Core Forest Analysis of the Wildcat Creek

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

(Lindsey et al., 1965)
This is what the area of the Wildcat Creek’s watershed looks like today.
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)
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

<table>
<thead>
<tr>
<th>Category</th>
<th>30mx30m Cell Count</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Forest</td>
<td>5,678.00</td>
<td>1,262.76</td>
</tr>
<tr>
<td>Forest</td>
<td>90,340.00</td>
<td>20,091.12</td>
</tr>
<tr>
<td>Non-forest</td>
<td>449,012.00</td>
<td>99,857.80</td>
</tr>
<tr>
<td>Total Acres Analyzed</td>
<td>539,352.00</td>
<td>119,948.92</td>
</tr>
</tbody>
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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 Core forest in Montgomery County’s Sugar Creek Watershed: Using spatial analysis to set conservation priorities (Unpublished final project).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.