

Statement of Common Interest and Intent to Work Together on Carbon Cycle Research in North America

Canada, Mexico, and the United States

1. Statement of Common Interest

1.1. The scientific community:

- 1.1.1. Is aware of how human activities (especially fossil fuel use and land use change) have contributed to a rise in the levels of greenhouse gases, namely CO₂, CH₄, and N₂O, in the global atmosphere;
- 1.1.2. Acknowledges the large body of scientific evidence that links the increased concentrations of these greenhouse gases to global climate change;
- 1.1.3. Appreciates the major role that the Earth's oceans and terrestrial ecosystems play in the exchange of these gases with the atmosphere (i.e., the global carbon cycle), including the large potential for ecosystems to take up and store atmospheric carbon; and
- 1.1.4. Recognizes that historically climate change, natural disturbance, and human activities have altered the movement of carbon among atmospheric, terrestrial, and oceanic pools.
- 1.1.5. Appreciates that since the Industrial Revolution, humans became the main force behind that movement of carbon via fossil fuel-based energy systems and new technology, which facilitated a huge increase in the global population and intensified consumer lifestyles.

1.2. Canada, Mexico, and the United States have mutual interests in improving the scientific understanding of carbon cycle science to address issues including, but not restricted to, the following:

- 1.2.1. The temporal and regional distributions and magnitudes of carbon sources, sinks and greenhouse gas fluxes;
 - 1.2.2. Understanding how climate change, natural disturbance, and socioeconomic and institutional drivers (e.g., changes in lifestyles, demographic dynamics) affect the pools and fluxes of the carbon cycle, and ultimately the concentrations of CO₂, CO, CH₄ and N₂O in the atmosphere;
 - 1.2.3. The complex interrelationships between the carbon cycle and the climate system in order to account for past variability in atmospheric CO₂ and to predict future climate and carbon cycle fluxes;
 - 1.2.4. Developing management strategies and new technologies to reduce greenhouse gas emissions and/or enhance carbon stocks; and
 - 1.2.5. Evaluating environmental, economic and social costs and benefits of potential management strategies, new technologies and their implementation.
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- 1.3. To address these scientific questions, an optimal research strategy would include, but not be limited to:
 - 1.3.1. Integrating studies of carbon stock changes and flux, measurements associated with various ecosystems, management strategies, and new technologies with studies of atmospheric composition and remote sensing at regional and continental scales;
 - 1.3.2. Belowground carbon stocks and fluxes and measurement technologies, including the problem of scale, especially how to scale-up from point measurements;
 - 1.3.3. Focusing on a continental scale in an attempt to account for all major sources and sinks of CO₂, CH₄, and N₂O, terrestrial and oceanic, and thereby understand and quantify the carbon budget for the North American continent;
 - 1.3.4. Securing consistent, high-quality regional and continental data sets to permit the scientific community to conduct rigorous analyses of carbon dynamics at larger spatial scales;
 - 1.3.5. Developing a level of confidence in our understanding of the key factors controlling biospheric sources and sinks for CO₂, CH₄, and N₂O to be able to predict the dynamic changes in the future sources and sinks of greenhouse gases under a variety of scenarios;
 - 1.3.6. Understanding how different mixes of related causes and underlying drivers (social, economic, political, physical and biological), operating at diverse scales, interact to produce emissions trajectories by the three countries and their regions;
 - 1.3.7. Evaluating cost-effective management strategies and new technologies that could be implemented to reduce biospheric emissions or enhance carbon sinks, including the exploration of both social, economic and institutional constraints to and opportunities for the implementation of those strategies and technologies.
 - 1.3.8. Identifying social and economic constraints and needs for capacity building to attack the problems of how to reduce emissions

2. Statement of Intent to Work Together

- 2.1. We agree to work together on carbon cycle research by:
 - 2.1.1. Establishing a **Government Coordination Working Group** on carbon cycle research that is co-chaired by a representative selected from each country. The U.S. Carbon Cycle Interagency Working Group will designate the representatives from the U.S.; a Mexican working group will designate representatives from Mexico; and a Canadian Working Group will designate the representatives from Canada.
 - 2.1.2. Establishing a joint **Science Steering Committee** for joint research on carbon cycle science for the North American continent and adjacent ocean basins to provide guidance and advice on research priorities and activities within joint and complementary research initiatives;
 - 2.1.3. Organizing a joint workshop to identify priority areas for cooperative research activities and research areas where we have common interests and complementary expertise;
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- 2.1.4. Identifying the scope of disciplines and research expertise needed to address common research questions and ensuring that the major organizations within each country are given an opportunity to participate;
 - 2.1.5. Identifying existing research groups and projects within each and between countries and encouraging better scientific integration among them. Where appropriate, agencies and individuals from each country will work with their respective researchers to encourage them to develop standardized measurement protocols and share results and insights;
 - 2.1.6. Developing international projects that could form the focus for new initiatives that could be considered for cooperative funding by appropriate agencies in the respective countries; and
 - 2.1.7. Exploring the opportunity to make this research an important element in cooperative agreements between countries (e.g., a Bilateral Agreement on Climate Change), thereby raising its profile and recognizing the importance of this research at high levels within each country.
- 2.2. It is understood that each country will work within its government and institutions to secure the support needed to participate in this venture, both at the organizational and planning stages, and to facilitate access to funds to carry out the relevant research activities.

Approved as a working document on June 13, 2006 by representatives of Canadian, Mexican, and U.S. Government agencies involved in carbon cycle research.
