

LOCAL

# Minnesota's forests and land offer big opportunities to cut greenhouse gases

A new report notes nature-based climate solutions need to be in the mix.

By Jennifer Bjorhus (<https://www.startribune.com/jennifer-bjorhus/6370514/>), Greg Stanley (<https://www.startribune.com/greg-stanley/6370510/>) and Byline Override Star Tribune

JANUARY 18, 2021 — 12:01AM

Reforestation and cover cropping should be on the front lines of Minnesota's fight to reduce greenhouse gases and could cut up to one-fifth of the state's heat-trapping emissions.

The climate impacts of how Minnesotans manage and work the land is front and center in "[Nature and Climate Solutions for Minnesota](http://beta.documentcloud.org/documents/20457231-report-nature-and-climate-mn-2021) (<http://beta.documentcloud.org/documents/20457231-report-nature-and-climate-mn-2021>)," a new report out Monday by the Nature Conservancy.

"It's the type of solution that our state needs right now and that we haven't yet capitalized on," said lead author Sachi Graber, climate policy associate at the organization's local chapter.

The 13 practices the study measures underscore the power of simple plant photosynthesis, which sucks carbon out of the atmosphere. A mature tree, for example, absorbs about 48 pounds of carbon dioxide a year.

While greenhouse gases from electricity generation continue to fall as utilities retire and replace coal plants with cleaner energy sources, Minnesota [has failed](http://www.startribune.com/minnesota-falls-further-away-from-greenhouse-gas-reduction-goals/600010709/) (<http://www.startribune.com/minnesota-falls-further-away-from-greenhouse-gas-reduction-goals/600010709/>) to meaningfully cut global warming emissions in nearly every other sector.

Not only have lawmakers not met the reductions they promised in the 2007 Next Generation Energy Act, they've actually allowed emissions to increase in most sectors of the state's economy. Greenhouse gases coming from croplands and livestock have jumped by about 10% since the Legislature vowed to curb emissions. Emissions from industrial centers, homes, businesses and commercial centers have all increased over that time, too.

Greenhouse gases coming from vehicles and transportation trickled down between 2005 and 2010, but have stayed virtually flat since then, according to the [latest data](https://www.pca.state.mn.us/air/greenhouse-gas-emissions-data) (<https://www.pca.state.mn.us/air/greenhouse-gas-emissions-data>) from the Minnesota Pollution Control Agency.

The state now has a Climate Change Subcabinet trying to nail down concrete action steps to meet the emission cuts the Legislature set.



ANTHONY SOUFFLÉ •  
ANTHONY.SOUFFLE@STARTRIBUNE.COM

Conservation Corps crew leader Sarah Curran planted trees on the bits of raised land she could find along a Mississippi River floodplain

## Nature's remedies to reduce greenhouse gas emissions

Natural climate solutions like reforestation and cover cropping could remove an estimated 26 million metric tonnes of greenhouse gas emissions each year in Minnesota.

TOTAL ANNUAL SEQUESTRATION POTENTIAL (MMT/YEAR)\*

|                              |      |
|------------------------------|------|
| Cover cropping               | 6.41 |
| Improved nutrient management | 2.25 |
| Reduced tillage              | 1.83 |
| Reforestation                | 7.99 |
| Improved forest management   | 3.29 |
| Riparian forest buffers      | 0.79 |
| Avoided forest conversion    | 0.62 |
| Wetland restoration          | 1.11 |
| Avoided wetland conversion   | 0.53 |
| Peatland restoration         | 0.35 |
| Avoided peatland conversion  | 0.1  |
| Grassland restoration        | 0.43 |
| Avoided grassland conversion | 0.07 |

\* Million metric tonnes CO<sub>2</sub>e/yr

Chart: Jim Foster, Star Tribune • Source: The Nature Conservancy

The Nature Conservancy estimates the maximum potential of fully implementing the 13 practices it measured would cut 26 million metric tonnes of carbon dioxide and its equivalents out of the air each year, on average. The practices include restoring grasslands, wetlands and peatlands — and avoiding digging them up in the future.

Farm and forest practices, however, clearly top the list for impacts.

The full reduction would require heavy adoption of cover crops and reduced or no tilling. It would also require reductions in the amount of fertilizer applied to decrease nitrogen dioxide emissions, switching from anhydrous ammonia to urea fertilizer and greater precision in applying it, such as varying the rates within fields.

Those results would also require adding more than 5 million acres of forest across the state, including urban areas, a goal Graber acknowledged as very ambitious.

"We think it would be great to see 1 million acres of forest acres in the near future," Graber said. "That would be a total win for us."

The state Department of Natural Resources said it fully supports the practices in the report, but the scale of reforestation outlined would require a huge investment of money and effort.

"That's a whole lot of seedlings," said Doug Tillma, manager of the DNR's strategic planning section.

He also noted that most of the formerly forested land open for reforestation is privately owned, and strong incentive programs would need to be created to entice private landowners to convert their land back to forest.

Graber said the Nature Conservancy has been talking about its findings with the state's Climate Change Subcabinet and testified Thursday at the House Climate and Energy Finance and Policy Committee.

"It comes down to investment," she said. "Cover crops don't seed themselves. Trees don't plant themselves in urban areas."

Pam Kiely, director of regulatory strategy at the Environmental Defense Fund, said such land-based natural solutions have a huge role to play. But there's no silver bullet for climate change.

"It is not a substitute for directly reducing emissions at the sources of pollution," Kiely said. "We absolutely need to reduce the amount of pollution that's going into the atmosphere, particularly in the near term."

Jennifer Bjorhus • 612-673-4683

Greg Stanley • 612-673-4882

---

**Jennifer Bjorhus** is a reporter covering the environment for the Star Tribune. She was a business reporter for much of her career but in recent years focused on criminal justice issues, including police use of force and responses to sexual assault.

✉ [jennifer.bjorhus@startribune.com](mailto:jennifer.bjorhus@startribune.com) 📞 612-673-4683 🐦 [jbjorhus](https://twitter.com/jbjorhus)

**Greg Stanley** is an environmental reporter for the Star Tribune. He has previously covered water issues, development and politics in Florida's Everglades and in northern Illinois.

✉ [greg.stanley@startribune.com](mailto:greg.stanley@startribune.com) 📞 612-673-4882 🐦 [greggstanley](https://twitter.com/greggstanley)