05120209040	nd	1	nd	nd	5	nd	2	3	3	4	2	2	5	2	4
	05120209050	nd	nd	nd	nd	nd	nd	2	2	2	4	1	2	4	2	5
	05120209060	nd	1	nd	nd	nd	nd	nd	4	3	4	2	2	3	1	5
	05120209070	nd	nd	1	nd	nd	nd	nd	2	3	4	3	2	3	1	5
	05120209080	nd	nd	nd	nd	nd	nd	nd	3	3	3	3	2	3	4	4
Silver-Little Ken-tucky	05140101020	nd	nd	nd	nd	nd	nd	nd	1	3	3	2	1	3	1	1
	05140101030	nd	nd	nd	2	nd	nd	nd	2	4	3	2	2	2	1	1
	05140101040	3	nd	nd	nd	nd	nd	nd	4	4	3	3	2	3	1	1
	05140101060	nd	nd	nd	nd	nd	nd	nd	2	4	3	2	2	2	1	1
	05140101070	nd	nd	nd	nd	nd	nd	nd	4	4	3	2	2	2	1	1
	05140101080	nd	nd	nd	nd	nd	nd	nd	2	4	3	4	3	2	1	1
	05140101100	nd	nd	nd	nd	nd	nd	nd	2	3	3	5	3	2	1	1
	05140101120	nd	nd	nd	nd	nd	nd	nd	2	2	3	5	4	2	1	1
	05140101130	nd	nd	nd	nd	nd	nd	nd	3	4	3	4	2	3	1	1
	05140101140	nd	nd	nd	nd	nd	nd	2	4	4	3	4	2	2	1	1
	05140101150	1	nd	nd	nd	nd	nd	nd	5	4	3	4	3	3	1	1

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11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Blue-Sinking	05140104010	4	nd	nd	nd	nd	nd	nd	4	2	3	2	1	4	1	2
	05140104040	nd	nd	nd	nd	nd	nd	nd	4	1	3	2	1	4	1	2
	05140104050	4	nd	nd	nd	nd	nd	nd	4	1	3	3	2	4	1	2
	05140104070	nd	nd	nd	nd	nd	nd	nd	2	4	3	2	1	4	1	2
	05140104080	nd	nd	nd	nd	nd	nd	nd	2	4	3	5	2	3	1	1
	05140104090	nd	nd	nd	2	nd	nd	nd	4	1	3	4	2	4	1	2
	05140104100	4	nd	nd	4	nd	nd	nd	4	3	3	3	2	4	1	2
	05140104110	nd	nd	nd	nd	nd	nd	nd	4	5	3	3	1	4	1	2
	05140104120	1	nd	nd	2	nd	nd	nd	4	3	3	2	2	4	1	1
	05140104130	nd	nd	nd	nd	nd	nd	2	4	3	3	3	2	4	1	1
	05140104140	3	nd	nd	2	nd	nd	nd	5	4	3	2	2	4	1	1
	05140104150	4	nd	nd	2	nd	nd	nd	5	4	3	3	2	4	1	2
	05140104170	nd	nd	nd	nd	nd	nd	nd	3	4	3	1	2	2	1	1
	05140104180	4	nd	nd	nd	1	nd	nd	5	5	3	1	2	2	1	2
	05140104190	nd	nd	nd	nd	nd	nd	nd	2	3	3	1	1	3	1	2
	05140104200	nd	nd	nd	nd	nd	nd	nd	5	5	3	1	1	3	1	2
	05140104210	3	nd	nd	nd	nd	nd	nd	3	4	2	1	1	3	1	2
Lower Ohio-little Pigeon	05140201010	3	nd	nd	nd	nd	nd	nd	2	4	2	1	1	3	1	2
	05140201030	nd	nd	nd	nd	nd	nd	nd	3	4	2	1	1	3	1	2
	05140201040	nd	nd	nd	nd	nd	nd	nd	2	5	2	1	1	3	1	2
	05140201050	3	nd	nd	nd	nd	nd	4	2	4	2	4	3	3	1	2
	05140201060	nd	nd	nd	nd	nd	nd	nd	2	5	2	1	1	3	1	2
	05140201070	nd	nd	nd	nd	nd	nd	nd	2	4	2	1	1	5	1	2
	05140201080	4	nd	nd	nd	nd	nd	nd	2	4	2	1	2	4	3	2
	05140201090	4	nd	nd	nd	2	nd	2	2	2	2	1	2	4	3	3
	05140201110	4	nd	nd	nd	nd	nd	nd	3	3	2	2	2	4	3	1
	05140201130	4	nd	nd	nd	nd	nd	nd	3	3	2	3	2	4	3	1
	05140201140	nd	nd	nd	nd	nd	nd	nd	4	3	2	1	2	4	2	4
	05140201150	5	nd	nd	nd	nd	nd	nd	3	3	2	3	2	3	2	3
	05140201160	3	nd	nd	nd	nd	nd	nd	2	3	5	4	2	2	1	4

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11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Highland-Pigeon	05140202010	4	nd	nd	nd	nd	nd	nd	2	2	5	2	4	1	2	3
	05140202020	nd	nd	nd	nd	nd	nd	nd	2	3	5	2	2	3	4	4
	05140202030	nd	nd	nd	nd	nd	nd	nd	3	3	5	2	2	2	1	5
	05140202040	nd	nd	nd	nd	nd	nd	nd	2	3	5	4	3	1	2	4
	05140202050	4	nd	nd	nd	nd	nd	nd	3	2	5	5	3	1	2	4
	05140202070	4	nd	nd	nd	nd	nd	nd	4	3	5	4	2	2	3	3
	05140202100	nd	nd	nd	nd	nd	nd	nd	4	2	3	1	1	2	4	3
Kankakee	07120001010	nd	nd	nd	nd	2	nd	2	5	2	3	4	2	3	3	1
	07120001020	nd	nd	nd	nd	nd	nd	2	4	2	3	3	2	3	3	1
	07120001030	nd	nd	nd	nd	nd	nd	3	4	2	3	4	2	3	3	1
	07120001040	nd	nd	nd	nd	5	nd	nd	3	1	3	4	2	2	3	1
	07120001050	nd	nd	nd	nd	5	nd	3	3	3	3	4	2	4	3	1
	07120001060	nd	nd	nd	nd	nd	4	3	3	2	3	4	2	3	3	1
	07120001070	nd	nd	nd	nd	nd	nd	nd	4	2	3	4	2	2	4	1
	07120001080	nd	nd	nd	nd	nd	nd	nd	5	1	3	2	2	3	3	1
	07120001090	nd	nd	nd	nd	nd	nd	nd	4	2	3	4	2	2	2	1
	07120001100	nd	nd	nd	nd	nd	nd	nd	4	1	3	3	1	3	5	2
	07120001110	nd	nd	nd	nd	nd	nd	nd	4	1	3	3	2	3	5	1
	07120001120	nd	nd	nd	nd	nd	nd	2	5	1	3	3	2	1	4	1
	07120001130	nd	nd	nd	nd	nd	nd	nd	2	2	3	3	2	1	2	1
	07120001140	nd	nd	nd	nd	nd	nd	3	3	3	3	4	2	1	2	1
	07120001150	nd	nd	nd	nd	nd	nd	nd	1	1	3	2	1	1	2	1
	07120001170	nd	nd	nd	nd	nd	nd	nd	1	1	1	4	1	1	4	1

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11 Digit Hydrologic Unit		Mussel Diversity and Occurrence	Aquatic Life Use Support	Recreational Use Attainment	Stream Fishery	Lake Fishery	Eurasian Milfoil Infestation Status	Lake Trophic Status	Critical Biodiversity Resource	Aquifer Vulnerability	Population Using Surface Water for	Residential Septic System Density	Degree of Urbanizatio n	Density of Livestock	% Cropland	Mineral Extraction Activities
Iroquois	07120002010	nd	nd	nd	nd	nd	nd	nd	4	2	1	2	1	3	5	2
	07120002020	nd	nd	nd	nd	nd	nd	nd	2	3	1	1	2	3	5	2
	07120002030	nd	nd	nd	nd	nd	nd	nd	3	2	1	1	2	2	5	2
	07120002040	nd	nd	nd	nd	nd	nd	nd	4	3	1	1	2	2	5	1
	07120002050	nd	nd	nd	nd	nd	nd	nd	2	3	1	1	2	1	5	1
	07120002070	nd	nd	nd	nd	nd	nd	nd	3	4	1	1	2	1	5	1
	07120002090	nd	nd	nd	nd	nd	nd	nd	2	5	1	1	1	1	5	1
	07120002150	nd	nd	nd	nd	nd	nd	nd	5	1	5	1	2	1	5	1
Chicago	07120003030	nd	nd	nd	nd	nd	nd	nd	5	3	5	5	4	1	2	1
	07120003040	nd	nd	nd	nd	nd	nd	nd	1	4	5	1	3	1	2	1
	07120003050	nd	nd	nd	nd	nd	nd	nd	2	2	5	1	5	1	2	1

Data Table 1: Mussel occurrences and species diversity							
County	**Waterbody**	**Date**	**Raw Score**	**County**	**Waterbody**	**Date**	**Raw Score**
ALLEN	CEDAR CREEK	1988	4	MADISON	BIG KILBUCK CREEK	1989	2
ALLEN	ST. JOSEPH RIVER	1988	44	MARSHALL	TIPPECANOE RIVER	1992	24
BARTHOLOMEW	CLIFTY CREEK	1993	16	MARTIN	EAST FORK WHITE RIVER	1992	138
BOONE	SUGAR CREEK	1991	46	MIAMI	EEL RIVER	1986	10
BOONE	WONDER CREEK	1991	4	MIAMI	WABASH RIVER	1988	4
CARROLL	TIPPECANOE RIVER	1992	188	MONTGOMERY	SUGAR CREEK	1991	18
CARROLL	WABASH RIVER	1988	4	OWEN	WEST FORK WHITE RIVER	1991	2
CASS	WABASH RIVER	1988	10	PARKE	SUGAR CREEK	1991	28
CLINTON	SUGAR CREEK	1991	4	PERRY	OHIO RIVER	1982	40
CRAWFORD	BLUE RIVER	1995	20	POSEY	WABASH RIVER	1989	206
CRAWFORD	OHIO RIVER	1982	34	PULASKI	TIPPECANOE RIVER	1991	388
DECATUR	FLATROCK RIVER	1994	8	RANDOLPH	WEST FORK WHITE RIVER	1989	4
DECATUR	SAND CREEK	1993	2	RUSH	FLATROCK RIVER	1994	20
DEKALB	CEDAR CREEK	1988	8	RUSH	LITTLE BLUE RIVER	1993	70
DEKALB	FISH CREEK	1988	102	SHELBY	BIG BLUE RIVER	1989	2
DEKALB	ST. JOSEPH RIVER	1988	50	SHELBY	BRANDYWINE CREEK	1991	40
FLOYD	OHIO RIVER	1988	2	SHELBY	BUCK CREEK	1990	20
FULTON	CHIPPENWANUCK CREEK	1992	4	SHELBY	FLATROCK RIVER	1994	12
FULTON	TIPPECANOE RIVER	1991	296	SHELBY	LITTLE BLUE RIVER	1993	44
GIBSON	WABASH RIVER	1984	24	SHELBY	SNAIL CREEK	1990	2
GREENE	WEST FORK WHITE RIVER	1991	2	SHELBY	SUGAR CREEK	1990	52
HANCOCK	BRANDYWINE CREEK	1991	20	SPENCER	OHIO RIVER	1982	76
HANCOCK	LITTLE BRANDYWINE CREEK	1991	2	STEUBEN	FISH CREEK	1996	40
HANCOCK	SUGAR CREEK	1990	158	SULLIVAN	WABASH RIVER	1988	4
HARRISON	BLUE RIVER	1995	20	SWITZERLAND	OHIO RIVER	1982	28
HARRISON	OHIO RIVER	1982	98	TIPPECANOE	TIPPECANOE RIVER	1992	124
HENRY	FLATROCK RIVER	1989	14	TIPPECANOE	WABASH RIVER	1988	54
JACKSON	EAST FORK WHITE RIVER	1991	4	VANDERBURGH	OHIO RIVER	1982	60
JEFFERSON	BIG CREEK	1992	60	VERMILLION	WABASH RIVER	1988	2
JEFFERSON	OHIO RIVER	1982	28	VIGO	WABASH RIVER	1988	22
JENNINGS	GRAHAM CREEK	1988	12	WABASH	WABASH RIVER	1988	30
JENNINGS	OTTER	1994	10	WARREN	WABASH RIVER	1988	56
JENNINGS	SAND CREEK	1993	4	WARRICK	OHIO RIVER	1982	26
JENNINGS	VERNON FORK MUSCATATU	1992	34	WASHINGTON	BLUE RIVER	1995	8
JOHNSON	LITTLE SUGAR CREEK	1990	8	WHITE	TIPPECANOE RIVER	1991	14

Data Table 1: Mussel occurrences and species diversity							
County	**Waterbody**	**Date**	**Raw Score**	**County**	**Waterbody**	**Date**	**Raw Score**
JOHNSON	SUGAR CREEK	1990	126				
JOHNSON	YOUNGS CREEK	1990	2				
KNOX	WABASH RIVER	1988	18				
KNOX	WEST FORK WHITE RIVER	1991	2				
KNOX	WHITE RIVER	1991	28				
KOSCIUSKO	TIPPECANOE RIVER	1991	310				
LAGRANGE	PIGEON RIVER	1996	34				
LAWRENCE	EAST FORK WHITE RIVER	1991	56				

Data Table 2: Aquatic Life Use Support [ALUS]						
Waterbody ID Number	Aquatic Life Use support [Stream Miles]				Recreational Use Support[Stream Miles]	
	Total Miles	Supports	Partly Supports	Does Not Support	Supports	Impaired
IN05120201010	163.7	100.9	58.8	4		
IN05120201020	54.9	39.80	3.60	11.50		
IN05120201030	32.9	12.00	20.9			
IN05120201040	54.9	29.3	25.6		54.90	
IN05120201050	89.3	25.4	63.9		40.30	49.20
IN05120201060	77	32.3	33.4	11.3	60.20	16.80
IN05120201070	62.2	38.2	24		37.00	25.20
IN05120201080	177.5	128.8	48.7		173.30	2.50
IN05120201090	82.3	35.6	35.4		82.30	
IN05120201100	99.2	29.3	52.9		99.20	
IN05120201110	90.9	90.9			85.10	5.80
IN05120201120	164.2	143.2	21		164.20	
IN05120201130	75.2	33.7	39.2	2.3	59.80	15.40
IN05120201140	148.8	147.8			148.80	
IN05120201150	176.1	149.1	26	1	176.10	
IN05120201160	52.01	32	20		17.20	34.80
IN05120201170	109.07	81.2	27.9		90.20	18.90
IN05120202010	114.4	114.4			8.80	105.60
IN05120202020	162.2	113.3	48.9		90.70	
IN05120202030	35	35			35.00	
IN05120202040	141.1	114	22	5.1	79.80	61.30
IN05120202050	157.2	121.5	35.7		37.80	95.80
IN05120202060	70.9	64.9		6		
IN05120202070	209.9	168.9	17.6	23.4	16.90	40.40
IN05120202080	107	98.7	8.3			73.70
IN05120202090	7.9	7.5			7.50	
IN05120202100	126.5	77	49.5		119.00	
IN05120203010	71.6	71.6				
IN05120203020	103.6	94.2	6.2	3.2	96.40	
IN05120203030	47.3	47.3			47.30	

Data Table 2: Aquatic Life Use Support [ALUS]						
Waterbody ID Number	Aquatic Life Use support [Stream Miles]				Recreational Use Support[Stream Miles]	
	Total Miles	Supports	Partly Supports	Does Not Support	Supports	Impaired
IN05120203040	62.6	56.2	6.4		62.60	
IN05120203050	174.4	152.4	24		143.60	32.80
IN05120203060	145.4	145.4			68.30	
IN05120203070	16.7	6.7		10		
IN05120203080	170.8	162.5		8.3	118.90	51.90
IN05120209010	84.1	84.1				
IN05120209020	125	125				
IN05120209030	58.3	58.3				
IN05120209040	67.4	67.4				
IN05120209050	90.8	90.8				
IN05120209060	41.6	41.6				
IN05120209070	189.8	150.8		39	189.80	

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
ST. MARY'S RIVER	ALLEN	04100004060	11.6	1.67
ST. MARY'S RIVER	ALLEN	04100004060	5.4	5.00
ST. MARY'S RIVER	ALLEN	04100004060	5.4	3.33
EAST FORK WHITE RIVER	BARTHOLOMEW	05120206020	177.6	10.91
EAST FORK WHITE RIVER	BARTHOLOMEW	05120206020	177.6	6.67
EAST FORK WHITE RIVER	BARTHOLOMEW	05120206020	189.1	40.13
EAST FORK WHITE RIVER	BARTHOLOMEW	05120206020	189.1	10.56
EAST FORK WHITE RIVER	BARTHOLOMEW	05120206020	189.1	31.67
EAST FORK WHITE RIVER	BARTHOLOMEW	05120206020	189.1	8.33
FLATROCK RIVER	BARTHOLOMEW	05120205050	0.51	27.88
FLATROCK RIVER	BARTHOLOMEW	05120205050	0.51	46.46
FLATROCK RIVER	BARTHOLOMEW	05120205050	0.51	15.00
FLATROCK RIVER	BARTHOLOMEW	05120205050	0.51	25.00
FLATROCK RIVER	BARTHOLOMEW	05120205050	7.31	29.18
FLATROCK RIVER	BARTHOLOMEW	05120205050	7.31	61.01
FLATROCK RIVER	BARTHOLOMEW	05120205050	7.31	18.07
FLATROCK RIVER	BARTHOLOMEW	05120205050	7.31	37.79
BIG PINE CREEK	BENTON	05120108040	24.13	4.00
BIG PINE CREEK	BENTON	05120108040	24.13	8.00
BIG PINE CREEK	BENTON	05120108040	24.13	3.33
BIG PINE CREEK	BENTON	05120108040	24.13	6.67
SUGAR CREEK	BOONE	05120110010	63.6	22.06
SUGAR CREEK	BOONE	05120110010	63.6	20.00
SUGAR CREEK	BOONE	05120110010	61.1	40.00
SUGAR CREEK	BOONE	05120110010	61.1	37.27
SUGAR CREEK	BOONE	05120110010	56.8	26.67
SUGAR CREEK	BOONE	05120110010	56.8	40.00
SUGAR CREEK	BOONE	05120110010	69.6	48.03
SUGAR CREEK	BOONE	05120110020	69.6	56.77
SUGAR CREEK	BOONE	05120110020	69.6	36.67
SUGAR CREEK	BOONE	05120110020	69.6	43.33
SUGAR CREEK	BOONE	05120110020	74.3	26.67
SUGAR CREEK	BOONE	05120110020	74.3	60.00
SUGAR CREEK	BOONE	05120110020	74.3	23.76

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
SUGAR CREEK	BOONE	05120110020	74.3	53.47
SUGAR CREEK*	BROWN	05120208050	86	4.76
EEL RIVER	CLAY	05120203080	38.7	3.51
BLUE RIVER	CRAWFORD	05140104140	2	3.33
BLUE RIVER	CRAWFORD	05140104140	10	38.33
BLUE RIVER	CRAWFORD	05140104140	10	61.67
BLUE RIVER	CRAWFORD	05140104140	21	60.00
BLUE RIVER	CRAWFORD	05140104150	35	91.67
BLUE RIVER	CRAWFORD	05140104150	35	105.00
BLUE RIVER	CRAWFORD	05140104150	40	81.67
BLUE RIVER	CRAWFORD	05140104150	40	61.67
BLUE RIVER	CRAWFORD	05140104150	44	160.00
LAUGHERY CREEK	DEARBORN	05090203070	18.4	56.00
LAUGHERY CREEK	DEARBORN	05090203070	18.4	46.67
LAUGHERY CREEK	DEARBORN	05090203080	12.5	10.00
LAUGHERY CREEK	DEARBORN	05090203080	12.5	9.25
TANNERS CREEK	DEARBORN	05090203030	10.4	1.82
TANNERS CREEK	DEARBORN	05090203030	10.4	14.55
TANNERS CREEK	DEARBORN	05090203030	10.4	1.67
TANNERS CREEK	DEARBORN	05090203050	10.4	13.33
WHITEWATER RIVER	DEARBORN	05080003080	8.5	30.00
WHITEWATER RIVER	DEARBORN	05080003080	8.5	26.67
WHITEWATER RIVER	DEARBORN	05080003080	23.5	15.00
WHITEWATER RIVER	DEARBORN	05080003080	23.5	58.33
SAND CREEK	DECATUR	05120206030	33	10.00
SAND CREEK	DECATUR	05120206030	33	20.00
SAND CREEK	DECATUR	05120206030	33	8.74
SAND CREEK	DECATUR	05120206030	33	17.48
CHRISTIANA CREEK	ELKHART	04050001160	0.62	56.67
CHRISTIANA CREEK	ELKHART	04050001160	0.62	30.00
CHRISTIANA CREEK	ELKHART	04050001160	3.47	23.33
CHRISTIANA CREEK	ELKHART	04050001160	3.47	33.33
CHRISTIANA CREEK	ELKHART	04050001160	6.2	6.67
CHRISTIANA CREEK	ELKHART	04050001160	6.2	10.00

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
ELKHART RIVER	ELKHART	04050001190	34	46.98
ELKHART RIVER	ELKHART	04050001190	34	62.08
ELKHART RIVER	ELKHART	04050001190	34	46.67
ELKHART RIVER	ELKHART	04050001190	34	61.67
ELKHART RIVER	ELKHART	04050001190	28.8	74.66
ELKHART RIVER	ELKHART	04050001190	28.8	40.72
ELKHART RIVER	ELKHART	04050001190	28.8	73.33
ELKHART RIVER	ELKHART	04050001190	28.8	40.00
ELKHART RIVER	ELKHART	04050001190	16.5	43.52
ELKHART RIVER	ELKHART	04050001190	16.5	47.00
ELKHART RIVER	ELKHART	04050001190	16.5	41.67
ELKHART RIVER	ELKHART	04050001190	16.5	45.00
ELKHART RIVER	ELKHART	04050001190	11	145.00
ELKHART RIVER	ELKHART	04050001190	11	115.00
ELKHART RIVER	ELKHART	04050001190	11	133.74
ELKHART RIVER	ELKHART	04050001190	11	106.07
ELKHART RIVER	ELKHART	04050001190	3.2	94.62
ELKHART RIVER	ELKHART	04050001190	3.2	26.10
ELKHART RIVER	ELKHART	04050001210	3.2	29.36
ELKHART RIVER	ELKHART	04050001210	3.2	102.77
ELKHART RIVER	ELKHART	04050001210	3.2	89.23
ELKHART RIVER	ELKHART	04050001210	3.2	24.62
ELKHART RIVER	ELKHART	04050001210	3.2	27.69
ELKHART RIVER	ELKHART	04050001210	3.2	96.92
ELKHART RIVER	ELKHART	04050001210	3.2	58.66
ELKHART RIVER	ELKHART	04050001210	3.2	16.18
ELKHART RIVER	ELKHART	04050001210	3.2	18.21
ELKHART RIVER	ELKHART	04050001210	3.2	63.72
COAL CREEK	FOUNTAIN	05120108100	7.2	10.08
COAL CREEK	FOUNTAIN	05120108100	7.2	6.72
COAL CREEK	FOUNTAIN	05120108100	7.2	10.00
COAL CREEK	FOUNTAIN	05120108100	7.2	6.67
COAL CREEK	FOUNTAIN	05120108100	10.32	10.94
COAL CREEK	FOUNTAIN	05120108100	10.32	3.65

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
COAL CREEK	FOUNTAIN	05120108100	10.32	10.00
COAL CREEK	FOUNTAIN	05120108100	10.32	3.33
COAL CREEK	FOUNTAIN	05120108100	14	73.58
COAL CREEK	FOUNTAIN	05120108110	14	13.38
COAL CREEK	FOUNTAIN	05120108110	14	73.33
COAL CREEK	FOUNTAIN	05120108110	14	13.33
COAL CREEK	FOUNTAIN	05120108110	21.1	51.42
COAL CREEK	FOUNTAIN	05120108110	21.1	47.46
COAL CREEK	FOUNTAIN	05120108110	21.1	43.33
COAL CREEK	FOUNTAIN	05120108110	21.1	40.00
E.F. WHITEWATER	FRANKLIN	05080003070	1.4	7.73
E.F. WHITEWATER	FRANKLIN	05080003070	1.4	6.67
WHITEWATER RIVER	FRANKLIN	05080003040	17	10.00
WHITEWATER RIVER	FRANKLIN	05080003040	17	28.33
WHITEWATER RIVER	FRANKLIN	05080003040	17	9.86
WHITEWATER RIVER	FRANKLIN	05080003060	17	27.93
WHITEWATER RIVER	FRANKLIN	05080003060	23.5	14.41
WHITEWATER RIVER	FRANKLIN	05080003060	23.5	56.03
WHITEWATER RIVER	FRANKLIN	05080003080	29.2	38.33
WHITEWATER RIVER	FRANKLIN	05080003080	29.2	33.33
WHITEWATER RIVER	FRANKLIN	05080003080	29.2	38.25
WHITEWATER RIVER	FRANKLIN	05080003080	29.2	33.26
PLUMMER CREEK	GREENE	05120202040	7.5	6.69
PLUMMER CREEK	GREENE	05120202040	7.5	3.33
PLUMMER CREEK	GREENE	05120202040	1	1.47
PLUMMER CREEK	GREENE	05120202040	1	1.58
CICERO CREEK	HAMILTON	05120201080	2.18	41.63
CICERO CREEK	HAMILTON	05120201080	2.18	314.57
CICERO CREEK	HAMILTON	05120201080	2.18	30.00
CICERO CREEK	HAMILTON	05120201080	2.18	226.67
CICERO CREEK	HAMILTON	05120201080	3.18	17.86
CICERO CREEK	HAMILTON	05120201080	3.18	245.54
CICERO CREEK	HAMILTON	05120201080	3.18	13.33
CICERO CREEK	HAMILTON	05120201080	3.18	183.33

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
FALL CREEK	HAMILTON	05120201100	26.09	3.33
FALL CREEK	HAMILTON	05120201100	26.09	15.00
LITTLE SUGAR CREEK	HANCOCK	05120204060	1.5	10.75
SUGAR CREEK*	HANCOCK	05120204060	39.7	15.42
SUGAR CREEK*	HANCOCK	05120204060	44.2	3.08
SUGAR CREEK*	HANCOCK	05120204060	57	17.33
SUGAR CREEK*	HANCOCK	05120204060	60	2.42
BLUE RIVER	HARRISON	05140104150	53	20.00
INDIAN CREEK	HARRISON	05140104090	6	8.33
INDIAN CREEK	HARRISON	05140104090	12.7	51.67
INDIAN CREEK	HARRISON	05140104090	12.7	75.00
INDIAN CREEK	HARRISON	05140104090	12.7	45.09
INDIAN CREEK	HARRISON	05140104090	12.7	65.45
INDIAN CREEK	HARRISON	05140104090	22.5	39.06
INDIAN CREEK	HARRISON	05140104090	22.5	22.32
INDIAN CREEK	HARRISON	05140104090	22.5	35.00
INDIAN CREEK	HARRISON	05140104100	22.5	20.00
INDIAN CREEK	HARRISON	05140104100	36.6	11.98
INDIAN CREEK	HARRISON	05140104100	36.6	3.42
INDIAN CREEK	HARRISON	05140104100	36.6	11.67
INDIAN CREEK	HARRISON	05140104100	36.6	3.33
INDIAN CREEK	HARRISON	05140104100	41.1	8.33
INDIAN CREEK	HARRISON	05140104100	41.1	5.00
BIG BLUE RIVER	HENRY	05120204010	58.2	3.33
BIG BLUE RIVER	HENRY	05120204010	58.2	13.33
BIG BLUE RIVER	HENRY	05120204010	60.4	6.67
BIG BLUE RIVER	HENRY	05120204010	60.4	26.67
FLATROCK RIVER	HENRY	05120205010	79.35	4.62
FLATROCK RIVER	HENRY	05120205010	79.35	3.32
FLATROCK RIVER	HENRY	05120205010	82.95	7.75
FLATROCK RIVER	HENRY	05120205010	82.95	3.87
FLATROCK RIVER	HENRY	05120205010	82.95	6.62
FLATROCK RIVER	HENRY	05120205010	82.95	3.31
LITTLE WABASH RIVER	HUNTINGTON	05120101120	1.55	13.33

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
EAST FORK WHITE RIVER	JACKSON	05120206040	136.9	1.67
EAST FORK WHITE RIVER	JACKSON	05120206040	136.9	1.67
EAST FORK WHITE RIVER	JACKSON	05120206040	154.5	2.00
EAST FORK WHITE RIVER	JACKSON	05120206040	154.5	8.00
EAST FORK WHITE RIVER	JACKSON	05120206060	154.5	2.00
EAST FORK WHITE RIVER	JACKSON	05120206060	154.5	1.67
EAST FORK WHITE RIVER	JACKSON	05120206060	154.5	6.67
EAST FORK WHITE RIVER	JACKSON	05120206060	154.5	1.67
EAST FORK WHITE RIVER	JACKSON	05120206060	162.2	12.00
EAST FORK WHITE RIVER	JACKSON	05120206060	162.2	2.00
EAST FORK WHITE RIVER	JACKSON	05120206060	162.2	10.00
EAST FORK WHITE RIVER	JACKSON	05120208010	162.2	1.67
EAST FORK WHITE RIVER	JACKSON	05120208010	166.6	1.68
EAST FORK WHITE RIVER	JACKSON	05120208010	166.6	1.67
BIG CREEK	JEFFERSON	05120207010	8	13.33
BIG CREEK	JEFFERSON	05120207010	8	12.98
BIG CREEK	JEFFERSON	05120207010	7.9	36.67
BIG CREEK	JEFFERSON	05120207010	7.9	23.33
BIG CREEK	JEFFERSON	05120207010	7.9	26.84
BIG CREEK	JEFFERSON	05120207010	7.9	17.08
BIG CREEK	JEFFERSON	05120207010	4.3	3.33
BIG CREEK	JEFFERSON	05120207010	4.3	2.82
BIG CREEK	JEFFERSON	05120207010	3.9	8.42
BIG CREEK	JEFFERSON	05120207010	3.9	4.21
BIG CREEK	JEFFERSON	05120207010	3.9	6.67
BIG CREEK	JEFFERSON	05120207010	3.9	3.33
INDIAN-KENTUCK	JEFFERSON	05140101030	6.7	34.84
INDIAN-KENTUCK	JEFFERSON	05140101030	6.7	42.58
INDIAN-KENTUCK	JEFFERSON	05140101030	6.7	30.00
INDIAN-KENTUCK	JEFFERSON	05140101030	6.7	36.67
INDIAN-KENTUCK	JEFFERSON	05140101030	11.4	22.00
INDIAN-KENTUCK	JEFFERSON	05140101030	11.4	60.00
INDIAN-KENTUCK	JEFFERSON	05140101030	11.4	18.33
INDIAN-KENTUCK	JEFFERSON	05140101030	11.4	50.00

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
GRAHAM CREEK	JENNINGS	05120207020	8.7	6.67
GRAHAM CREEK	JENNINGS	05120207020	8.7	4.20
GRAHAM CREEK	JENNINGS	05120207020	14.2	3.33
GRAHAM CREEK	JENNINGS	05120207020	14.2	2.42
SAND CREEK	JENNINGS	05120206030	22.2	43.33
SAND CREEK	JENNINGS	05120206030	22.2	78.33
SAND CREEK	JENNINGS	05120206030	17.8	55.38
SAND CREEK	JENNINGS	05120206030	17.8	43.92
SAND CREEK	JENNINGS	05120206030	17.8	48.33
SAND CREEK	JENNINGS	05120206030	17.8	38.33
VERNON FORK MUSCATATUK	JENNINGS	05120207050	27.8	1.67
VERNON FORK MUSCATATUK	JENNINGS	05120207050	27.8	1.67
VERNON FORK MUSCATATUK	JENNINGS	05120207050	34.1	9.40
VERNON FORK MUSCATATUK	JENNINGS	05120207050	34.1	7.52
VERNON FORK MUSCATATUK	JENNINGS	05120207070	34.1	8.33
VERNON FORK MUSCATATUK	JENNINGS	05120207070	34.1	6.67
BIG BLUE RIVER	JOHNSON	05120204050	1.3	30.00
BIG BLUE RIVER	JOHNSON	05120204050	1.3	18.33
SUGAR CREEK*	JOHNSON	05120204080	1.5	14.13
SUGAR CREEK*	JOHNSON	05120204080	6.3	91.82
SUGAR CREEK*	JOHNSON	05120204090	11.4	76.04
SUGAR CREEK*	JOHNSON	05120204090	15.6	77.60
SUGAR CREEK*	JOHNSON	05120204090	25	43.02
YOUNGS CREEK	JOHNSON	05120204090	0.9	30.96
PIGEON RIVER	LAGRANGE	04050001120	18.8	97.06
PIGEON RIVER	LAGRANGE	04050001120	18.8	37.06
PIGEON RIVER	LAGRANGE	04050001120	18.8	91.67
PIGEON RIVER	LAGRANGE	04050001120	18.8	35.00

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
PIGEON RIVER	LAGRANGE	04050001120	29	20.00
PIGEON RIVER	LAGRANGE	04050001120	29	11.67
PIGEON RIVER	LAGRANGE	04050001120	29	11.67
PIGEON RIVER	LAGRANGE	04050001120	21.5	67.59
PIGEON RIVER	LAGRANGE	04050001120	21.5	42.48
PIGEON RIVER	LAGRANGE	04050001120	21.5	46.35
PIGEON RIVER	LAGRANGE	04050001120	21.5	58.33
PIGEON RIVER	LAGRANGE	04050001120	21.5	36.67
PIGEON RIVER	LAGRANGE	04050001120	21.5	40.00
PIGEON RIVER	LAGRANGE	04050001120	12.6	93.33
PIGEON RIVER	LAGRANGE	04050001120	12.6	100.00
PIGEON RIVER	LAGRANGE	04050001120	2.6	100.00
PIGEON RIVER	LAGRANGE	04050001120	2.6	58.33
PIGEON RIVER	LAGRANGE	04050001120	2.6	8.33
EAST FORK WHITE RIVER	LAWRENCE	05120208020	116.6	2.19
EAST FORK WHITE RIVER	LAWRENCE	05120208020	116.6	2.19
EAST FORK WHITE RIVER	LAWRENCE	05120208040	116.6	1.65
EAST FORK WHITE RIVER	LAWRENCE	05120208040	116.6	1.65
EAST FORK WHITE RIVER	LAWRENCE	05120208040	106.4	3.53
EAST FORK WHITE RIVER	LAWRENCE	05120208100	106.4	1.76
EAST FORK WHITE RIVER	LAWRENCE	05120208100	106.4	3.33
EAST FORK WHITE RIVER	LAWRENCE	05120208100	106.4	1.67
BUCK CREEK	MARION	05120204070	3.1	168.42
BUCK CREEK	MARION	05120204070	9.3	83.89
EAGLE CREEK	MARION	05120201120	4.5	6.67
EAGLE CREEK	MARION	05120201120	4.5	1.67
EAGLE CREEK	MARION	05120201120	10	30.00
EAGLE CREEK	MARION	05120201120	10	28.33
EAGLE CREEK	MARION	05120201120	24.9	13.33
FALL CREEK	MARION	05120201100	11	30.00
FALL CREEK	MARION	05120201110	11	26.67
INDIAN CREEK*	MARTIN	05120208110	4.5	8.13
INDIAN CREEK*	MARTIN	05120208110	4.5	8.13
INDIAN CREEK*	MARTIN	05120208110	4.5	5.00

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
INDIAN CREEK*	MARTIN	05120208110	4.5	5.00
INDIAN CREEK*	MARTIN	05120208110	13	6.63
INDIAN CREEK*	MARTIN	05120208110	13	6.63
INDIAN CREEK*	MARTIN	05120208110	13	3.42
INDIAN CREEK*	MARTIN	05120208110	13	3.42
LOST RIVER	MARTIN	05120208160	16	3.33
SUGAR CREEK	MONTGOMERY	05120110020	24.7	30.77
SUGAR CREEK	MONTGOMERY	05120110020	24.7	48.35
SUGAR CREEK	MONTGOMERY	05120110020	24.7	23.33
SUGAR CREEK	MONTGOMERY	05120110020	24.7	36.67
SUGAR CREEK	MONTGOMERY	05120110020	28.5	70.00
SUGAR CREEK	MONTGOMERY	05120110020	28.5	93.33
SUGAR CREEK	MONTGOMERY	05120110020	28.5	60.34
SUGAR CREEK	MONTGOMERY	05120110020	28.5	80.46
SUGAR CREEK	MONTGOMERY	05120110040	31.6	47.57
SUGAR CREEK	MONTGOMERY	05120110040	31.6	95.13
SUGAR CREEK	MONTGOMERY	05120110040	31.6	46.67
SUGAR CREEK	MONTGOMERY	05120110040	31.6	93.33
SUGAR CREEK	MONTGOMERY	05120110040	39.8	43.33
SUGAR CREEK	MONTGOMERY	05120110040	39.8	106.67
SUGAR CREEK	MONTGOMERY	05120110040	39.8	33.16
SUGAR CREEK	MONTGOMERY	05120110050	39.8	81.63
SUGAR CREEK	MONTGOMERY	05120110050	45.9	74.55
SUGAR CREEK	MONTGOMERY	05120110050	45.9	225.45
SUGAR CREEK	MONTGOMERY	05120110050	45.9	68.33
SUGAR CREEK	MONTGOMERY	05120110050	45.9	206.67
SUGAR CREEK	MONTGOMERY	05120110050	51	36.67
SUGAR CREEK	MONTGOMERY	05120110050	51	66.67
WHITE LICK CREEK	MORGAN	05120201150	4.5	100.00
WHITE LICK CREEK	MORGAN	05120201150	4.5	36.67
WHITE LICK CREEK	MORGAN	05120201150	17	76.67
WHITE LICK CREEK	MORGAN	05120201150	17	43.33
ELKHART RIVER	NOBLE	04050001190	41	79.20
ELKHART RIVER	NOBLE	04050001190	41	57.95

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
ELKHART RIVER	NOBLE	04050001190	41	68.33
ELKHART RIVER	NOBLE	04050001190	41	50.00
N. BRANCH ELKHART RIVER	NOBLE	04050001170	1	20.00
N. BRANCH ELKHART RIVER	NOBLE	04050001170	1	31.67
N. BRANCH ELKHART RIVER	NOBLE	04050001170	7	12.13
N. BRANCH ELKHART RIVER	NOBLE	04050001170	7	19.06
N. BRANCH ELKHART RIVER	NOBLE	04050001170	7	11.67
N. BRANCH ELKHART RIVER	NOBLE	04050001170	7	18.33
S. BRANCH ELKHART RIVER	NOBLE	04050001180	4.2	5.64
S. BRANCH ELKHART RIVER	NOBLE	04050001180	4.2	2.31
S. BRANCH ELKHART RIVER	NOBLE	04050001180	4.2	1.67
MILL CREEK	OWEN	05120203060	14.8	14.75
MILL CREEK	OWEN	05120203060	14.8	51.63
MILL CREEK	OWEN	05120203060	14.8	13.33
MILL CREEK	OWEN	05120203060	14.8	46.67
MILL CREEK	OWEN	05120203060	19.9	8.45
MILL CREEK	OWEN	05120203060	19.9	46.48
MILL CREEK	OWEN	05120203060	19.9	6.67
MILL CREEK	OWEN	05120203060	19.9	36.67
BIG RACCOON	PARKE	05120108190	19.7	11.02
BIG RACCOON	PARKE	05120108190	19.7	19.28
BIG RACCOON	PARKE	05120108190	19.7	6.67
BIG RACCOON	PARKE	05120108190	19.7	11.67
BIG RACCOON	PARKE	05120108170	15.6	5.63
BIG RACCOON	PARKE	05120108170	15.6	5.63

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
BIG RACCOON	PARKE	05120108170	15.6	1.67
BIG RACCOON	PARKE	05120108170	15.6	1.67
BIG RACCOON	PARKE	05120108170	6	3.50
BIG RACCOON	PARKE	05120108170	6	3.33
COAL CREEK	PARKE	05120108110	1.3	1.82
COAL CREEK	PARKE	05120108110	1.3	1.67
LITTLE RACCOON	PARKE	05120108180	9.5	3.33
LITTLE RACCOON	PARKE	05120108180	9.5	3.14
SUGAR CREEK	PARKE	05120110050	0.9	17.93
SUGAR CREEK	PARKE	05120110050	0.9	15.00
SUGAR CREEK	PARKE	05120110050	11.5	3.33
SUGAR CREEK	PARKE	05120110050	11.5	76.67
SUGAR CREEK	PARKE	05120110050	11.5	2.67
SUGAR CREEK	PARKE	05120110060	11.5	61.39
SUGAR CREEK	PARKE	05120110060	12.9	6.67
SUGAR CREEK	PARKE	05120110060	12.9	23.33
SUGAR CREEK	PARKE	05120110060	12.9	6.11
SUGAR CREEK	PARKE	05120110060	12.9	21.37
BIG RACCOON	PUTNAM	05120108160	46.3	3.50
BIG RACCOON	PUTNAM	05120108160	46.3	3.33
BIG RACCOON	PUTNAM	05120108160	48.9	31.47
BIG RACCOON	PUTNAM	05120108160	48.9	30.00
BIG RACCOON	PUTNAM	05120108160	57.7	4.36
BIG RACCOON	PUTNAM	05120108160	57.7	17.45
BIG RACCOON	PUTNAM	05120108160	57.7	3.33
BIG RACCOON	PUTNAM	05120108160	57.7	13.33
BIG WALNUT CREEK	PUTNAM	05120203020	0.2	4.44
BIG WALNUT CREEK	PUTNAM	05120203020	0.2	2.22
BIG WALNUT CREEK	PUTNAM	05120203020	0.2	3.33
BIG WALNUT CREEK	PUTNAM	05120203020	0.2	1.67
BIG WALNUT CREEK	PUTNAM	05120203020	4.4	11.11
BIG WALNUT CREEK	PUTNAM	05120203020	4.4	6.67
BIG WALNUT CREEK	PUTNAM	05120203020	4.4	8.33
BIG WALNUT CREEK	PUTNAM	05120203020	4.4	5.00

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
BIG WALNUT CREEK	PUTNAM	05120203020	11.4	6.67
BIG WALNUT CREEK	PUTNAM	05120203020	11.4	26.67
BIG WALNUT CREEK	PUTNAM	05120203020	11.4	6.49
BIG WALNUT CREEK	PUTNAM	05120203020	11.4	25.95
BIG WALNUT CREEK	PUTNAM	05120203020	18	13.33
BIG WALNUT CREEK	PUTNAM	05120203020	18	6.67
BIG WALNUT CREEK	PUTNAM	05120203020	18	11.21
BIG WALNUT CREEK	PUTNAM	05120203040	18	5.60
BIG WALNUT CREEK	PUTNAM	05120203040	20	10.00
BIG WALNUT CREEK	PUTNAM	05120203040	20	9.80
BIG WALNUT CREEK	PUTNAM	05120203040	22.3	3.33
BIG WALNUT CREEK	PUTNAM	05120203040	22.3	40.00
BIG WALNUT CREEK	PUTNAM	05120203040	22.3	2.61
BIG WALNUT CREEK	PUTNAM	05120203040	22.3	31.35
BIG WALNUT CREEK	PUTNAM	05120203040	27.5	72.82
BIG WALNUT CREEK	PUTNAM	05120203040	27.5	25.49
BIG WALNUT CREEK	PUTNAM	05120203040	27.5	66.67
BIG WALNUT CREEK	PUTNAM	05120203040	27.5	23.33
BIG WALNUT CREEK	PUTNAM	05120203040	36.5	63.33
BIG WALNUT CREEK	PUTNAM	05120203040	36.5	63.33
BIG WALNUT CREEK	PUTNAM	05120203040	36.5	55.23
BIG WALNUT CREEK	PUTNAM	05120203040	36.5	55.23
BIG WALNUT CREEK	PUTNAM	05120203040	42.7	58.82
BIG WALNUT CREEK	PUTNAM	05120203040	42.7	51.90
BIG WALNUT CREEK	PUTNAM	05120203040	42.7	56.67
BIG WALNUT CREEK	PUTNAM	05120203040	42.7	50.00
BIG WALNUT CREEK	PUTNAM	05120203040	43	74.36
BIG WALNUT CREEK	PUTNAM	05120203040	43	50.88
BIG WALNUT CREEK	PUTNAM	05120203040	43	63.33
BIG WALNUT CREEK	PUTNAM	05120203040	43	43.33
MILL CREEK	PUTNAM	05120203060	22	36.81
MILL CREEK	PUTNAM	05120203060	22	23.33
LAUGHERY CREEK	RIPLEY	05090203060	29.4	27.10
LAUGHERY CREEK	RIPLEY	05090203060	29.4	30.97

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
LAUGHERY CREEK	RIPLEY	05090203060	29.4	23.33
LAUGHERY CREEK	RIPLEY	05090203060	29.4	26.67
LAUGHERY CREEK	RIPLEY	05090203060	40.1	9.09
LAUGHERY CREEK	RIPLEY	05090203060	40.1	52.73
LAUGHERY CREEK	RIPLEY	05090203060	40.1	8.33
LAUGHERY CREEK	RIPLEY	05090203060	40.1	48.33
LAUGHERY CREEK	RIPLEY	05090203070	48.1	84.21
LAUGHERY CREEK	RIPLEY	05090203070	48.1	80.00
LAUGHERY CREEK	RIPLEY	05090203070	53.8	50.63
LAUGHERY CREEK	RIPLEY	05090203070	53.8	45.00
BIG BLUE RIVER	RUSH	05120204010	47.2	36.67
BIG BLUE RIVER	RUSH	05120204010	47.2	53.33
BIG BLUE RIVER	RUSH	05120204010	49.7	20.00
BIG BLUE RIVER	RUSH	05120204010	49.7	30.00
FLATROCK RIVER	RUSH	05120205010	42.72	33.23
FLATROCK RIVER	RUSH	05120205010	42.72	25.85
FLATROCK RIVER	RUSH	05120205010	42.72	14.99
FLATROCK RIVER	RUSH	05120205010	42.72	11.66
FLATROCK RIVER	RUSH	05120205010	53.16	8.54
FLATROCK RIVER	RUSH	05120205010	53.16	66.19
FLATROCK RIVER	RUSH	05120205010	53.16	6.65
FLATROCK RIVER	RUSH	05120205010	53.16	51.55
FLATROCK RIVER	RUSH	05120205020	65.24	8.90
FLATROCK RIVER	RUSH	05120205020	65.24	13.35
FLATROCK RIVER	RUSH	05120205020	65.24	6.63
FLATROCK RIVER	RUSH	05120205020	65.24	9.94
BIG BLUE RIVER	SHELBY	05120204020	12.4	18.33
BIG BLUE RIVER	SHELBY	05120204020	19.1	31.67
BIG BLUE RIVER	SHELBY	05120204020	19.1	40.00
BIG BLUE RIVER	SHELBY	05120204030	23.5	66.67
BIG BLUE RIVER	SHELBY	05120204030	23.5	135.00
BIG BLUE RIVER	SHELBY	05120204050	27.8	76.67
BIG BLUE RIVER	SHELBY	05120204050	27.8	101.67
BIG BLUE RIVER	SHELBY	05120204050	39	36.67

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
BIG BLUE RIVER	SHELBY	05120204050	39	121.67
BRANDYWINE CREEK	SHELBY	05120204040	2.3	36.67
BRANDYWINE CREEK	SHELBY	05120204040	2.3	33.33
BRANDYWINE CREEK	SHELBY	05120204040	4.4	110.00
BRANDYWINE CREEK	SHELBY	05120204040	4.4	36.67
BRANDYWINE CREEK	SHELBY	05120204040	5.1	50.00
BRANDYWINE CREEK	SHELBY	05120204040	5.1	13.33
BRANDYWINE CREEK	SHELBY	05120204040	5.9	13.33
BRANDYWINE CREEK	SHELBY	05120204040	5.9	46.67
FLATROCK RIVER	SHELBY	05120205040	16	63.33
FLATROCK RIVER	SHELBY	05120205040	16	140.00
FLATROCK RIVER	SHELBY	05120205040	16	63.30
FLATROCK RIVER	SHELBY	05120205040	16	139.92
FLATROCK RIVER	SHELBY	05120205040	26.28	72.23
FLATROCK RIVER	SHELBY	05120205040	26.28	154.77
FLATROCK RIVER	SHELBY	05120205040	26.28	60.13
FLATROCK RIVER	SHELBY	05120205050	26.28	128.85
FLATROCK RIVER	SHELBY	05120205050	31.05	49.62
FLATROCK RIVER	SHELBY	05120205050	31.05	127.86
FLATROCK RIVER	SHELBY	05120205050	31.05	43.06
FLATROCK RIVER	SHELBY	05120205050	31.05	110.96
LITTLE BLUE RIVER	SHELBY	05120204030	0.3	23.33
LITTLE BLUE RIVER	SHELBY	05120204030	0.3	86.67
LITTLE BLUE RIVER	SHELBY	05120204030	5	16.67
LITTLE BLUE RIVER	SHELBY	05120204030	5	76.67
LITTLE BLUE RIVER	SHELBY	05120204030	10.4	20.00
LITTLE BLUE RIVER	SHELBY	05120204030	10.4	30.00
LITTLE BLUE RIVER	SHELBY	05120204030	11.5	10.00
LITTLE BLUE RIVER	SHELBY	05120204030	11.5	23.33
SNAIL CREEK	SHELBY	05120204080	0.4	78.74
SNAIL CREEK	SHELBY	05120204080	3.5	95.90
SUGAR CREEK*	SHELBY	05120204060	33.3	22.50
PIGEON RIVER	STEUBEN	04050001110	31.4	26.67
PIGEON RIVER	STEUBEN	04050001110	31.4	8.33

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
PIGEON RIVER	STEUBEN	04050001110	31.4	5.00
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	10.43	49.11
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	10.43	93.75
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	10.43	36.67
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	10.43	70.00
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	8.76	16.67
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	8.76	73.33
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	8.76	15.76
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	8.76	69.33
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	4.4	60.00
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	4.4	140.00
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	4.4	58.95
SOUTH FORK WILDCAT CREEK	TIPPECANOE	05120107040	4.4	137.55
WEA CREEK	TIPPECANOE	05120108020	19.5	13.33
WEA CREEK	TIPPECANOE	05120108020	19.5	10.00
WEA CREEK	TIPPECANOE	05120108020	13.79	23.33
WEA CREEK	TIPPECANOE	05120108020	13.79	40.00
WEA CREEK	TIPPECANOE	05120108020	5.54	40.00
WEA CREEK	TIPPECANOE	05120108020	5.54	32.00
WEA CREEK	TIPPECANOE	05120108020	5.54	33.33
WEA CREEK	TIPPECANOE	05120108020	5.54	26.67
WEA CREEK	TIPPECANOE	05120108020	1.79	26.67

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
WEA CREEK	TIPPECANOE	05120108020	1.79	20.00
LITTLE VERMILLION RIVER	VERMILLION	05120108140	11.1	6.67
LITTLE VERMILLION RIVER	VERMILLION	05120108140	11.1	20.00
LITTLE VERMILLION RIVER	VERMILLION	05120108140	10.8	3.33
LITTLE VERMILLION RIVER	VERMILLION	05120108140	10.8	3.33
LITTLE VERMILLION RIVER	VERMILLION	05120108140	10.8	3.29
LITTLE VERMILLION RIVER	VERMILLION	05120108140	10.8	3.29
LITTLE VERMILLION RIVER	VERMILLION	05120108140	8.3	3.33
LITTLE VERMILLION RIVER	VERMILLION	05120108140	8.3	6.67
LITTLE VERMILLION RIVER	VERMILLION	05120108140	8.3	3.20
LITTLE VERMILLION RIVER	VERMILLION	05120108140	8.3	6.40
LITTLE VERMILLION RIVER	VERMILLION	05120108140	4.5	4.00
LITTLE VERMILLION RIVER	VERMILLION	05120108140	4.5	3.33
LITTLE VERMILLION RIVER	VERMILLION	05120108140	1.2	1.67
LITTLE VERMILLION RIVER	VERMILLION	05120108140	1.2	3.33
VERMILLION RIVER	VERMILLION	05120109100	1.1	5.00
VERMILLION RIVER	VERMILLION	05120109100	1.1	5.00
OTTER CREEK	VIGO	05120111030	6	16.67
OTTER CREEK	VIGO	05120111030	6	16.05
OTTER CREEK	VIGO	05120111030	4	16.64

Data Table 3: Stream Fishery				
SITE	COUNTY	HUC	RIVER MILE	CPE
OTTER CREEK	VIGO	05120111030	4	20.80
OTTER CREEK	VIGO	05120111030	4	13.33
OTTER CREEK	VIGO	05120111030	4	16.66
OTTER CREEK	VIGO	05120111030	10.3	34.93
OTTER CREEK	VIGO	05120111030	10.3	104.80
OTTER CREEK	VIGO	05120111030	10.3	26.45
OTTER CREEK	VIGO	05120111030	10.3	79.34
BIG PINE CREEK	WARREN	05120108040	14.36	23.53
BIG PINE CREEK	WARREN	05120108060	14.36	13.33
BIG PINE CREEK	WARREN	05120108060	17.98	3.33
BLUE RIVER	WASHINGTON	05140104120	60	60.00
BLUE RIVER	WASHINGTON	05140104120	60	35.00
BLUE RIVER	WASHINGTON	05140104140	72	70.00
E.F. WHITEWATER	WAYNE	05080003070	28.1	243.81
E.F. WHITEWATER	WAYNE	05080003070	28.1	49.52
E.F. WHITEWATER	WAYNE	05080003070	28.1	213.33
E.F. WHITEWATER	WAYNE	05080003070	28.1	43.33

Data Table 4: Lake Fishery Data		
LAKE	Catch per Hour [12 to 14 Inches]	Catch per Hour [14 Inches or More]
Adams	42.14	23.87
Appleman	23.94	8.64
Atwood	4.50	11.50
Atwood	17.02	13.06
Ball	15.67	17.50
Ball	4.67	4.00
Barrel1/2	4.17	6.27
Barrel1/2	4.52	8.46
Barrel1/2	6.31	10.82
Bass	0.96	0.17
Beaver Dam	1.31	11.74
Beaver Dam	11.02	11.00
Beaver Dam	6.03	17.34
Beaver Dam	23.72	17.79
Beaver Dam	52.99	14.29
Beaver Dam	43.58	30.12
Beaver Dam	34.85	21.94
Beaver Dam	27.02	7.63
Beaver Dam2	14.48	8.22
Big	29.86	40.71
Big	30.92	17.75
Bixler	7.19	9.27
Blue	9.57	16.65
Blue	8.33	8.00
Blue	8.26	9.27
Blue	19.43	18.93
Blue	12.37	9.47
Blue	49.97	13.00
Bryant's Creek	33.00	7.33
Brookville	32.44	15.31
Cagle's Mill	20.37	19.91

Data Table 4: Lake Fishery Data		
LAKE	Catch per Hour [12 to 14 Inches]	Catch per Hour [14 Inches or More]
Cedar	5.38	4.63
Celina	26.50	12.00
Chapman	5.97	4.29
Chapman	11.42	6.40
Chapman	10.80	4.00
Chapman	8.00	5.00
Chapman	25.23	6.23
Chapman	19.63	3.13
Chapman	35.55	25.89
Crane	8.71	7.56
Crane	9.52	4.99
Crane	25.23	34.45
Crane	51.10	13.05
Cree	36.10	14.65
Cree	17.25	26.50
Cree	19.31	19.81
Cree	13.50	20.25
Cree	22.15	12.36
Cree	22.50	7.25
Cree	44.00	17.00
Crooked	9.25	9.50
Crooked	16.50	5.50
Delaney	49.61	3.36
Delaney	42.32	20.20
Delaney	12.82	13.02
Dogwood	80.50	1.33
Dogwood	128.64	3.57
Dogwood	128.74	6.46
Dogwood	78.25	16.75
Dogwood	55.50	21.75
Dogwood	115.50	29.50

Data Table 4: Lake Fishery Data		
LAKE	Catch per Hour [12 to 14 Inches]	Catch per Hour [14 Inches or More]
Dove Hollow	9.27	32.87
Dove Hollow	6.80	22.76
Dove Hollow	3.38	16.36
Eagle	9.40	3.53
Engle	14.26	9.64
Engle	12.63	3.78
Ferdinand	23.84	10.39
Fish	9.78	8.89
Fish	14.00	5.33
Fish	30.04	26.76
Fletcher	8.67	12.00
Fletcher	40.33	4.33
Fox	3.25	4.13
Freeman	5.10	6.28
Goldeneye	6.15	13.11
Goldeneye	14.13	25.27
Goldeneye	18.01	17.23
Glenn Flint	33.43	26.90
Harden	39.75	31.75
Harden	42.91	41.29
Harden	22.89	42.29
Hartz	4.00	9.33
Hamilton	26.50	23.00
Hominy Ridge	29.28	3.12
Huntingburg	2.00	10.00
Indian	44.85	28.60
Indian	22.83	23.33
Knop	7.00	15.50
Kokomo	16.50	6.50
Koontz	1.80	2.50
Koontz	2.50	1.80

Data Table 4: Lake Fishery Data		
LAKE	Catch per Hour [12 to 14 Inches]	Catch per Hour [14 Inches or More]
Koontz	5.70	0.90
Koontz	15.92	2.83
Koontz	42.00	6.50
Kunkel	36.63	28.64
Kunkel	177.57	31.69
Lake-Woods	1.10	3.10
Lake-Woods	5.40	4.30
Lake-Woods	2.90	6.00
Lake-Woods	10.30	10.10
Lenape	22.04	5.05
Lenape	9.17	8.46
Long	15.12	13.26
Long	38.79	27.59
Long	38.81	18.02
Manitou	6.66	22.09
Maxinkuckee	14.08	11.00
Maxinkuckee	8.25	6.75
Middlefork	22.32	36.63
Mollenkramer	16.35	20.53
Monroe	14.00	19.75
New	33.71	23.37
Old	4.19	10.09
Old	33.79	17.00
Patoka	17.07	2.54
Patoka	44.52	12.88
Patoka	16.25	5.25
Pike	3.00	6.19
Pretty	27.88	13.88
Robinson	29.60	34.39
Robinson	19.59	17.29
Round	3.15	3.68

Data Table 4: Lake Fishery Data		
LAKE	Catch per Hour [12 to 14 Inches]	Catch per Hour [14 Inches or More]
Round	2.50	2.00
Round	4.06	3.82
Round	3.16	4.42
Round	2.58	2.60
Round	8.80	6.08
Round	9.98	6.52
Round	14.70	6.23
Round	67.50	17.76
Sacarider	16.24	6.09
Sacarider	2.94	11.31
Sacarider	9.65	12.59
Sacarider	11.29	8.17
Sacarider	41.81	12.02
Sacarider	80.74	27.38
Salamonie	5.63	10.58
Salinda	105.23	3.12
Sand	14.21	15.17
Scottsburg	7.25	10.53
Shakamak	19.43	12.00
Shakamak	46.82	7.70
Shipshewana	51.87	61.41
Shock	15.65	16.87
Shock	18.59	11.10
Shock	16.34	16.07
Shock	9.57	22.22
Simonton	4.78	2.64
Simonton	4.00	2.80
Simonton	4.30	1.70
Simonton	3.40	1.20
Simonton	3.80	0.90
Simonton	12.13	2.75

Data Table 4: Lake Fishery Data		
LAKE	Catch per Hour [12 to 14 Inches]	Catch per Hour [14 Inches or More]
Skinner	8.69	10.90
Skinner	18.84	11.52
Skinner	38.81	22.77
Skinner	21.73	20.65
Skinner	14.86	21.16
Smalley	54.97	27.68
Spear	8.44	5.78
Spear	2.31	1.12
Spear	2.68	3.59
Spear	5.54	5.11
Springs Valley	32.61	2.84
Starve Hollow	38.61	11.39
Starve Hollow	62.40	33.78
Summit	25.79	75.68
Sylvan	125.75	18.50
Syracuse	28.24	11.97
Tippecanoe	8.52	8.49
Tippecanoe	8.90	6.46
Tippecanoe	7.14	6.37
Tippecanoe	15.01	6.76
Tippecanoe	15.67	7.67
Tippecanoe	18.00	5.50
Tipsaw	13.67	6.83
Troxall	10.34	4.78
Upper Long	16.74	13.84
Wade Creek	0.50	6.20
Wawasee	23.94	21.85
Waveland	91.24	20.62
Webster	10.47	9.48
West Boggs	3.00	8.50
West Boggs	2.25	9.50

Data Table 4: Lake Fishery Data		
LAKE	Catch per Hour [12 to 14 Inches]	Catch per Hour [14 Inches or More]
West Boggs	2.25	30.75
Westwood	66.52	2.69
Westwood	6.90	22.84
Winona	17.71	11.67
Winona	6.04	13.61
Worster	43.13	12.13

Data Table 5: Eurasian Water Milfoil Infestation in Lakes		
COUNTY	**LAKE**	**Milfoil Infestation Score**
LAGRANGE	ADAMS LAKE	4
LAGRANGE	ATWOOD LAKE	4
KOSCIUSKO	BANNING LAKE	1
STEUBEN	BARTON	1
STARKE	BASS	4
KOSCIUSKO	BEAVER DAM LAKE	3
NOBLE	BECK LAKE	3
KOSCIUSKO	BIG BARBEE LAKE	4
KOSCIUSKO	BIG CHAMPMAN LAKE	3
NOBLE	BIG LAKE	4
LAGRANGE	BIG LONG LAKE	2
STEUBEN	WEST OTTER	3
FULTON	BRUCE LAKE	4
KOSCIUSKO	CENTER LAKE	5
NOBLE	CREE LAKE	3
STEUBEN	CROOKED	3
LAGRANGE	DALLAS LAKE	3
KOSCIUSKO	DEWART LAKE	4
KOSCIUSKO	DIAMOND LAKE	4
VIGO	FOWLER PARK	3
WHITLEY	GOOSE	1
LAGRANGE	HACKENBURG LAKE	4
STEUBEN	HAMILTON	5
NOBLE	HARPER LAKE	2
NOBLE	HIGH LAKE	3
KOSCIUSKO	HILL LAKE	3
KOSCIUSKO	IRISH LAKE	2
KOSCIUSKO	JAMES LAKE	3
STEUBEN	JIMMERSON	3
WASHINGTON	JOHN HAY	5
NOBLE	JONES LAKE	1
STEUBEN	GEORGE	3

Data Table 5: Eurasian Water Milfoil Infestation in Lakes		
COUNTY	**LAKE**	**Milfoil Infestation Score**
STEUBEN	JAMES LAKE	1
MONROE	LEMON	5
FULTON	MANITOU LAKE	4
KOSCIUSKO	WAWASEE LAKE	2
KOSCIUSKO	LITTLE BARBEE LAKE	4
NOBLE	LITTLE LONG LAKE	3
LAGRANGE	LITTLE TURKEY LAKE	3
WHITLEY	LOON	2
DEKALB	STORY LAKE	1
LAPORTE	UPPER/LOWER FISH LAKE	4
LAGRANGE	MARTIN LAKE	3
LAGRANGE	MESSICK LAKE	3
WHITLEY	NEW	3
LAGRANGE	OLIVER LAKE	2
KOSCIUSKO	PALESTINE LAKE	4
KOSCIUSKO	RIDINGER LAKE	3
KOSCIUSKO	SAWMILL LAKE	3
KOSCIUSKO	SECHRIST LAKE	3
WHITLEY	SHRINER	4
KOSCIUSKO	SILVER LAKE	2
NOBLE	SILVER LAKE	2
NOBLE	SKINNER LAKE	4
NOBLE	SMALLEY	1
NOBLE	SYLVAN	3
KOSCIUSKO	SYRACUSE LAKE	2
KOSCIUSKO	TIPPECANOE LAKE	3
NOBLE	UPPER LONG	0
KOSCIUSKO	WAUBEE LAKE	4
NOBLE	WALDRON	4
KOSCIUSKO	WEBSTER LAKE	4
LAGRANGE	WESTLER LAKE	2
LAGRANGE	WITMER LAKE	2

Data Table 5: Eurasian Water Milfoil Infestation in Lakes		
COUNTY	**LAKE**	**Milfoil Infestation Score**
KOSCIUSKO	WINONA LAKE	3
LAPORTE	MILLPOND LAKE	4
HENRY	SUNSET PARK	1
MARION	DUBARRY PARK	1
VIGO	BURNS	1
WARRICK	SCALES	1
WAYNE	SPRINGWOOD	1

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Lake	George (Hammond)	78	4
Lake	Wolf	385	3
Lake	Fancher	10	2
Lake	George (Hobart)	282	3
Porter	Loomis	62	3
Porter	Spectacle	62	3
LaPorte	Walton	21	
Porter	Billington	11	
Porter	Morgan	12	
LaPorte	Hog	59	
LaGrange	Wall	141	2
Steuben	(Big) Center	46	3
Steuben	Barton	94	1
Steuben	Bell	38	1
Steuben	Big Otter	69	2
Steuben	Buck	20	2
Steuben	Cheeseboro	27	
Steuben	Crooked	828	2
Steuben	Failing	23	2
Steuben	Fish	59	3
Steuben	Green	24	
Steuben	Hog	48	1
Steuben	Jimmerson	434	2
Steuben	Lime (Gage)	30	1
Steuben	Lime (Orland)	30	2
Steuben	Little Otter	34	3
Steuben	Lk. Gage	332	2
Steuben	Lk. George	488	1
Steuben	Lk. James	1034	2
Steuben	Lk. Pleasant	424	2
Steuben	Loon	138	1
Steuben	Marsh	56	2
Steuben	Middle Center	15	

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Steuben	Perch	12	
Steuben	Rhodes	12	
Steuben	Round A	30	
Steuben	Sally Owen	12	2
Steuben	Seven Sisters	22	
Steuben	Snow	421	2
Steuben	Syl-Van	10	
Steuben	Tamarack	47	3
Steuben	Walters	53	2
Steuben	Warner	17	3
Steuben	Crockett	5	
Steuben	Grass	20	
Steuben	Lk. Charles (east)	150	2
LaGrange	Cedar	120	2
LaGrange	Fennel(l)	17	2
LaGrange	Mateer	18	1
LaGrange	Star Mill Dam	38	
Steuben	(West) Otter	118	3
Steuben	Black	18	
Steuben	Golden	119	3
Steuben	Gooseneck	25	2
Steuben	Gravel	12	3
Steuben	Gravel Pit	15	1
Steuben	Hogback	146	4
Steuben	Johnson	17	
Steuben	Little Bower	12	3
Steuben	Long A (Pleasant)	92	3
Steuben	Meserve	16	2
Steuben	Mud B (Pleas.)	16	2
Steuben	Pigeon	61	3
Steuben	Pleasant	53	2
Steuben	Silver	238	1
Steuben	Staynor (Stayner)	5	1

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Steuben	(Big) Bower	25	3
Steuben	Bass	61	1
Steuben	Booth	10	2
Steuben	Fox	142	2
Steuben	Howard	27	1
Dekalb	Story (Lower)	---	3
Dekalb	Story (Upper)	77	2
LaGrange	Appleman	52	2
LaGrange	Big Long	388	1
LaGrange	Buck	18	2
LaGrange	Cline	20	2
LaGrange	Cotton	31	3
LaGrange	Fish (Plato)	100	2
LaGrange	Green (Rawles)	62	3
LaGrange	Hayward	6	5
LaGrange	Lake of the Woods	136	4
LaGrange	Little Turkey	135	3
LaGrange	Mongo	24/125?	2
LaGrange	Nasby Mill Pond	31	2
LaGrange	North Twin	135	1
LaGrange	Ontario Mill Pond	42	2
LaGrange	Pigeon	61	2
LaGrange	Pretty	184	2
LaGrange	Royer	69	3
LaGrange	Shipshewana	202	4
LaGrange	South Twin	116	1
LaGrange	Spectacle	6	2
LaGrange	Still	30	1
LaGrange	Weir	6	2
Steuben	Beaver Dam	11	1
Steuben	Big Turkey	450	3
Steuben	Deep	12	2
Steuben	Henry	20	4

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Steuben	Lime-Kiln	25	3
Steuben	Little Turkey	58	4
Steuben	McClish	35	4
Steuben	Shallow	65	
LaGrange	Rainbow	16	3
LaGrange	Brokesha	36	1
LaGrange	Fish (Scott)	139	3
LaGrange	Stone	116	2
LaGrange	Adams	308	2
LaGrange	Atwood	170	2
LaGrange	Blackman	67	1
LaGrange	Dallas	283	1
LaGrange	Dollar	15	2
LaGrange	Eve	31	1
LaGrange	Hackenberg	42	3
LaGrange	Martin	26	1
LaGrange	Messick	68	2
LaGrange	Nauvoo	38	4
LaGrange	Olin	103	2
LaGrange	Oliver	362	2
LaGrange	Westler	88	2
LaGrange	Witmer	204	2
Noble	(Little) Whitford		3
Noble	Axel	8	1
Noble	Beck	10	2
Noble	Bixler	120	2
Noble	Cree	58	2
Noble	Grannis	?	1
Noble	Hall	10	1
Noble	Henderson	22	3
Noble	Jones	114	4
Noble	Latta	42	2
Noble	Little Long	71	3

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Noble	Mirror	7	2
Noble	Round	99	3
Noble	Sacarider	33	4
Noble	Shockapee	21	2
Noble	Stienbarger	73	3
Noble	Sylvan	575	3
Noble	Tamarack (Rome)	50	4
Noble	Tamarack (Wol)	84	3
Noble	Waldron	216	3
Noble	Wible	49	3
Elkhart	Hunter	99	2
LaGrange	Cass	89	1
LaGrange	Emma	42	2
Noble	Bartley	34	2
Noble	Bear	136	3
Noble	Bowen	30	3
Noble	Bristol	27	3
Noble	Bushong	10	3
Noble	Diamond	105	3
Noble	Dock	16	3
Noble	Eagle	81	3
Noble	Finster	?	2
Noble	High	123	3
Noble	Long (Chain)	40	3
Noble	Lower Long	66	3
Noble	Miller (Chain)	11	3
Noble	Millers	28	
Noble	Mud (Chain)	8	2
Noble	Muncie	47	3
Noble	Norman	14	3
Noble	Pleasant	20	3
Noble	Port Mitchell	15	4
Noble	Rivir (Chain)	24	3

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Noble	Sand (Chain)	47	2
Noble	Silver	34	2
Noble	Skinner	125	3
Noble	Summit	18	3
Noble	Sweet	16	3
Noble	Upper Long	86	3
Noble	Whirledge (Hover)	5	2
Noble	Williams	46	3
Noble	Wolf	25	
Elkhart	Fish	34	4
Elkhart	Goshen Pond	142	3
Kosciusko	Allen	?	3
Kosciusko	Barrel (and a Half)	7	3
Kosciusko	Boner	40	2
Kosciusko	Dewart	551	2
Kosciusko	Flatbelly (Papakeechie)	326/179	
Kosciusko	Long	13?	2
Kosciusko	Price	12	2
Kosciusko	Rothenberger	6	3
Kosciusko	S(c)hock	37	3
Kosciusko	Spear	18	3
Kosciusko	Syracuse	414	
Kosciusko	Wabee	187	1
Kosciusko	Wawasee	3060	2
Noble	Deer	36	3
Noble	Duely	21	3
Noble	Engle	48	1
Noble	Gordy	31	3
Noble	Harper	11	2
Noble	Hindman	13	2
Noble	Indian (Ligonier)	5	1
Noble	Indian (Village)	12	4

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Noble	Knapp	88	3
Noble	Moss	9	2
Noble	Rider	5	2
Noble	Sparta	31	2
Elkhart	Yellow Creek	16	3
Elkhart	Heaton	87	2
Elkhart	Indiana	122	2
Elkhart	Simonton	282/303	2
St. Joseph	Pinhook	32	1
Dekalb	Wiley	9	2
Steuben	Clear	800	1
Steuben	Handy	16	3
Steuben	Lk. Anne	17	2
Steuben	Long B (Clear)	154	2
Steuben	Mirror	9	1
Steuben	Mud C (Clear/Ray)	21	1
Steuben	Round B (Clear)	30	1
Allen	Cedarville	245/408	2
Dekalb	Dunten	21	3
Dekalb	Cedar	28/40	
Dekalb	Indian	56	2
Steuben	Ball	87	4
Steuben	Hamilton	802	2
Steuben	Round C (Hamilton)	12	
Dekalb	Lintz	19	
Allen	St. Joseph Res.	30	3
Fayette	Manlove	15	4
Franklin	Brookville	5260	2
Union	Whitewater	199	4
Wayne	Middle Fork Res.	161/277	2
Ripley	Bischoff Res.	200	3
Ripley	Liberty Park	11	
Ripley	Mollenkramer Res.	93	4

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Ripley	Oser	12	
Ripley	Versailles	230	3
Ohio	Arnold's Creek Embayment	20	4
Switzerland	Wade & Goose Creek Embayment	77	4
Switzerland	Bryant's Creek Embayment	120	4
Switzerland	Turtle Creek Embayment	12	3
Wells	Kunkel	25	4
Huntington	J. Edward Roush (Huntington)	900	3
Huntington	Clare/Clair	43	1
Wells	Moser	26	3
Wabash	Hominy Ridge	11	1
Wabash	Salamonie	2800	3
Blackford	Lake Placid	19	3
Miami	Mississinewa	3180	1
Whitley	Dewart	?	2
Whitley	Hammond	?	3
Whitley	Spear		3
Allen	Everett	43	5
Noble	Keister	7	3
Noble	Lindsey	12	4
Whitley	(Big) Cedar (Tri-Lake)	131	1
Whitley	Blue	239	3
Whitley	Little Cedar	45	3
Whitley	Little Crooked	11/15	2
Whitley	Round (Tri-Lake)	125/131	2
Whitley	Shriner (Tri-Lake)	111/120	2
Whitley	Black	24	5

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Whitley	Larwill	9	4
Whitley	Little Wilson	?	2
Whitley	Wilson	29	3
Kosciusko	North Little	12	3
Kosciusko	Silver	102	4
Wabash	Long (at Laketon)	48	3
Wabash	Lukens	46	2
Wabash	Round (at Laketon)	48	3
Wabash	Twin Lakes	18	2
Cass	France Park	20	1
Cass	Lk. Cicott	65	2
Fulton	Upper Summitt	6	
Kosciusko	Backwater	140	2
Kosciusko	Banning	12	2
Kosciusko	Big Barbee	304	3
Kosciusko	Heron	22	
Kosciusko	Irish	182	3
Kosciusko	James	282	3
Kosciusko	Keyser/Kiser	5	1
Kosciusko	Kuhn	137	2
Kosciusko	Little Barbee	74	3
Kosciusko	Oswego	41/83	
Kosciusko	Ridinger	136	
Kosciusko	Sawmill	36/74	2
Kosciusko	Sechrist	105	2
Kosciusko	Shoe	40	2
Kosciusko	Stanton	32	1
Kosciusko	Tippecanoe	768	2
Kosciusko	Webster	774	2
Noble	Baugher	32	3
Noble	Big	228	2
Noble	Crane	28	4
Noble	Crooked	206	

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Noble	Gilbert	28	2
Noble	Green	5	4
Noble	Horseshoe	18	2
Noble	Smalley	69	3
Noble	Wilmot Pond	16	1
Whitley	Dollar	10	3
Whitley	Goose	84	3
Whitley	Loon	222	3
Whitley	New	50	2
Whitley	Old	32	4
Whitley	Robinson	59	2
Whitley	Scott	18	2
Whitley	Troy-Cedar	93	3
Kosciusko	Black Pond	?	2
Kosciusko	Big Chapman (N)	---	
Kosciusko	Big Chapman (W)	581	1
Kosciusko	Carr	79	4
Kosciusko	Center	120	2
Kosciusko	Little Chapman	177	2
Kosciusko	Little Pike	25	2
Kosciusko	Muskelonge	32	
Kosciusko	Pike	203	2
Kosciusko	Winona	562	3
Kosciusko	Crystal	76	1
Kosciusko	Goose	27	2
Kosciusko	Hoffman	180	2
Kosciusko	Palestine	232/290	3
Kosciusko	Beigh	20	4
Kosciusko	Caldwell	45	3
Fulton	Barr	22/5 ?	
Fulton	Lake 16	27	
Fulton	Town	22	
Kosciusko	Beaver Dam	146	3

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Kosciusko	Diamond	79/105	4
Kosciusko	Hill	66	2
Kosciusko	Loon	40	2
Kosciusko	McClures	32	2
Kosciusko	Rock	56	4
Kosciusko	Yellow Creek	151	
Fulton	Lk. Manitou	713/1156	3
Fulton	Millark Pond	15	
Fulton	Mt. Zion Mill	28	
Fulton	Nyona	104	3
Fulton	South Mud	94	3
Fulton	Zink	19	
Marshall	Eddy	16	2
Marshall	Lk. Maxinkuckee	1864	1
Marshall	Lost (Hawks)	43	
Starke	Hartz	28	2
Starke	Langenbaum	48	1
Fulton	King	18	3
Fulton	Bruce	245	2
Fulton	Fletcher	45	3
White	Shafer	1291	2
Carroll	Freeman	1547	3
Howard	Kokomo Res. 2	484	2
Carroll	Knop	10	3
Parke	Cecil M. Hardin (Raccoon, Mansfield)	2060	3
Montgomery	Waveland	358	3
Parke	Rockville	100	4
Sullivan	Bass	?	3
Sullivan	Benefiel	60	1
Sullivan	County Line Pit	5	
Sullivan	Downing	32	1
Sullivan	Duck	?	2

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Sullivan	Goose (Dugger)	?	1
Sullivan	Graveyard	48	2
Sullivan	Hale	15	2
Sullivan	Long (Dugger)	?	1
Sullivan	Lonnie	4	2
Sullivan	Pintail	4	1
Sullivan	Pump	?	1
Sullivan	Redbud	4	1
Sullivan	South	10	2
Sullivan	Turtle	15/21	1
Sullivan	Twin Pit	14	1
Vigo	Fowler Park	44/50	2
Vigo	South	45	2
Clay	Brazil WW	15	4
Vigo	(Izaak) Walton	83	2
Vigo	Green Valley	40/50	3
Vigo	North	20?	3
Vigo	Paintmill	50	2
Vigo	Stick Pit 2	75	1
Greene	Mayfield	15	1
Vigo	Hartman	21	
Sullivan	Kelly Bayou	40	
Vigo	Greenfield Bayou	61	
Sullivan	Turtle Creek	1556	3
Sullivan	Merom Gravel Pits	55	1
Greene	Lenape	60	3
Sullivan	Kickapoo	30	2
Sullivan	Shakamak	56	4
Sullivan	Sullivan	460	3
Sullivan	Canvasback	34	1
Sullivan	Dugger	40	na
Sullivan	Goose (Minnehaha)	33	3
Sullivan	Island	48	2

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Sullivan	Janay Ponds	11	
Sullivan	Mohawk (Glendora)	118	2
Gibson	Gibson	~3000	3
Knox	White Oak 1?	20?	4
Knox	White Oak 2?	11/30?	2
Delaware	Prairie Creek	1216	2
Hamilton	Clair/Clare	54	1
Hamilton	Morse	1375	2
Marion	Geist	1800	2
Marion	Eagle Creek	1500	3
Boone	Boone's Pond	8	1
Monroe	Cherry	4	1
Monroe	Bryant's Creek	9	2
Greene	Clear	3	1
Greene	Frank	8	2
Greene	Midland	20	4
Greene	Scott	12	2
Greene	Shake 1	6	1
Greene	Shake 2	5	1
Greene	Todd	8	1
Monroe	Griff(e)y	130	1
Monroe	Lemon	1650	2
Brown	Bear Creek	7	1
Monroe	Beanblossom	17	1
Owen	Lk. Greyb(r)ook	33	2
Martin	Greenwood (Crane)	820	1
Greene	Airline Pit	25	2
Greene	Corky	12	1
Greene	Wampler	70	2
Sullivan	Gambill	12	1
Sullivan	Reservoir 26	47	2
Sullivan	Reservoir 29	50?	1
Pike	Twin Pits, East	31	1

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Pike	Twin Pits, West	15?	3
Pike	Prides Creek	90	3
Putnam	Cagles Mill (Cataract)	1400	2
Vigo	French	55	4
Henry	Big Blue #13 (Westwood)	173	2
Henry	Big Blue #7A (Knightstown)	40	2
Henry	Summit	835	1
Rush	Woods (Big Blue #3)	44	3
Decatur	Decatur Co. Cons. Club (Morrison Pond?)	18	4
Decatur	Greensburg SFA	23	4
Bartholomew	Grouse Ridge	20/30	2
Jackson	Cypress	25?	2
Jennings	Brush Creek	167	3
Jennings	Crosley	14	1
Scott	Hardy (Quick Creek)	705	2
Scott	Scottsburg	83	1
Washington	Elk Creek	47	3
Jackson	Starve Hollow	145	3
Washington	John Hay	210	2
Lawrence	Spring Mill	23	3
Brown	Crooked Creek	13	2
Brown	Strahl	6	1
Brown	Ogle	20	2
Brown	Yellowwood	133	1
Monroe	Monroe (Lower)	10750	2
Monroe	Monroe (Upper)	---	3
Martin	West Boggs Creek	610	4
Orange	Springs Valley (Tucker)	141	2

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Daviess	Dogwood (Glendale)	1313	2
Dubois	Beaver Creek Res.	173	3
Dubois	Patoka	880	2
Dubois	Ferdinand 1 (Old)	16	2
Dubois	Huntingburg City	102	2
Pike	West Lake	15	
Clark	Oak	10	1
Clark	Deam	195	1
Clark	Schlamm	19	1
Floyd	Georgetown Res.	11	2
Washington	Salinda	70/85	2
Perry	Saddle	41	1
Perry	Deer Creek	39	3
Perry	Celina/Calina	155/165	1
Perry	Indian	149	1
Perry	Tipsaw	131/142	2
Dubois	Ferdinand	42	3
Dubois	Ferdinand New	10	3
Dubois	Holland 1	17	4
Dubois	Holland 2	20	3
Spencer	Chrisney	26	2
Spencer	Dale Res.	33	3
Spencer	Lincoln	58	1
Warrick	Scales	66	2
Posey	Hovey	242	3
LaPorte	Hudson	432	1
LaPorte	Lower Fish	134	1
LaPorte	Saugany	74	2
LaPorte	Upper Fish	139	2
St. Joseph	Bass (No. Chain)	88	2
St. Joseph	Chamberl(a)in	51	
St. Joseph	Czmanda (So. Chain)	90	
St. Joseph	Kale	10	

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
St. Joseph	Mud	197	
St. Joseph	Quarry	43	
St. Joseph	Sously	40	
St. Joseph	South Clear	51	
St. Joseph	Worster (Potato Creek)	327	2
LaPorte	Clear (LaPorte)	106	1
LaPorte	Crane	58	
LaPorte	Fishtrap	102	
LaPorte	Horseshoe	35	
LaPorte	Lily	16	2
LaPorte	Pine	282	2
LaPorte	Stone	125	2
Starke	Koontz	346	3
Marshall	Lake of the Woods	416	3
St. Joseph	Dipper	?	3
St. Joseph	Pleasant	29	3
St. Joseph	Riddles	77	3
Marshall	Cook	93	4
Marshall	Dixon	33	2
Marshall	Flat	26	3
Marshall	Gilbert	37	3
Marshall	Holem	40	2
Marshall	Kreighbaum	20	3
Marshall	Lawrence	69	2
Marshall	M(e)yers	96	2
Marshall	Mill Pond	136	4
Marshall	Pretty	97	2
Marshall	Thomas	16	2
Starke	Eagle	24	
Starke	Bass	1400	2
Porter	Canada	10	
Porter	Clear	17	2

Data Table 6: Individual Lake Trophic Scores			
County	**Lake**	**Size in Acres**	**Score**
Porter	Deep	7	
Porter	Eliza	45	3
Porter	Flint	86	2
Porter	Long	65	3
Porter	Mink	35	3
Porter	Moss	9	
Porter	Wa(u)hob	21	2
Lake	Cedar	781	3
Lake	Dalecarlia	193	
Newton	J.C. Murphy	1515	5

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
04040001010	0	0
04040001020	64	537
04040001030	19	39
04040001040	14	108
04040001050	2	20
04040001060	12	92
04040001070	13	78
04040001080	9	356
04040001090	4	77
04040001100	10	52
04050001020	0	0
04050001080	4	1
04050001090	61	207
04050001100	0	120
04050001110	27	93
04050001120	9	216
04050001130	7	19
04050001140	6	31
04050001150	2	40
04050001160	0	1
04050001170	30	90
04050001180	22	54
04050001190	3	15
04050001200	7	49
04050001210	1	10
04050001220	2	10
04050001230	3	6

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
04050001240	2	50
04050001280	1	8
04060200010	1	14
04100003020	1	29
04100003030	3	9
04100003050	2	71
04100003060	0	13
04100003070	4	41
04100003080	0	12
04100003090	13	44
04100003100	0	26
04100004030	0	0
04100004040	2	4
04100004050	0	1
04100004060	2	20
04100005010	2	16
04100005020	0	0
04100007100	0	0
04100007120	0	0
05080001110	0	0
05080002070	1	0
05080002080	0	0
05080002090	0	3
05080003010	0	8
05080003020	2	4
05080003030	1	10
05080003040	6	18

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05080003050	0	1
05080003060	1	8
05080003070	6	32
05080003080	2	18
05090203030	0	3
05090203040	0	7
05090203050	0	4
05090203060	18	11
05090203070	13	15
05090203080	0	9
05090203100	0	3
05090203110	0	3
05090203130	0	3
05090203150	1	5
05090203170	0	2
05090203180	0	0
05090203190	1	3
05090203200	0	6
05090203210	0	0
05120101010	0	0
05120101040	0	1
05120101050	0	2
05120101060	0	3
05120101070	2	10
05120101080	2	3
05120101090	0	9
05120101100	5	15

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05120101110	2	1
05120101120	0	1
05120101130	0	6
05120101140	2	11
05120101150	1	10
05120101160	0	9
05120101170	0	5
05120101180	2	17
05120102010	2	3
05120102020	3	8
05120102030	0	10
05120102040	2	27
05120103010	0	4
05120103020	1	2
05120103030	1	4
05120103040	1	2
05120103050	2	7
05120103060	3	6
05120104010	2	7
05120104020	4	18
05120104030	1	7
05120104040	1	21
05120104050	5	24
05120104060	0	8
05120104070	0	29
05120105010	0	17
05120105020	1	5

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05120105030	1	26
05120105040	0	4
05120105050	0	11
05120105060	1	5
05120105070	0	24
05120106010	16	87
05120106020	11	91
05120106030	1	34
05120106040	1	57
05120106050	4	63
05120106060	11	140
05120106070	0	5
05120106080	4	37
05120106090	0	3
05120106100	0	5
05120106110	10	40
05120106120	8	17
05120106130	1	2
05120106140	1	15
05120106150	0	93
05120107010	1	7
05120107020	0	8
05120107030	0	6
05120107040	1	16
05120107050	0	5
05120108010	4	38
05120108020	4	35

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05120108030	13	73
05120108040	1	21
05120108050	3	12
05120108060	1	15
05120108070	1	22
05120108080	6	39
05120108090	1	16
05120108100	1	10
05120108110	2	6
05120108120	0	1
05120108140	9	18
05120108150	1	16
05120108160	0	8
05120108170	1	2
05120108180	2	10
05120108190	0	5
05120108200	2	8
05120109080	0	2
05120109090	1	7
05120109100	0	2
05120110010	0	15
05120110020	2	19
05120110030	1	2
05120110040	2	7
05120110050	25	99
05120110060	10	16
05120111010	0	0

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05120111020	1	1
05120111030	4	17
05120111040	2	8
05120111050	0	27
05120111060	0	2
05120111070	1	2
05120111090	1	18
05120111100	0	35
05120111120	0	4
05120111130	0	3
05120111150	0	20
05120111160	2	19
05120111170	0	14
05120111180	0	5
05120111190	0	20
05120111200	0	16
05120113010	0	9
05120113020	2	22
05120113030	0	3
05120113040	0	13
05120113050	4	28
05120113060	0	28
05120113080	0	24
05120113090	0	10
05120113100	0	61
05120113110	1	8
05120113120	0	47

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05120113130	7	69
05120201010	1	28
05120201020	6	17
05120201030	2	20
05120201040	2	4
05120201050	0	3
05120201060	0	0
05120201070	0	14
05120201080	0	4
05120201090	9	21
05120201100	0	20
05120201110	12	33
05120201120	3	24
05120201130	1	14
05120201140	1	16
05120201150	1	8
05120201160	7	22
05120201170	2	15
05120201180	0	27
05120202010	5	50
05120202020	17	35
05120202030	1	15
05120202040	5	33
05120202050	4	29
05120202060	1	7
05120202070	0	17
05120202080	2	38

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05120202090	2	26
05120202100	8	65
05120203010	1	9
05120203020	7	21
05120203030	0	0
05120203040	2	3
05120203050	0	2
05120203060	5	13
05120203070	1	11
05120203080	0	4
05120203090	1	6
05120204010	6	26
05120204020	0	4
05120204030	1	54
05120204040	1	56
05120204050	0	1
05120204060	0	64
05120204070	0	10
05120204080	0	73
05120204090	1	46
05120204100	2	40
05120205010	0	9
05120205020	0	14
05120205030	0	1
05120205040	0	7
05120205050	1	32
05120205060	0	4

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05120206010	0	12
05120206020	1	9
05120206030	0	15
05120206040	0	14
05120206050	1	4
05120206060	0	7
05120207010	3	63
05120207020	3	62
05120207030	1	13
05120207040	0	18
05120207050	5	29
05120207060	15	34
05120207070	6	38
05120207080	3	30
05120207090	3	15
05120207100	0	2
05120207110	6	17
05120208010	2	38
05120208020	8	81
05120208030	6	12
05120208040	0	15
05120208050	16	53
05120208060	1	35
05120208070	5	17
05120208080	2	41
05120208090	4	60
05120208100	1	51

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05120208110	6	31
05120208120	17	37
05120208130	4	23
05120208140	4	31
05120208150	1	90
05120208160	3	54
05120208170	4	43
05120209010	0	26
05120209020	3	9
05120209030	0	1
05120209040	1	18
05120209050	0	7
05120209060	5	65
05120209070	0	12
05120209080	1	18
05140101020	0	0
05140101030	0	8
05140101040	8	37
05140101060	0	11
05140101070	3	56
05140101080	0	17
05140101100	0	1
05140101120	0	2
05140101130	17	21
05140101140	12	60
05140101150	19	63
05140104010	9	64

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05140104040	3	42
05140104050	2	39
05140104070	0	10
05140104080	0	6
05140104090	6	64
05140104100	3	55
05140104110	6	69
05140104120	4	56
05140104130	4	33
05140104140	0	114
05140104150	24	316
05140104170	1	28
05140104180	11	126
05140104190	0	7
05140104200	29	82
05140104210	5	27
05140201010	0	3
05140201030	1	17
05140201040	3	12
05140201050	2	14
05140201060	0	8
05140201070	0	13
05140201080	0	8
05140201090	2	9
05140201110	2	17
05140201130	4	20
05140201140	8	48

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
05140201150	0	29
05140201160	1	13
05140202010	0	4
05140202020	4	9
05140202030	1	21
05140202040	2	12
05140202050	2	22
05140202070	4	50
05140202100	4	33
07120001010	19	141
07120001020	5	36
07120001030	5	70
07120001040	3	19
07120001050	1	19
07120001060	6	26
07120001070	8	41
07120001080	32	89
07120001090	13	27
07120001100	4	42
07120001110	7	46
07120001120	11	74
07120001130	3	7
07120001140	4	19
07120001150	0	0
07120001170	0	0
07120002010	1	53
07120002020	0	14

Data Table 7: Critical Biological Resources		
Watershed	High Quality Biological Communities	Number of Threatened & Endangered Species Reported
07120002030	1	18
07120002040	4	42
07120002050	1	8
07120002070	1	20
07120002090	0	1
07120002150	13	85
07120003030	28	66
07120003040	0	0
07120003050	0	11

Data Table 8: Aquifer Vulnerability	
Watershed	Score
04040001020	2
04040001030	3
04040001040	2
04040001050	2
04040001060	3
04040001070	2
04040001080	2
04040001090	3
04040001100	3
04050001020	5
04050001080	1
04050001090	2
04050001100	1
04050001110	3
04050001120	2
04050001130	1
04050001140	2
04050001150	1
04050001160	1
04050001170	3
04050001180	4
04050001190	2
04050001200	3
04050001210	2
04050001220	1
04050001230	4
04050001240	1
04050001280	2
04060200010	2
04100003020	3
04100003030	4
04100003050	4
04100003060	5
04100003070	5

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
04100003080	4
04100003090	5
04100003100	5
04100004030	5
04100004040	5
04100004050	5
04100004060	4
04100005010	3
04100005020	5
04100007100	2
04100007120	4
05080001110	4
05080002070	4
05080002080	4
05080002090	4
05080003010	4
05080003020	4
05080003030	4
05080003040	4
05080003050	4
05080003060	4
05080003070	4
05080003080	4
05090203030	5
05090203040	4
05090203050	4
05090203060	4
05090203070	4
05090203080	4
05090203100	3
05090203110	5
05090203130	5
05090203150	4
05090203170	2

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
05090203180	5
05090203190	5
05090203200	5
05090203210	5
05120101010	5
05120101040	4
05120101050	5
05120101060	5
05120101070	4
05120101080	5
05120101090	4
05120101100	4
05120101110	5
05120101120	4
05120101130	5
05120101140	4
05120101150	4
05120101160	4
05120101170	5
05120101180	2
05120102010	5
05120102020	5
05120102030	5
05120102040	5
05120103010	4
05120103020	5
05120103030	5
05120103040	5
05120103050	5
05120103060	4
05120104010	4
05120104020	5
05120104030	5
05120104040	4

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
05120104050	4
05120104060	4
05120104070	2
05120105010	2
05120105020	3
05120105030	2
05120105040	4
05120105050	3
05120105060	4
05120105070	4
05120106010	3
05120106020	3
05120106030	2
05120106040	2
05120106050	2
05120106060	2
05120106070	2
05120106080	2
05120106090	2
05120106100	2
05120106110	2
05120106120	2
05120106130	2
05120106140	2
05120106150	3
05120107010	5
05120107020	4
05120107030	4
05120107040	5
05120107050	3
05120108010	3
05120108020	4
05120108030	3
05120108040	4

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
05120108050	3
05120108060	4
05120108070	3
05120108080	4
05120108090	4
05120108100	3
05120108110	4
05120108120	5
05120108140	4
05120108150	4
05120108160	5
05120108170	4
05120108180	4
05120108190	4
05120108200	3
05120109080	5
05120109090	4
05120109100	4
05120110010	5
05120110020	4
05120110030	4
05120110040	4
05120110050	4
05120110060	4
05120111010	5
05120111020	5
05120111030	4
05120111040	3
05120111050	3
05120111060	3
05120111070	3
05120111090	1
05120111100	2
05120111120	1

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
05120111130	4
05120111150	3
05120111160	4
05120111170	1
05120111180	1
05120111190	3
05120111200	3
05120113010	1
05120113020	1
05120113030	1
05120113040	1
05120113050	2
05120113060	1
05120113080	1
05120113090	2
05120113100	3
05120113110	3
05120113120	2
05120113130	2
05120201010	4
05120201020	3
05120201030	2
05120201040	3
05120201050	4
05120201060	5
05120201070	2
05120201080	5
05120201090	3
05120201100	2
05120201110	2
05120201120	4
05120201130	2
05120201140	3
05120201150	4

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
05120201160	4
05120201170	4
05120201180	3
05120202010	4
05120202020	3
05120202030	3
05120202040	3
05120202050	2
05120202060	3
05120202070	3
05120202080	2
05120202090	3
05120202100	3
05120203010	4
05120203020	5
05120203030	4
05120203040	3
05120203050	5
05120203060	3
05120203070	4
05120203080	4
05120203090	4
05120204010	4
05120204020	4
05120204030	4
05120204040	3
05120204050	2
05120204060	4
05120204070	4
05120204080	3
05120204090	4
05120204100	4
05120205010	3
05120205020	4

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
05120205030	4
05120205040	4
05120205050	3
05120205060	3
05120206010	4
05120206020	3
05120206030	4
05120206040	1
05120206050	4
05120206060	2
05120207010	4
05120207020	4
05120207030	2
05120207040	3
05120207050	4
05120207060	4
05120207070	3
05120207080	3
05120207090	1
05120207100	3
05120207110	3
05120208010	4
05120208020	2
05120208030	5
05120208040	3
05120208050	5
05120208060	4
05120208070	5
05120208080	4
05120208090	3
05120208100	3
05120208110	5
05120208120	5
05120208130	3

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
05120208140	3
05120208150	2
05120208160	5
05120208170	2
05120209010	5
05120209020	4
05120209030	5
05120209040	3
05120209050	2
05120209060	3
05120209070	3
05120209080	3
05140101020	3
05140101030	4
05140101040	4
05140101060	4
05140101070	4
05140101080	4
05140101100	3
05140101120	2
05140101130	4
05140101140	4
05140101150	4
05140104010	2
05140104040	1
05140104050	1
05140104070	4
05140104080	4
05140104090	1
05140104100	3
05140104110	5
05140104120	3
05140104130	3
05140104140	4

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
05140104150	4
05140104170	4
05140104180	5
05140104190	3
05140104200	5
05140104210	4
05140201010	4
05140201030	4
05140201040	5
05140201050	4
05140201060	5
05140201070	4
05140201080	4
05140201090	2
05140201110	3
05140201130	3
05140201140	3
05140201150	3
05140201160	3
05140202010	2
05140202020	3
05140202030	3
05140202040	3
05140202050	2
05140202070	3
05140202100	2
07120001010	2
07120001020	2
07120001030	2
07120001040	1
07120001050	3
07120001060	2
07120001070	2
07120001080	1

Data Table 8: Aquifer Vulnerability	
Watershed	**Score**
07120001090	2
07120001100	1
07120001110	1
07120001120	1
07120001130	2
07120001140	3
07120001150	1
07120001170	1
07120002010	2
07120002020	3
07120002030	2
07120002040	3
07120002050	3
07120002070	4
07120002090	5
07120002150	1
07120003030	3
07120003040	4
07120003050	2

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
04040001010	0
04040001020	0
04040001030	0
04040001040	0
04040001050	0
04040001060	0
04040001070	0
04040001080	0
04040001090	0
04040001100	0
04050001020	0
04050001080	0
04050001090	0
04050001100	0
04050001110	0
04050001120	0
04050001130	0
04050001140	0
04050001150	0
04050001160	0
04050001170	0
04050001180	0
04050001190	0
04050001200	0
04050001210	0
04050001220	0
04050001230	0
04050001240	0
04050001280	0
04060200010	2
04100003020	0
04100003030	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
04100003050	0
04100003060	0
04100003070	0
04100003080	0
04100003090	0
04100003100	1
04100004030	0
04100004040	0
04100004050	0
04100004060	0
04100005010	0
04100005020	0
04100007100	0
04100007120	0
05080001110	0
05080002070	0
05080002080	0
05080002090	0
05080003010	0
05080003020	0
05080003030	0
05080003040	0
05080003050	1
05080003060	0
05080003070	2
05080003080	0
05090203030	0
05090203040	0
05090203050	0
05090203060	7
05090203070	0
05090203080	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05090203100	0
05090203110	0
05090203130	0
05090203150	0
05090203170	0
05090203180	0
05090203190	0
05090203200	0
05090203210	0
05120101010	0
05120101040	0
05120101050	0
05120101060	0
05120101070	0
05120101080	0
05120101090	0
05120101100	0
05120101110	0
05120101120	0
05120101130	0
05120101140	0
05120101150	0
05120101160	0
05120101170	0
05120101180	0
05120102010	0
05120102020	0
05120102030	0
05120102040	0
05120103010	0
05120103020	0
05120103030	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05120103040	0
05120103050	0
05120103060	0
05120104010	0
05120104020	0
05120104030	0
05120104040	0
05120104050	0
05120104060	0
05120104070	1
05120105010	0
05120105020	0
05120105030	0
05120105040	0
05120105050	0
05120105060	0
05120105070	0
05120106010	0
05120106020	1
05120106030	0
05120106040	0
05120106050	0
05120106060	0
05120106070	0
05120106080	0
05120106090	0
05120106100	0
05120106110	0
05120106120	0
05120106130	0
05120106140	0
05120106150	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05120107010	1
05120107020	0
05120107030	0
05120107040	0
05120107050	0
05120108010	0
05120108020	0
05120108030	0
05120108040	0
05120108050	0
05120108060	0
05120108070	0
05120108080	0
05120108090	0
05120108100	0
05120108110	0
05120108120	0
05120108140	0
05120108150	0
05120108160	0
05120108170	0
05120108180	0
05120108190	0
05120108200	0
05120109080	0
05120109090	0
05120109100	0
05120110010	0
05120110020	0
05120110030	0
05120110040	0
05120110050	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05120110060	0
05120111010	0
05120111020	0
05120111030	0
05120111040	0
05120111050	0
05120111060	0
05120111070	0
05120111090	0
05120111100	0
05120111120	0
05120111130	0
05120111150	0
05120111160	0
05120111170	0
05120111180	0
05120111190	0
05120111200	0
05120113010	0
05120113020	0
05120113030	0
05120113040	0
05120113050	0
05120113060	0
05120113080	0
05120113090	0
05120113100	0
05120113110	0
05120113120	0
05120113130	0
05120201010	1
05120201020	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05120201030	0
05120201040	0
05120201050	0
05120201060	0
05120201070	0
05120201080	0
05120201090	1
05120201100	1
05120201110	2
05120201120	2
05120201130	0
05120201140	0
05120201150	0
05120201160	0
05120201170	0
05120201180	0
05120202010	0
05120202020	0
05120202030	0
05120202040	0
05120202050	1
05120202060	0
05120202070	0
05120202080	0
05120202090	0
05120202100	0
05120203010	0
05120203020	0
05120203030	0
05120203040	0
05120203050	3
05120203060	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05120203070	0
05120203080	0
05120203090	0
05120204010	0
05120204020	0
05120204030	0
05120204040	0
05120204050	0
05120204060	0
05120204070	0
05120204080	0
05120204090	0
05120204100	0
05120205010	0
05120205020	0
05120205030	0
05120205040	1
05120205050	0
05120205060	0
05120206010	1
05120206020	0
05120206030	3
05120206040	1
05120206050	0
05120206060	0
05120207010	0
05120207020	0
05120207030	1
05120207040	0
05120207050	2
05120207060	0
05120207070	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05120207080	0
05120207090	0
05120207100	1
05120207110	0
05120208010	1
05120208020	1
05120208030	0
05120208040	1
05120208050	0
05120208060	0
05120208070	1
05120208080	2
05120208090	0
05120208100	0
05120208110	0
05120208120	0
05120208130	0
05120208140	0
05120208150	0
05120208160	3
05120208170	0
05120209010	1
05120209020	1
05120209030	0
05120209040	2
05120209050	0
05120209060	1
05120209070	3
05120209080	0
05140101020	0
05140101030	0
05140101040	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05140101060	0
05140101070	0
05140101080	0
05140101100	0
05140101120	0
05140101130	1
05140101140	0
05140101150	1
05140104010	0
05140104040	0
05140104050	0
05140104070	0
05140104080	0
05140104090	0
05140104100	0
05140104110	0
05140104120	1
05140104130	0
05140104140	0
05140104150	0
05140104170	0
05140104180	0
05140104190	0
05140104200	0
05140104210	0
05140201010	0
05140201030	0
05140201040	0
05140201050	0
05140201060	0
05140201070	3
05140201080	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
05140201090	0
05140201110	0
05140201130	0
05140201140	1
05140201150	0
05140201160	0
05140202010	1
05140202020	0
05140202030	0
05140202040	0
05140202050	0
05140202070	1
05140202100	0
07120001010	0
07120001020	0
07120001030	0
07120001040	0
07120001050	0
07120001060	0
07120001070	0
07120001080	0
07120001090	1
07120001100	0
07120001110	0
07120001120	0
07120001130	0
07120001140	0
07120001150	0
07120001170	0
07120002010	0
07120002020	0
07120002030	0

Data Table 9: Surface Water – Drinking Water Intakes	
Watershed	**Number of Surface Drinking Water Intakes**
07120002040	0
07120002050	0
07120002070	0
07120002090	0
07120002150	0
07120003030	0
07120003040	0
07120003050	0

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
04040001020	1478	56.23	26.29
04040001030	5726	124.13	46.13
04040001040	3168	54.91	57.69
04040001050	3946	77.46	50.94
04040001060	3252	74.79	43.47
04040001070	4330	59.22	73.12
04040001080	1365	32.47	42.03
04040001090	1529	10.66	143.39
04040001100	1147	46.30	24.78
04050001020	7	0.25	25.93
04050001080	196	6.12	31.94
04050001090	5849	130.34	44.87
04050001100	164	4.54	36.00
04050001110	5615	212.25	26.46
04050001120	3932	156.64	25.10
04050001130	740	17.18	43.10
04050001140	3062	129.64	23.62
04050001150	7427	77.05	96.39
04050001160	1049	4.88	214.77
04050001170	4257	162.86	26.14
04050001180	2115	114.20	18.52
04050001190	2896	124.97	23.18
04050001200	6362	183.12	34.74
04050001210	7245	114.13	63.48
04050001220	4416	33.98	129.98
04050001230	4008	79.97	50.12
04050001240	19703	147.47	133.61
04050001280	71	1.17	60.40
04060200010	1213	236.28	5.13
04100003020	225	8.69	25.89
04100003030	74	4.12	17.94
04100003050	1097	92.42	11.87

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
04100003060	872	75.43	11.56
04100003070	2232	100.98	22.10
04100003080	1184	92.44	12.80
04100003090	3780	180.76	20.91
04100003100	1652	48.97	33.73
04100004030	68	6.41	10.64
04100004040	1951	156.68	12.45
04100004050	1812	101.59	17.84
04100004060	2669	116.19	22.98
04100005010	3739	195.20	19.16
04100005020	103	6.11	16.86
04100007100	7	0.66	10.29
04100007120	1214	97.14	12.49
05080001110	354	32.20	11.00
05080002070	186	17.54	10.60
05080002080	413	36.75	11.25
05080002090	222	9.16	24.29
05080003010	4005	202.12	19.82
05080003020	1587	108.80	14.58
05080003030	1913	101.48	18.85
05080003040	3043	193.42	15.73
05080003050	1393	117.31	11.87
05080003060	1765	118.94	14.84
05080003070	5056	312.18	16.20
05080003080	2958	175.26	16.88
05090203030	2771	106.43	26.04
05090203040	2764	128.03	21.59
05090203050	353	13.59	25.96
05090203060	2423	167.71	14.45
05090203070	1741	108.65	16.03
05090203080	1039	66.48	15.63
05090203100	125	8.44	14.86
05090203110	409	28.92	14.14

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05090203130	420	27.70	15.16
05090203150	482	31.05	15.53
05090203170	9	0.60	15.29
05090203180	359	23.69	15.17
05090203190	238	22.17	10.73
05090203200	741	65.36	11.34
05090203210	88	6.79	12.93
05120101010	88	8.64	10.21
05120101040	356	34.34	10.35
05120101050	1084	108.85	9.96
05120101060	1173	99.89	11.74
05120101070	1282	90.21	14.21
05120101080	1093	104.26	10.49
05120101090	401	22.66	17.69
05120101100	3091	128.46	24.06
05120101110	1359	80.76	16.83
05120101120	1279	78.77	16.24
05120101130	818	56.40	14.50
05120101140	901	70.48	12.78
05120101150	2248	157.61	14.26
05120101160	1641	67.53	24.29
05120101170	3200	195.03	16.41
05120101180	715	28.50	25.09
05120102010	1669	173.47	9.62
05120102020	805	79.59	10.11
05120102030	1615	147.97	10.91
05120102040	1532	158.49	9.67
05120103010	1092	100.38	10.88
05120103020	1414	136.13	10.38
05120103030	2115	103.24	20.49
05120103040	1026	76.25	13.46
05120103050	5276	235.22	22.43
05120103060	2388	135.40	17.64

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05120104010	2265	104.71	21.63
05120104020	2309	80.49	28.69
05120104030	1688	110.28	15.31
05120104040	2419	144.46	16.74
05120104050	2841	187.80	15.13
05120104060	891	76.87	11.59
05120104070	2080	110.75	18.78
05120105010	1294	92.82	13.94
05120105020	1630	131.42	12.40
05120105030	807	69.26	11.66
05120105040	2269	98.36	23.06
05120105050	2685	204.79	13.11
05120105060	508	23.56	21.57
05120105070	893	48.40	18.46
05120106010	5711	113.83	50.17
05120106020	5641	122.54	46.03
05120106030	2735	121.14	22.58
05120106040	3405	205.30	16.59
05120106050	2916	204.17	14.28
05120106060	3119	183.00	17.05
05120106070	951	90.26	10.53
05120106080	839	92.17	9.10
05120106090	1391	111.28	12.50
05120106100	992	47.27	20.98
05120106110	2038	224.02	9.10
05120106120	1348	169.88	7.94
05120106130	1685	45.68	36.90
05120106140	2265	59.88	37.83
05120106150	2348	157.96	14.86
05120107010	5051	241.22	20.94
05120107020	4534	177.67	25.52
05120107030	1490	121.05	12.31
05120107040	3135	250.26	12.53

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05120107050	666	14.06	47.36
05120108010	1695	76.62	22.12
05120108020	2489	163.26	15.25
05120108030	3218	239.02	13.46
05120108040	714	193.99	3.68
05120108050	503	96.74	5.20
05120108060	287	36.99	7.77
05120108070	689	87.49	7.88
05120108080	1016	121.44	8.37
05120108090	1119	73.34	15.26
05120108100	1827	170.77	10.70
05120108110	789	94.15	8.38
05120108120	247	31.75	7.77
05120108140	655	63.83	10.26
05120108150	477	37.72	12.65
05120108160	2219	215.48	10.30
05120108170	1023	76.30	13.41
05120108180	1665	153.88	10.82
05120108190	1115	73.95	15.08
05120108200	1304	57.80	22.55
05120109080	459	59.13	7.77
05120109090	175	32.04	5.45
05120109100	774	44.87	17.25
05120110010	1856	188.86	9.83
05120110020	1427	134.67	10.60
05120110030	688	79.05	8.70
05120110040	1004	105.64	9.51
05120110050	2721	182.73	14.89
05120110060	1037	119.74	8.66
05120111010	118	11.43	10.33
05120111020	1772	57.47	30.83
05120111030	5025	142.95	35.15
05120111040	2069	61.82	33.46

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05120111050	2285	40.17	56.88
05120111060	2372	92.86	25.54
05120111070	835	19.11	43.70
05120111090	134	8.83	15.20
05120111100	1305	81.08	16.09
05120111120	68	8.82	7.75
05120111130	939	91.02	10.32
05120111150	607	78.08	7.77
05120111160	2730	236.49	11.55
05120111170	27	1.97	13.86
05120111180	654	42.32	15.47
05120111190	1167	97.12	12.02
05120111200	905	51.26	17.65
05120113010	37	3.62	10.35
05120113020	697	66.32	10.51
05120113030	83	8.11	10.28
05120113040	10	1.25	8.17
05120113050	896	91.76	9.76
05120113060	61	11.77	5.18
05120113080	250	24.81	10.08
05120113090	903	91.43	9.88
05120113100	419	48.93	8.57
05120113110	5929	256.24	23.14
05120113120	261	33.66	7.76
05120113130	212	27.24	7.77
05120201010	3833	240.45	15.94
05120201020	3036	107.37	28.28
05120201030	3078	58.90	52.26
05120201040	6407	144.73	44.27
05120201050	3745	153.10	24.46
05120201060	1621	104.97	15.45
05120201070	2869	102.14	28.09
05120201080	3571	225.46	15.84

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05120201090	13247	151.90	87.21
05120201100	7872	219.02	35.94
05120201110	4942	102.67	48.13
05120201120	8113	210.29	38.58
05120201130	14586	157.42	92.66
05120201140	7335	172.28	42.58
05120201150	14493	290.27	49.93
05120201160	2065	81.94	25.20
05120201170	2361	93.84	25.16
05120201180	1926	103.15	18.67
05120202010	6070	192.63	31.51
05120202020	4564	269.80	16.92
05120202030	1081	79.55	13.58
05120202040	2973	173.40	17.15
05120202050	1734	202.16	8.58
05120202060	1516	137.22	11.05
05120202070	891	94.58	9.42
05120202080	1232	152.02	8.10
05120202090	1724	139.81	12.33
05120202100	2704	231.22	11.70
05120203010	1355	115.55	11.73
05120203020	1907	113.74	16.77
05120203030	570	64.26	8.87
05120203040	500	39.06	12.79
05120203050	1447	91.28	15.85
05120203060	5876	294.54	19.95
05120203070	1911	111.59	17.12
05120203080	1683	120.92	13.92
05120203090	3196	256.09	12.48
05120204010	4089	196.51	20.81
05120204020	1980	118.14	16.76
05120204030	1687	118.04	14.29
05120204040	2299	106.64	21.55

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05120204050	772	44.09	17.52
05120204060	3936	132.43	29.72
05120204070	6308	100.83	62.55
05120204080	2892	117.18	24.68
05120204090	2629	124.30	21.15
05120204100	2592	106.78	24.27
05120205010	2008	122.77	16.36
05120205020	1033	95.39	10.83
05120205030	583	63.29	9.22
05120205040	1204	103.89	11.59
05120205050	2915	154.16	18.91
05120205060	993	58.31	17.03
05120206010	2904	205.67	14.12
05120206020	1872	84.73	22.09
05120206030	3556	258.97	13.73
05120206040	1003	77.82	12.88
05120206050	1986	116.00	17.12
05120206060	586	68.37	8.57
05120207010	2017	176.40	11.43
05120207020	1196	114.28	10.46
05120207030	1526	80.08	19.06
05120207040	2613	129.02	20.25
05120207050	1447	112.81	12.83
05120207060	903	83.44	10.83
05120207070	1492	96.39	15.48
05120207080	1109	70.05	15.83
05120207090	1199	98.64	12.16
05120207100	1143	88.86	12.87
05120207110	824	90.00	9.16
05120208010	821	83.66	9.81
05120208020	1568	99.43	15.77
05120208030	1148	96.75	11.86
05120208040	1493	65.32	22.86

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05120208050	3178	158.56	20.04
05120208060	839	102.44	8.19
05120208070	822	73.08	11.24
05120208080	2198	98.16	22.39
05120208090	6680	203.42	32.84
05120208100	933	57.20	16.31
05120208110	3081	172.29	17.88
05120208120	1203	94.62	12.72
05120208130	471	89.13	5.29
05120208140	663	60.09	11.03
05120208150	1845	162.01	11.39
05120208160	2099	203.92	10.30
05120208170	2490	207.33	12.01
05120209010	1683	167.47	10.05
05120209020	1418	111.44	12.73
05120209030	849	67.61	12.55
05120209040	1689	125.40	13.47
05120209050	570	58.83	9.69
05120209060	1334	118.57	11.25
05120209070	1111	76.30	14.57
05120209080	2074	135.47	15.31
05140101020	49	3.80	12.94
05140101030	1836	152.82	12.02
05140101040	1085	57.62	18.83
05140101060	575	44.38	12.95
05140101070	1402	100.99	13.88
05140101080	198	8.69	22.78
05140101100	899	17.21	52.22
05140101120	456	10.69	42.63
05140101130	1450	66.43	21.83
05140101140	4797	152.27	31.50
05140101150	1584	62.20	25.47
05140104010	406	31.47	12.90

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05140104040	120	9.29	12.89
05140104050	2030	113.90	17.82
05140104070	208	16.16	12.90
05140104080	5304	87.67	60.50
05140104090	2945	102.79	28.65
05140104100	1089	66.08	16.48
05140104110	172	11.18	15.40
05140104120	2095	156.39	13.40
05140104130	2104	125.83	16.72
05140104140	1680	115.81	14.50
05140104150	2409	125.65	19.18
05140104170	63	8.24	7.68
05140104180	1708	171.86	9.94
05140104190	33	5.83	5.64
05140104200	376	72.03	5.21
05140104210	234	32.53	7.19
05140201010	110	14.11	7.76
05140201030	98	12.60	7.76
05140201040	530	50.48	10.49
05140201050	554	17.16	32.27
05140201060	594	105.38	5.64
05140201070	1313	151.85	8.65
05140201080	654	72.78	8.99
05140201090	370	47.46	7.80
05140201110	473	42.61	11.10
05140201130	640	37.44	17.10
05140201140	2022	222.15	9.10
05140201150	2147	137.59	15.60
05140201160	1955	77.50	25.22
05140202010	274	19.43	14.09
05140202020	1872	143.32	13.06
05140202030	1518	107.63	14.10
05140202040	3909	107.49	36.36

Data Table 10: Septic System Density Data			
Watershed	**Housing Units with Onsite Septic Disposal**	**Area (sq. mile)**	**Density (units per sq. mile)**
05140202050	1038	21.88	47.45
05140202070	2541	117.65	21.60
05140202100	71	9.16	7.75
07120001010	7570	226.32	33.45
07120001020	2102	114.76	18.32
07120001030	4458	202.92	21.97
07120001040	2673	118.21	22.61
07120001050	6054	293.70	20.61
07120001060	3328	144.95	22.96
07120001070	2301	99.95	23.02
07120001080	2666	193.69	13.77
07120001090	5155	243.30	21.19
07120001100	1364	84.21	16.20
07120001110	2011	108.86	18.47
07120001120	1457	95.56	15.25
07120001130	3035	163.52	18.56
07120001140	1219	48.85	24.96
07120001150	57	4.40	12.95
07120001170	2	0.07	22.72
07120002010	919	82.33	11.17
07120002020	1176	135.59	8.68
07120002030	722	145.13	4.98
07120002040	1171	161.72	7.24
07120002050	716	126.65	5.66
07120002070	484	111.93	4.33
07120002090	12	2.33	5.18
07120002150	598	76.98	7.77
07120003030	5355	56.47	94.83
07120003040	18	1.88	9.61
07120003050	39	7.22	5.45

Data Table 11: Urbanization	
Watershed	% Developed Area
04040001010	0
04040001020	67
04040001030	15
04040001040	28
04040001050	11
04040001060	7
04040001070	9
04040001080	20
04040001090	7
04040001100	1
04050001020	0
04050001080	3
04050001090	2
04050001100	2
04050001110	1
04050001120	1
04050001130	3
04050001140	1
04050001150	10
04050001160	39
04050001170	2
04050001180	1
04050001190	1
04050001200	2
04050001210	9
04050001220	32
04050001230	2
04050001240	29
04060200010	1
04100003020	0
04100003030	0
04100003050	0
04100003060	1

Data Table 11: Urbanization	
Watershed	% Developed Area
04100003070	1
04100003080	2
04100003090	2
04100003100	21
04100004030	0
04100004040	1
04100004050	1
04100004060	21
04100005010	9
04100005020	0
04100007100	0
04100007120	0
05080001110	1
05080002070	1
05080002080	1
05080002090	4
05080003010	1
05080003020	0
05080003030	1
05080003040	1
05080003050	1
05080003060	1
05080003070	3
05080003080	1
05090203030	2
05090203040	2
05090203050	11
05090203060	2
05090203070	1
05090203080	1
05090203100	4
05090203110	1
05090203130	1
05090203150	0

Data Table 11: Urbanization	
Watershed	% Developed Area
05090203180	1
05090203190	2
05090203200	1
05090203210	0
05120101010	0
05120101040	0
05120101050	0
05120101060	0
05120101070	2
05120101080	0
05120101090	1
05120101100	4
05120101110	1
05120101120	4
05120101130	0
05120101140	0
05120101150	2
05120101160	4
05120101170	2
05120101180	5
05120102010	1
05120102020	0
05120102030	0
05120102040	0
05120103010	1
05120103020	1
05120103030	1
05120103040	2
05120103050	4
05120103060	1
05120104010	1
05120104020	2
05120104030	0
05120104040	1

Data Table 11: Urbanization	
Watershed	% Developed Area
05120104050	0
05120104060	0
05120104070	1
05120105010	2
05120105020	0
05120105030	0
05120105040	1
05120105050	1
05120105060	0
05120105070	0
05120106010	1
05120106020	4
05120106030	1
05120106040	1
05120106050	1
05120106060	1
05120106070	0
05120106080	1
05120106090	0
05120106100	0
05120106110	1
05120106120	1
05120106130	0
05120106140	3
05120106150	1
05120107010	4
05120107020	2
05120107030	0
05120107040	1
05120107050	10
05120108010	15
05120108020	3
05120108030	1
05120108040	1

Data Table 11: Urbanization	
Watershed	% Developed Area
05120108050	1
05120108060	1
05120108070	1
05120108080	1
05120108090	1
05120108100	1
05120108110	0
05120108120	0
05120108140	4
05120108150	4
05120108160	0
05120108170	0
05120108180	1
05120108190	1
05120108200	2
05120109080	0
05120109090	1
05120109100	1
05120110010	0
05120110020	2
05120110030	0
05120110040	0
05120110050	1
05120110060	0
05120111010	3
05120111020	2
05120111030	3
05120111040	11
05120111050	23
05120111060	9
05120111070	2
05120111090	0
05120111100	1
05120111120	1

Data Table 11: Urbanization	
Watershed	% Developed Area
05120111130	1
05120111150	1
05120111160	2
05120111170	2
05120111180	1
05120111190	1
05120111200	5
05120113010	0
05120113020	7
05120113030	0
05120113040	1
05120113050	3
05120113060	0
05120113080	0
05120113090	1
05120113100	1
05120113110	2
05120113120	0
05120113130	0
05120201010	2
05120201020	7
05120201030	9
05120201040	5
05120201050	1
05120201060	2
05120201070	2
05120201080	1
05120201090	26
05120201100	3
05120201110	22
05120201120	11
05120201130	49
05120201140	4
05120201150	3

Data Table 11: Urbanization	
Watershed	% Developed Area
05120201160	2
05120201170	3
05120201180	0
05120202010	3
05120202020	0
05120202030	3
05120202040	1
05120202050	1
05120202060	3
05120202070	3
05120202080	1
05120202090	3
05120202100	1
05120203010	0
05120203020	1
05120203030	0
05120203040	0
05120203050	2
05120203060	1
05120203070	1
05120203080	2
05120203090	1
05120204010	2
05120204020	1
05120204030	2
05120204040	2
05120204050	1
05120204060	1
05120204070	6
05120204080	1
05120204090	6
05120204100	4
05120205010	0
05120205020	1

Data Table 11: Urbanization	
Watershed	% Developed Area
05120205030	1
05120205040	2
05120205050	6
05120205060	9
05120206010	3
05120206020	4
05120206030	3
05120206040	8
05120206050	1
05120206060	5
05120207010	2
05120207020	1
05120207030	3
05120207040	3
05120207050	2
05120207060	1
05120207070	3
05120207080	5
05120207090	5
05120207100	3
05120207110	2
05120208010	1
05120208020	4
05120208030	0
05120208040	8
05120208050	1
05120208060	0
05120208070	0
05120208080	1
05120208090	8
05120208100	1
05120208110	0
05120208120	1
05120208130	2

Data Table 11: Urbanization	
Watershed	% Developed Area
05120208140	2
05120208150	2
05120208160	2
05120208170	1
05120209010	1
05120209020	3
05120209030	2
05120209040	3
05120209050	1
05120209060	1
05120209070	3
05120209080	1
05140101020	0
05140101030	1
05140101040	9
05140101060	2
05140101070	3
05140101080	26
05140101100	25
05140101120	68
05140101130	3
05140101140	10
05140101150	12
05140104010	0
05140104040	0
05140104050	1
05140104070	0
05140104080	6
05140104090	3
05140104100	2
05140104110	0
05140104120	2
05140104130	2
05140104140	1

Data Table 11: Urbanization	
Watershed	% Developed Area
05140104150	2
05140104170	3
05140104180	1
05140104190	0
05140104200	0
05140104210	0
05140201010	0
05140201030	0
05140201040	0
05140201050	11
05140201060	0
05140201070	0
05140201080	1
05140201090	1
05140201110	3
05140201130	2
05140201140	1
05140201150	1
05140201160	10
05140202010	52
05140202020	3
05140202030	6
05140202040	18
05140202050	19
05140202070	4
05140202100	0
07120001010	3
07120001020	1
07120001030	4
07120001040	1
07120001050	2
07120001060	2
07120001070	2
07120001080	1

Data Table 11: Urbanization	
Watershed	% Developed Area
07120001090	2
07120001100	0
07120001110	1
07120001120	1
07120001130	3
07120001140	3
07120001150	0
07120001170	0
07120002010	0
07120002020	2
07120002030	1
07120002040	1
07120002050	1
07120002070	1
07120002090	0
07120002150	1
07120003030	49
07120003040	31
07120003050	89

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
04040001010	0.00	0.00	0.00	0.00	0.00
04040001020	23.78	43.11	6.63	19.61	0.03
04040001030	52.82	43.38	6.75	20.05	0.05
04040001040	23.95	44.46	8.60	26.69	0.41
04040001050	34.73	45.71	10.73	34.33	0.83
04040001060	35.65	48.59	17.66	36.86	1.00
04040001070	34.12	58.74	42.20	45.80	1.61
04040001080	15.39	48.33	17.92	36.69	1.00
04040001090	6.14	58.66	42.15	45.74	1.61
04040001100	26.33	57.97	40.48	46.61	1.64
04050001020	0.12	47.81	29.10	21.56	1.10
04050001080	2.88	48.01	29.22	21.65	1.11
04050001090	67.77	53.00	53.59	74.46	1978.34
04050001100	2.41	54.09	93.61	162.34	6485.18
04050001110	108.43	52.08	45.79	60.08	1360.31
04050001120	96.99	63.12	103.53	182.77	6038.98
04050001130	9.01	53.46	93.02	161.04	6544.57
04050001140	76.52	60.18	99.01	174.74	6040.89
04050001150	40.42	53.48	93.05	161.08	6546.28
04050001160	2.56	53.45	92.99	160.98	6542.32
04050001170	91.55	57.31	57.58	127.63	1689.50
04050001180	61.65	55.03	39.71	106.18	0.00
04050001190	67.24	54.85	66.24	136.62	3151.10
04050001200	101.92	56.74	64.00	170.66	2546.55
04050001210	59.92	53.52	93.13	161.22	6551.86
04050001220	17.60	52.79	83.75	149.26	5773.34
04050001230	39.98	50.97	60.28	119.36	3824.10
04050001240	68.55	47.39	15.29	61.96	89.86
04050001280	0.53	46.58	14.01	59.67	1.97

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
04060200010	1.16	0.50	0.11	0.29	0.00
04100003020	4.10	48.03	29.23	21.66	1.11
04100003030	1.94	47.90	28.71	22.64	1.12
04100003050	46.31	51.08	27.82	30.66	1.32
04100003060	42.97	58.07	24.55	51.43	1.81
04100003070	57.64	58.19	26.64	60.18	11.92
04100003080	52.61	58.02	24.85	52.50	1.78
04100003090	101.28	57.12	30.81	74.72	6.86
04100003100	28.06	58.40	30.64	76.88	31.23
04100004030	5.52	87.77	45.56	315.74	1781.65
04100004040	134.85	87.73	45.31	314.33	1759.93
04100004050	84.65	84.94	42.87	288.88	1526.18
04100004060	68.70	60.27	29.84	87.52	28.06
04100005010	111.82	58.40	30.59	76.69	31.00
04100005020	3.48	58.06	25.97	57.45	8.86
04100007100	0.37	58.01	30.43	76.37	31.02
04100007120	60.93	63.94	33.45	122.06	362.45
05080001110	21.95	69.47	17.64	114.26	172.30
05080002070	11.06	64.26	27.67	170.30	0.88
05080002080	19.99	55.44	31.73	151.83	1.50
05080002090	2.05	22.79	36.61	6.19	0.00
05080003010	118.40	59.72	34.61	87.06	30.98
05080003020	64.14	60.10	33.50	100.02	58.84
05080003030	56.62	56.88	39.21	96.08	17.27
05080003040	111.30	58.66	43.19	117.87	0.38
05080003050	58.49	50.82	42.08	203.84	1.87
05080003060	44.55	38.18	40.66	94.30	2.15
05080003070	174.81	57.08	35.40	128.66	2.99
05080003080	57.61	33.51	40.95	79.47	2.15
05090203030	23.89	22.89	36.70	6.55	0.01

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05090203040	35.58	28.33	36.00	25.00	0.03
05090203050	2.99	22.44	35.95	5.99	0.00
05090203060	74.11	45.05	35.61	104.95	0.35
05090203070	36.40	34.15	35.45	41.13	0.35
05090203080	16.98	26.03	37.54	1.49	0.53
05090203100	2.34	28.24	38.43	0.00	0.00
05090203110	8.08	28.49	38.77	0.00	0.00
05090203130	6.63	24.39	36.04	0.00	1.95
05090203150	7.22	23.72	35.61	0.00	2.28
05090203170	0.14	23.55	35.36	0.00	2.26
05090203180	5.52	23.74	35.64	0.00	2.28
05090203190	5.14	23.62	35.46	0.00	2.27
05090203200	15.22	23.73	35.63	0.00	2.28
05090203210	1.58	23.72	35.61	0.00	2.28
05120101010	5.34	63.06	23.20	138.70	1231.24
05120101040	24.95	74.06	32.82	214.49	1474.66
05120101050	70.97	66.47	25.33	156.72	1246.16
05120101060	80.73	82.38	34.30	249.32	899.96
05120101070	67.46	76.24	22.53	175.85	0.00
05120101080	75.80	74.12	21.52	155.67	3.13
05120101090	15.13	68.06	18.59	96.88	0.00
05120101100	76.75	60.90	28.62	100.28	20.75
05120101110	57.32	72.35	24.50	155.11	11.75
05120101120	53.93	69.79	19.44	113.76	0.02
05120101130	37.13	67.12	21.12	117.70	0.00
05120101140	45.74	66.16	27.66	150.86	0.00
05120101150	96.66	62.52	52.00	303.35	0.14
05120101160	47.78	72.13	38.63	261.30	0.79
05120101170	134.10	70.09	24.86	182.07	3.03
05120101180	18.89	67.54	30.29	177.07	0.00

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05120102010	109.15	64.14	23.46	141.49	1240.13
05120102020	54.31	69.57	15.66	182.66	440.72
05120102030	105.39	72.61	16.57	153.42	0.00
05120102040	103.76	66.74	24.83	134.20	0.00
05120103010	67.83	68.88	18.38	117.64	304.31
05120103020	90.11	67.48	19.05	118.55	481.83
05120103030	64.23	63.42	13.01	67.57	34.54
05120103040	53.11	71.00	11.79	187.47	73.37
05120103050	155.53	67.41	11.76	74.90	0.14
05120103060	86.40	65.05	32.71	192.50	0.10
05120104010	63.06	61.39	29.68	129.91	15.25
05120104020	49.00	62.06	31.36	162.70	0.10
05120104030	69.47	64.22	28.84	180.56	0.98
05120104040	86.95	61.36	44.96	228.44	97.29
05120104050	115.79	62.85	50.05	283.38	22.61
05120104060	54.72	72.56	39.41	269.08	0.86
05120104070	74.38	68.46	32.06	193.38	0.17
05120105010	61.50	67.55	30.29	177.09	0.00
05120105020	96.11	74.56	23.44	399.05	0.00
05120105030	55.73	82.03	16.26	640.83	0.00
05120105040	69.62	72.15	29.21	249.61	7.93
05120105050	157.00	78.15	19.18	519.35	3.47
05120105060	17.60	76.19	16.18	461.08	0.00
05120105070	35.73	75.25	16.12	426.53	0.00
05120106010	67.36	60.32	39.55	170.48	123.20
05120106020	71.38	59.38	48.20	189.32	274.47
05120106030	70.76	59.54	46.97	170.58	246.39
05120106040	124.08	61.61	36.71	99.65	81.21
05120106050	129.36	64.59	30.08	109.82	0.21
05120106060	123.27	68.67	17.96	81.51	1.20

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05120106070	60.62	68.47	23.77	104.59	0.09
05120106080	70.42	77.89	14.34	127.20	0.00
05120106090	75.40	69.07	26.24	152.25	0.03
05120106100	36.07	77.79	14.14	175.92	0.00
05120106110	167.64	76.29	14.22	135.28	0.30
05120106120	132.39	79.44	13.72	197.38	0.00
05120106130	34.80	77.66	14.12	221.30	0.00
05120106140	45.81	77.99	14.50	261.72	0.00
05120106150	120.31	77.65	14.26	256.75	0.00
05120107010	186.40	78.77	12.48	207.01	7.61
05120107020	134.91	77.41	15.88	381.77	9.51
05120107030	99.66	83.93	8.82	476.52	0.10
05120107040	202.89	82.65	8.25	387.52	0.03
05120107050	9.46	68.64	15.74	184.27	0.00
05120108010	52.28	69.56	15.57	188.02	0.00
05120108020	111.45	69.59	15.99	184.35	11.40
05120108030	162.08	69.12	15.91	112.01	0.00
05120108040	167.27	87.90	11.14	47.21	0.00
05120108050	82.07	86.49	11.12	11.62	0.00
05120108060	25.11	69.20	13.91	0.00	0.00
05120108070	59.62	69.46	20.64	80.26	0.66
05120108080	82.59	69.33	16.43	17.87	0.00
05120108090	46.48	64.60	18.21	69.73	0.15
05120108100	120.62	72.00	20.94	114.50	33.51
05120108110	63.51	68.77	23.19	66.00	0.00
05120108120	19.83	63.68	22.73	63.37	0.00
05120108140	37.36	59.66	18.00	89.99	0.24
05120108150	21.55	58.22	18.51	85.15	0.20
05120108160	133.03	62.94	20.77	127.45	28.83
05120108170	37.56	50.19	21.22	57.38	0.13

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05120108180	82.97	54.97	21.10	80.25	14.38
05120108190	36.83	50.76	21.57	56.71	0.00
05120108200	32.90	58.02	18.56	84.45	0.20
05120109080	40.14	69.21	13.91	0.00	0.00
05120109090	29.09	92.56	10.15	15.70	0.00
05120109100	27.74	63.01	16.50	69.86	0.20
05120110010	151.63	81.84	11.08	299.16	0.89
05120110020	103.52	78.36	14.97	194.02	18.52
05120110030	61.15	78.87	13.38	282.92	48.43
05120110040	79.22	76.45	16.77	179.08	56.09
05120110050	128.99	71.96	18.17	165.78	70.74
05120110060	71.48	60.86	21.82	74.07	8.76
05120111010	6.80	60.66	17.40	94.81	0.27
05120111020	32.34	57.37	15.98	86.69	0.50
05120111030	66.32	47.29	14.84	46.73	0.84
05120111040	22.88	37.73	7.58	38.69	1.80
05120111050	14.87	37.73	7.58	38.69	1.80
05120111060	36.80	40.40	9.32	40.42	1.56
05120111070	7.07	37.68	7.57	38.64	1.80
05120111090	3.42	39.54	8.12	37.64	1.57
05120111100	32.36	40.68	8.45	37.24	1.45
05120111120	4.59	53.00	12.06	31.12	0.00
05120111130	45.23	50.66	11.36	32.47	0.30
05120111150	40.74	53.19	12.10	31.23	0.00
05120111160	119.80	51.64	13.57	40.64	50.02
05120111170	1.27	65.91	16.66	62.92	186.25
05120111180	29.21	70.37	18.12	71.96	235.67
05120111190	65.85	69.11	17.68	68.98	218.43
05120111200	38.36	76.28	20.19	86.02	317.13
05120113010	2.69	75.87	20.09	85.56	315.44

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05120113020	49.65	76.32	20.20	86.07	317.31
05120113030	6.00	75.51	19.99	85.16	313.94
05120113040	0.80	64.92	13.25	76.50	62.54
05120113050	59.75	66.37	13.53	78.22	63.17
05120113060	7.63	66.14	13.48	77.94	62.95
05120113080	16.25	66.76	11.78	55.47	78.49
05120113090	59.89	66.77	11.80	55.73	78.35
05120113100	32.14	66.95	9.80	29.97	95.25
05120113110	153.12	60.92	9.60	30.41	67.08
05120113120	22.14	67.07	9.81	30.02	95.42
05120113130	17.96	67.22	9.84	30.09	95.64
05120201010	158.96	67.39	16.60	96.08	113.71
05120201020	66.68	63.31	18.49	57.01	1.22
05120201030	38.12	65.98	13.20	61.70	1.70
05120201040	96.67	68.09	13.68	60.67	1.53
05120201050	105.47	70.22	14.19	59.58	1.35
05120201060	72.16	70.08	11.84	101.24	0.92
05120201070	54.94	54.83	11.75	60.32	1.25
05120201080	148.77	67.27	9.50	137.72	0.69
05120201090	50.42	33.84	7.59	38.28	0.77
05120201100	144.94	67.46	16.71	70.48	0.90
05120201110	34.61	34.37	6.99	42.68	0.57
05120201120	104.29	50.56	10.66	90.71	1.03
05120201130	21.67	14.03	4.88	5.96	0.00
05120201140	81.70	48.34	24.25	33.33	0.37
05120201150	151.26	53.12	17.35	59.01	0.93
05120201160	34.08	42.39	22.59	26.20	0.71
05120201170	40.57	44.07	23.32	29.55	0.45
05120201180	36.60	36.17	24.11	23.89	0.90
05120202010	20.73	10.97	20.05	0.72	0.27

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05120202020	77.47	29.27	30.18	52.13	119.68
05120202030	32.77	41.99	40.28	180.09	855.38
05120202040	65.70	38.63	38.63	158.44	751.56
05120202050	102.10	51.48	40.51	237.13	1367.84
05120202060	65.58	48.72	33.62	147.82	672.73
05120202070	67.01	72.23	25.80	145.09	726.43
05120202080	100.31	67.27	47.21	358.92	2189.38
05120202090	99.27	72.39	32.55	211.01	1172.30
05120202100	139.31	61.42	16.25	64.21	301.46
05120203010	74.18	65.44	16.87	102.40	1.24
05120203020	56.34	50.50	24.77	81.98	1.15
05120203030	31.25	49.57	25.64	84.24	1.16
05120203040	19.16	50.00	25.46	82.98	1.11
05120203050	44.43	49.62	25.64	84.45	1.17
05120203060	136.24	47.15	22.90	55.74	1.21
05120203070	54.28	49.59	23.48	51.13	0.77
05120203080	63.88	53.85	22.17	49.39	0.38
05120203090	115.92	46.14	24.74	68.11	146.43
05120204010	128.34	66.57	29.65	85.96	0.01
05120204020	86.23	74.41	16.54	166.96	0.61
05120204030	87.63	75.68	28.13	225.64	0.16
05120204040	79.14	75.65	13.05	172.34	0.77
05120204050	29.79	68.88	16.99	143.47	0.39
05120204060	99.83	76.84	13.41	162.67	0.87
05120204070	45.60	46.10	7.79	96.15	0.47
05120204080	73.04	63.54	20.18	105.94	0.25
05120204090	71.77	58.86	28.18	44.52	0.00
05120204100	54.93	52.44	18.04	55.74	0.09
05120205010	83.30	69.17	32.87	136.65	0.01
05120205020	73.28	78.31	36.07	271.71	0.02

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05120205030	48.72	78.47	36.33	285.95	0.06
05120205040	77.75	76.29	31.68	259.39	0.17
05120205050	100.03	66.15	15.87	129.25	0.32
05120205060	33.73	58.97	16.50	81.30	0.10
05120206010	136.61	67.71	34.21	280.82	0.35
05120206020	46.27	55.67	16.85	59.94	0.00
05120206030	154.09	60.66	36.87	270.70	0.37
05120206040	37.33	48.89	34.99	67.14	0.00
05120206050	58.20	51.15	24.47	61.25	0.02
05120206060	32.13	47.90	37.71	68.32	0.00
05120207010	61.97	35.81	38.49	18.91	0.04
05120207020	45.23	40.34	30.73	52.38	0.06
05120207030	28.99	36.91	28.70	22.92	0.00
05120207040	42.52	33.60	27.21	7.23	0.00
05120207050	51.00	46.08	31.80	118.36	0.15
05120207060	33.66	41.12	30.92	58.57	0.07
05120207070	36.08	38.16	26.13	32.19	0.00
05120207080	29.39	42.77	31.61	49.29	0.00
05120207090	45.56	47.09	38.35	65.38	219.04
05120207100	31.21	35.81	42.67	20.83	2408.91
05120207110	38.14	43.20	47.99	52.22	2202.09
05120208010	32.85	40.03	54.92	41.36	3687.34
05120208020	34.38	35.25	58.52	18.27	1005.12
05120208030	37.77	39.80	52.44	32.19	0.49
05120208040	22.24	34.71	61.69	9.52	0.80
05120208050	12.18	7.83	10.70	1.90	0.61
05120208060	42.07	41.87	33.75	58.30	0.12
05120208070	5.74	8.01	7.30	4.03	0.73
05120208080	11.24	11.67	21.73	0.71	0.21
05120208090	51.35	25.73	46.18	6.26	0.45

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05120208100	17.72	31.58	52.85	24.66	193.24
05120208110	46.18	27.33	38.27	59.51	422.08
05120208120	25.60	27.59	40.57	44.39	416.96
05120208130	24.31	27.81	27.29	114.23	1013.81
05120208140	18.95	32.14	29.47	141.08	1142.77
05120208150	50.80	31.97	40.40	37.22	1037.42
05120208160	55.87	27.93	30.72	53.83	304.62
05120208170	104.71	51.49	42.21	240.13	2333.62
05120209010	46.11	28.07	35.13	55.77	519.74
05120209020	51.42	47.04	58.84	231.80	3923.34
05120209030	32.95	49.68	62.82	259.30	4486.37
05120209040	61.71	50.16	60.60	248.12	4141.03
05120209050	21.10	36.56	23.67	78.69	1423.08
05120209060	39.78	34.20	16.12	44.06	828.95
05120209070	26.72	35.70	10.93	25.10	328.81
05120209080	83.63	62.93	13.23	72.16	96.30
05140101020	1.11	29.86	37.82	5.81	1.03
05140101030	52.58	35.07	37.94	22.55	0.33
05140101040	19.58	34.63	39.47	10.38	0.03
05140101060	13.62	31.29	37.83	9.46	0.00
05140101070	31.75	32.04	37.45	9.45	0.01
05140101080	2.67	31.26	37.93	9.46	0.00
05140101100	5.28	31.29	37.96	9.47	0.00
05140101120	3.27	31.15	37.79	9.43	0.00
05140101130	20.44	31.36	38.51	10.47	167.58
05140101140	45.44	30.42	36.53	9.74	0.48
05140101150	14.80	24.26	31.50	12.59	1285.71
05140104010	10.86	35.19	50.77	12.44	4081.28
05140104040	3.21	35.19	50.77	12.44	4081.63
05140104050	38.96	34.87	50.16	12.49	3980.73

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05140104070	5.58	35.20	50.79	12.44	4082.69
05140104080	18.14	21.09	25.05	12.42	41.87
05140104090	34.10	33.82	48.30	12.52	3707.83
05140104100	22.90	35.32	50.95	12.49	4096.19
05140104110	3.87	35.31	50.95	12.48	4095.50
05140104120	58.18	37.92	59.51	34.16	4671.47
05140104130	45.64	36.98	56.74	29.38	4351.91
05140104140	33.72	29.68	45.11	22.31	2505.02
05140104150	35.33	28.66	43.92	9.42	2754.45
05140104170	1.20	14.84	29.19	3.10	1.52
05140104180	25.68	15.23	29.79	8.88	1.23
05140104190	0.98	17.20	32.15	61.33	1.58
05140104200	12.62	17.86	33.04	75.37	1.69
05140104210	5.71	17.89	33.07	76.31	1.69
05140201010	2.48	17.89	33.07	76.31	1.69
05140201030	2.21	17.89	33.06	76.28	1.69
05140201040	8.86	17.90	33.08	76.33	1.69
05140201050	3.01	17.90	33.08	76.33	1.69
05140201060	18.49	17.89	33.07	76.08	1.69
05140201070	49.29	33.09	39.05	114.07	943.53
05140201080	39.60	55.47	35.75	123.26	292.38
05140201090	25.82	55.45	35.75	123.22	292.30
05140201110	23.05	55.15	35.55	122.55	290.71
05140201130	20.09	54.69	35.16	121.08	286.42
05140201140	92.12	42.27	25.07	84.08	503.37
05140201150	60.04	44.48	24.50	79.32	153.43
05140201160	25.06	32.97	11.85	30.09	0.25
05140202010	8.37	43.93	7.79	16.38	0.00
05140202020	90.79	64.58	13.40	75.32	63.69
05140202030	37.52	35.53	12.20	35.15	6.02

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
05140202040	44.70	42.40	8.52	18.97	0.28
05140202050	8.32	38.75	9.23	21.46	0.10
05140202070	68.96	59.75	9.18	25.69	64.92
05140202100	6.03	67.13	9.82	30.05	95.51
07120001010	116.12	52.30	26.38	54.23	1.83
07120001020	59.83	53.15	23.02	50.03	1.24
07120001030	116.77	58.66	40.81	44.60	1.74
07120001040	67.67	58.35	10.78	13.88	4.45
07120001050	164.92	57.24	34.45	72.83	304.01
07120001060	86.22	60.64	27.40	27.33	1.43
07120001070	59.78	60.97	6.75	23.60	4.62
07120001080	112.88	59.41	31.15	54.02	1.99
07120001090	114.43	47.94	16.08	36.34	0.96
07120001100	59.28	71.76	19.51	170.50	0.00
07120001110	75.23	70.45	14.04	107.64	0.03
07120001120	64.74	69.06	8.90	50.63	0.00
07120001130	69.44	43.29	6.61	19.53	0.02
07120001140	20.66	43.12	6.49	19.10	0.00
07120001150	1.87	43.24	6.50	19.15	0.00
07120001170	0.04	65.17	8.07	48.54	0.00
07120002010	58.16	72.01	19.03	165.94	0.06
07120002020	95.45	71.76	19.51	170.50	0.00
07120002030	107.20	75.30	17.62	159.76	0.00
07120002040	117.95	74.35	12.72	93.14	0.00
07120002050	98.26	79.09	9.35	47.57	0.00
07120002070	104.59	95.26	9.70	17.53	0.00
07120002090	2.18	95.37	9.71	17.55	0.00
07120002150	56.41	74.70	9.25	55.64	0.00
07120003030	23.89	43.12	6.49	19.10	0.00
07120003040	0.77	41.59	6.26	18.43	0.00

Data Table 12: Crop & Livestock Production Density					
Watershed	Square miles of Cropland	Percent Cropland	Total Cattle per sq. mile	Total Hogs per sq. mile	Total All Chickens & Turkeys per sq. mile
07120003050	3.05	43.03	6.47	19.06	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
04040001010	0.00	0.00
04040001020	0.00	0.00
04040001030	0.00	0.00
04040001040	0.00	0.00
04040001050	0.00	0.00
04040001060	0.00	0.00
04040001070	0.00	0.00
04040001080	0.00	0.00
04040001090	0.00	0.00
04040001100	0.00	0.00
04050001020	0.00	0.00
04050001080	0.00	0.00
04050001090	0.00	0.00
04050001100	0.00	0.00
04050001110	0.00	0.00
04050001120	0.00	0.00
04050001130	0.00	0.00
04050001140	0.00	0.00
04050001150	0.00	0.00
04050001160	0.00	0.00
04050001170	0.00	0.00
04050001180	0.00	0.00
04050001190	0.00	0.00
04050001200	0.00	0.00
04050001210	0.00	0.00
04050001220	0.00	0.00
04050001230	0.00	0.00
04050001240	0.00	0.00
04050001280	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
04060200010	0.00	0.00
04100003020	0.00	0.00
04100003030	0.00	0.00
04100003050	0.00	0.00
04100003060	0.00	0.00
04100003070	0.00	0.00
04100003080	0.00	0.00
04100003090	0.00	0.00
04100003100	0.00	0.00
04100004030	0.00	0.00
04100004040	0.00	0.00
04100004050	0.00	0.00
04100004060	0.00	0.00
04100005010	0.00	0.00
04100005020	0.00	0.00
04100007100	0.00	0.00
04100007120	0.00	0.00
05080001110	0.00	0.00
05080002070	0.00	0.00
05080002080	0.00	0.00
05080002090	0.00	0.00
05080003010	0.00	0.00
05080003020	0.00	0.00
05080003030	0.00	0.00
05080003040	0.00	0.00
05080003050	0.00	0.00
05080003060	0.00	0.00
05080003070	0.00	0.00
05080003080	0.00	0.00
05090203030	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05090203040	0.00	0.00
05090203050	0.00	0.00
05090203060	0.00	0.00
05090203070	0.00	0.00
05090203080	0.00	0.00
05090203100	0.00	0.00
05090203110	0.00	0.00
05090203130	0.00	0.00
05090203150	0.00	0.00
05090203170	0.00	0.00
05090203180	0.00	0.00
05090203190	0.00	0.00
05090203200	0.00	0.00
05090203210	0.00	0.00
05120101010	0.00	0.00
05120101040	0.00	0.00
05120101050	0.00	0.00
05120101060	0.00	0.00
05120101070	0.00	0.00
05120101080	0.00	0.00
05120101090	0.00	0.00
05120101100	0.00	0.00
05120101110	0.00	0.00
05120101120	0.00	0.00
05120101130	0.00	0.00
05120101140	0.00	0.00
05120101150	0.00	0.00
05120101160	0.00	0.00
05120101170	0.00	0.00
05120101180	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05120102010	0.00	0.00
05120102020	0.00	0.00
05120102030	0.00	0.00
05120102040	0.00	0.00
05120103010	0.00	0.00
05120103020	0.00	0.00
05120103030	0.00	0.00
05120103040	0.00	0.00
05120103050	0.00	0.00
05120103060	0.00	0.00
05120104010	0.00	0.00
05120104020	0.00	0.00
05120104030	0.00	0.00
05120104040	0.00	0.00
05120104050	0.00	0.00
05120104060	0.00	0.00
05120104070	0.00	0.00
05120105010	0.00	0.00
05120105020	0.00	0.00
05120105030	0.00	0.00
05120105040	0.00	0.00
05120105050	0.00	0.00
05120105060	0.00	0.00
05120105070	0.00	0.00
05120106010	0.00	0.00
05120106020	0.00	0.00
05120106030	0.00	0.00
05120106040	0.00	0.00
05120106050	0.00	0.00
05120106060	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05120106070	0.00	0.00
05120106080	0.00	0.00
05120106090	0.00	0.00
05120106100	0.00	0.00
05120106110	0.00	0.00
05120106120	0.00	0.00
05120106130	0.00	0.00
05120106140	0.00	0.00
05120106150	0.00	0.00
05120107010	0.00	0.00
05120107020	0.00	0.00
05120107030	0.00	0.00
05120107040	0.00	0.00
05120107050	0.00	0.00
05120108010	0.00	0.00
05120108020	0.00	0.00
05120108030	0.00	0.00
05120108040	0.00	0.00
05120108050	0.00	0.00
05120108060	0.00	0.00
05120108070	0.00	0.00
05120108080	0.01	0.01
05120108090	0.00	0.00
05120108100	0.06	0.04
05120108110	0.66	0.71
05120108120	0.23	0.71
05120108140	0.24	0.38
05120108150	0.18	0.49
05120108160	0.00	0.00
05120108170	0.08	0.10

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05120108180	0.05	0.03
05120108190	0.00	0.00
05120108200	0.33	0.57
05120109080	0.00	0.00
05120109090	0.00	0.00
05120109100	0.00	0.00
05120110010	0.00	0.00
05120110020	0.00	0.00
05120110030	0.00	0.00
05120110040	0.00	0.00
05120110050	0.00	0.00
05120110060	0.42	0.35
05120111010	0.00	0.00
05120111020	11.02	19.17
05120111030	7.43	5.20
05120111040	1.89	3.06
05120111050	0.00	0.00
05120111060	15.43	16.62
05120111070	0.47	2.43
05120111090	0.00	0.00
05120111100	0.33	0.41
05120111120	0.00	0.00
05120111130	0.37	0.41
05120111150	0.00	0.00
05120111160	27.02	11.43
05120111170	0.00	0.00
05120111180	0.00	0.00
05120111190	0.36	0.37
05120111200	0.00	0.00
05120113010	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05120113020	0.00	0.00
05120113030	0.00	0.00
05120113040	0.00	0.00
05120113050	0.00	0.00
05120113060	0.00	0.00
05120113080	0.00	0.00
05120113090	0.00	0.00
05120113100	0.00	0.00
05120113110	0.00	0.00
05120113120	0.00	0.00
05120113130	0.00	0.00
05120201010	0.00	0.00
05120201020	0.00	0.00
05120201030	0.00	0.00
05120201040	0.00	0.00
05120201050	0.00	0.00
05120201060	0.00	0.00
05120201070	0.00	0.00
05120201080	0.00	0.00
05120201090	0.00	0.00
05120201100	0.00	0.00
05120201110	0.00	0.00
05120201120	0.00	0.00
05120201130	0.00	0.00
05120201140	0.00	0.00
05120201150	0.00	0.00
05120201160	0.00	0.00
05120201170	0.00	0.00
05120201180	0.00	0.00
05120202010	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05120202020	0.17	0.06
05120202030	8.38	10.53
05120202040	0.18	0.11
05120202050	3.49	1.73
05120202060	21.75	15.85
05120202070	9.08	9.60
05120202080	10.43	6.86
05120202090	0.44	0.32
05120202100	4.69	2.03
05120203010	0.00	0.00
05120203020	0.00	0.00
05120203030	0.00	0.00
05120203040	0.00	0.00
05120203050	0.00	0.00
05120203060	0.00	0.00
05120203070	0.92	0.82
05120203080	10.57	8.74
05120203090	15.98	6.24
05120204010	0.00	0.00
05120204020	0.00	0.00
05120204030	0.00	0.00
05120204040	0.00	0.00
05120204050	0.00	0.00
05120204060	0.00	0.00
05120204070	0.00	0.00
05120204080	0.00	0.00
05120204090	0.00	0.00
05120204100	0.00	0.00
05120205010	0.00	0.00
05120205020	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05120205030	0.00	0.00
05120205040	0.00	0.00
05120205050	0.00	0.00
05120205060	0.00	0.00
05120206010	0.00	0.00
05120206020	0.00	0.00
05120206030	0.00	0.00
05120206040	0.00	0.00
05120206050	0.00	0.00
05120206060	0.00	0.00
05120207010	0.00	0.00
05120207020	0.00	0.00
05120207030	0.00	0.00
05120207040	0.00	0.00
05120207050	0.00	0.00
05120207060	0.00	0.00
05120207070	0.00	0.00
05120207080	0.00	0.00
05120207090	0.00	0.00
05120207100	0.00	0.00
05120207110	0.00	0.00
05120208010	0.00	0.00
05120208020	0.00	0.00
05120208030	0.00	0.00
05120208040	0.00	0.00
05120208050	0.00	0.00
05120208060	0.00	0.00
05120208070	0.00	0.00
05120208080	0.00	0.00
05120208090	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05120208100	0.00	0.00
05120208110	0.00	0.00
05120208120	0.00	0.00
05120208130	1.34	1.50
05120208140	2.92	4.86
05120208150	0.00	0.00
05120208160	0.03	0.01
05120208170	11.17	5.39
05120209010	0.00	0.00
05120209020	0.00	0.00
05120209030	0.07	0.11
05120209040	3.31	2.64
05120209050	6.38	10.84
05120209060	23.23	19.59
05120209070	33.99	44.55
05120209080	1.64	1.21
05140101020	0.00	0.00
05140101030	0.00	0.00
05140101040	0.00	0.00
05140101060	0.00	0.00
05140101070	0.00	0.00
05140101080	0.00	0.00
05140101100	0.00	0.00
05140101120	0.00	0.00
05140101130	0.00	0.00
05140101140	0.38	0.25
05140101150	0.00	0.00
05140104010	0.00	0.00
05140104040	0.00	0.00
05140104050	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05140104070	0.00	0.00
05140104080	0.00	0.00
05140104090	0.00	0.00
05140104100	0.00	0.00
05140104110	0.00	0.00
05140104120	0.00	0.00
05140104130	0.00	0.00
05140104140	0.00	0.00
05140104150	0.00	0.00
05140104170	0.00	0.00
05140104180	0.00	0.00
05140104190	0.00	0.00
05140104200	0.00	0.00
05140104210	0.00	0.00
05140201010	0.00	0.00
05140201030	0.00	0.00
05140201040	0.00	0.00
05140201050	0.00	0.00
05140201060	0.00	0.00
05140201070	0.24	0.15
05140201080	3.00	4.12
05140201090	4.01	8.44
05140201110	0.00	0.00
05140201130	0.09	0.25
05140201140	19.30	8.69
05140201150	15.03	10.92
05140201160	18.75	24.19
05140202010	0.00	0.00
05140202020	7.15	4.99
05140202030	39.36	36.57

Data Table 13: Mineral Resource Extraction		
Watershed	Mine Area sq. miles	Watershed Mined (percent)
05140202040	2.55	2.37
05140202050	0.36	1.65
05140202070	0.00	0.00
05140202100	0.00	0.00
07120001010	0.00	0.00
07120001020	0.00	0.00
07120001030	0.00	0.00
07120001040	0.00	0.00
07120001050	0.00	0.00
07120001060	0.00	0.00
07120001070	0.00	0.00
07120001080	0.00	0.00
07120001090	0.00	0.00
07120001100	0.00	0.00
07120001110	0.00	0.00
07120001120	0.00	0.00
07120001130	0.00	0.00
07120001140	0.00	0.00
07120001150	0.00	0.00
07120001170	0.00	0.00
07120002010	0.00	0.00
07120002020	0.00	0.00
07120002030	0.00	0.00
07120002040	0.00	0.00
07120002050	0.00	0.00
07120002070	0.00	0.00
07120002090	0.00	0.00
07120002150	0.00	0.00
07120003030	0.00	0.00
07120003040	0.00	0.00

Data Table 13: Mineral Resource Extraction		
Watershed	**Mine Area sq. miles**	**Watershed Mined (percent)**
07120003050	0.00	0.00

Data Table 14: Oil & Gas	
County	**Oil and Gas Wells**
Adams	1665
Allen	218
Bartholomew	27
Benton	55
Blackford	1448
Boone	93
Brown	12
Carroll	32
Cass	145
Clark	79
Clay	577
Clinton	7
Crawford	118
Daviess	1898
Dearborn	46
Decatur	1823
Dekalb	48
Delaware	512
Dubois	1208
Elkhart	65
Fayette	14
Floyd	30
Fountain	95
Franklin	17
Fulton	76
Gibson	7927
Grant	5569
Greene	1222
Hamilton	839
Hancock	770
Harrison	387
Hendricks	124
Henry	664
Howard	657
Huntington	707

Data Table 14: Oil & Gas	
County	**Oil and Gas Wells**
Jackson	84
Jasper	330
Jay	2297
Jefferson	38
Jennings	74
Johnson	24
Knox	2147
Kosciusko	84
Lagrange	27
Lake	76
Laporte	254
Lawrence	162
Madison	1341
Marion	190
Marshall	168
Martin	401
Miami	558
Monroe	177
Montgomery	47
Morgan	76
Newton	87
Noble	44
Ohio	2
Orange	76
Owen	177
Parke	228
Perry	769
Pike	4380
Porter	73
Posey	6437
Pulaski	91
Putnam	51
Randolph	595
Ripley	20
Rush	1088

Data Table 14: Oil & Gas	
County	**Oil and Gas Wells**
Scott	34
Shelby	587
Spencer	3917
St. Joseph	43
Starke	32
Steuben	70
Sullivan	2538
Switzerland	16
Tippecanoe	101
Tipton	471
Union	6
Vanderburgh	1933
Vermillion	192
Vigo	911
Wabash	371
Warren	65
Warrick	774
Washington	64
Wayne	47
Wells	4339
White	290
Whitley	27