The Fox River Watershed

- 2 States
- 15 Counties (4 in WI)
- 2658 sq mi (IL & WI)
- 1720 sq mi in Illinois

- Headwaters: Colgate, WI
- Confluence: Ottawa, IL

- Mainstem = 223 miles in length
- 2450 miles of streams

*In Illinois:*
- 93 Municipalities
The Fox River Watershed
Landcover

Agricultural  63.8%
Forested & Woodland  10.4%
Urban / Developed  20.8%
Wetlands, Lakes & Streams  5.0%

Data Source: IDNR Landsat Data, 1999-2000
Landscapes

- Prairies
- Floodplain Forests
- Upland Forests
- Northern Flatwoods
- Savannas
- Wetlands

Green Infrastructure!
Biological Resources

- 1064 species of native plants
- 248 species of birds
- 96 species of fish
- 44 species of mammals
- 80 species of butterflies
- 32 species of mussels
- 14 species of amphibians
- 22 species of reptiles

Biological Resources

- 153 State Threatened or Endangered Species
  - 1 Federally Endangered; 2 Federally Threatened

102 Plants
5 Mussels
5 Insects
8 Fish

1 Reptile
31 Birds
1 Mammal


998,345 (31% Growth since 1990)

Total Watershed Population in 2000:
> 1,250,000

Total Watershed Population in 2030:

Data Source: ISWS Illinois River Decision Support System
Water Supply in the Fox River Watershed

- Over 225,000 people rely on the Fox River for drinking water

- Everyone else = groundwater

Data Source: Kane County Groundwater Study, 2009
The Fox River Watershed
Regulated Discharges

- About 160 NPDES permits in Illinois
- 146.9 mgd permitted
- That’s 227 cfs!
- Fox River 7Q10 @ Ottawa is only 265 cfs!

- 32 WWTP on Fox River
  - 7 WWTP in WI
  - 0.01 – 42 mgd
- 41 WWTP on tributaries
  - 11 WWTP in WI
  - 0.02 – 4.5 mgd

Data Source: ISWS & USEPA BASINS Data
Storm sewer conveyance

Open channel conveyance

Traditional detention facility with concrete low flow channel
Traditional development practices and stormwater management techniques are the responsible for much of the stream channel degradation in northeastern Illinois.
Stormwater Runoff in the Watershed

- Sediment
- Oil, grease and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles and other sources
- Thermal pollution from impervious surfaces
**BIOTIC INTEGRITY VS URBANIZATION**

*(Fish Species)*

IBI = 68 - 12.8Log(Pop)

$R^2 = 0.77$

Source: Center for Watershed Protection
Managing a Multi-Purpose Resource

- Drinking water for 225,000 people
- Wastewater and stormwater conveyance
- Recreation for inhabitants and visitors
- Habitat for aquatic and terrestrial species
- Aesthetic value
Impaired Waters

- **Suspended solids** (construction erosion)
- **Nutrients** (fertilizers)
- **Flow alteration** (urban runoff > predevelopment)
- **Low dissolved oxygen** (dams + nutrients)
- **Habitat alteration** (dams, seawalls, channel erosion, etc.)
- **Pathogens** (urban runoff, geese, etc.)

Source: IEPA Integrated Water Quality Report
How did this happen?

- Problem is multi-dimensional & complicated
  - “Surely SOMEONE is working on the solution”
- Easy for us individually to sidestep responsibility
- We, the stakeholders, as well as the river, are the FROG!
How do we fix it?

- WATER – our most precious resource, behind the air we breathe and the land we stand on.
  - Keep it here – don’t send it to the Gulf!
- Green Infrastructure – Save what’s left & expand it!
  - Habitat to support the ecosystem
    - Preserve remaining natural areas
  - Cleanses the water washing off our landscapes
    - Create site-scale green infrastructure and use it to filter and infiltrate our stormwater.
- Networking & Communication
  - Municipality to Municipality
  - Ecosystem Partnership!
  - Subwatershed Groups (Tyler, Poplar, Friends of the Fox, etc.)
Who’s doing What?

- Federal Government
  - USEPA (Enforce CWA)
  - US Army Corps of Engineers (Navigation, wetlands)
- State of Illinois
  - IEPA (Ensuring the State’s waters support designated uses)
  - IDNR (Flooding, dams, biological resources, etc.)
- Local Government
  - Stormwater Ordinance
  - NPDES Phase II / MS4 Permit
Who’s doing What?

- Public Agencies, Municipalities, Park Districts, Townships, HOAs, etc.
  - Fox River Ecosystem Partnership
- Environmental Education, Advocacy & Citizen Stream Monitoring
  - Friends of the Fox River
  - Sierra Club of Illinois
  - The Conservation Foundation
- Watershed-wide Water Quality Study
  - Fox River Study Group
- Local Watershed Groups
  - Tyler Creek, Poplar Creek, Ferson-Otter Creek (to name a few)
It’s up to ALL of US!

- **EVERYONE** has a role to play

  - **To The Resident:**
    - Your yard – plant a rain garden!
    - Your neighborhood – help your neighbors plant a rain garden!
    - Your Community – attend the meetings & contribute!
    - Your Watershed – join a watershed group!
  
  - **To The Elected Official:**
    - Land Use Decisions & Development Regulations
      - Be fair, but consider the long term consequences to water & environment.
    - Open Space protection – During the conversion from farmland to subdivision, you only get one shot! Make strategic acquisitions according to your community’s Green Infrastructure Plan! (No plan yet? Make one!)
    - Make sure you & your staff are **plugged in**!