Forested Watersheds and Urban Forest Patch Connectivity in Bloomington, IN

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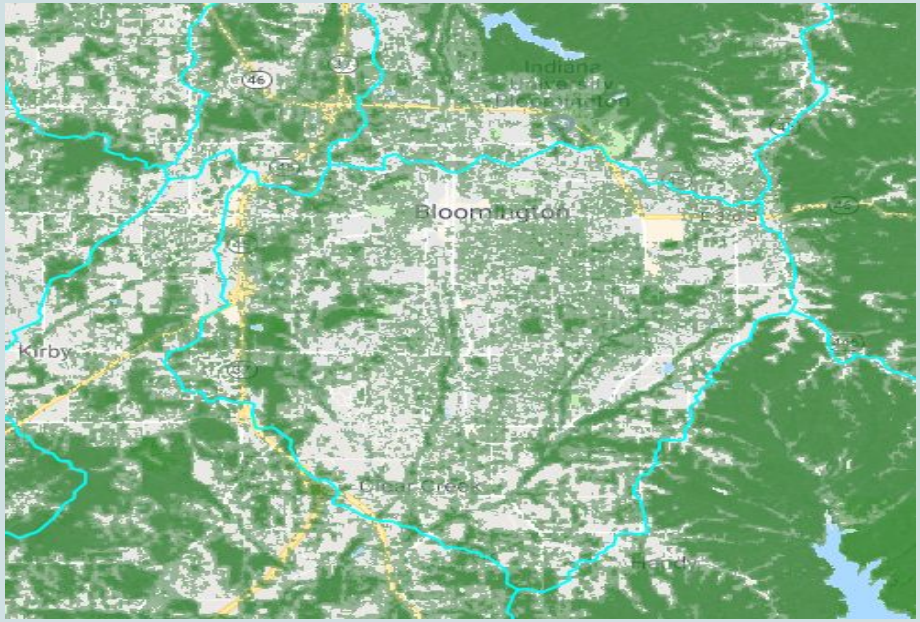
Urban Forest Connectivity

- **New Sustainability Action Plan features an afforestation project connecting two area watersheds**
- **An opportunity to create an Urban Forest Corridor adaptable to local climate change impacts**



- **Use data from i-tree and detailed information from city inventory to assess current canopy cover and tree diversity of project area**
- **Develop resources and goals including a list of recommended tree species and canopy cover recommendations**

Climate Change Impacts and Opportunities in Southern Indiana

Impacts:

- **Temperatures during all seasons are expected to rise between 2° and 7℉ by the end of the century.**
- **Precipitation patterns are expected to change, with heavier winter and spring precipitation and dry periods, including drought, are projected for summer and fall.**
- **Storms will continue to be more frequent and intense, causing flooding and structure damage.**

Brandt et al. 2014. Central Hardwoods Ecosystem Vulnerability Assessment and Synthesis. USDA Forest Service Northern Forest Research Station.

June 2008 Flooding in Downtown Bloomington

Opportunities:

- **We can expand southern plantings into our region.**
- **A connected Urban Forest will reduce impacts from heavy rains, retain water during dry periods, and reduce Urban Heat Island**

Adaptation Actions

Adaptation Tactics

- **Reduce forest fragmentation**
- **Maintain and create habitat corridors through reforestation and restoration**
- **Favor or restore native species expected to be adapted to future conditions and are more storm-resistant**
- **Establish or encourage new mixes of native and non-invasive species**
- **Select tree species to match current and future site conditions**
- **Include species and genotypes with wide moisture and temperature tolerances**

Objectives and Monitoring

Objectives:

- **A healthy corridor of urban forest patches between outlying forests and watersheds**
- **Increase canopy cover of project area from 16% to 25% over 10-year period with further future increases**
- **Diverse plantings including natives to this area and natives to further south in Indiana, Kentucky, Missouri- move away from highly dominant maples**

Monitoring:

- **Annual survival rate of plantings (goal 93% plus, Widney et al.)**
- **Tree diversity of project area**
- **Canopy cover change over time**
- **Partner with Indiana University and Citizens' Science groups to conduct monitoring**