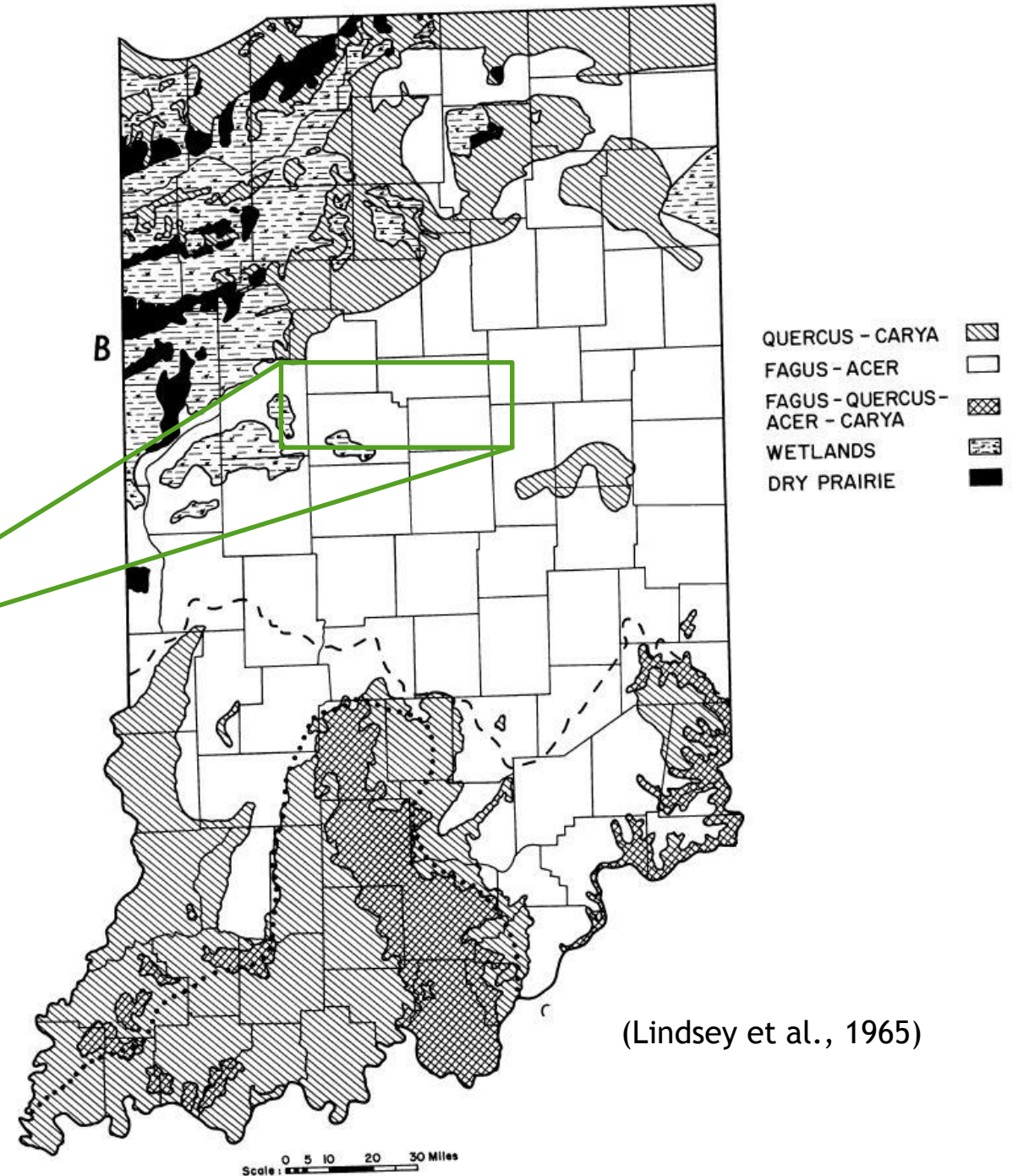
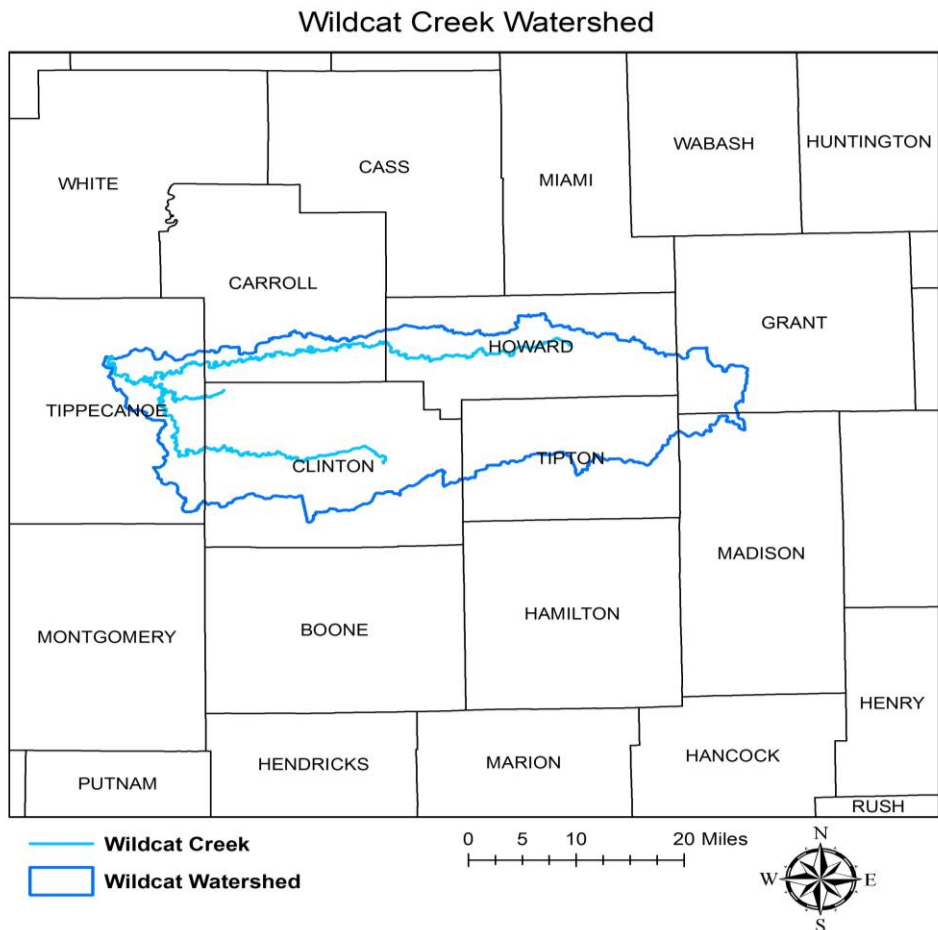


Core Forest Analysis of the Wildcat Creek

Ryan Schroeder

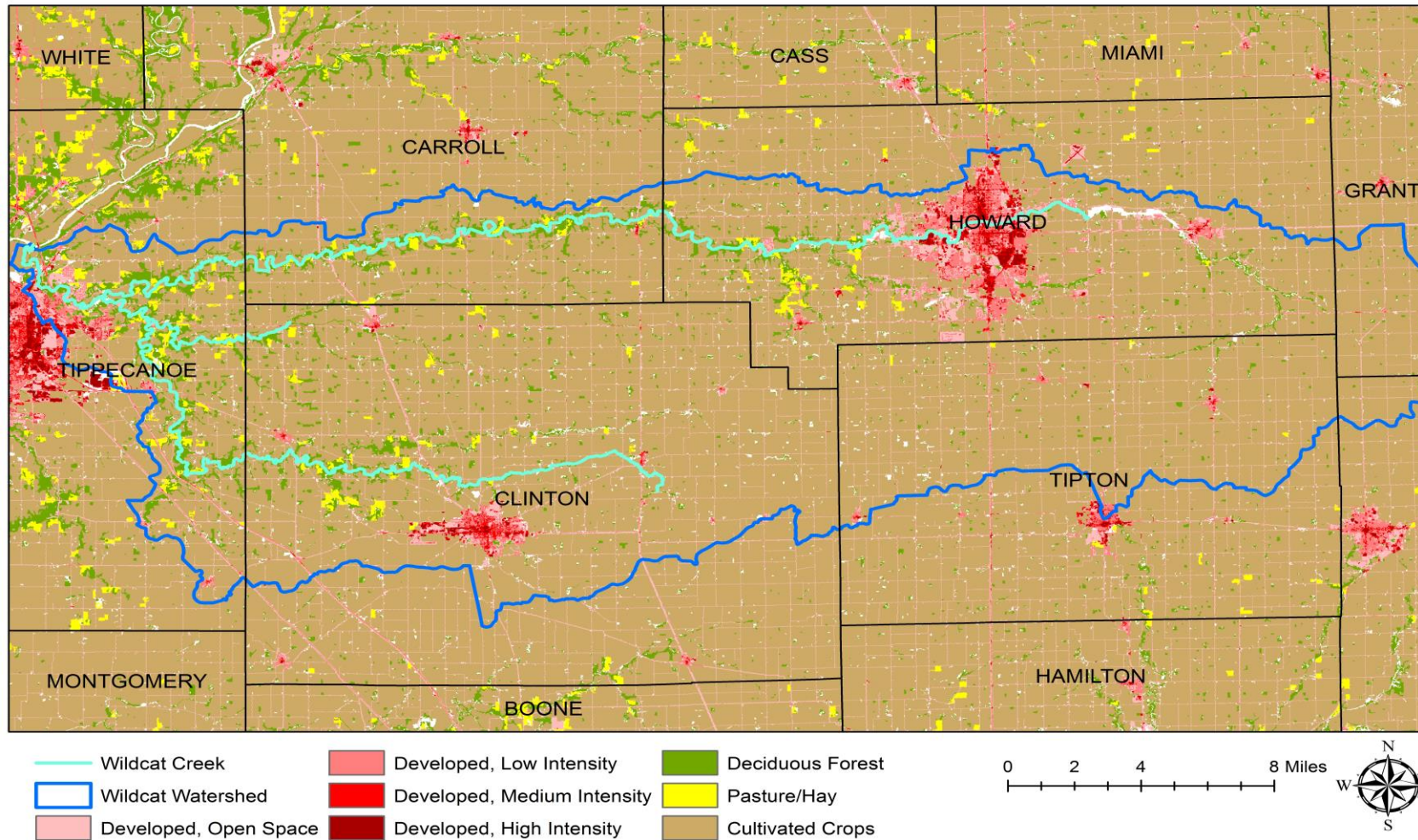
Sophomore, Natural Resources and Environmental Sciences

Northwest Indiana was once covered by contiguous forests, wetlands, and prairie.



This is what the area of the Wildcat Creek's watershed looks like today.

U.S. Geological Survey Land Cover - 2006



Volunteer Research Project for NICHES Land Trust (Northern Indiana Citizens Helping Ecosystems Survive)

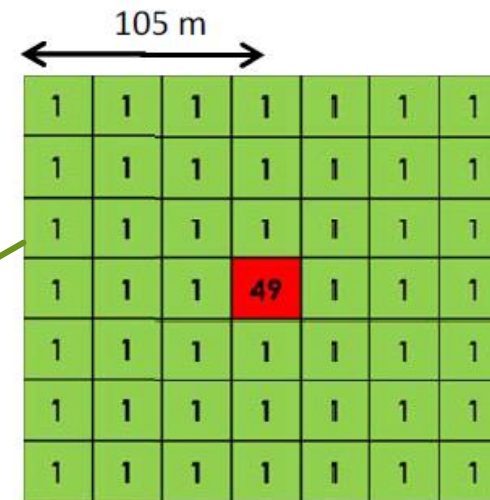
- ▶ Purpose: Establish baseline data of forest and core forest within 1-mile buffer of Wildcat Creek
 - ▶ Core forest: Any forested area with 100 meters of forest on all sides (Hoover et al, 1995)
 - ▶ Parameter analyzed in study
- ▶ Goal of study
 - ▶ Gather data to be used in NICHES' conservation strategy
 - ▶ Plan projects to increase core forest area
 - ▶ Acquire new properties/conservation easements
 - ▶ Focus efforts to manage/increase forest ecosystems



Methodology

- ▶ ArcGIS V. 10.2.2, to conduct spatial analysis
- ▶ Data from U.S. Geological Survey and Indiana Geological Survey
 - ▶ Land Cover - raster (30x30m cells)
 - ▶ Waterway and Watershed - shapefile
 - ▶ Indiana Counties - shapefile

1. Create 1-mile buffer zone around Wildcat Creek
2. Clip Land Cover data to the buffer extent
3. Reclassify raster to Forest/Non-forest
4. Focal Sum Statistic Tool (7x7 cell window)
5. Reclassify to Core Forest/Non-core forest
6. Final unit conversion from cell count to acres



(Mullendore, 2010)

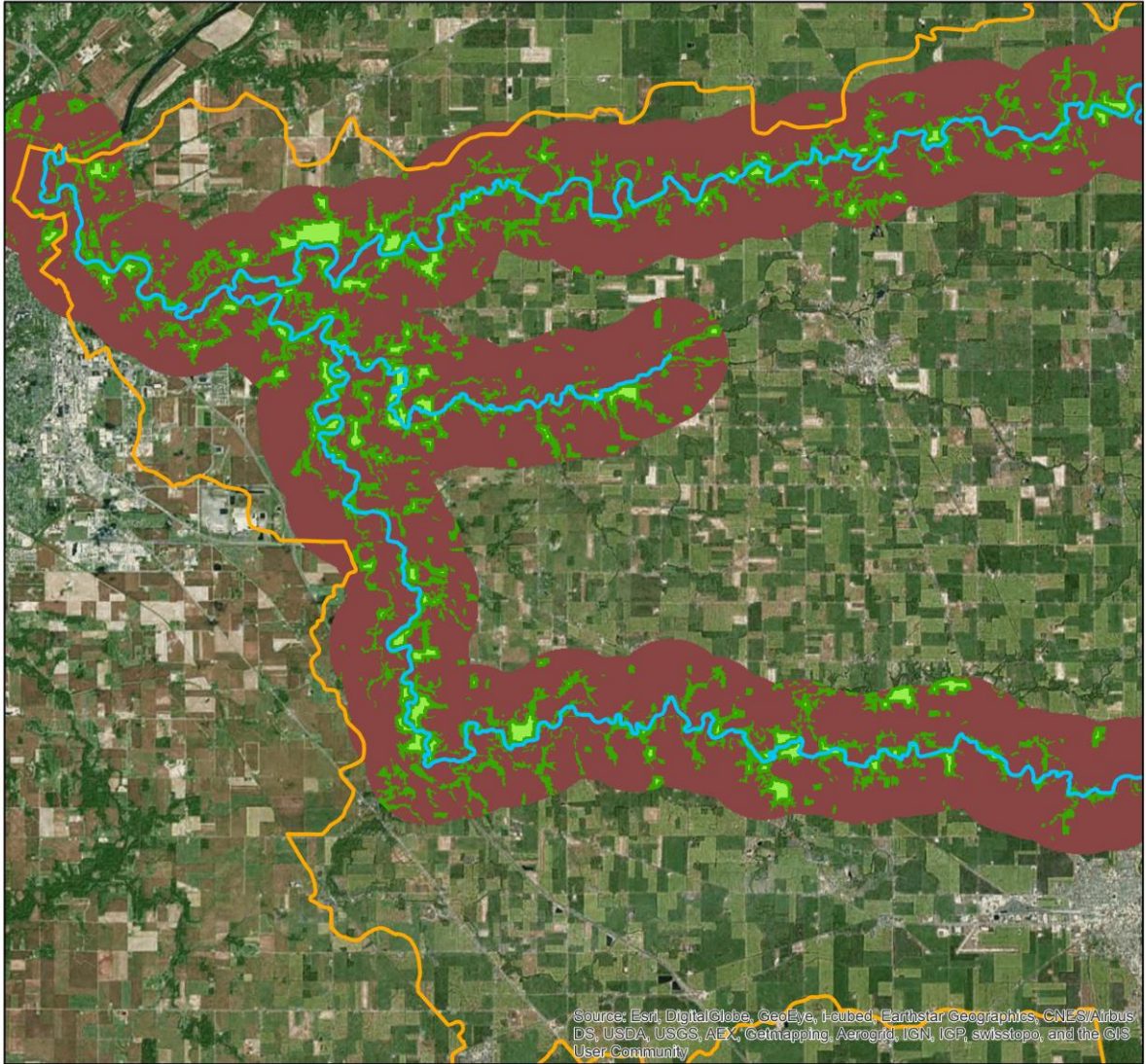
Core Forest Analysis of 1-mile buffer zone along the Wildcat Creek

Results

- 119,948 total acres analyzed
- 20,091 acres Forested (16.8%)
- 1,263 acres Core Forest (1.1%)

- Core Forest represents 6.3% of total Forest area
- Forest ecosystems are fragmented

Category	30mx30m Cell Count	Acres
Core Forest	5,678.00	1,262.76
Forest	90,340.00	20,091.12
Non-forest	449,012.00	99,857.80
Total Acres Analyzed	539,352.00	119,948.92



- Core Forest
- Forest
- Non-Forest
- Wildcat Creek
- Wildcat Watershed

0 1.25 2.5 5 Miles

NAD 1983 UTM Zone 16N. Cartographer: Ryan Schroeder

Source(s): USGS, Indiana Geological Survey, ArcGIS online database.



References

- ▶ Lindsey, A. A., Crankshaw, B. W., Qadir, A. S. (1965). Soil relations and distribution of the vegetation of presettlement Indiana. *Botanical Gazette*, 126(3), 155-163.
- ▶ Hoover, J. P., Brittingham, M. C., & Goodrich, L. J. (1995). Effects of forest patch size on nesting success of wood thrushes. *The Auk*, 112(1), 146-155.
- ▶ Mullendore, N. (2010). Core forest in Montgomery County's Sugar Creek Watershed: Using spatial analysis to set conservation priorities (Unpublished final project). Purdue University, West Lafayette, IN.