



Legislative Affairs

Six Beacon Street, Suite 1025 • Boston, Massachusetts 02108
tel 617.523.8448 • fax 617.523.4183 • email beaconhill@massaudubon.org

June 1, 2009

Attn: Stacy DeGabriele
Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
One Winter Street 6th Floor
Boston, MA 02108
climate.strategies@state.ma.us

Re: Draft Report: Statewide Greenhouse Gas Emissions Level: 1990 Baseline and 2020 Business as Usual Projection

Dear Ms. DeGabriele;

On behalf of Mass Audubon, we submit the following comments on the Statewide Greenhouse Gas Emissions Level: 1990 Baseline and 2020 Business As Usual Projection (Baseline Report). Mass Audubon recognizes that the disruptive effects of rapid climate warming are a major threat to land conservation and wildlife in the Commonwealth and on the planet. Current climate change expectations also create challenges for our economy, security, and health. The Global Warming Solutions Act (GWSA) sets the stage for Massachusetts to aggressively reduce its GHG emissions and play a leadership role in responding to climate change. Mass Audubon supports the goals of the GWSA and is pleased to see the commonwealth moving forward with implementation. Our comments in this letter focus on *Section 4. Other Methodological Issues, Land Use Conversion* and *Section 5. Methodological Issues with the 2020 BAU Projection* in the Baseline Report. Mass Audubon recommends that the final Baseline Report address the carbon sequestration function of forests.

MASSACHUSETTS FORESTS AND GHGS

According to data from MassGIS, forests cover approximately 61% of Massachusetts' land area. These forests provide numerous ecosystem services, including carbon sequestration, habitat for plants and animals, clean air and water, recreation and tourism, and community character. The ecosystem service value of Massachusetts forests is estimated to be approximately \$2.9 billion annually¹. Forests in the northeastern U.S., including Massachusetts, annually capture approximately two to four tons of carbon per hectare per year. Taken together, the midlatitudinal forests of North America, from the Carolinas into Canada and across to the Midwest, are

¹ Mass Audubon, 2003. *Losing Ground: At What Cost?*

reducing the global increase in carbon by over 10%². Although most Massachusetts forests are relatively mature, many stands continue to increase their net carbon sequestration on an annual basis.

Large blocks of unfragmented forest also are important for climate change adaptation. Large intact habitats are relatively resilient to a variety of stresses, support a wide range of species, and provide opportunities for plants and animals to migrate across the landscape in response to climate induced habitat changes.

FOREST DATA

In the Baseline Report, MassDEP raises concerns about data regarding carbon sequestration and land use conversion, specifically:

- carbon sequestration “emissions factors appropriate for different types of vegetative cover are the subject of much ongoing research, with new factors frequently published.”
- land use conversion “there are few reliable estimates of land use changes on which to base either historic emissions or future projections”

While these and other factors in the Baseline Report are subject to continuing evolution of data and analytical techniques, there is nevertheless reasonably reliable information available today on both carbon sequestration rates and land use conversion. Given the significance of the role of forest carbon sequestration in net carbon fluxes overall in Massachusetts, it is vital that this factor be included in the baseline and future projections. We recommend that the Commonwealth develop estimates using best available data including the following sources and be prepared to update these estimates as more accurate information becomes available.

Using MassGIS land use/land cover data sets (<http://www.mass.gov/mgis/lus.htm>) we generated the following numbers:

Between 1971 – 1985: 156,196 acres of forest converted into another land use type.

Between 1985 – 1999: 195,975 acres of forest converted into another land use type.

Data from our recently released *Losing Ground IV: Beyond the Footprint* further refines these analyses, showing 28,201 acres were converted from forestland to development between 1999 and 2005, and analyses looking further back prior to 1999 are possible. A copy of the report is enclosed and we would be happy to work with you on further analyses.

In addition, The Nature Conservancy, Winrock International and The Sampson’s Group produced the report “Terrestrial Carbon Sequestration in the Northeast: Quantities and Costs” which is very applicable. Harvard Forest in Petersham is doing ground-breaking research tracking carbon sequestration in Massachusetts Forests. The long term studies conducted at Harvard Forest provide some of the best available data on Northeastern forests’ carbon fluxes and related measurements.

² Julian Hadley, Harvard Forest, as stated in *NY Times Magazine*, http://www.nytimes.com/2009/04/19/magazine/19Forest-t.html?_r=2&scp=2&sq=harvard%20forest&st=cse. Harvard Forest publications are available at: <http://harvardforest.fas.harvard.edu/publications.html>.

BIOENERGY AND NET CARBON EMISSIONS

The draft Baseline Report acknowledges that there are complex interactions involved with the use of bioenergy from various sources. Nevertheless, it is important to account for the net carbon emissions associated with bioenergy, particularly if Massachusetts intends to utilize bioenergy as a significant component of its overall energy strategy. The net carbon effects of burning woody biomass depends on many factors including the source of the material, forest management and harvesting methods, whether the burned material is mill waste or whole trees that otherwise would remain standing or in durable forest products, the distance between source and the biomass facility, and the efficiency of the facility.

The most important factor to include is the effect of woody biomass energy on carbon sequestration rates of Massachusetts forests. To the extent existing mature forests might be clearcut (for whatever reason - development, bioenergy, or otherwise), their current high rates of carbon sequestration will be eliminated for long periods of time. If, however, forests are carefully and selectively managed so as to maintain a relatively constant or increasing rate of carbon sequestration, many benefits can accrue. By establishing clear standards for sustainable forest management and linking that to regulation of net carbon emissions from bioenergy Massachusetts could establish a rational system that promotes both GHG emissions reduction and many other important forest functions and values.

CONCLUSION

In conclusion, Mass Audubon recommends that change in forest cover be considered in the crafting of the final baseline numbers, and that the net carbon emissions of bioenergy be included in future projections. Forests play a very important role in carbon capture in Massachusetts, and the policy implications of not recognizing their role are significant.

Thank you for the opportunity to provide these comments.

Sincerely,



E. Heidi Ricci
Senior Policy Analyst



Jennifer Ryan
Legislative Director

Cc: Phil Griffiths, Undersecretary for Environment, EEA
Rick Sullivan, Commissioner, DCR
Phil Guidice, Commissioner, DOER

Protecting the Nature of Massachusetts