# A Watershed Inventory Tool for Local Partnerships ("The Land Inventory")


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# What is the *Watershed Inventory Tool for Indiana?*

- Workbook format
- Designed to be used by interested, “non-expert” volunteers
- Builds on simple tools like Farm*A*Syst, Home*A*Syst, and many others around the country

# The watershed inventory tool....

- Focuses on the land, not the water
- Considers possible water quality concerns associated with each land use
- Can be used with or without GIS

# Goals of the *Watershed Inventory Tool for Indiana*

- Enable local watershed partnerships to locate potential sources of pollution in the watershed in order to develop a better management plan
- Help local people understand what is going on in their watershed, and how it might affect water quality

# Why did we think you needed a Tool?

- **Determining “what is there now” is a basic step in watershed management**
- **Water quality monitoring often needs to continue for several years, to make accurate conclusions**
- **Land inventory can help with choosing water monitoring sites**
- **Land inventory can help make sense out of water monitoring results.**

- Inventory can help validate citizen concerns
- Provides data beyond what citizens usually supply

# How the Inventory Tool is organized:

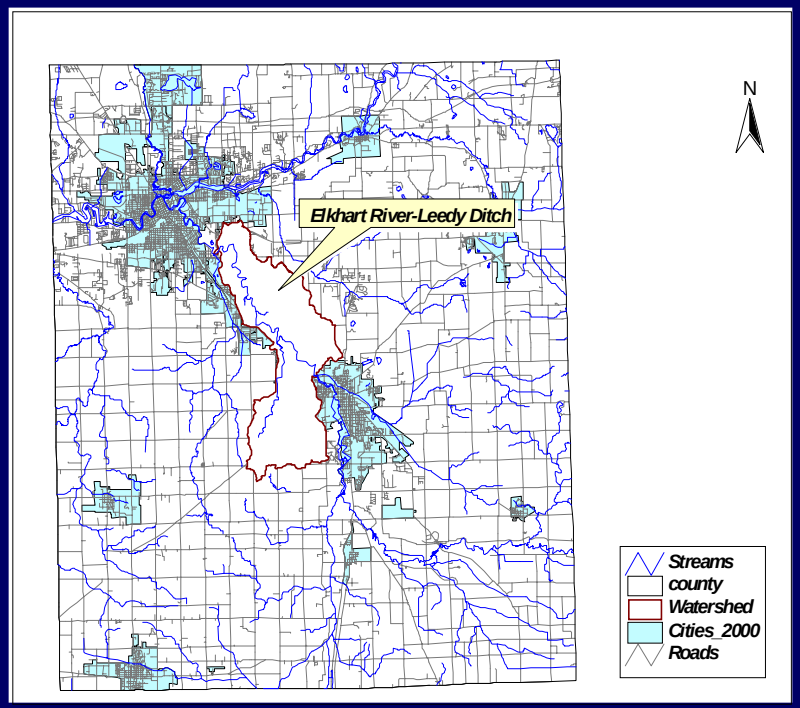
1. Basic information to get you started;

2. Sections based on human activities on the land;

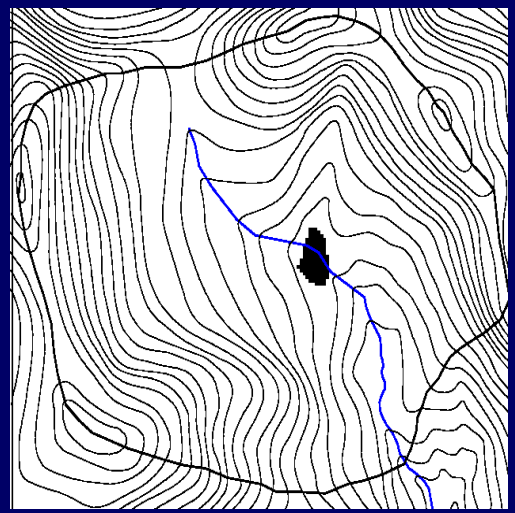
3. Questions to help you make sense of the information.

# Watershed boundaries

- Usually 11-digit or 14-digit HUA

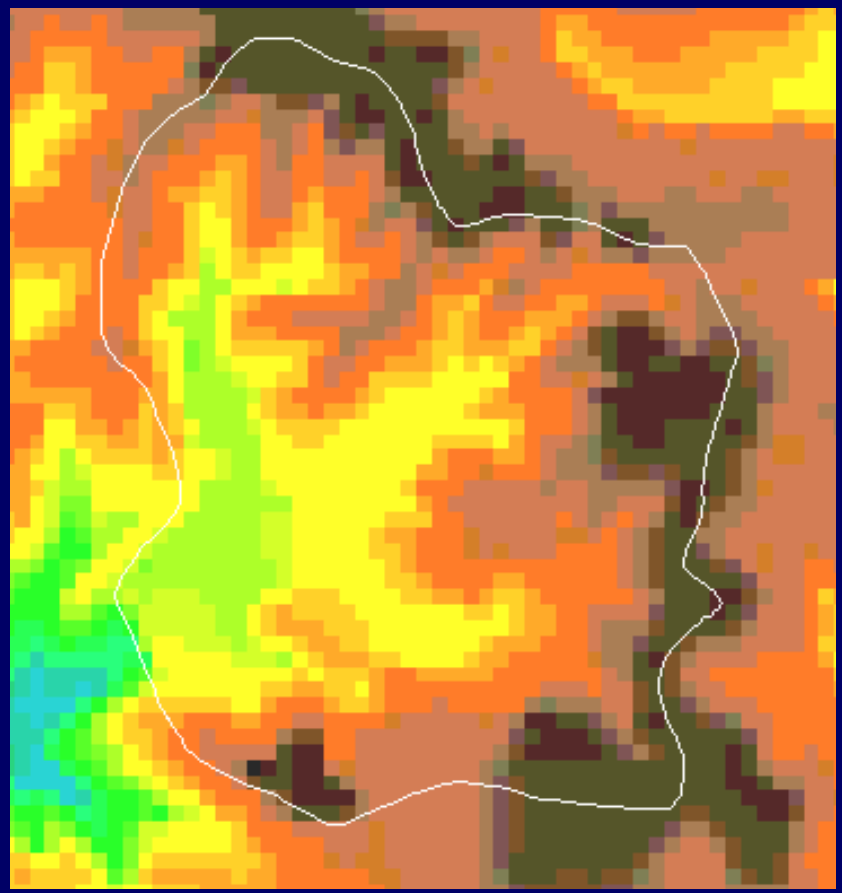



- Can also delineate actual boundaries for a watershed that might not line up with "officially delineated" hydrologic unit areas



# Natural features of the watershed

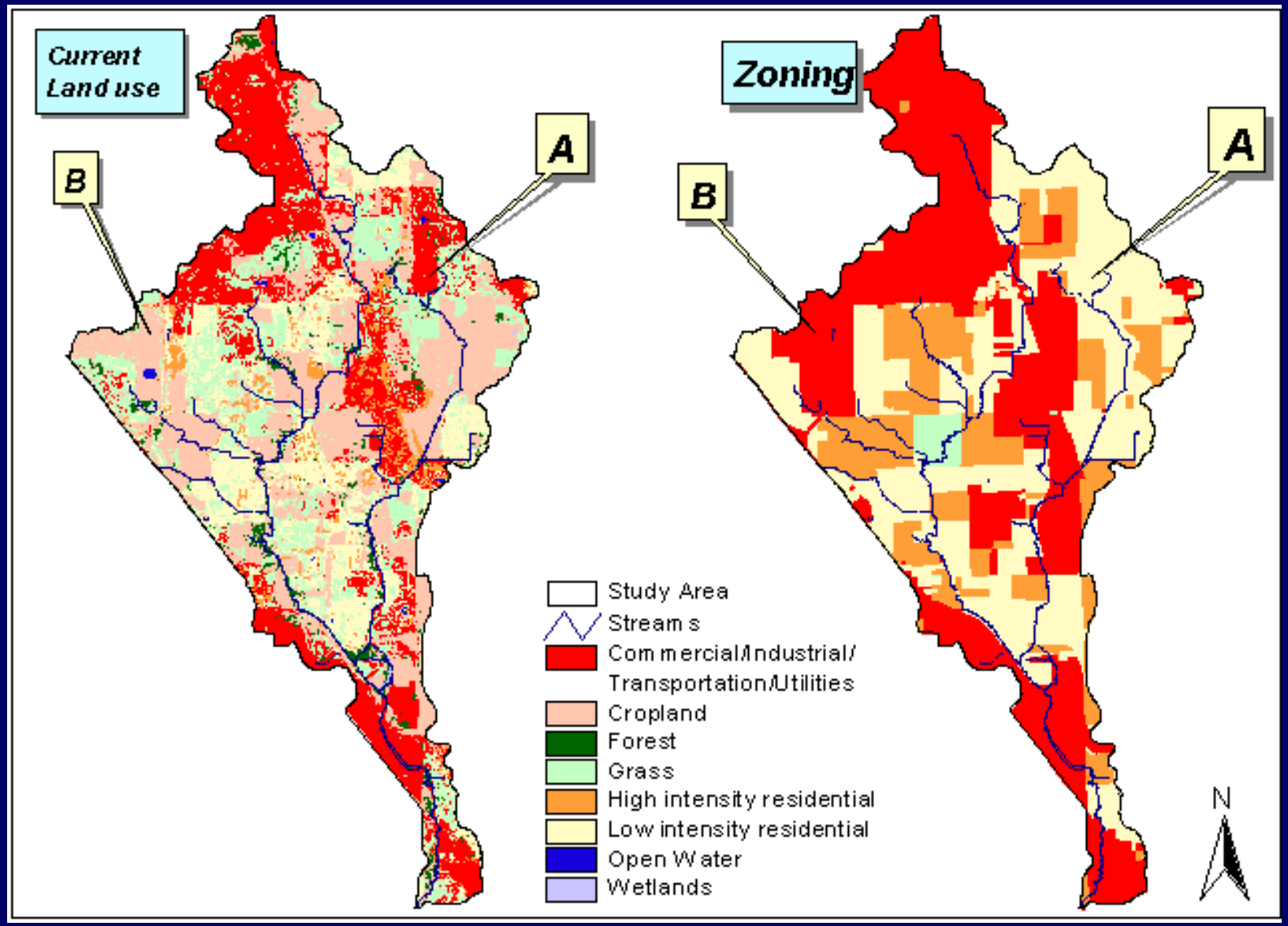
- Soils
- Floodplains
- Topography
- Karst areas



# Land use overview

- Determine current land use
- Determine zoned land uses
- Compare the two to see future land use
- (For example, a watershed that is 30% urban and residential now, but zoned to be 70%, should consider that in watershed management!)

# Land use overview



# Streams, lakes & wetlands

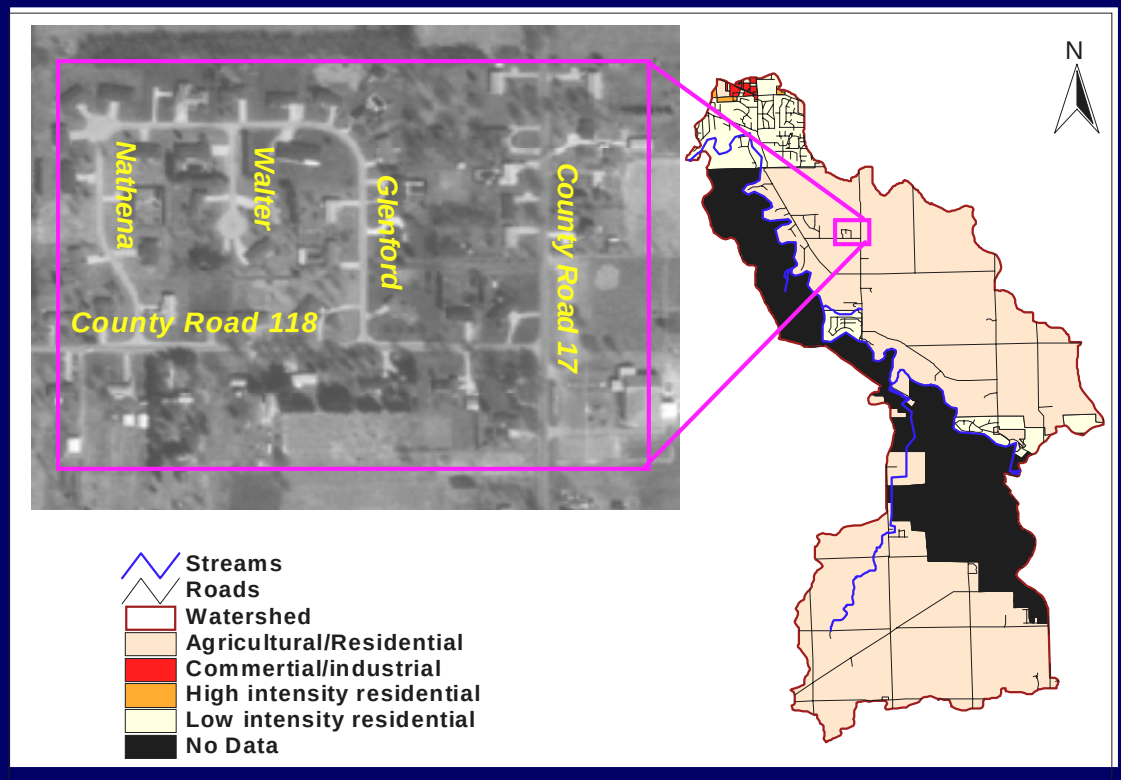
- Determine which streams are legal drains
- Determine which are officially impaired [303(d) list, fish consumption advisories, beach closings]

# Streams, lakes & wetlands

- **Observe as many locations as possible (observations similar to Streamwalk, but simpler than NRCS Visual Stream Assessment)**
- **Locate wetlands from National Wetland Inventory**

# Urban & residential areas

- Locate subdivisions
- Map sewered and unsewered dwellings



# Urban & residential areas

- Identify stormwater practices. Will community be developing a stormwater management plan? (Phase II)
- Construction site erosion control

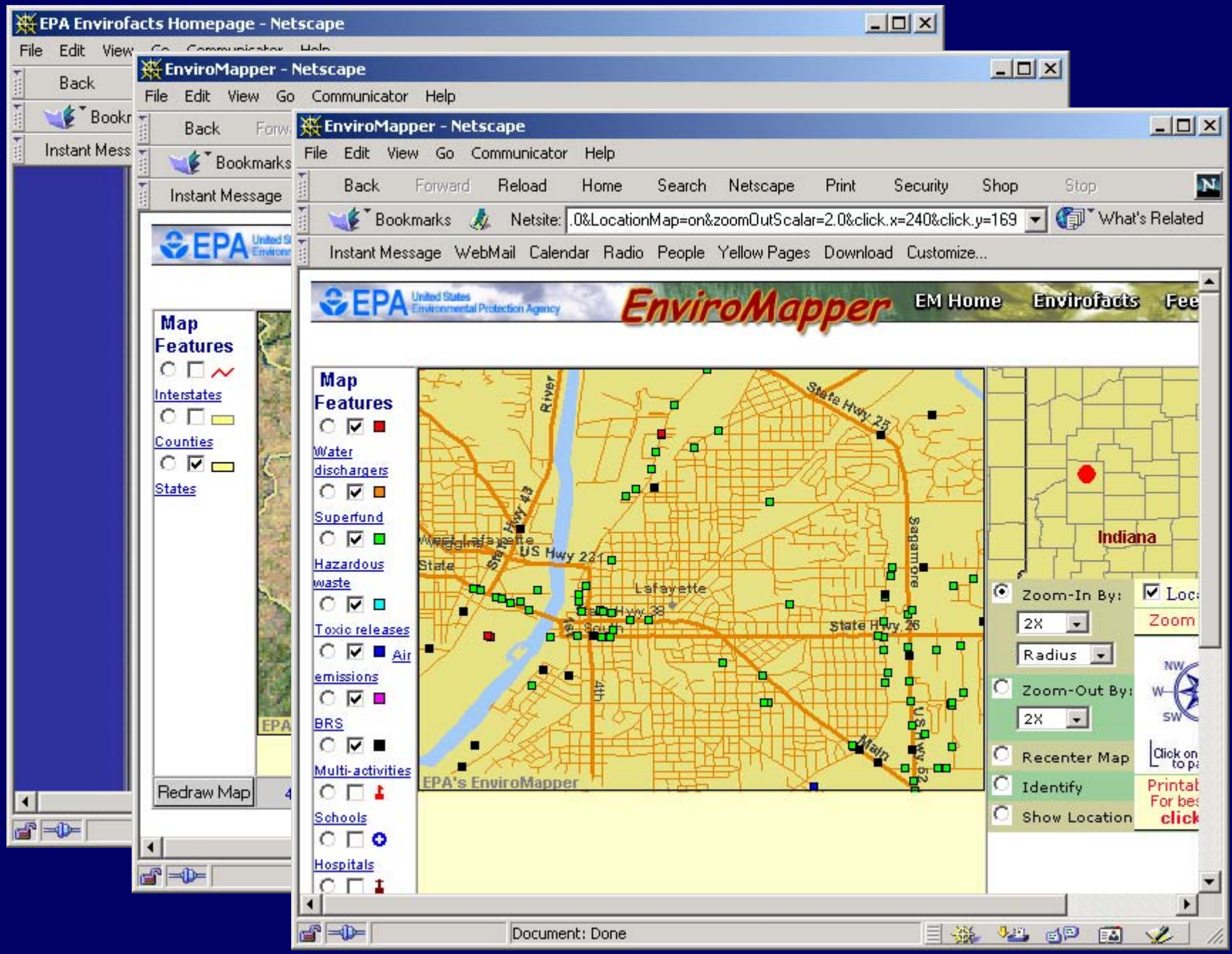
# Urban & residential areas

- Locate large impervious areas

- Golf courses and other large turf areas

# Regulated pollutant sources

- Use EPA Web sites (Envirofacts; Enviromapper) to locate
  - NPDES permits
  - Superfund sites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Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...
EPA United States Environmental Protection Agency
EnviroMapper
EM Home
Envirofacts
Map Features
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Counties
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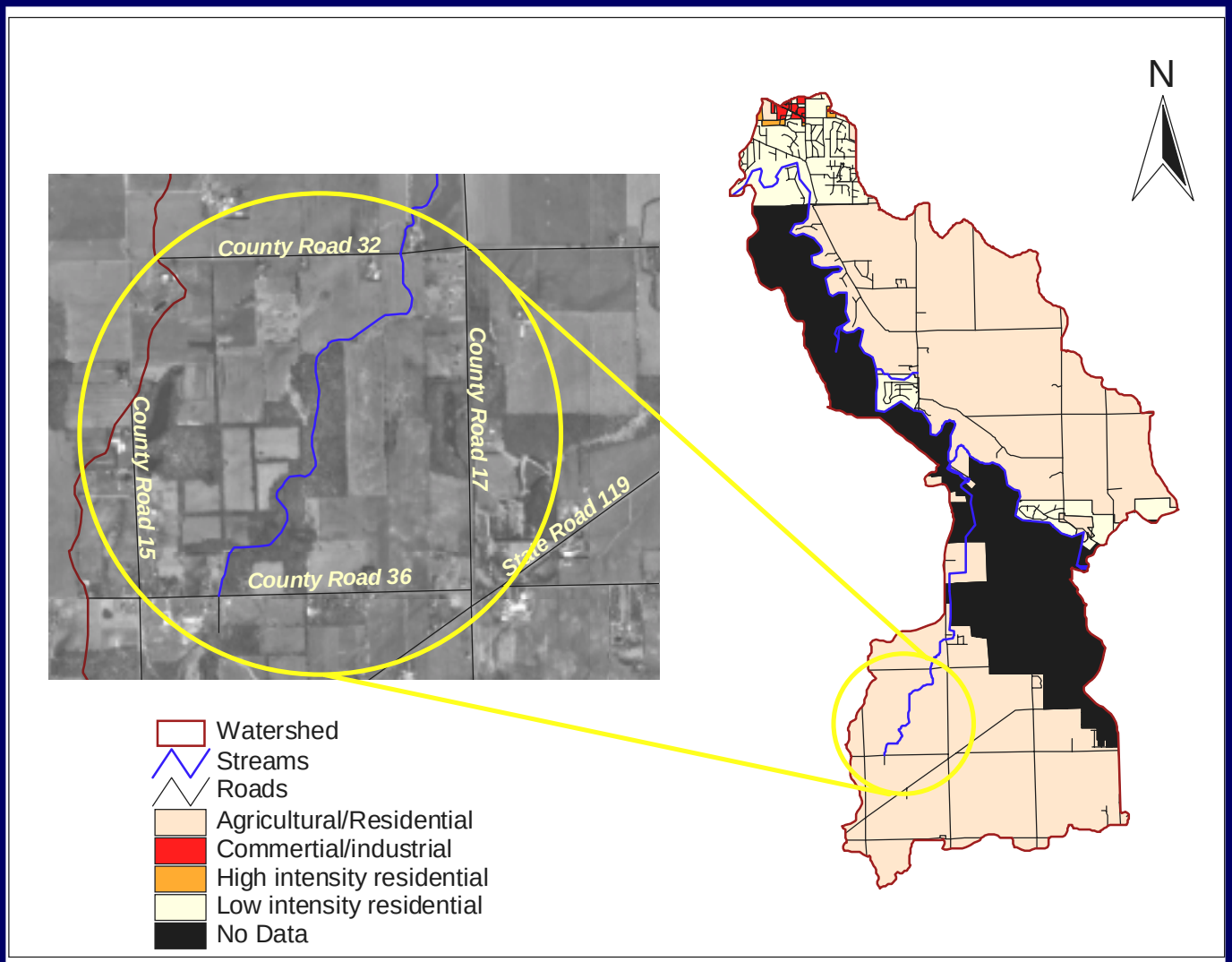
Superfund
Hazardous waste
Toxic releases
Air emissions
BRS
Multi-activities
Schools
Hospitals
Redraw Map
Lafayette
US Hwy 231
State Hwy 25
State Hwy 26
Indiana
Zoom-In By:
2X
Radius
Zoom-Out By:
2X
Recenter Map
Identify
Show Location
Zoom
EPA's EnviroMapper
Document: Done

# Regulated pollutant sources

- Locate any landfills from state data
- Determine if combined sewer overflows discharge into stream
- Locate stormwater outfalls (Phase II makes many more regulated)
- Identify other (unpermitted or unknown) discharges

# Agriculture

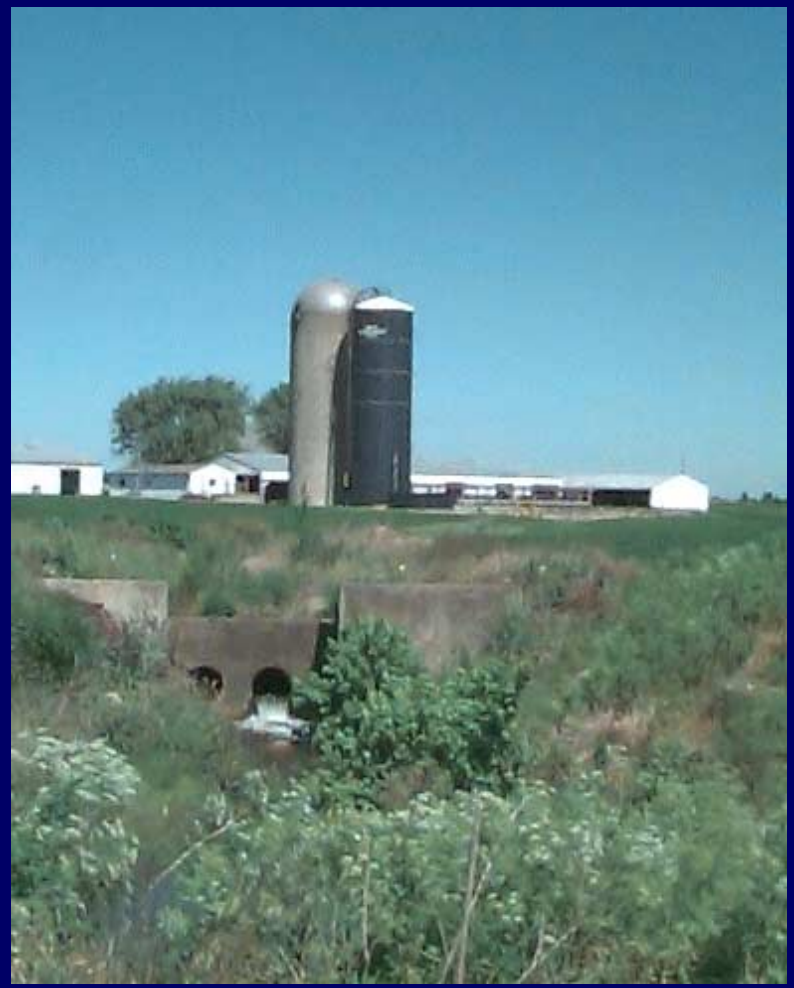
- Locate agricultural land in the watershed



# Agriculture

- Can estimate pesticide and fertilizer use

- Identify livestock operations



# Agriculture

- **Identify tillage practices and erosion estimates (from tillage survey)**
- **Conduct windshield survey of cropland, pasture, and livestock areas; look for buffers, obvious erosion, signs of overgrazing, BMPs, etc.**

# Forests & Wildlife

- Identify publicly owned land & Classified Forest
- Identify special areas such as riparian forest
- Find out if there are threatened and endangered species
- Conduct windshield survey to identify any logging

# Mining & Drilling

- Identify active, reclaimed, & abandoned mines
- Identify active & abandoned oil & gas wells and brine contamination sites
- For assistance & recommendations, contact Division of Reclamation

# Social & economic factors

- Historical information
- Census data, population trends, housing trends
- New businesses, economic trends
- Farm consolidation
- Watershed projects and other conservation programs

# Pulling it all together

- Make maps!!!
- Make tables
- Ask questions and develop “problem statements”as a group

# Pulling it all together - Questions

- What have we learned about this landscape that we think needs to change? What raises red flags?
- What have we learned that is positive and needs to be maintained or protected?
- Do we know enough to reach decisions? If not, what else do we need to find out?
- What are the priorities or targets for each land use?

# Turn observations into problem statements

- "A plume of sediment *[problem]* is visible going into Lick Creek north of Cemetery Road when it rains. From our field observations it appears to be due to the lack of erosion and sediment control practices *[cause]* in the new Country Corner subdivision" *[source]*

# Another more general example:

Streambank erosion was noted at 60% of stream observation points, and we know that impervious area in the watershed has increased from 8% to 15% over the last five years. There's a lot of new commercial strip developments in the headwaters, and a new SuperTarget going in.

It appears that increased impervious area is changing the hydrology of the streams and causing banks to erode.

# One more:

"Possum Creek, which is on the 303(d) list for "impaired biotic community," runs through three farms where beef cattle have free access to the stream. The stream banks are bare and eroded.

It appears that livestock access to the stream is degrading aquatic habitat."

# Experiences of groups that have tried it

- Some had trouble getting volunteers to participate -- Inventory conducted by paid watershed coordinator and agency personnel
- In others, coordinator did background work (checking Web sites, locating studies, maps, etc.) while volunteers did “driving around” portions.

# Volunteer participation in inventory

- Different people like different kinds of maps (topographic map, aerial photograph blown up, plat book)
- Didn’t like to fill out forms. Preferred arrows on maps with elaborate notes in margin of map
- They felt a great deal of “ownership” of the section they had done

# How do you get it?

- Download tool from

http://www.ecn.purdue.edu/SafeWater/watershed