

## Trends to Watch

**VALUE:** Goshen's urban forest research showed that the value (including cooling) of our *current* mix of tree species will decrease as a result of climate change. If the climate impacts are moderate, we will lose 25% of the value; if the impacts are harsh, we could lose 55% of current value.

**MAPLES:** In Goshen – The Maple City – our maple trees may be at most risk. The research showed that 80%-90% of the value of our maples alone could be lost under harsh climate conditions. Sugar maples may be especially susceptible to changing climate conditions.

This doesn't mean that maples can't continue to grow here. But it does mean that they will likely become more precious. And it also means that we need to plant other species of trees.

**DIVERSITY:** Goshen's early research suggests that a diversity of species of trees, including from this list, can protect the value of our urban forest. These are some trees to plant now, to keep us cool in the future:

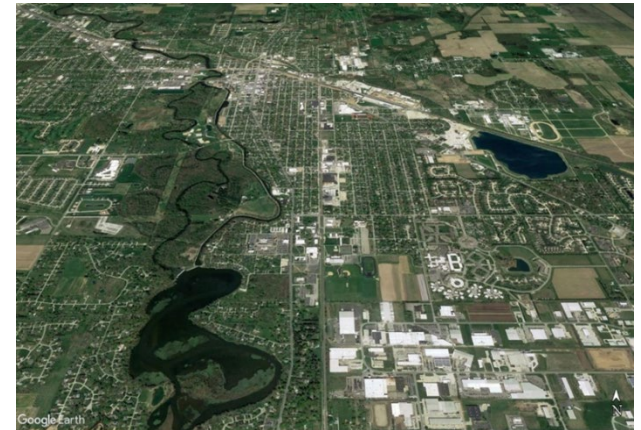
American Beech	<i>Fagus grandifolia</i>
American Hophornbeam	<i>Ostrya virginiana</i>
Black Locust	<i>Robinia pseudoacacia</i>
Hackberry	<i>Celtis occidentalis</i>
Honey Locust (thornless)	<i>Gleditsia triacanthos</i>
Pin Oak	<i>Quercus palustris</i>
Red Bud	<i>Cercis canadensis</i>
Shagbark Hickory	<i>Carya ovata</i>
Sweet Gum	<i>Liquidambar styraciflua</i>

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For more information on Goshen's climate resilient urban forest research, please visit <https://goshenindiana.org/forestry>.



Goshen, Indiana

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Climate Resilient

Urban Forests

for Michiana



## Why the Urban Forest Matters

Trees in the urban landscape keep us cool. They operate efficiently, cleanly, with little cost, and they can cool a large area. The more trees there are, the more area they can cool – for instance a whole yard, or even a whole neighborhood.

Urban areas, like cities and towns, are hot places. All the hard surfaces – such as pavement and rooftops – absorb summer heat, making everything in and around them hotter. Air conditioning can make indoor temperatures comfortable. Trees can shade large outdoor urban spaces, like houses, businesses, and parking lots so that they stay cooler in the first place.

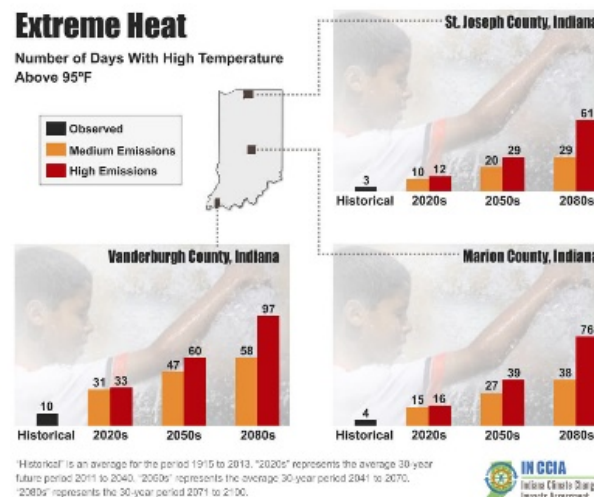
All the trees in a city or town are called the urban forest. Together, they can reduce summer temperatures, and associated costs. In the years and decades ahead, as temperatures climb due to climate change, the urban forest will become more and more valuable to us.

## Climate Change in Northern Indiana

The Indiana Climate Change Impact Assessment from Purdue University (<https://ag.purdue.edu/indianaclimate/>) shows that temperatures in Northern Indiana have been climbing already and will continue to climb. Indiana scientists project that by 2050 we will experience up to 29 days per year warmer than 95 degrees F, with the average hottest day of the year at 105 degrees F.

Planting trees and caring for our existing urban forest will be an important way for us to prepare for increasing heat.

However, rising temperatures and climate change will also affect our trees, sometimes detrimentally.



**“Trees and other plants help cool the environment.”**

– US EPA

*Heat Island Compendium*

<https://www.epa.gov/heatislands/using-trees-and-vegetation-reduce-heat-islands>

## Goshen’s Urban Forest Research

In 2020, the City of Goshen commissioned research into the impacts of climate change on its urban forest. In particular, the City wanted to know whether individual tree species would be harmed or helped by rising temperatures and changes in precipitation.

The research focused on comparing the economic value of existing trees in Goshen (based on size and species), to projections from the US Forest Service (<https://www.fs.fed.us/nrs/atlas/tree/373>).

While the research conducted is very preliminary, it does point towards some trends which are important for us to pay attention to. And it does underscore a very basic principle: diversity is the key to urban forest health and value.

