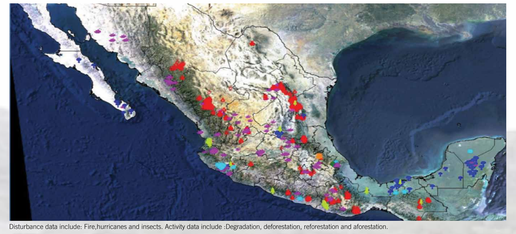
North American Collaboration on Ecosystem Carbon Sources and Storage



Disturbance data include: Fire,hurricanes and insects. Activity data include :Degradation, deforestation, reforestation and aforestation.

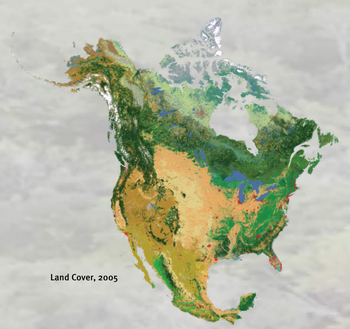
Goals

1. Develop trilaterally agreed methods and products to monitor continental land cover change and model landscape-level ecosystem carbon changes to improve North America's capacity to store carbon and reduce GHG emissions
2. Model carbon dynamics in Mexican forest ecosystems for the assessment of long-term carbon dynamics in Mexico and North America
3. Contribute to the development of a national-scale carbon accounting system for Mexico
4. Provide recommendations for a North American modeling and analysis approach to support REDD+ in Mexico

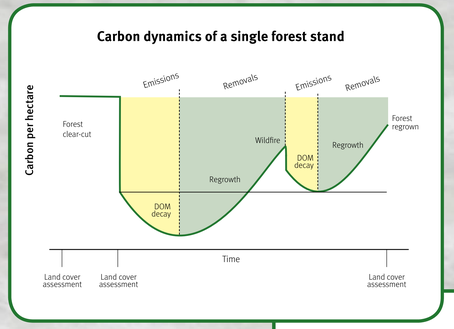
Methodology and Proof of Concept

1. Land Cover and Land Cover Change Products

- Continental baseline map 2005 using MODIS imagery
- 19 land cover classes (level II)
- 5 year change product (2005-2010)
- Annual land cover
- Testing of 30m scale (Landsat)

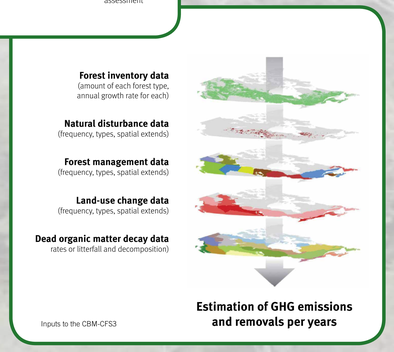


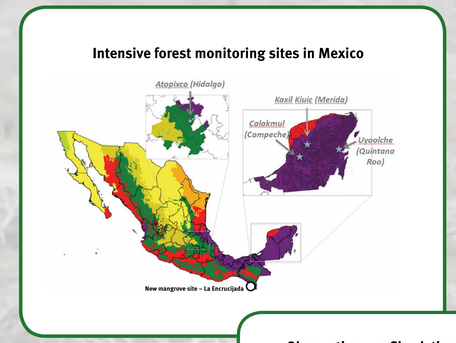
Land Cover, 2005

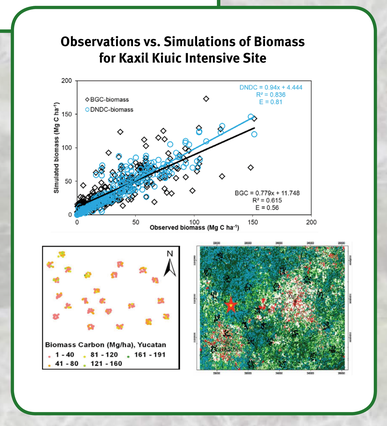


2. Application of the Canadian Forest Service Carbon Budget Model (CBM-CFS3) in Mexico

- Research on application of CBM-CFS3 model for spatially-explicit (e.g. REDD+ projects) and spatially-referenced (regional to national scale) projects
- Estimations of past and possible future GHG emissions and removals from land use, land use change, and forestry in Mexico
- Evaluation of model for Mexican Tier 3 reporting and early action REDD+ estimations of GHG emissions and removals over time

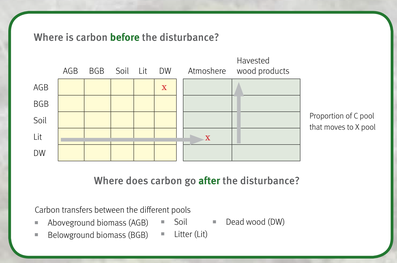






3. Modeling Forest Carbon Dynamics in Several Intensive Sites in Mexico

- Development of forest growth and mortality estimates from field observations and modeling of forest dynamics
- Benchmark estimates and maps of carbon stocks and fluxes and ground-based estimates of changes in carbon stocks in response to management, disturbances, and climate
- Evaluation of different process-based models, including InTEC , Biome-BGC and Forest-DNDC



4. Impact of Different Disturbances and Activities on Carbon Pools

- Analysis of how different disturbance and forest activity data impact different events that shape the forest by altering their composition, structure and function
- Analysis of how these disturbances and activities impact carbon pools

Outcomes and Products

- Contribution to the reduction of GHG emissions associated with forest degradation and land cover change by generating and improving access to better information on land cover change and carbon accounting.
- Recommendations for a North American modeling and analysis approach to support REDD+ for Mexico
- Proof of concept for a national-scale carbon accounting system for Mexico
- Publicly available databases
- Comprehensive set of forest growth curves for Mexico
- Comparison and evaluation of land cover change products at different resolutions
- Improved institutional capacity to monitor carbon stocks in Mexico
- Training of scientists and students

Partners

Natural Resources Canada (Canadian Forest Service and Canada (CFS) Centre for Remote Sensing (CCRS), *Instituto Nacional de Estadística y Geografía* (INEGI), *Comisión Nacional Forestal* (Conafor), *Comisión Nacional para el Conocimiento y Uso de la Biodiversidad* (Conabio), United States Forest Service (USFS), United States Geological Survey (USGS), University of British Columbia and University of Maryland

For more information contact **Karen Richardson**, Program Manager, Terrestrial and Marine Ecosystems, Commission for Environmental Cooperation at **514-350-4326** or at **krichardson@cec.org** or visit the webpage **www.cec.org/carbon**.

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