

**Virginia Commission on Climate Change
Adaptation and Sequestration Workgroup Meeting Summary, September 10, 2008**

Members present: The Honorable Joseph Bouchard (chair), The Reverend Richard Cizik, The Honorable R. Creigh Deeds, The Honorable Penelope A. Gross, Mr. Michael L. Lipford, Mr. William A. “Skip” Stiles, and The Honorable Frank Wagner.

Members absent: The Honorable John W. Daniel, II, Mr. Dale Gardner, Dr. Roger Mann, Mr. William A. “Skip” Stiles, and the Honorable Frank Wagner.

Delegate Bouchard called the meeting to order at 9 am. There were no comments on the August meeting summary.

Introductions were then made by workgroup members and public participants. Del. Bouchard suggested that a discussion of net sequestration by natural systems should be moved to the first item on the agenda.

Net Sequestration of Greenhouse Gases by Natural Systems

Tom Ballou, representing the Department of Environmental Quality (DEQ), presented the latest findings on natural carbon sequestration. First, DEQ has revised their estimate of forest sequestration to 23 million metric tons (mmt) of carbon dioxide, from 20 mmt carbon dioxide based conversations with the Department of Forestry Virginia is currently losing about 27,300 acres of forest to land conversion per year. At the current rate, Virginia would lose approximately one million acres of forests within the next twenty five years. Mr. Ballou explained that it is difficult to project a future loss rate for forests because it is dependent on so many variables. For this reason, staff did not feel comfortable taking the current sequestration rate and carrying it well into the future. Staff revised its recommendation to include the forest sequestration number in the inventory, but is not recommending it be counted toward net reduction of greenhouse gases because of the uncertainties surrounding it. Because it is critical to recognize the contribution of natural systems to sequestration, workgroup members acknowledged the need for more quantitative information to support the qualitative assessment. Per discussions at our August meeting, Mr. Stiles performed additional research on the sequestration rates for wetlands. Mr. Stiles previously emailed his findings to workgroup staff, stating there is little consensus on wetland sequestration rates in the available literature. Sequestration rates can differ greatly between wetland types, so it is not possible to provide one estimate on rates that can be applied to all of Virginia’s wetlands. Mr. Stiles also mentioned that available wetland inventories (National Wetlands Inventory and the Tidal Marsh Inventory) have not been updated for sometimes as long as twenty years leading to concern over their representation of existing resources. Staff will investigate the status of wetland inventories in Virginia and report back to the workgroup.

Follow-up: Paula Jasinski contacted providers for the two primary sources of wetlands monitoring within Virginia. She found that the Tidal Marsh Inventories (TMI) conducted by the Virginia Institute of Marine Science have not been

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updated since the 1990's, based on data collected in the 1980's. This monitoring program ended in the 1990's due to insufficient funds. U.S. Fish and Wildlife Service's National Wetlands Inventories (NWI) maps are updated periodically, however, updates are not necessarily state-wide. They may consist of small, sub-regions within states. The bulk of NWI data available for Virginia was collected between 1980-1989 (primarily non-tidal). Much of the tidal wetlands data for our state was updated in either the 1990-1999 or 2000-present periods. Both monitoring programs have been valuable in assessing the wetland resources within Virginia. The TMI program provided higher resolution data to more accurately inventory acreage and type of coastal wetlands.

Mr. Lipford recommended that Virginia develop a database of all natural sequestration areas, as there is no good state-wide source for this information. Mr. Lipford also suggested considering a carbon credit system tied to natural sequestration sources. If Virginia adopted a no-net loss policy for natural systems that offer sequestration, a carbon credit system could be used as an incentive. A sequestration database system would include wetlands, forests, farmlands, and possibly other land coverage types. Del. Bouchard recommended doing a pilot project on this to gauge how much time it would take and how much funding would be necessary. Members supported this recommendation and suggested such a database could also allow for parcel ownership status.

Del. Bouchard asked whether temperature driven tree species range shifts would negatively impact Virginia's sequestration rate. This topic needs more research before the workgroup could make a recommendation on it. Staff will inquire with Virginia Department of Forestry to see if they have addressed this question and then report to the workgroup.

Follow-up: Dr. John Scrivani, Department of Forestry, was asked about potential implications of range shifts to sequestration rates. Dr. Scrivani said that one hypothesis is that southern pines will move northward into Virginia. These pines are fast-growing and sequester at a faster rate than many of our current species. However, climate change driven species shifts may also cause mortality among our standing forest stocks that would decrease overall sequestration. There is no definitive answer as to how sequestration rates would vary given range shifts. However, given current climate change predictions, Virginia is not expected to see many current tree species shift out of Virginia as our state does not lay on a critical north/south boundary (with the exception of red spruce in some small, high elevation areas)

Rev. Cizik provided an overview of massive forest die-offs in Alaska and Canada attributed to climate change. Millions of acres have been lost to relatively small increases in temperatures that have allowed forest pests to flourish. Such forest losses have immediate impacts on habitat value and air quality. Losing forests to the north could have implications for mid-Atlantic air quality as well. Rev. Cizik urged the workgroup to consider these implications while developing recommendations. Del. Bouchard suggested

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we find out more about current forestry practices in Virginia to understand what climate change precautions they may already be taking.

Noting that land conservation is essential to many of the developing Adaptation and Sequestration recommendations, workgroup members discussed the need for a dedicated land conservation fund. Members also recognized that responsibility, in implementation and funding, for many of our recommendations would fall on local government. Ms. Gross stressed that we need to keep this in mind as we develop our final report.

Members agreed that Virginia could and should make a recommendation regarding any future cap and trade federal legislation, that carbon credit be provided for sinks. Such legislation would provide incentives to help implement adaptation strategies. As an example, the Warner-Lieberman bill could provide a strong economic incentive for preserving carbon sinks. For its part, Virginia should determine what would qualify as a natural sink for carbon credit.

Draft recommendations: Gaps and Revisions

The working draft table of workgroup recommendations was provided to participants. The list of categories currently includes natural resources, social/human health, and cross-cutting. These may change prior to the final report.

Workgroup members suggested at least one additional recommendation that would support a no-net loss policy recommendation for all sequestration sources, along with the development of a carbon credit incentive program. A revised list of draft recommendations will be distributed to workgroup members for comment this week.

Follow-up: The working draft copy of our recommendations was distributed to workgroup members for comments on September 16th.

Climate Change Planning Targets

During this and past meetings, workgroup members discussed the applicability of a draft Scientific and Technical Advisory Committee (STAC) report to the Chesapeake Bay Program, "Climate Change and the Chesapeake Bay: State-of-the-Science Review and Recommendations" to defining our planning targets. Members supported the use of projected sea level rise, temperature and precipitation change estimates within the report because it has been widely reviewed and is regionally-specific.

During our last meeting, this group identified a sea level planning target of 2 feet by 2100. The STAC report estimates sea levels will rise from 0.7-1.6 m (2.3-5.2 feet) over this period. The STAC report provides an estimate of a 2-6° C (3.6-10.8° F) temperature increase, in both air and water, over the next 100 years. The report states that changes in precipitation patterns are harder to predict with great certainty. The Chesapeake Bay region is expected to see an increase in precipitation amount, intensity, and tropical storms. Given the projected increases in sea level rise and precipitation, it was recommended that storm water and freshwater management be addressed in our final report. Members suggested Virginia's approach to water management should be more comprehensive. Different parts of the state have different concerns regarding water

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management, from farming to wetlands. Current planning efforts generally do not take climate change impacts into account.

Several public comments were provided, including recommendations to look into available literature on sequestration rates by agriculture and soils; and to consider climate change impacts to the Chesapeake Bay as well as terrestrial features.

The meeting was adjourned at 10:30 am.