



# Evaluating Carbon Offsets in Michigan State Forests

*Left: Fall Colors Hartwick Pines State Park by Daniel Brown.  
Right: Team members at the 2019 Dow Symposium*

## GLOBAL IMPACT ARTICLE SERIES

**C**arbon sequestration is the process by which carbon dioxide is removed or stored to reduce the effects of climate change. Forests are considered an important factor in storing carbon, and the carbon sink potential or the degree to which carbon dioxide is absorbed through natural processes of Michigan forests can be quite large. The Michigan Department of Natural Resources (DNR) manages four million acres of state forest land in the upper and lower peninsulas. Determining the exact carbon value from Michigan forests depends on a number of variables.

Working with The Nature Conservancy in Michigan, a Dow Sustainability Fellows team explored the possibility of selling the sequestered carbon in the form of carbon credits from improved forest management strategies in the Michigan State Forest system. The team evaluated the practicality and strategy of carbon offsets.

### CARBON OFFSETS

Carbon offset markets create a monetary value related to the process of sequestering carbon or removing carbon from the atmosphere for a long period of time. An offset is an intangible product that represents a portion of carbon that has been sequestered. Markets are economic systems created by the pricing of goods and services.

Markets focusing on carbon offsets provide a flexible solution to reduce carbon dioxide levels. Carbon offset markets allow the market to allocate resources in the most efficient way. Negative externalities arise from the burning of fossil fuels because those companies do not directly pay for their carbon dioxide emissions. Carbon sequestration offsets attempt to correct this externality by incorporating the cost of carbon dioxide emissions into the market. The process of determining the value of sequestered carbon creates an economic incentive for polluting

companies. Carbon markets provide an effective avenue for individuals and organizations that want to reduce their environmental impact.

Carbon registries are bodies that certify carbon offsets. There are no laws that require the use of carbon registries in voluntary markets, but the team found that verification by a reputable registry is necessary to find buyers, who are likely the utility companies, of carbon offsets.

### GATHERING INFORMATION

The team performed an extensive literature review to gain a baseline knowledge of how carbon offset markets work. They also completed ten phone interviews with individuals representing various aspects of the carbon offset industry.



// Carbon markets are very complicated, [including] how they work,” says Kanchan Swaroop, an engineering student and member of the U-M Dow Fellows team.

## RECOMMENDATIONS & NEXT STEPS

### Recommendations to Pursue Carbon Offsets in Michigan:

- Use the American Carbon Registry for offsets because it caters to the U.S. market
- Contract with a consulting service to establish the initial business
- Garner political support for a carbon offset project
- Brand offsets similar to the Pure Michigan campaign to appeal to Midwest corporate buyers
- Account for stakeholder interests
- Use the state revenue to fund sustainability projects in Michigan, such as:
  - Reducing the energy burden of low-income communities
  - Subsidizing more public and mass transit

“The DNR is actually already looking into this [a carbon offset project] and it [the Dow Fellows project] could help them bypass a few of the preliminary steps in figuring out feasibility,” adds Swaroop. “Since The Nature Conservancy operates across the globe, they can use our results as a template for other states could go about this [carbon offsets],” adds Marc Jaruzel, another team member.

## NEXT STEPS

Future work may include working with the DNR to develop a carbon project through modeling, a political assessment, and a business plan. Additionally, the State of Michigan may also consider the best use of the carbon offset revenue, such as performing analyses to determine which options produce the most greenhouse gas reductions per dollar and assisting communities in need.

“Oftentimes, payment for ecosystem services like selling carbon is pushed off to developing countries, and I appreciate us in the western world locally doing the same thing and not making it someone else’s responsibility,” says Cutler.

## PROJECT TEAM

- **Marc Jaruzel**, Gerald R. Ford School of Public Policy
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## CLIENT

- [The Nature Conservancy in Michigan](#)

## READ MORE

- [Full Project Report](#)
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This project addresses the following United Nations Sustainable Development Goals.

## SUSTAINABLE DEVELOPMENT GOALS

