Natural & Working Lands Climate Partnership
Forest-Climate Working Group

The Forest-Climate Working Group is the nation’s only sector-wide coalition working to advance forests as a climate change solution.

We Are Your Missing Half!
Partners to Empower State Leadership.
Climate Change Impacts

Regional Ecosystem Impacts
1) Longer growing season
2) Less snow, more rain
3) Altered soil moisture
4) Potential for summer drought
5) Extreme events
6) Species range shifts
7) Invasive plants
8) Forest pests and diseases

Pathways Include Adaptation—Adaptation is Good “Defense”.
We Are Working on “Missing Pathways” beyond Those Used to Date.
Premise: States Have Many Levers to Incentivize Practices.

- Compliance offsets
- Carbon incentive programs
- Tax incentives
- Conservation grants
- State land management
- Land use regs, including practices
- Climate technical assistance
- Promoting markets for key products
- And much more...
And Many Places to Look for Additional Levers.

- Federal cost-share and grants
- County and municipal funding
- Voluntary offsets
- Corporate social responsibility
- Impact investment
- Federal, native & tribal, local land mgmt
- Climate tech assistance from others
- Market promotion from other entities
- And much more...
Technical Assistance to Date.
**PATHWAY OVERVIEW**

1. Reforestation
2. Agroforestry
   - Riparian buffers
   - Wind breaks
   - Silvopasture
3. Forest carbon management
4. Fire management
5. Urban reforestation
6. Avoided forest conversion
7. Avoided grassland conversion
8. Grassland restoration
9. Cover crops
11. Improved manure mgmt.
12. Tidal wetland restoration

*Photo credit: Flickr/John Westrock*
STATE NATURAL & WORKING LANDS INITIATIVE

Opportunity Assessment: VERMONT

Contributors:
- Adam Daigleault, University of Maine
- Brent Sohngen, Ohio State University
- Tyler Lark and Seth Spawn, University of Wisconsin-Madison (avoided grassland conversion; grassland restoration)
- Christopher Williams, Clark University (avoided deforestation)
- Kevin Kreuger, U.S. Geological Survey (tidal wetland restoration)
- Marc Baranick and Jan Lewandrowski, U.S. Department of Agriculture (manure management)
- Peter Woodbury, Cornell University (cropland nutrient management)
- Matt Hantze, University of New Mexico (fire management)
- The Nature Conservancy: Joe Fargione, Susan Cook-Patton, Bronson Griscom, Peter Ellis, Chris Zgainer, Trisha Gopalakrishna, Steve Bassett, Timm Kreuger, Tim Buider, Rob McDonald
- World Resources Institute: David Gibbs, Nancy Harris, James Mulligan, Gretchen Elton

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The Relative Opportunities Are Different for Every State.
Riparian Buffers: 7,000-29,000 tCO₂e/yr

The low end of this range reflects 10ft forested buffers on all streams in the state, while the high end reflects 30ft buffers. If buffers are reforested through natural regeneration, most of this potential is available at less than $10/tCO₂e, and the vast majority at less than $20/tCO₂e. If buffers must be actively planted, costs are closer to $60/tCO₂e. These costs include the opportunity cost of displaced land uses. This pathway is a subset of the reforestation pathway. The annual rate of carbon gain represents an annualized average over the next 20 years.

Note that although the assessment attempts to account for existing riparian buffers, coarse resolution (30m) precluded fine-grain accounting. Riparian areas immediately adjacent to lakes, reservoirs, and some coastal areas are also excluded from the assessment, likely resulting in an underestimation of reforestable area.
Learning Lab
July 9-11, 2018

UNIVERSITY OF CALIFORNIA
SANTA CRUZ

CLIMATE ALLIANCE
STATES UNITED FOR CLIMATE ACTION
Module 1—State refines its understanding of land sector mitigation potential.

- Unpack Opportunity Assessment with template queries
- Flesh out practices under each pathway
- Identify outstanding questions and how to move forward
Module 2—State evaluates dominant landowner/producer types within pathways, and barriers/opportunities to action.

- Zoom into priority geographies with Carbon Map and other tools; add to the strategy
- Conduct Barriers & Opportunities analysis using template questions
Modules 3-5—States Translate Understanding into State Policy and Finance Strategies, Leveraged by Federal, Local, and Private Actions.

- State policy and finance that matches barriers to action
- Implementing state policy (e.g. landowner/producer engagement)
- Finding leverage that matches state action
Exercise: Broading and Downscaling Practices within Highest Priority Pathways

Description: This exercise will help your state team look beyond the Opportunity Assessment and develop a fuller understanding of the climate mitigation opportunities within this pathway. This will include fleshing out a full “menu” of specific practices that are relevant for your state under this pathway, and identifying important geographies and land types (e.g., specific types of forest, farm, range) for that pathway within the state.

Method: The Team Raters have a list of practices used by The Nature Conservancy (TNC) and World Resources Institute (WRI) to model opportunities in each pathway. The TNC-WRI practices used for the Opportunity Assessment were not intended to be comprehensive, and states may find other practices with mitigation benefits in most pathways.

### Pathway

**Enhanced Forest Carbon Sequestration**

- Enter this practice using the Pathway dropdown area in Module 4.

### Optional:

Estimated Annual Mitigation Mitigation Potential

[ ] Enter here if you have information from the Opportunity Assessment or other analyses that you wish to explore the sector’s potential in your state.

### Practices within Pathway

- Use as many spaces as needed.

<table>
<thead>
<tr>
<th>Practice</th>
<th>Include in the Opportunity Assessment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Extended rotation</td>
<td>Y</td>
</tr>
<tr>
<td>2. Extended hard-sided rotation</td>
<td>Y</td>
</tr>
<tr>
<td>3. Retooling understocked stands</td>
<td>N</td>
</tr>
<tr>
<td>4. Managing herbivory</td>
<td>Y</td>
</tr>
<tr>
<td>5. Reduced competition</td>
<td>Y</td>
</tr>
<tr>
<td>6. Integrated Spruce Management</td>
<td>N</td>
</tr>
<tr>
<td>7. Fertilization</td>
<td>Y</td>
</tr>
<tr>
<td>8. Forest Fuel Carbon</td>
<td>Y</td>
</tr>
<tr>
<td>9. Increasing structural diversity</td>
<td>N</td>
</tr>
<tr>
<td>10. Circulate managed reserves</td>
<td>Y</td>
</tr>
</tbody>
</table>

### Priority Geographies

- Identify at least 2:

  1. [ ] Flatwoods and lowlands, all terrain
  2. [ ]...
Looking Forward.
NWL Climate Partners—Areas of Future Support.

- Stakeholder Engagement
- Data and Analysis
- Pathways and Practices
- Policy and Finance Design
- Convening & Knowledge Sharing
- Demonstration & Delivery
Supporting Climate Alliance NWL Initiative As a Community of Practice…

- Continue to expand engagement from national-level land sector organizations
- Compile national pathway/practice menus and address “missing pathways” that will benefit many states, particularly in agriculture
- Convening national-level Learning Labs on cross-cutting topics
- Assist with national-level data and quantification barriers, particularly around inventory
- Assist in identifying shared interests in federal policy
Helping an Alliance state could include...

- Build and facilitate a state-level land sector working group
- Engage stakeholders by funding and hosting a state-level Learning Lab
- Collaborate with in-state partners on enhanced quantification of key mitigation pathways and practices
- Help expand relevant pathways and practices (e.g. forest soil carbon) with shared research and on-the-ground demonstration
- Help cross-pollinate policy and finance design from other states
- Attract private leverage in the state’s most promising pathways
Questions and Dialogue.