The Pileus Project at Michigan State University was undertaken by a multi-disciplinary team to investigate the potential impacts of climate variability and change on agriculture and tourism in the Great Lakes region. The agricultural applications are directed primarily at the tart cherry and grain quality industries, and this presentation will focus specifically on the tart cherry industry. All major aspects of the tart cherry industry and the value chain are located within a relatively small geographic area, which provides for a unique opportunity to link expertise in tart cherry production, economics, and climatology. Major objectives are to: 1) cultivate research partnerships with tart cherry growers, processors, and marketers, to establish assessment goals, identify specific needs, and provide expertise; 2) create quantitative models to simulate relationships between climate variability and several aspects of the tart cherry industry; 3) develop a suite of local climate scenarios along with uncertainty estimates, and 4) integrate climate information and output from model simulations with stakeholder input to develop decision support tools to be utilized by the tart cherry industry for risk management. A key contribution of this project is to identify, in appropriate detail, the information needed in decision making that is influenced by climate and