The premise of the Climate Grove is to simulate (or project) how our Northeast Ohio natural woodlands may transform as climates change by the 22nd Century.

Volunteers including Kent State University students and alumni planted the grove beginning in 2016. In 2019, additional tree species (primarily fruit/nut; persimmon and hickory complex) were added. All species planted are native to the lower 48 states, including Ohio. Some have distributions that are more southern, and do not readily occur in Northeast Ohio.

Some species (those that are common now) may “lose”, and others (currently more southern in distribution) may “win” as climates change, while others may have no change. For this study, the species are split into the categories, “May increase” (win), “No change”, “Mixed Models”, and “May decrease” (lose) in their natural distributions.

Since we are testing these models in a real-world application, we are taking a cross section from each category to perform long-term research, promote reforestation efforts of previously mowed lawn areas, and allow students the opportunity to study some species currently uncommon to northeast Ohio both now and in the next century.

The outcome of this study depends on the amount of actual emissions over time. According to the USDA Forest Service, “Scenario A1B assumes that the current emission trends continue into the future,” and in scenario B1, “emission levels are substantially reduced due to technological advances and conservation efforts.” These two emissions scenarios bracket most of the range of possible future emissions as outlined by the Intergovernmental Panel on Climate Change’s evaluation of emission scenarios, and end the century at roughly double (550 ppm-B1) and triple (970 ppm-A1B) the pre-industrial levels for CO2.

Department of Biological Sciences, University Facilities Management Grounds, Office of University Architect, Kent State University Tree Advisory Board, and student organizations The Herrick Conservatory & Sustainability Club and Biology Club.

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