

Assessing and Addressing Indiana Urban Tree Canopy

Urban trees play an important role in our daily lives; they provide many economic, environmental, and social benefits and can have far-reaching effects on a community's quality of life. Trees reduce the urban heat island effect and help to cool the atmosphere, improve water quality, save energy, reduce stormwater flooding and damage, mitigate air pollution, enhance property values, provide wildlife habit, provide educational opportunities, and provide psychological and aesthetic benefits for citizens and visitors.

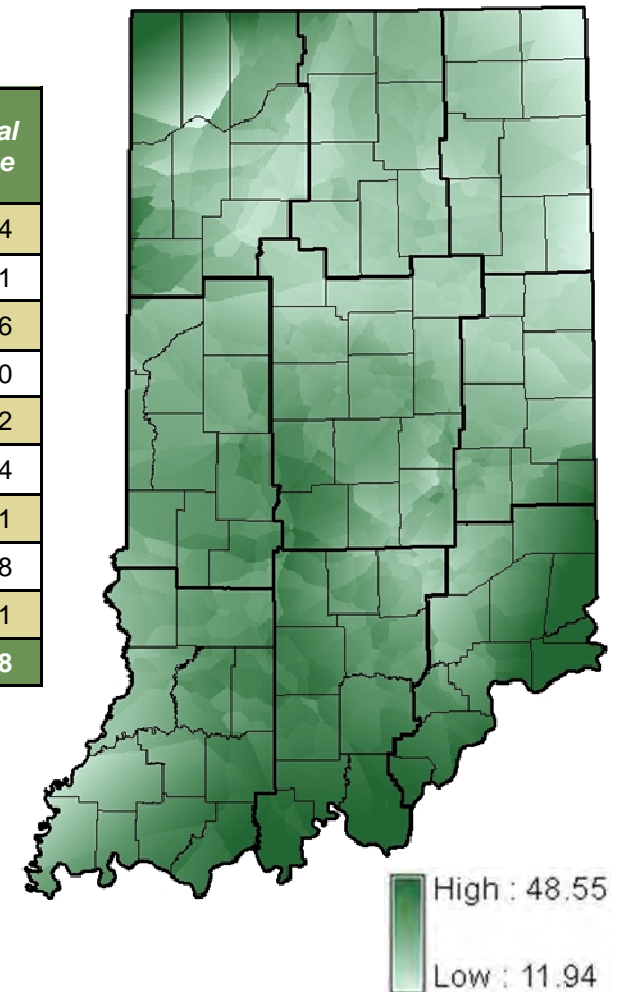
The amount of urban tree canopy (UTC) determines many of these environmental and social benefits. Urban tree canopy is composed of the leaves, stems, and branches of all public and private trees within the urban forest, as viewed from above. With proper care and protection, trees, as part of a community's infrastructure, can actually appreciate over time. Recognizing the importance of UTC, the State of Indiana developed a project, titled *Assessing and Addressing Indiana Tree Canopy*.

The project measured the current UTC of six communities (selected from the Sample Urban Statewide Inventory [SUSI] project) using advanced remote sensing surveys. An additional 102 communities were selected based on population and their UTC was assessed using the U.S. Forest Service's i-Tree Canopy software. The data produced by these two methods were used to determine the average UTC for First, Second, and Third Class Communities. The State of Indiana was divided into nine regions and the results of i-Tree Canopy were used to extrapolate regional UTC averages and a Statewide UTC average.

Average Percent UTC for Urban Areas

Region	Second Class	Third Class	Regional Average
Northwest	25.73	25.46	23.44
Northcentral	25.53	19.61	20.61
Northeast	26.80	20.06	18.06
Centralwest	18.60	25.87	25.30
Central	22.56	25.81	23.32
Centraleast	21.45	21.42	21.54
Southwest	24.80	24.38	26.71
Southcentral	24.75	30.86	30.38
Southeast	29.70	31.19	30.71
Statewide	23.75	24.96	24.58

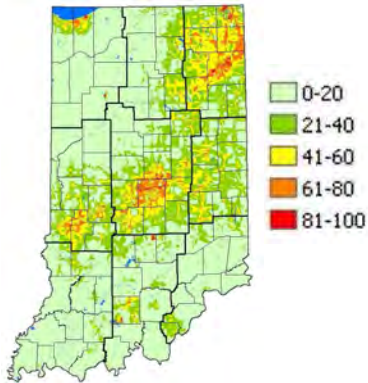
Statewide Average Percent UTC for Urban Areas



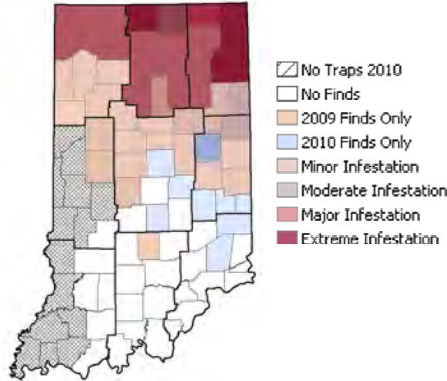


Threats and Environmental Pressures that Influence Indiana UTC

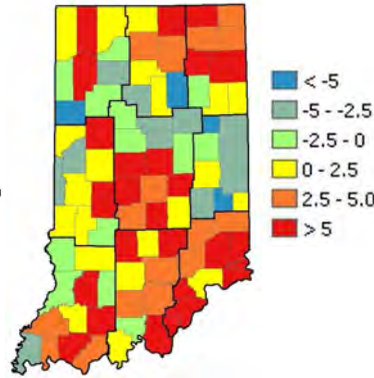
Probability of EAB Presence (percent)



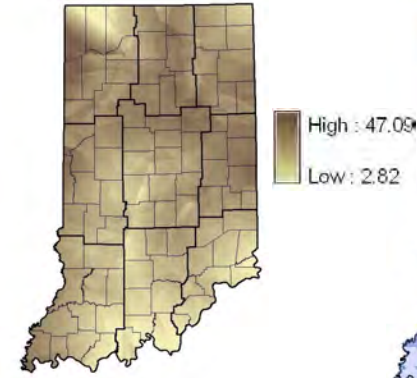
Presence of Gypsy Moth (number)



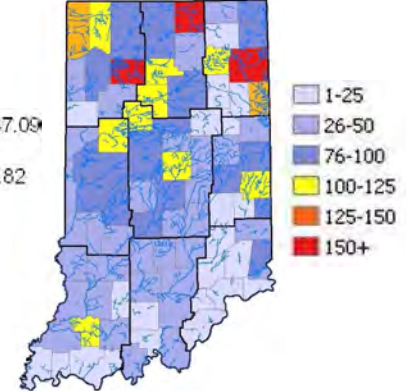
Land Development as Measured by Population Change (percent)



Existing Impervious Land Cover (percent)



Impaired Stream Segments (number)



Establishing a tree canopy goal is essential for communities seeking to improve the quality of life and create a sustainable urban forest. Knowing how much urban tree canopy is present is the first step in this goal-setting process, followed by determining the desired amount of tree canopy that could practically be established.

Within the regions of Indiana, factors that threaten and influence urban tree canopy were evaluated to determine their potential impact on this important natural resource. Threats include the probability of the presence of emerald ash borer, presence of gypsy moth, and land development as measured by the change in population. Environmental pressures analyzed were existing urban tree canopy, existing impervious land cover, and the presence and number of impaired stream segments.

The results of this report can be used by the State and by communities to establish benchmarks against similar communities, set goals for canopy cover improvement, create plans for planting and protecting trees, and monitor threats to the urban forest. Each of the factors that affect urban tree canopy can be considered separately, or combined, to determine the reasonable allocation of technical and financial support to achieve the State's efforts to preserve and increase canopy cover in Indiana.

Threats and Environmental Pressures that Influence UTC

Region	Existing Average UTC (percent)	Probability of EAB Presence (percent)	Presence of Gypsy Moth (number)	Land Development as Measured by Population Change (percent)	Existing Impervious Land Cover (percent)	Impaired Stream Segments (number)
Northwest	23.44%	5.23%	7,343	1.43%	28.26%	860
Northcentral	20.61%	15.97%	17,120	1.31%	30.54%	693
Northeast	18.06%	40.68%	53,201	3.58%	28.16%	696
Centralwest	25.30%	19.26%	5	1.91%	27.04%	586
Central	23.32%	28.28%	280	11.20%	27.38%	828
Centraleast	21.54%	26.52%	446	-2.87%	30.73%	449
Southwest	26.71%	6.82%	0	2.35%	24.27%	428
Southcentral	30.38%	10.66%	4	5.01%	21.27%	317
Southeast	30.71%	7.69%	6	7.54%	22.07%	212

Level of Threat or Environmental Pressures that Influence Indiana UTC



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