# GWSA Implementation Advisory Committee (IAC) Meeting

December 10, 2021

1:00PM – 3:00PM

Massachusetts Global Warming Solutions

# Agenda

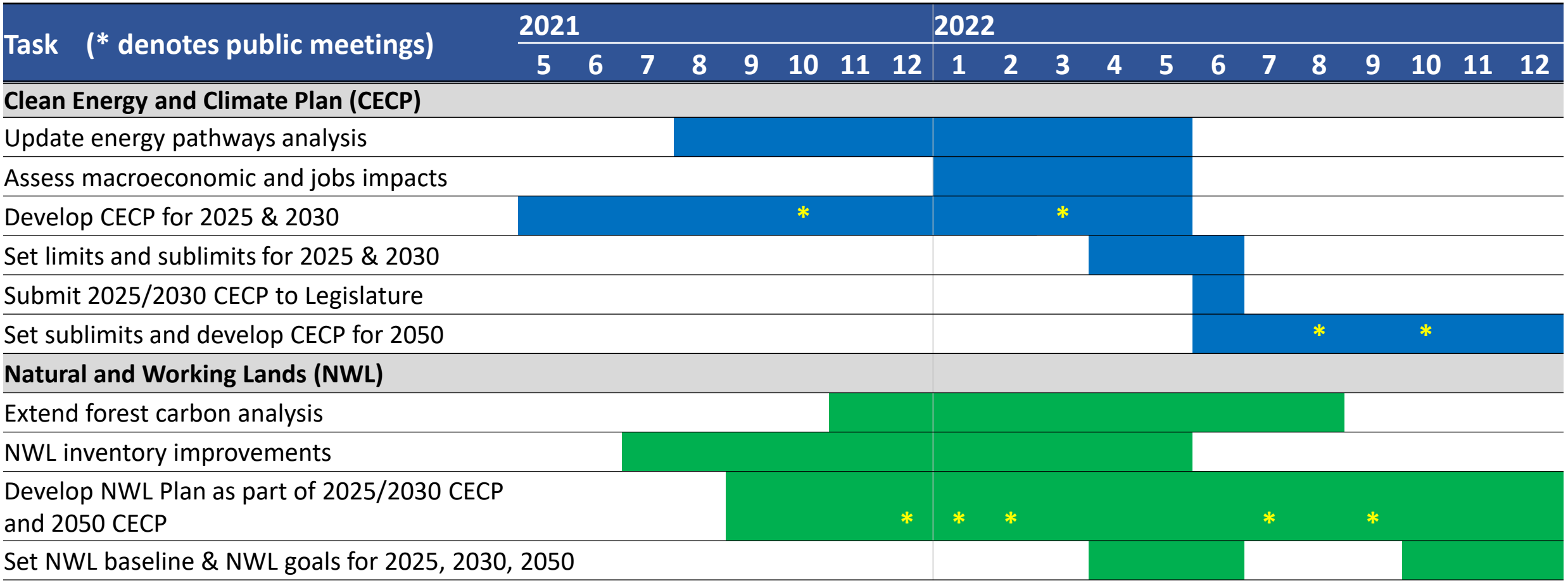
- Review and call to approve the 10/12/2021 IAC meeting minutes
- Brief updates
- 2025/2030 CECP process, timeline, public meetings (reminders)
- Tracking carbon flux on natural and working lands, and implications for achieving net zero emissions in 2050
- IAC Work Groups report out
- Other IAC business
- Public comment

# Updates

# Clean Energy and Climate Plan for 2025 and 2030

# CECP Process & Timeline

- EEA will release the final 2025/2030 CECP by July 1, 2022



# 2025/2030 CECP Public Meetings

- **On Oct. 14 & 15, 2021,** we presented on proposed approach for completing the 2025/2030 CECP and gathered feedback on these questions:
  1. What are your concerns with EEA setting limits on gross emissions while tracking and lowering net emissions through goal setting and policy development?
  2. Do you support EEA setting emissions sublimits to be consistent with the categories already in the statewide greenhouse gas emissions inventory? If not, what are your concerns?
  3. Do you support EEA finalizing the Interim 2030 CECP to be the Clean Energy and Climate Plan for 2025 and 2030? If not, what are your concerns?

Input on these questions can be submitted to gwsa@mass.gov through Dec. 24, 2021.

# 2025/2030 CECP Public Meetings

- **In March 2022,** we will present and gather feedback on:
  1. Proposed emissions limits and sublimits for 2025 and 2030;
  2. Proposed goals for reducing emissions from and increasing carbon sequestration on natural and working lands (NWL)
  3. Proposed policy portfolio that aim to achieve these emission limits, sublimits, and NWL goals.

# Input on Related Initiatives

- Visit www.mass.gov/2030CECP for more information on ways to provide input on key initiatives that feed into the 2025/2030 CECP, including:
  - Clean Heat Commission
  - Specialized Stretch Energy Codes
  - Forest carbon goals and policies
  - Environmental Justice Strategy
  - Environmental Impact Review of Development Projects
  - Cumulative Impact Assessment for Certain Permits and Approvals

Public Processes informing the 2025/2030 CECP

| Topic | Agency/Office | Public Meeting/Comment Period | More Information |
|---|---|---|---|
| Environmental Justice Strategy in accordance with the Environmental Justice Policy (updated June 2021) | Environmental Justice | Early 2022 | www.mass.gov/environmenta<br>Sign up to get Environmental Ju https://www.mass.gov/forms/ updates-notices |
| Cumulative Impact Assessment in review of applications for certain air permits and approvals | Department of Environmental Protection | Usually the third/fourth Tuesday and Wednesday of each month | www.mass.gov/info-details/cu air-quality-permitting |
| Recommendations from the Commission on Clean Heat | Executive Office of Energy and Environmental Affairs | 2022: Date/time to be determined | www.mass.gov/orgs/commissi<br>Sign up for updates on the Commission: www.mass.gov/fc on-the-commission-on-clean-h |
| Energy efficiency plans (Mass Save program) | Department of Energy Resources, Department of Public Utilities | The Energy Efficiency Advisory Council (EEAC) usually have meetings the third/fourth Wednesday of each month, with public comment opportunities | https://www.mass.gov/energy utilities<br>Calendar of EEAC meetings: htt council-meetings-materials/ |

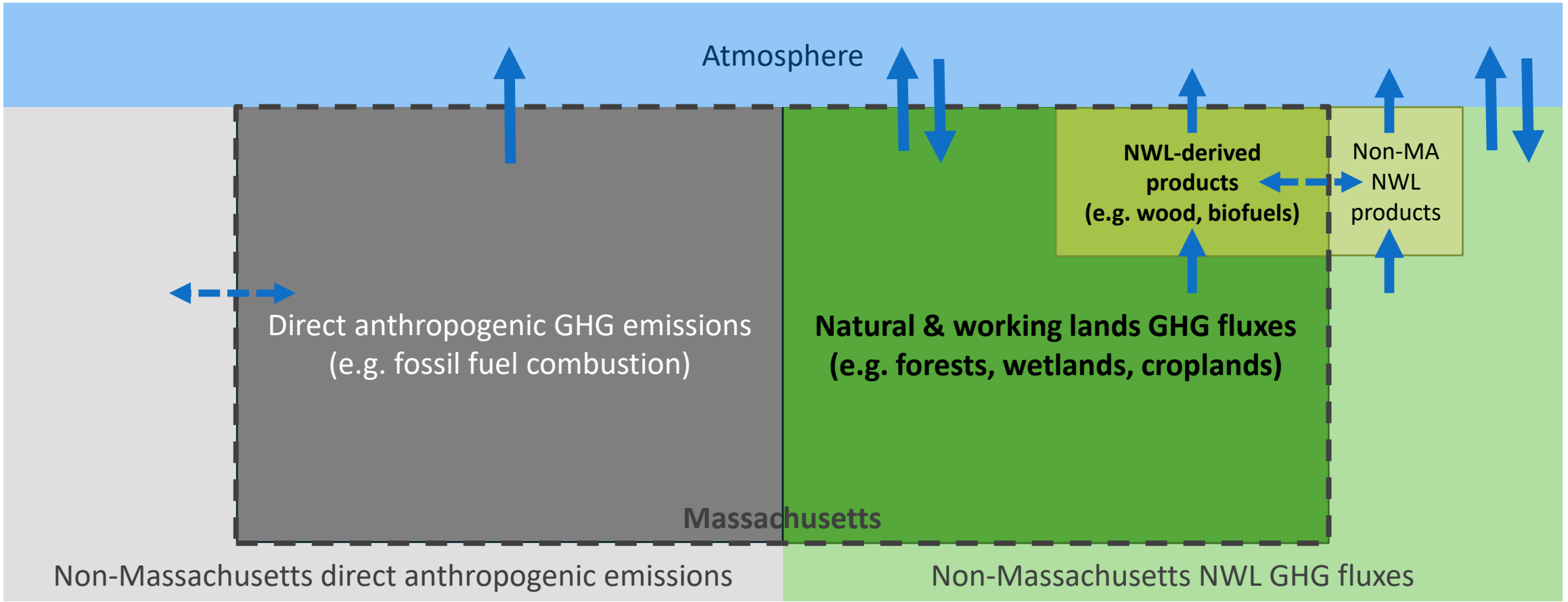
# IAC Contribution to 2025/2030 CECP

- Sector-specific policy discussions in IAC work group meetings
  - Work group recommendations on the Interim 2030 CECP
  - Additional policy considerations for the 2025/2030 CECP
  - Flesh out policy details and sources of funding
- Full IAC meetings include:
  - IAC work groups report out
  - Cross-sectoral topics and issues for the 2025/2030 CECP
  - Interim 2030 CECP implementation progress

# Tracking NWL Carbon Flux

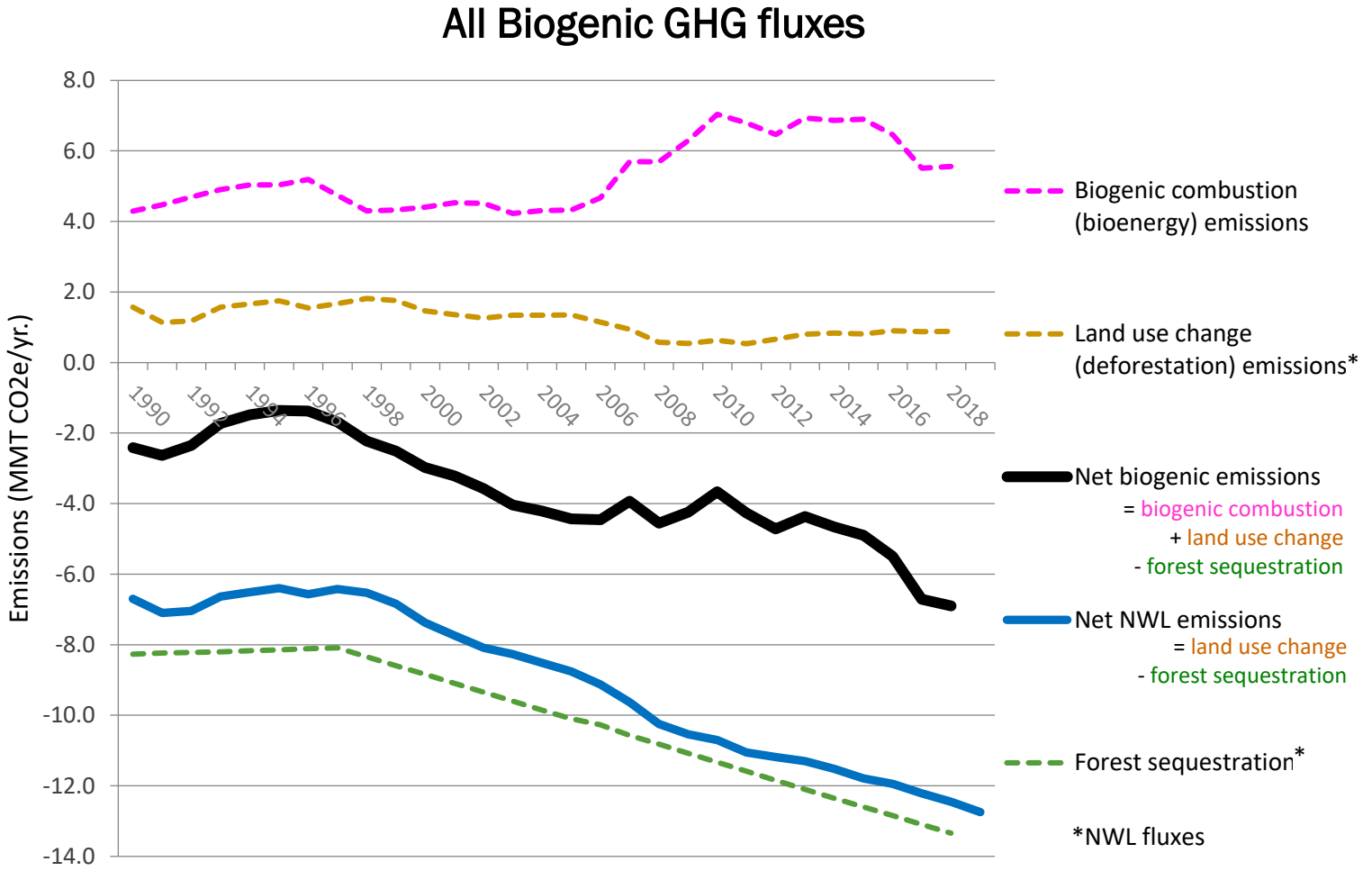
# Greenhouse Gas (GHG) Fluxes

- Net GHG emissions accounting includes tracking the emissions and removal/storage of carbon on natural and working lands (NWL) and NWL-derived products.



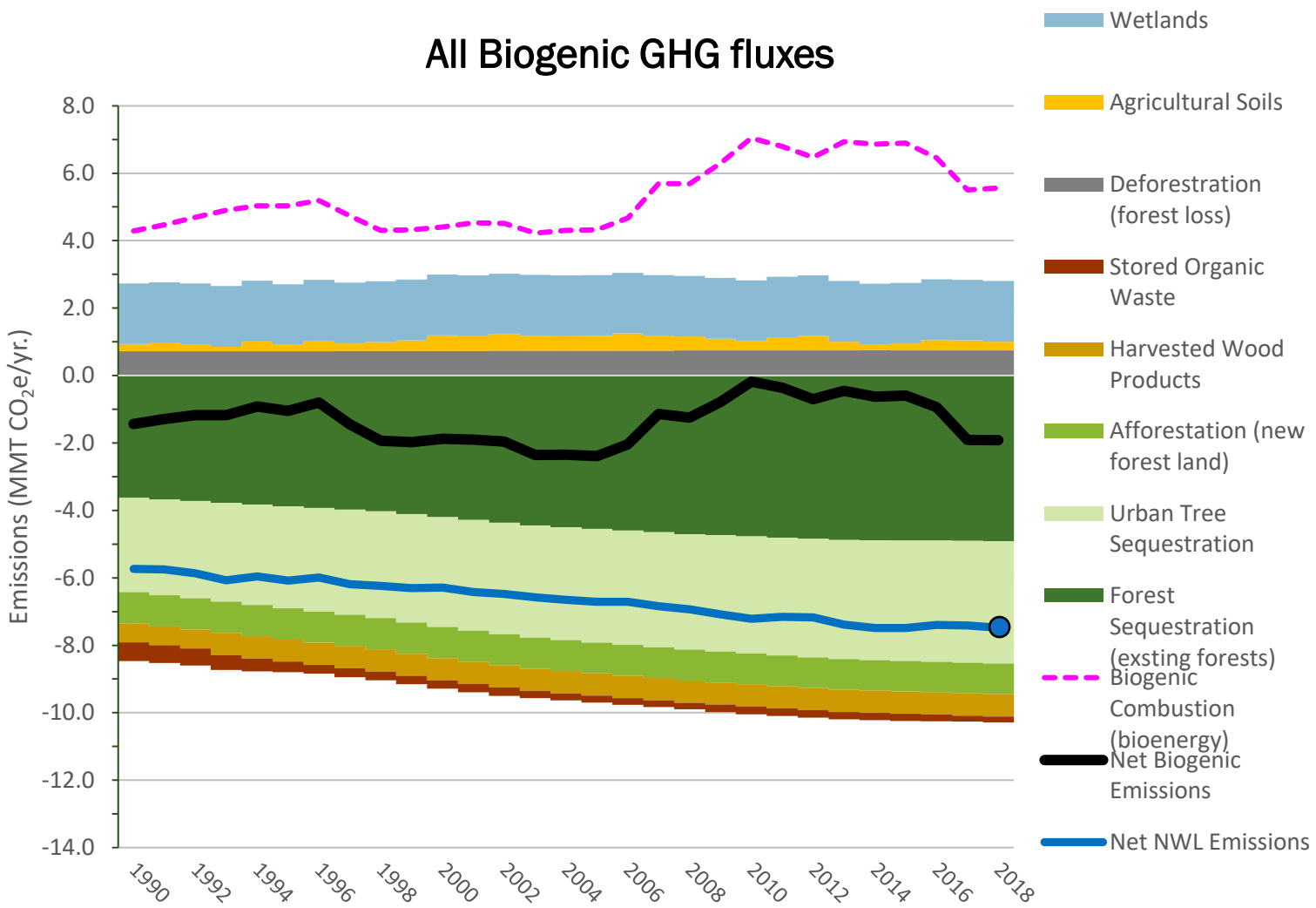
# Current Biogenic GHG Inventory

- The biogenic component of our current GHG inventory currently tracks some NWL fluxes (deforestation, forest sequestration), but was developed ~10 years ago, and must be updated to:
  - Track additional NWL GHG fluxes e.g. wetlands, urban trees/forests, croplands, harvested wood products;
  - Use more standardized, updated data sources and methodology;
  - Incorporate spatially-explicit accounting of land use change.



# Preliminary NWL Inventory Improvement

- Net NWL GHG emissions estimated at -7.4 $MMTCO_2e/yr.$ for 2018 (i.e. net GHG removal)
- NWL carbon removal and storage is smaller than previously estimated (-12.7 $MMTCO_2e/yr.$ for 2018)
- Net overall biogenic emissions (NWL + biogenic combustion) are likely still negative (estimated at -1.9 $MMTCO_2e/yr.$)
- All results preliminary now but magnitude of net carbon sequestration unlikely to change



# Preliminary NWL Inventory Improvement

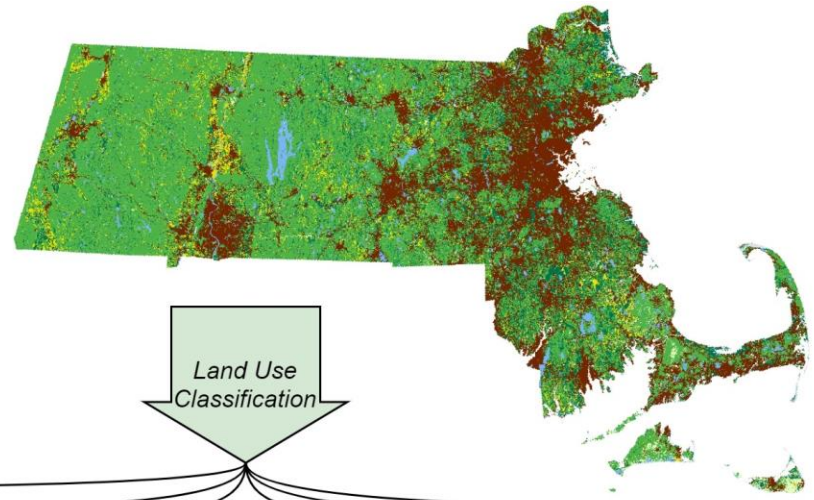
- Forest land is the largest source of GHG removal and storage, and the largest carbon stock, in Massachusetts.
- Loss and gain of forest land (i.e. deforestation and reforestation) are key NWL GHG emission sources and carbon removal/storage, respectively.
- Other significant carbon storage include durable wood products and urban forests and trees.
- Wetlands and croplands can sequester and store carbon, but are currently net GHG emission sources due to past and ongoing land use and management practices.

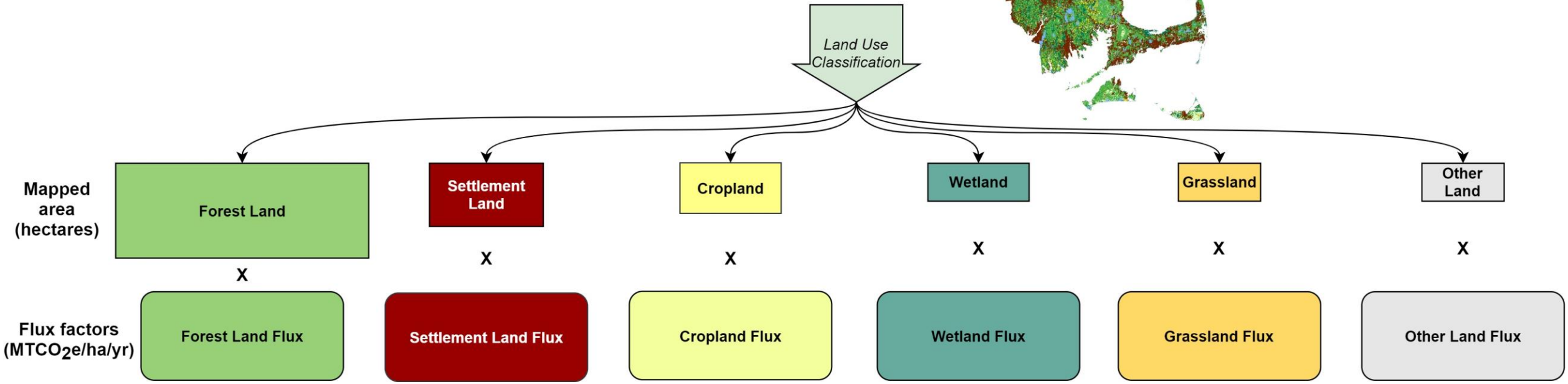
| **Land Class** (i.e. NWL Subsectors) | **Net Emissions** $MMTCO_2e$/yr. in 2018 | **Carbon Stock** $MMTCO_2e$ |
|---|---|---|
| **Forest Land** (live & dead biomass, soils) | -5.7 | 1,020 |
| Forest sequestration | -4.9 | - |
| New forest land | -0.9 | - |
| Forest loss | +0.8 | - |
| Harvested wood products | -0.7 | - |
| **Wetlands** | +1.8 | 700 |
| **Settlement Land** (urban trees, soils, landscape areas) | -3.8 | Unknown |
| **Croplands** (agricultural soils) | +0.3 | 45 |
| **Other Land** (e.g. grasslands, water bodies) | Unknown (likely small) | Unknown |
| **Net NWL Emissions:** | **-7.4** | **Total: > 1,800** |

Emissions estimates from EPA (2020) State Information Tool – LULCF module, MassDEP (2019) *Wetlands Status and Trends* and Blue Carbon Calculator. Stock estimates from Massachusetts' *2050 Decarbonization Roadmap Land Sector Report* and *Healthy Soils Action Plan*.

# General Framework of New NWL Inventory

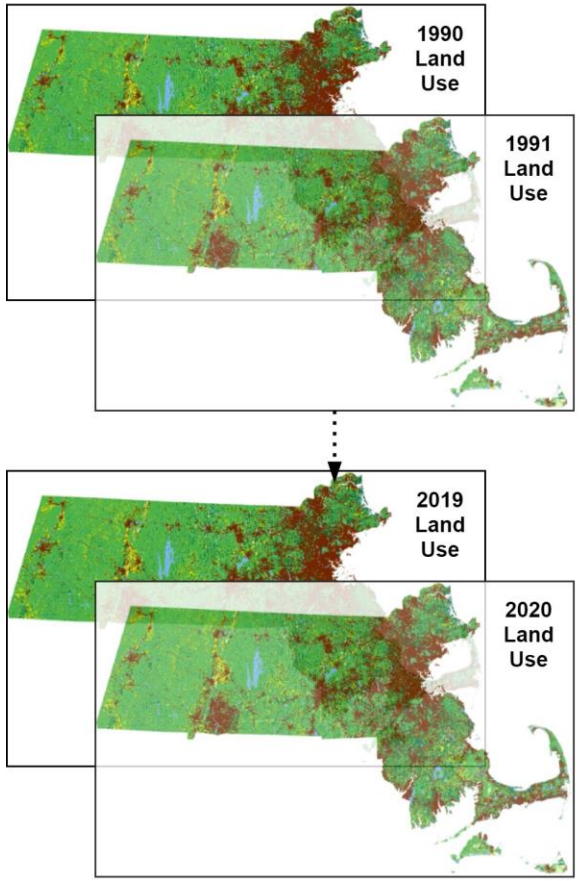
- NWL inventory improvements will include spatially explicit land use accounting to estimate net annual GHG fluxes from major land use classes and subclasses.

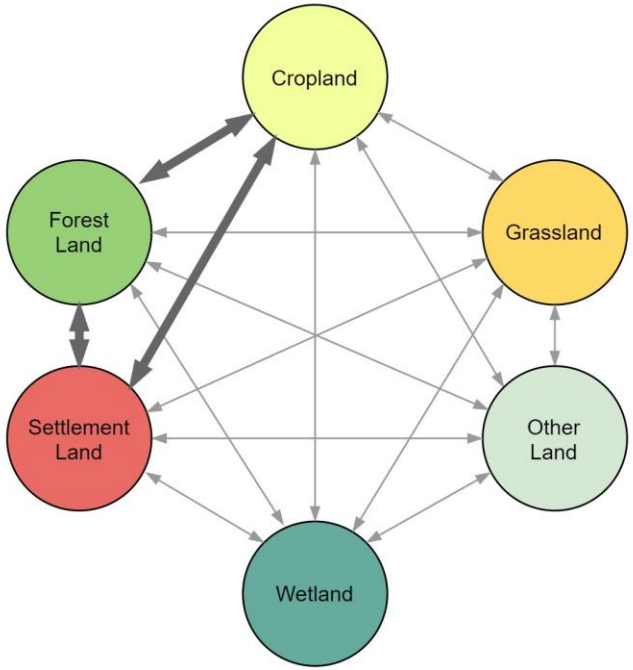


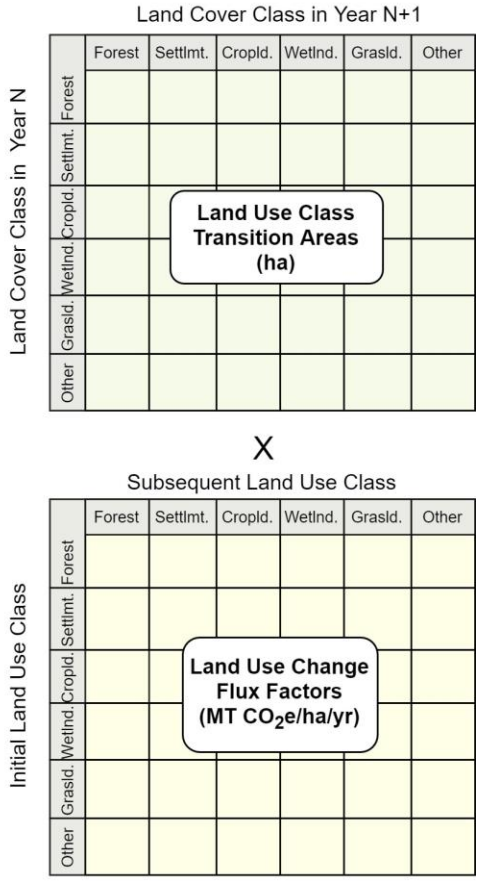


# General Framework of New NWL Inventory

- Net annual NWL emissions estimates will include GHG fluxes from land use change in prior years



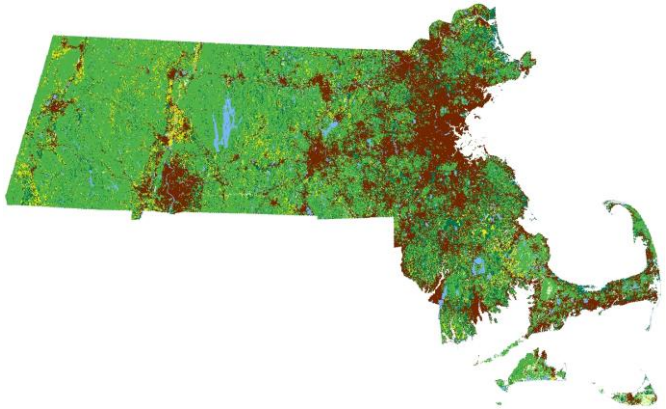



# Tracking NWL GHG Fluxes for Different Purposes

- Improvement to NWL inventory informs development of a net emissions accounting framework

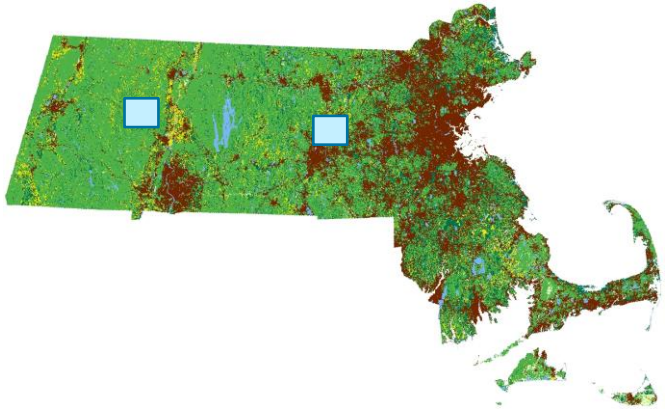
1 **Monitor** real GHG fluxes & C stocks in Massachusetts



*Biophysical inventory*

- Land sector carbon budget – our best approximation of C sources, sinks, and transfers of ecosystems in MA territory
- What the atmosphere "sees"

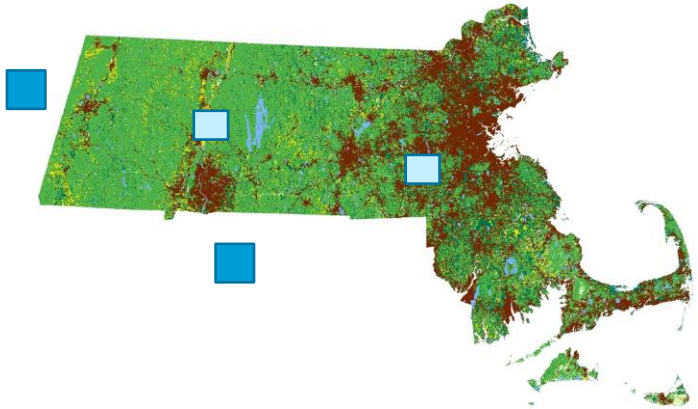
2 Set & Assess NWL GHG **Goals** (for CECPs)



*Assessment inventory*

- Fluxes and stocks used to set targets, measure progress, and evaluate the effects of actions and policies
- Depends on baseline (historical year or period, projected, or fixed level goal)

3 Net Emissions **Compliance** (i.e., net zero in 2050)



*Compliance inventory*

- Considers attribution, responsibility for various sources/sinks, including certain out-of-state activities
- What "counts" as net emissions for statutory compliance
- Defined on TBD net GHG accounting framework

# Implications for Achieving Net Zero Emissions

- Broad strategies for achieving Net Zero by 2050:
  1. Reduce gross emissions
     - Transition energy "end-uses" away from fossil fuels
     - Deploy higher levels of energy efficiency and flexibility
     - Decarbonize the energy supply to become predominantly reliant on renewable electricity generation
  2. Reduce biogenic combustion emissions
  3. Reduce GHG emissions + enhance carbon sequestration from our NWL
     - Protect NWL to protect current carbon storage
     - Manage NWL to enhance and improve resiliency of carbon storage
     - Restore degraded NWL to enhance carbon storage
     - Store carbon in durable wood products
  4. Explore additional carbon sequestration

# IAC Work Group Report Out

# Other IAC Business

# Public Comments