Natural and Working Lands

November 7, 2016
Overview

- Goals
- Carbon/GHG Projections for NWL
- Next Steps
Goals

Manage California’s Natural and Working Lands, including greenspace in urban areas, to be a resilient net sink of carbon in 2030, 2050 and beyond.
Goals

How do we get there?

*Protect - Enhance - Innovate*
Goals: Next Steps

- Expand the scope of lands (and waters) targeted for carbon sequestration

- Define and measure the “business as usual” case for land-based carbon sequestration and GHG emissions
  - Are we on track today?

- Identify and assess land use and management or restoration treatments that are expected to secure or increase carbon sequestration rates
  - What do we need to do to be successful in 2030, 2050?

- Identify and pursue implementation pathways
Draft Goals: Protect

Pursue development and new infrastructure construction patterns that avoid greenfield development and increase protections on natural and working lands to reduce the rate of conversion to intensified uses.

**Success will be driven by land use decisions.**

Draft scenarios modeled:

- Reduce the rate of land conversion to developed use by 50% - 75% by 2050, relative to BAU.

Draft scenarios for modeling purposes only.
Draft Goals: Enhance

Manage and restore ecological and agricultural systems to increase carbon storage and minimize GHG and black carbon emissions in a sustainable manner so that the carbon bank is resilient and grows over time.

- Forests: fuel reduction and prescribed burn treatments; reforestation
- Urban Areas: tree canopy
- Croplands and rangelands: composting, cover crops, and no-till
- Grasslands/rangelands: mountain meadows restoration
- Wetlands: coastal/tidal restoration, Delta managed wetlands restoration
- Oceans: eelgrass beds
<table>
<thead>
<tr>
<th>Land Type</th>
<th>Activity</th>
<th>Low Scenario</th>
<th>High Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forests</td>
<td>fuel reduction and prescribed burn</td>
<td>60,000 acres/year treated through 2030</td>
<td>175,000 acres/year treated through 2030</td>
</tr>
<tr>
<td>Forests</td>
<td>reforestation</td>
<td>Increase rate 15% above BAU by 2030</td>
<td>Increase rate 30% above BAU by 2030</td>
</tr>
<tr>
<td>Urban Forests</td>
<td>urban tree canopy</td>
<td>Increase 20% above current by 2030</td>
<td>Increase 40% above current by 2030</td>
</tr>
<tr>
<td>Croplands</td>
<td>compost, cover crop, no-till</td>
<td>10,000 acres/year treated through 2030</td>
<td>10,000 acres/year treated through 2030</td>
</tr>
<tr>
<td>Rangelands</td>
<td>mountain meadow restoration</td>
<td>Add 10,000 acres by 2030</td>
<td>Add 30,000 acres by 2030</td>
</tr>
<tr>
<td>Rangelands/Grasslands</td>
<td>mountain meadow restoration</td>
<td>Add 10,000 acres by 2030</td>
<td>Add 30,000 acres by 2030</td>
</tr>
<tr>
<td>Wetlands (Delta)</td>
<td>managed wetlands restoration</td>
<td>Add 15,000 acres by 2030</td>
<td>Add 30,000 acres by 2030</td>
</tr>
<tr>
<td>Wetlands (Coastal/Tidal)</td>
<td>restoration</td>
<td>Add 30,000 acres by 2030</td>
<td>Add 60,000 acres by 2030</td>
</tr>
<tr>
<td>Oceans</td>
<td>establish eelgrass beds</td>
<td>Increase extent 5% by 2030</td>
<td>Increase extent 10% by 2030</td>
</tr>
</tbody>
</table>

Draft scenarios for modeling purposes only.
Scope and Scale of Goals

Will these goals get us where we want to be in 2030?

2050?

2100?
Scope and Scale of Goals
Scope and Scale of Goals

What?

Where?

How much?
Projections: Scope of Work

- Contractor: Lawrence Berkeley National Laboratory
- Project Business-as-Usual and “with policy” scenarios for land-based net carbon sequestration through 2050, 2100
- Spatial representation of carbon on landscape for use in modeling and other potential future uses (e.g., regional planning)
Projections: Data & Methods

- Survey and gather State use of data and methods; fill science gaps
- Gather statewide historical data on land use change trends, management and restoration practices
- Extrapolate BAU and with-policy trends to 2050 → Public Workshop
Projections: Dynamic Modeling

- Improve data and methods; gather alternatives from external science contributors
- Incorporate current conditions and observed trends into model
- Diversify management practices and make application spatially explicit, on an ecoregional basis
- Project BAU and with-policy trends to 2050
Projections: Long-term

- Project BAU and with-policy trends to 2100
- Incorporate climate models
- Continue to hone data, methods, modeling
  → ongoing
Projections: Going Forward

4th Assessment
Ongoing research
In-State expertise
External expertise
Federal partners

NWL Inventory
Accounting Frameworks
CO₂e Projections (SB 859)
Next Steps

- Ongoing model development for projections; public workshops
- SB 859
- Identify scalable implementation pathways for protection and enhancement
- Articulate carbon accounting for cross-sector interactions to identify innovation opportunities – biomass, land use, water