

# Project Accomplishments 2013–2014

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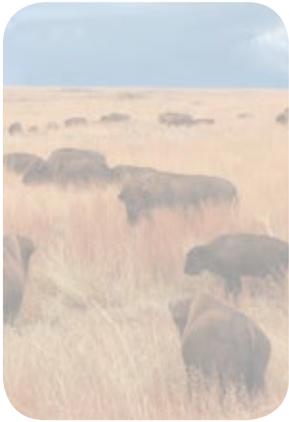
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## Introduction

In June 2015, the Commission for Environmental Cooperation (CEC) completed the second set of projects under the CEC's Strategic Plan for 2010–2015. Complementing and building upon the work carried out in 2011–2012, these projects were part of the five-year initiatives set by the CEC Council—federal environment ministers from Canada, Mexico and the United States—and focused on three key environmental priorities:

- [Healthy Communities and Ecosystems](#)
- [Climate Change—Low-Carbon Economy](#)
- [Greening the Economy in North America](#)

Officials and experts from the three countries collaborated on these projects to achieve tangible results in key environmental areas such as addressing climate change, improving air quality, greening transportation, protecting key ecosystems and addressing waste in trade in North America. The results of these projects also reflect CEC's commitment to engaging with the public, communities, and interested partners in all three countries.

The accomplishments of the sixteen projects implemented in 2013–2014 are summarized in this booklet. Detailed project summaries and budgets are available in the CEC's Operational Plan 2013–2014. You can also consult the CEC's Operational Plan 2011–2012, as well as its Strategic Plan for 2010–2015, available on our website: [www.cec.org](http://www.cec.org).

CEC projects are undertaken with the financial support of the Government of Canada, through the federal Department of Environment and Climate Change; the Government of the United States of Mexico, through the *Secretaría de Medio Ambiente y Recursos Naturales*; and the Government of the United States of America, through the Environmental Protection Agency.

For more information about any of these projects, contact: **Karen Richardson**, CEC Director of Programs, at [krichardson@cec.org](mailto:krichardson@cec.org), **514 350-4326**.





Blue carbon habitats mapped and assessed to better determine their capacity to remove greenhouse gases

## North America's Blue Carbon: Assessing the Role of Coastal Habitats in the Continent's Carbon Budget

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This first CEC project on blue carbon advances the conservation and restoration of coastal blue carbon habitats by improving data, mapping and approaches necessary to fill gaps in our knowledge of carbon dynamics in salt marsh, mangrove, and seagrass ecosystems.

### Key Accomplishments

- Establishment of a North American blue carbon community of practice to increase collaboration and knowledge exchange between blue carbon experts in the three countries
- A joint dataset on blue carbon habitats, including maps, carbon accounts, and sequestration and emissions potential, as well as documented methods, data and results. Information will be displayed through the North American Environmental Atlas
- First step completed in developing an internationally recognized methodology for including blue carbon conservation projects in voluntary carbon markets
- New information and methods from several scientific studies that filled gaps in our knowledge of the carbon dynamics in blue carbon habitats, including both healthy and disturbed sites

### Products

- First set of blue carbon maps for North America, showing 47,776 km<sup>2</sup> of blue carbon habitat mapped to date
- One trilateral blue carbon community of practice workshop, and one workshop with blue carbon, forest carbon and land cover experts
- *Greenhouse Gas Offset Methodology Criteria for Tidal Wetland Conservation* and recommendations
- Five coastal blue carbon research projects:
  - a. Response of marsh and coastal forest carbon accumulation rates to sea-level rise
  - b. Blue carbon in northern marshes: assessing processes, stocks and rates in undisturbed, drained and restored marshes
  - c. Ecosystem carbon stocks of mangroves and salt marshes from the largest wetland in Mesoamerica: the Pantanos de Centla, Mexico
  - d. Seagrass carbon stocks across a range of environmental conditions and seagrass bed types to determine the amount of carbon deposited
  - e. Spatial variability in carbon storage within and across marshes of the National Estuarine Research Reserve System (NERRS), USA: a comparison of methodologies and coastal regions

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### Partners, Stakeholders and Beneficiaries

North American Blue Carbon Steering Committee, Parks Canada; Natural Resources Canada—Canadian Forest Service; National Oceanic and Atmospheric Administration; US Environmental Protection Agency; US Geological Survey; US Forest Service; Restore America's Estuaries; *Comisión Nacional de Áreas Naturales Protegidas*; *Comisión Nacional Forestal*; *Comisión Nacional para el Conocimiento y Uso de la Biodiversidad*; *Instituto Nacional de Estadística y Geografía*.

A close-up photograph of a car's undercarriage, focusing on the exhaust system. The exhaust pipe is dark and cylindrical, extending from the engine area towards the rear. The surrounding components, including the suspension and chassis, are dark and metallic. The background is slightly blurred, showing a light-colored surface, possibly a road or parking lot.

## Government agencies can now better compare estimates of black carbon emissions

### North American Black Carbon Emissions Estimation Guidelines

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Building on past efforts to improve the comparability of greenhouse gas estimates and methodologies, this project focused on developing guidelines to improve the accuracy of estimates of black carbon and co-pollutant emissions from key sources in the three countries to support cross-border comparisons and mitigation assessments. The guidelines also provide recommendations for further research to align the capabilities of the three countries, with a special focus on Mexico.

### **Key Accomplishments**

- A guidance document for estimating black carbon emissions from key sources, providing comparable methodologies and best practices for use across North America, at both national and subnational levels
- Partnership and collaboration with government experts and other international environmental research and academic institutions in the development of the guidance document

### **Products**

- *North American Black Carbon Emissions Estimation Guidelines: Methods for Estimating Black Carbon Emissions*
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### **Partners, Stakeholders and Beneficiaries**

Partners include US Environmental Protection Agency, *Instituto Nacional de Ecología y Cambio Climático*, Environment Canada, Global Emissions Initiative (GEIA) Network; North American and international climate change experts. Project stakeholders and beneficiaries include air emissions and policy experts at the national and subnational levels, academia, industry, and other organizations that address black carbon emissions and other short-lived climate forcers.



Tools are now available to better manage forests for greenhouse gas mitigation

## **Integrated Modeling and Assessment of North American Forest Carbon Dynamics and Climate Change Mitigation Options**

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This project, initiated by the three national forest services of North America, contributed to the development of science-based decision-support models that quantify the impacts of alternative forest and land management options on the carbon balance of North American forests. It also supported the development of land cover and land-cover change products at the continental scale.

### Key Accomplishments

- Advancement of methods for monitoring and reporting forest sector greenhouse gas emissions and removal estimates
- Development of a set of continental land-cover change products
- First study to show that increasing the spatial resolution of remote sensing products improves the ability to detect changes in tropical regions where small plots of land undergo change

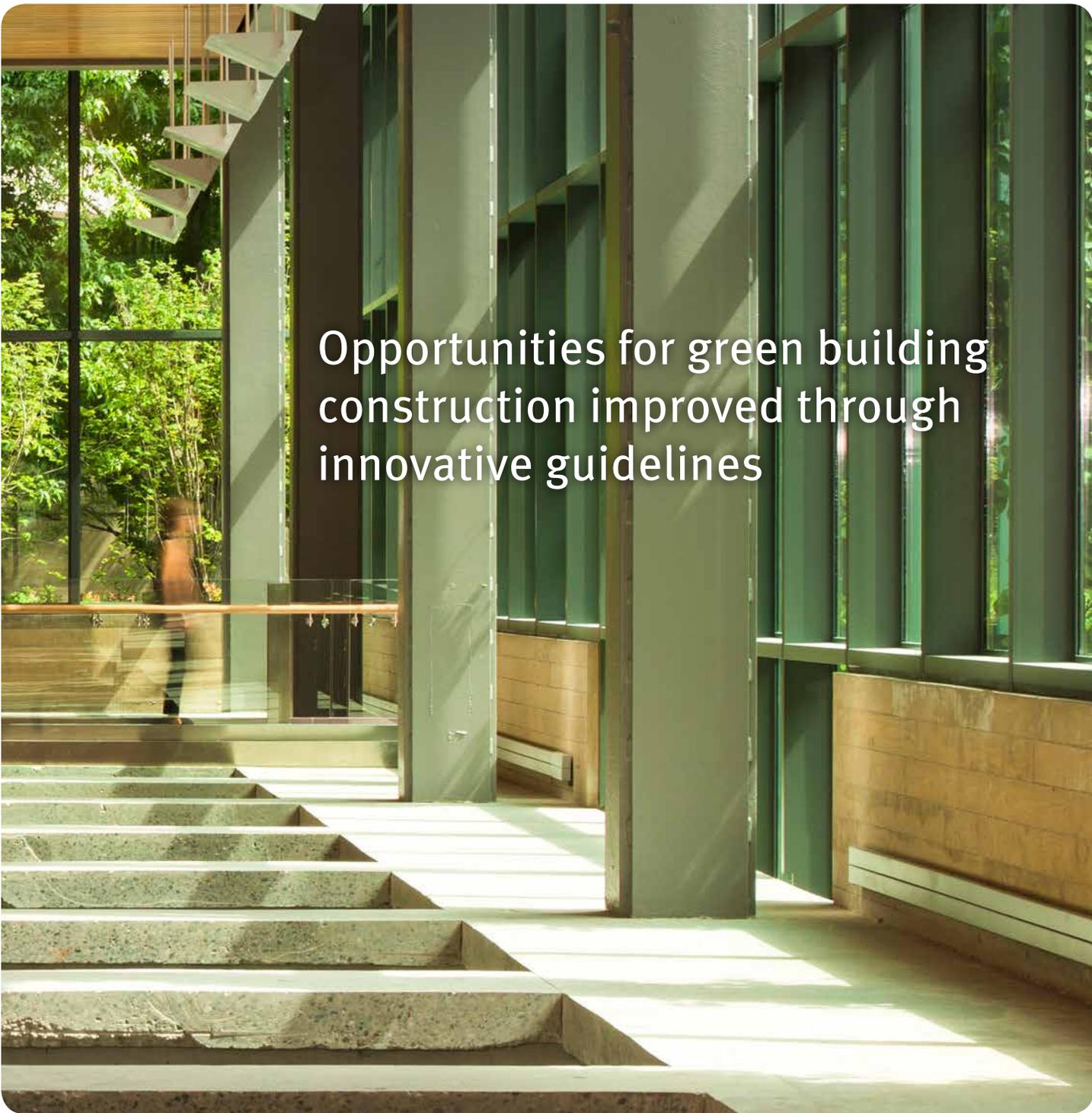
### Products

- Summary report entitled: *Integrated Modeling and Assessment of North American Forest Carbon Dynamics: Tools for Monitoring, Reporting and Projecting Forest Greenhouse Gas Emissions and Removals*
- Four research projects:
  - a. Estimating North American forest carbon budgets: development and testing of computational tools and modeling approaches
  - b. Estimating carbon dynamics and potential impacts of climate change and disturbances on carbon sequestration in the North American forests using process models: model evaluation and case study
  - c. Remote sensing observations of forest disturbances and their impact on forest carbon dynamics
  - d. Assessment of data sets and change detection approaches for forest carbon mapping in the Yucatán peninsula
- Land cover 2010 and land-cover change 2005–2010 maps and associated data

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### Partners, Stakeholders and Beneficiaries

Partners include the North American Carbon Modeling Group and North American Land Change Monitoring Group. Stakeholders and beneficiaries include: Natural Resources Canada—Canadian Forest Service and Canada Centre for Remote Sensing; University of British Columbia; US Forest Service; US Geological Survey; *Comisión Nacional Forestal*; *Instituto Nacional de Estadística y Geografía*; *Comisión Nacional para el Conocimiento y Uso de la Biodiversidad*; *Proyecto México Noruega*.



# Opportunities for green building construction improved through innovative guidelines

## Improving Conditions for Green Building Construction in North America

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This project engaged the private sector and governmental agencies in strengthening the environmental and economic performance of the North American built environment. Work included the development of a workforce guide on integrated project design and delivery and consultations to improve financing for green buildings and the availability of healthy and sustainable buildings in isolated communities across North America.

### **Key Accomplishments**

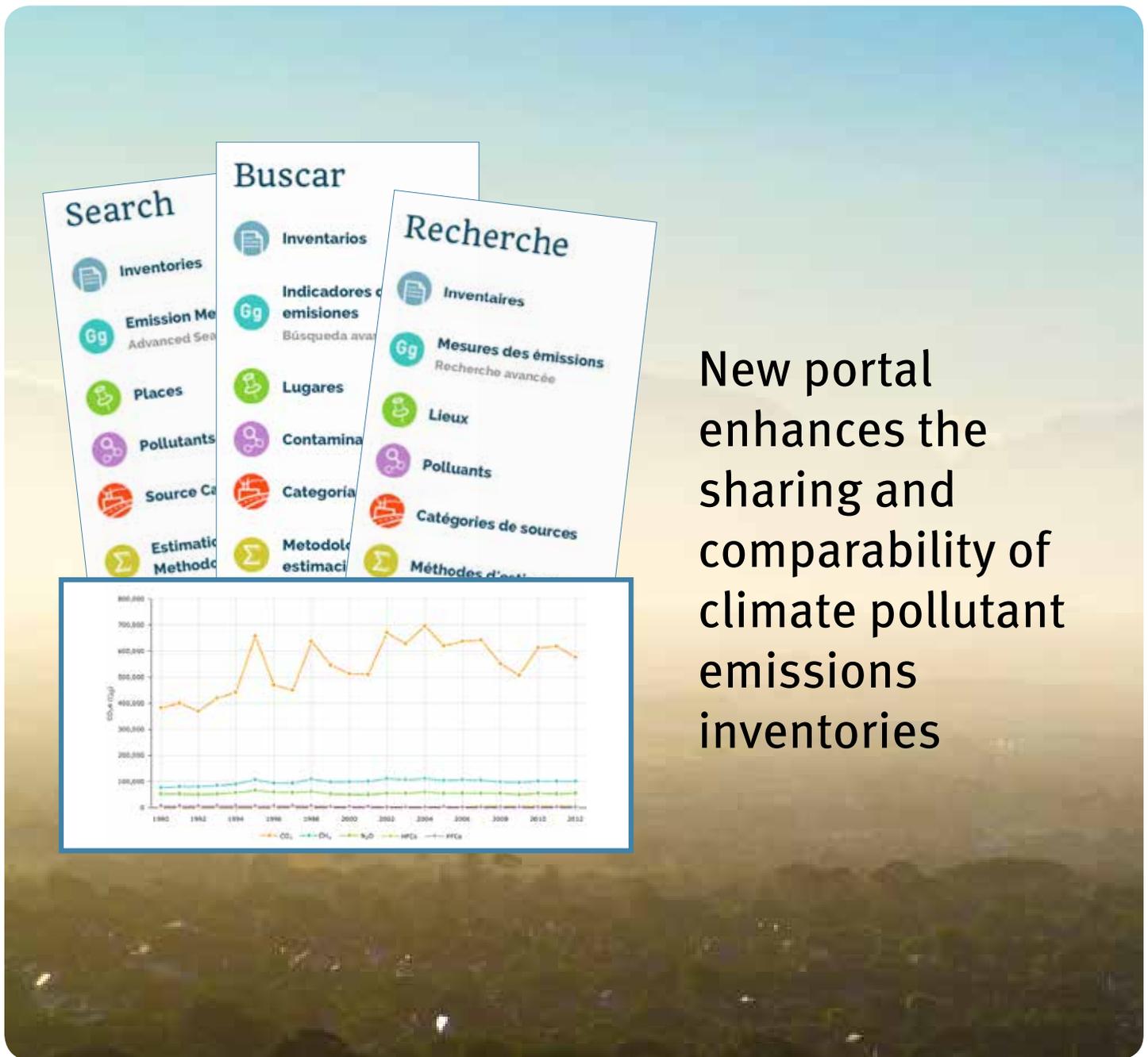
- Published a guide and outreach video on integrated design and delivery for improving green building construction in North America
- Hosted a roundtable discussion with industry and government experts to discuss financing solutions for green building, energy efficiency and renewable energy
- Hosted a forum of experts, government representatives and community members to discuss recommendations on improving housing sustainability and health in remote communities, including in native populations
- Canada and the US shared their expertise with Mexico regarding the adoption and implementation of the ENERGY STAR Portfolio Manager program for buildings

### **Products**

- *Improving Conditions for Green Building Construction in North America: Guide to Integrated Design and Delivery*
  - Outreach video on integrated project design and delivery
  - Recommendations on financing solutions to improve green building, energy efficiency and renewable energy in North America
  - Recommendations on improving housing sustainability and health in remote communities, including in native populations
- 

### **Partners, Stakeholders and Beneficiaries**

The Steering Committee members include Natural Resources Canada, Foreign Affairs and International Trade Canada, *Instituto Nacional de Ecología y Cambio Climático*, the US Department of Commerce and the US Environmental Protection Agency. Other partners include *Comisión Nacional para el Uso Eficiente de la Energía*, the US Department of Energy, as well as a Trilateral Consultative Group of fifteen members from the industry and other agencies. Project stakeholders and beneficiaries include the entire building industry, from architects, engineers and building owners, to product manufacturers, developers, managers, bankers and academics.



New portal enhances the sharing and comparability of climate pollutant emissions inventories

### North American Online, Interactive Informational Platform on Climate Change

This project established the North American Portal on Climate Pollutants, an online web platform designed to make the data from air pollutant emissions inventories for Canada, Mexico, and the United States comparable and easy for researchers and policy experts to use. The North American Portal on Climate Pollutants includes inventory data for greenhouse gases, black carbon, and other short-lived climate pollutant emissions, published with the cooperation of the three governments. The Portal will be updated periodically with additional inventories and related information. Through improved communication among experts, along with informed inventory data comparisons, the platform will support climate change mitigation policies and consequent greenhouse gas and black carbon emissions reductions in the three countries.

### **Key Accomplishments**

- A common framework to enhance the comparability of disparate air pollutant emissions inventories, through the use of semantic tags
- Developed a mechanism to distribute trilateral emissions inventory data to air emissions experts, researchers, and decision-makers
- Improved access and the ability to share North American national and subnational emissions inventory data and information, to improve decision-making relative to climate change issues
- Introduced the project to over 200 international atmospheric emissions experts at the Global Emissions Initiative (GEIA) conference in June 2014 in Boulder, Colorado

### **Products**

- North American Portal on Climate Pollutants
- A data dictionary that defines a semantic framework for tagging and comparing air pollutant inventories of any kind
- Web services that distribute trilateral emissions inventory data

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### **Partners, Stakeholders and Beneficiaries**

Partners *include* US Environmental Protection Agency, Instituto Nacional de Ecología y Cambio Climático, and the Global Emissions Initiative (GEIA) Network. Project stakeholders and beneficiaries include emissions and policy experts at the national and subnational levels, researchers, academia, and other organizations addressing climate pollutants.

# Health of children in Alaskan indigenous communities improved through reductions in indoor airborne contaminants



## Improving Indoor Air Quality to Reduce Exposure to Airborne Contaminants in Alaskan Native Populations and Other Indigenous Communities in North America

This project demonstrated that education, along with no-cost or low-cost home modifications, such as replacing inefficient wood-burning stoves and improving home ventilation, can reduce the need for respiratory medical care in Alaskan Native populations by reducing exposure to airborne contaminants in homes. The methodology and results from this pilot project can be used to make policy recommendations and help guide decisions in future healthy homes projects in North America. For example, lessons learned about the effects of improved ventilation and efficient heating devices on indoor air quality, along with best practices for community education to ensure the long-term sustainability of such interventions.

### **Key Accomplishments**

- Reductions in indoor contaminants and a decrease in the number of hospitalizations and missed days of school of 211 children in 63 households and eight communities in the State of Alaska

### **Products**

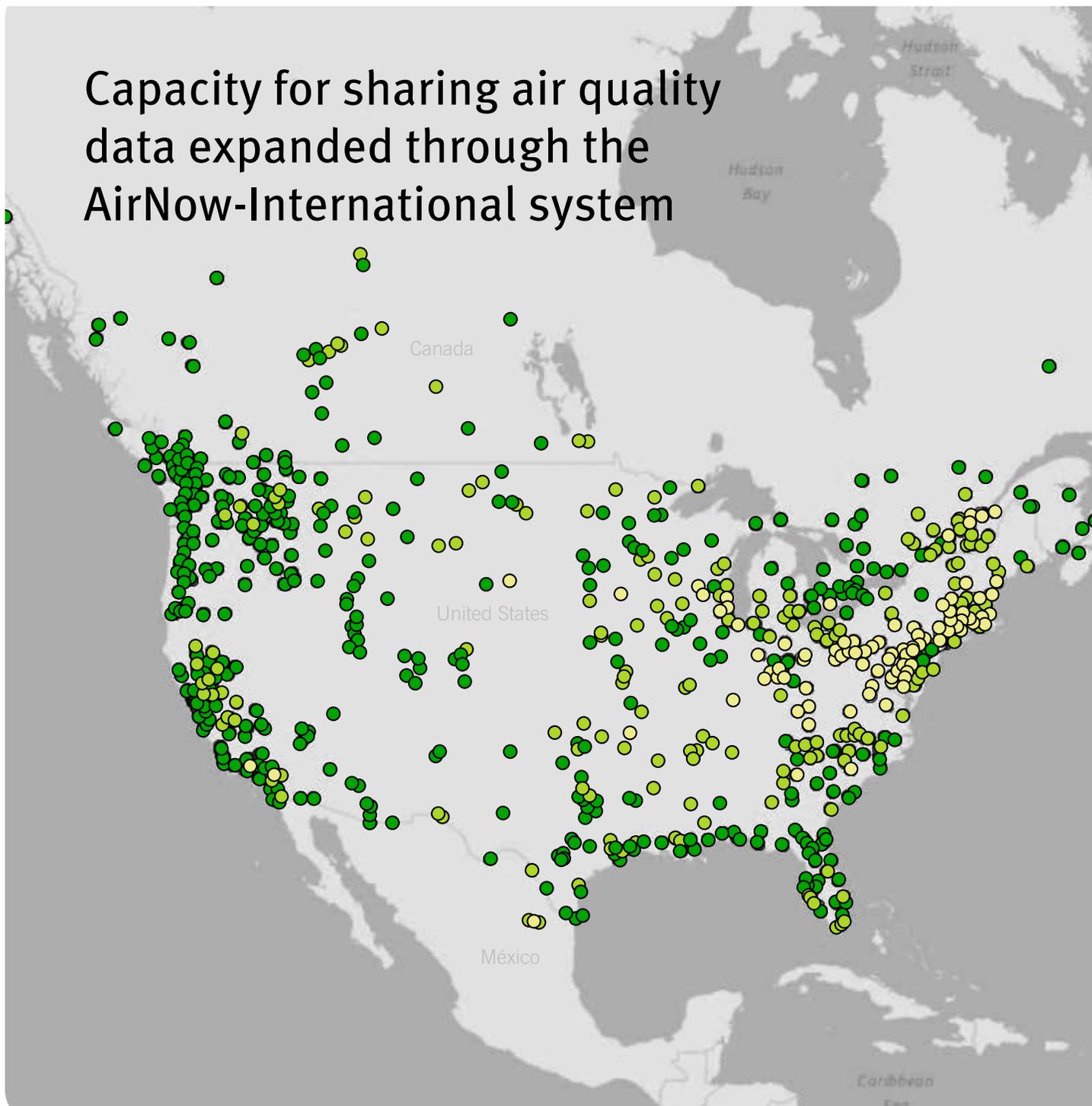
- Development of a healthy homes study protocol, along with information and home/health assessment tools, enabling the replication of this project in communities in Canada and Mexico
- Project results were disseminated to an audience of stakeholders from the three countries (academia, indigenous representatives) through a CECTalks webcast
- Meeting with Canadian researchers, government and aboriginal representatives to present project results and lessons learned, and exchange information on best practices on similar projects

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### **Partners, Stakeholders and Beneficiaries**

The main partner in this project was the Alaska Native Tribal Health Consortium, which implemented the project. Other partners include Alaska's 220+ Native Villages and their Tribal Councils and regional health corporations, the Denali Commission, the Alaska Energy Authority, the North American Network of Paediatric Environmental Health Specialty Units, the Alaska Housing Finance Corporation, US Environmental Protection Agency's Office of Children's Health Protection; Alaska Offices of Housing and Urban Development, Health Canada's First Nations and Inuit Health Branch; and US Centers for Disease Control and Prevention. Relevant stakeholders include indigenous and northern communities across North America, the research community, and decision-makers at national and subnational levels.

## Capacity for sharing air quality data expanded through the AirNow-International system



### North American AirNow-International Project

As part of the trilateral effort to promote healthy communities, this work supported and improved the management and sharing of ambient air quality data, and public access to it, through AirNow-International. In particular, it supported Mexico's efforts to connect its diverse air quality monitoring systems with the AirNow system used by Canada and the United States. Data can now be accessed on air quality conditions for locations across the three countries.

### Key Accomplishments

- Air quality monitoring networks in five major metropolitan areas (including Mexico City), accounting for half the urban population Mexico, now in the AirNow-International (AirNow-I) community
- Citizens from Canada, Mexico and the United States now able to access comparable information on air quality conditions from selected cities across North America
- Improved air quality data processing, leading to greater efficiency and effectiveness of air quality management decisions using the AirNow-I system (for instance, Monterrey data processing times reduced by 80%)
- Experts from Canada and the United States provided input on the proposal for a national air quality index for Mexico, which would inform the public about air quality conditions

### Products

- The AirNow-I system now operational for use by and sharing information with the air quality monitoring networks of Monterrey, Nuevo León; Toluca, Estado de México; Mexico City; Guadalajara, Jalisco; and Guanajuato, Guanajuato

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### Partners, Stakeholders and Beneficiaries

Partners include the US Environmental Protection Agency, *Instituto Nacional de Ecología y Cambio Climático*, Environment Canada, *Secretaría de Desarrollo Sustentable del Estado de Nuevo León*; *Secretaría del Medio Ambiente*, *Gobierno del Distrito Federal de México*; *Secretaría del Medio Ambiente*, *Gobierno del Estado de México*; *Secretaría de Medio Ambiente y Desarrollo Territorial*, *Estado de Jalisco*; and *Instituto de Ecología del Estado de Guanajuato*.

Stakeholders and beneficiaries include federal, state and local air quality management agencies throughout North America; the general public, through accessibility to real-time information supporting individual health-based decisions; academic institutions, through access to information supporting air quality research; industry and NGOs, through information to support advocacy and inform constituencies; and the media, through access to reliable air quality information to inform the public.

# Viable practices shared to reduce air emissions from transit through land ports of entry



## Greening Transportation at North American Land Ports of Entry

Building on recent work of the CEC on ways to reduce greenhouse gas emissions from freight transportation and along transportation corridors, this project analyzed vehicle emissions associated with border wait times and related health impacts, and proposed viable options and practices to reduce vehicle emissions from traffic congestion at terrestrial border crossings between Canada and the United States, and the United States and Mexico. The results of the studies were presented at two selected crossings.

### **Key Accomplishments**

- Produced a literature review of air emission reduction studies at North American land ports of entry and recommendations. The report will support future initiatives on reducing air emission at land ports of entry and inform areas for further research
- Completed studies of cross-border traffic wait times, air quality and health impacts at the Mexico-US (San Ysidro/El Chaparral) and the Canada-US (Pacific Highway) ports of entry with the support of twenty experts from the three countries
- Held two workshops at the selected ports of entry to present the study results. More than 80 key government stakeholders and experts invited by the steering committee participated in these workshops

### **Products**

- *Reducing Air Pollution at Land Ports of Entry: Recommendations for Canada, Mexico and the United States*
  - *Analysis of Wait Times, Traffic-related Air Emissions, Operations, and Health Impacts at the Pacific Highway Land Port of Entry*
  - *Analysis of Wait Times, Traffic-related Air Emissions, Operations, and Health Impacts at the San Ysidro/El Chaparral Land Ports of Entry*
  - Report summarizing the discussions, conclusions and recommendations of the two workshops held in May and June 2015
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### **Partners, Stakeholders and Beneficiaries**

The Steering Committee members of this project include Transport Canada, Canada Border Services Agency, *Secretaría de Economía, Secretaría de Medio Ambiente y Recursos Naturales*, and the US Environmental Protection Agency. Partners include members of the Trilateral Consultative Group, composed of representatives from Environment Canada, *Comisión de Cooperación Ecológica Fronteriza*, US/Mexico Joint Working Committee on Transportation Planning, Canada-United States Transportation Border Working Group, US and Texas Department of Transportation, US General Services Administration, Ontario and Quebec Ministries of Transportation, US Department of State, as well as representatives from universities and the transportation industry, among others. Other stakeholders and beneficiaries include communities living near the border crossings and daily commuters.

## Worked with Mexico on its efforts to establish an Emission Control Area under the International Maritime Organization



### Reducing Emissions from Goods Movement via Maritime Transportation in North America

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With a view to establishing a common North American approach to controlling emissions from ships, this project supported Mexico's effort to create an Emission Control Area (ECA) under the International Maritime Organization. The work involved technical analyses of marine source air pollutants, assessments of fuel quality and costs, and health and economic impacts that would result from implementing a Mexican ECA.

### **Key Accomplishments**

- Updated the emissions inventory for Mexico's ports
- Developed technical guidance for updating Mexico's national marine vessel emissions inventory
- Conducted an assessment of projected air quality conditions under the proposed Emission Control Area (ECA) and resulting health impacts and economic benefits
- Analyzed fuel requirements, supply and costs under the proposed ECA
- Developed a preliminary proposal to designate a Mexican ECA
- Presented the preliminary ECA proposal and supporting analyses to key Mexican government representatives
- Shared results and lessons learned from implementing an ECA in Canada and the United States

### **Products**

- Preliminary proposal to designate a Mexican ECA
  - Assessment of 2030 Mexico and Global Fuels Supply and Cost Impacts
  - Assessment of air quality and related health impacts and economic benefits in 2030 under current and proposed ECA conditions
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### **Partners, stakeholders and beneficiaries**

The Steering Committee of this project includes representatives from Transport Canada, Environment Canada, the US Environmental Protection Agency, and *Secretaría de Medio Ambiente y Recursos Naturales*. Beneficiaries of this project include policy makers in the three countries seeking information about opportunities to reduce air pollution from ships, private and public sector entities engaged in maritime shipping and technologies and environmental health protection, as well as communities affected by air pollution from ships.



## Best practices compiled to reduce environmental impacts in the truck and bus manufacturing sector

### Improving the Economic and Environmental Performance of the North American Truck and Bus Manufacturing Supply Chain

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Building on previous CEC work with the Suppliers Partnership for the Environment and *Alianza Verde Automotriz* for the North American automotive manufacturing sector, this project laid the groundwork for the establishment of a public-private partnership in the bus and heavy-duty truck manufacturing sectors. It provided a forum for sharing continued improvement, innovation, and successes of environmental management practices that reduce environmental impacts of these sectors. It also examined the economic profile and trends of the bus and heavy-duty truck manufacturing sectors in the past ten years, along with reviewing environmental management benchmarks and certification in the areas of waste management, water use, chemicals management, air quality, and energy efficiency.

### **Key Accomplishments**

- Prepared a framework document for the creation of the Suppliers Partnership for heavy-duty truck and bus manufacturers in North America
- Produced an economic profile of the last ten years of the North American heavy-duty truck and bus manufacturing sectors
- Reviewed the current environmental benchmarks and certification standards pertaining to the bus and heavy-duty truck manufacturing sectors
- Hosted meetings with industry and government representatives from the three countries to discuss best practices that improve the environmental performance of the heavy-duty truck and bus manufacturing sectors

### **Products**

- A framework document describing the operating principles, mission and objectives of a public-private partnership, based on interviews with key representatives from the bus and heavy-duty truck sectors in North America
- An economic profile and environmental management benchmarking of the bus and heavy-duty truck sectors in North America

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### **Partners, Stakeholders and Beneficiaries**

The Steering Committee members include Environment Canada, Foreign Affairs, Trade and Development Canada, *Secretaría de Medio Ambiente y Recursos Naturales*, *Procuraduría Federal de Protección al Ambiente*, and the US Environmental Protection Agency. Project stakeholders and beneficiaries include representatives from major North American bus and truck manufacturers, and their suppliers and the trade associations established within the three countries.

Information and training tools  
shared to prevent the illegal  
shipment of environmentally  
regulated materials and species



## Enhancing Environmental Law Enforcement in North America

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By strengthening cooperation to further environmental compliance and intelligence-led enforcement, this project improved the Parties' capacities to target illegal trade in environmentally regulated materials, including e-waste, hazardous waste, ozone-depleting substances, non-compliant motorcycles, and targeted species of wildlife in North America. An important element of this project was to increase understanding of regulatory gaps and to improve intelligence-led information-sharing.

### **Key Accomplishments**

- Reduced the limiting factors to sharing enforcement-sensitive information and intelligence among countries, including legal, technological and security issues, notably through actions of the North American Working Group on Environmental Enforcement and Compliance Cooperation (EWG); opened and reinforced channels for sustainable communication and collaboration among the three countries
- Addressed some EWG core activities: building the enforcement capacity of inspectors at border crossings, incorporating intelligence-led enforcement into the operations of the enforcement agencies, and promoting innovative and emerging technologies to support surveillance and monitoring by enforcement officers in the three countries
- The EWG has increased trilateral understanding of the regulatory gaps that exist among the three countries that may allow illegal smuggling of environmentally regulated materials to occur

### **Products**

- The first edition of the CEC-EWG Digest, a compilation of enforcement-related information from the three countries, was produced and widely disseminated amongst the Parties' officials
- An online training course to curb illegal imports of ozone-depleting substances—a free and easy-to-use tool available to the public at <[www.cec.org/ODS](http://www.cec.org/ODS)>, which complements the Hazardous Waste Online Trainer available at <[www3.cec.org/hwm/](http://www3.cec.org/hwm/)>

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### **Partners, Stakeholders and Beneficiaries**

The North American Working Group on Environmental Enforcement and Compliance Cooperation (EWG) is composed of senior-level North American environmental and wildlife law enforcement officials. More information is available at <[www.cec.org/ewg](http://www.cec.org/ewg)>. Stakeholders and beneficiaries include—besides the environmental enforcement and management/regulatory agencies—a wide range of industries related to the environmentally regulated materials under the EWG's purview.



## Enhanced the environmentally sound management of batteries from conventional, hybrid and electric vehicles

### Environmentally Sound Management of Selected End-of-life Vehicle Batteries, Including Spent Lead-acid Batteries (SLABs), in North America

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Building on the Article 13 report from the CEC Secretariat on the environmental hazards of transboundary spent lead-acid battery recycling, this project developed technical guidelines on environmentally sound management practices for secondary lead smelters and other facilities that process these batteries, including best practices and technologies for collecting and recycling in a manner that protects the environment, and the health and safety of workers and the public. The project also included the compilation of practices to improve the end-of-life management of batteries from electric-drive vehicles, as well as a study to determine emission factors from a selected secondary lead smelting facility to support the development of new regulations in Mexico.

### **Key Accomplishments**

- The project will support the adoption of practices and actions leading to a reduction of lead emissions from secondary lead smelting facilities to air, water and soil, and will help reduce lead exposure to workers and communities
- Building on the recommendations from the CEC's Article 13 report and this current project, Mexico developed its standard NOM-166-SEMARNAT-2014 related to lead emissions from secondary lead smelters

### **Products**

- *Technical Guidelines for the Environmentally Sound Management of Spent Lead-acid Batteries in North America*
  - *Environmentally Sound Management of End-of-life Batteries from Electric-drive Vehicles in North America*
  - Emission factors from a selected secondary lead smelting facility in Mexico
- 

### **Partners, Stakeholders and Beneficiaries**

Stakeholders and beneficiaries include the federal governments, environmental agencies, trade agencies and environmental compliance monitoring agencies in Canada, Mexico and the United States; the secondary lead smelting industry; the battery manufacturing industry; the automotive industry; universities and research centers such as *Instituto Politécnico Nacional* and *Universidad Nacional Autónoma de México*; nongovernmental organizations; and technical experts on the environmentally sound management of SLABs.

# Strengthened the economic and ecological viability of ranches on native grasslands through better management practices



## Catalyzing North American Grasslands Conservation and Sustainable Use through Partnerships

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Building on the success of cooperative work on native grasslands in 2011–2012, this project improved native grasslands and ranch livelihoods through the implementation of beneficial management projects on 21 ranches and *ejidos* on native grasslands. It also disseminated a social marketing package that included training material on the value of grasslands and ranching to society, an online tool with over a hundred innovative practices for grassland management, and a set of infographics on North America’s beef cattle industries, beef cattle trade and grasslands.

### **Key Accomplishments**

- Twenty-one ranch pilot projects demonstrating economic and ecological benefits of grassland management techniques shared with over five hundred stakeholders through conferences, workshops, range schools and ranch tours across North America, and included as case studies in an online tool
- Statistics on the North American beef cattle industries, beef cattle trade and grasslands disseminated as a series of infographics that raise awareness about the continentally integrated beef cattle market and its role in native grassland conservation.
- Expanded the North American Grasslands Alliance through a trilateral ranch tour and meeting of grassland landowners and managers, and rangeland and government experts to share evidence-based beneficial practices for grasslands conservation and sustainable use

### **Products**

- Officially launched the trilingual Grasslands Beneficial Management Practices Online Tool in May 2014, featuring over one hundred resources, case studies, and videos from ranchers, conservation organizations, and government and academic bodies in Canada, Mexico, and the United States <[www.nagrasslands.org/](http://www.nagrasslands.org/)>
- Summary case studies from the ranch pilot projects integrated into the online tool
- A social marketing package, including training material and a set of infographics on the beef cattle industries, beef cattle trade and grasslands of North America
- A trilateral ranch tour and meeting featuring CEC-supported ranch pilot projects
- Fourteen outreach events by regional partners

The experience will continue to be shared with other ranchers and their partners through additional ranch tours, conferences, and the Grasslands Beneficial Management Practices Online Tool.

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### **Partners, Stakeholders and Beneficiaries**

The project was carried out in collaboration with the North American Grasslands Conservation Steering Committee. Stakeholders and beneficiaries include Environment Canada, Agriculture and Agri-Food Canada, Canadian Forage and Grassland Association, Canadian Cattlemen's Association; US Fish and Wildlife Service, US Department of Agriculture, US Forest Service, Bureau of Land Management, Kansas Grazing Lands Coalition, Rocky Mountain Bird Observatory, the Nature Conservancy; *Comisión Nacional de Áreas Naturales Protegidas*; *Comisión Nacional para el Conocimiento y Uso de la Biodiversidad*; *Universidad Autónoma de Chihuahua*; *Universidad Autónoma de México*; and *IMC-Vida Silvestre A.C.*

# Resilience of the Big Bend-Río Bravo region improved through better ecosystem management and restoration



## North American Collaboration for Conservation of Transboundary Protected Areas

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The transboundary protected areas in the Big Bend-Río Bravo region have been the focus of four years of CEC support to increase the ecosystem health and resiliency of the region to climate change. This region is a composite of riparian, grassland and mountainous habitats that harbors endangered plants and animals and supports migrating species. Project work has focused on identifying priority areas for conservation within these habitats, implementing joint strategies for adaptive management, and assisting communities with the development of sustainable livelihoods.

### **Key Accomplishments**

- Identified priority areas for conservation and developed binational strategies and monitoring protocols for the Rio Grande, its tributaries and its uplands
- Engaged several communities in Maderas del Carmen, Ocampo and Cañón de Santa Elena in the implementation of opportunities for ecotourism and riverbank restoration activities
- Planted about 3,000 trees within the fragile riparian zones of three tributaries to the Rio Grande
- Monitored approximately 3,000 square kilometers of riparian habitats (including watersheds) for topography and vegetation
- Collected seeds of native milkweed plants for use in future milkweed restoration and monarch butterfly conservation activities

### **Products**

- *Conservation Assessment for the Big Bend-Río Bravo Region: A Binational Collaborative Approach to Conservation*
- *A Proposal for Developing Desired Future Conditions for the Big Bend Reach of the Rio Grande/Río Bravo (Roadmap to a Binational Conservation Strategy)*
- Landscape-level monitoring report of priority conservation areas in the Big Bend-Río Bravo region using repeat photography
- Reforestation report of Terlingua Creek in Big Bend National Park, Texas
- Hydrological and biological monitoring report of San Carlos and San Antonio creeks in the protected natural area of Cañón de Santa Elena, Chihuahua
- Assessment and management of visitor use and carrying capacity at ecotourism recreational sites in the protected natural areas of Maderas del Carmen and Ocampo, Coahuila
- Report on collection of native milkweed plant seeds for future monarch butterfly conservation activities

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### **Partners, Stakeholders and Beneficiaries**

The Steering Committee members include representatives from *Comisión Nacional de Áreas Naturales Protegidas*, *Instituto Nacional de Ecología y Cambio Climático*, National Park Service, US Fish and Wildlife Service, US Department of the Interior and International Boundary and Water Commission. Partners also include over thirty members of the Big Bend-Río Bravo Conservation Cooperation, comprising other governmental agencies, organizations, universities and citizens. Other stakeholders and beneficiaries in the region include landowners, farmers and ranchers.

# Flame retardants in consumer products analyzed to reduce the risks from exposure to chemicals



## Enhancing Trilateral Understanding of Chemicals in Products in North America

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This project advances a North American approach to identify the sources, presence, quantification, uses and associated risks from emerging flame retardants in products, to assist in developing strategies to manage those chemicals. The project evaluates the availability of information on emerging flame retardants of interest and provides information on the use of flame retardants in the North American polyurethane foam industry, particularly the use of such foam in upholstered furniture.

### **Key Accomplishments**

- Conducted a supply-chain analysis of 46 flame retardants of trilateral interest used in manufactured items in the North American market, and identified potential sources and uses of sixteen emerging flame retardants on the North American market
- Conducted product testing on 132 pieces of residential upholstered furniture purchased in Canada, Mexico and the United States and collected trend information on the presence of the 16 flame retardants, which may support risk management decisions for those substances.

### **Products**

- Two summary reports on enhancing trilateral understanding of flame retardants and their use in manufactured items:
    - Phase I: *Supply Chain Analysis of Select Flame Retardants Contained in Manufactured Items Used in Indoor Environments*
    - Phase II: *Analysis of Select Flame Retardants Contained in Office and Household Furniture*
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### **Partners, Stakeholders and Beneficiaries**

Partners include the Sound Management of Chemicals Working Group and regulators within the risk assessment and risk management communities in the three countries. Stakeholders and beneficiaries include industry associations, universities and research centers, nongovernmental organizations, and the Strategic Approach to International Chemicals Management (SAICM) Secretariat.

Assisted Mexico in  
developing policies  
and practices to  
manage chemicals



### **Close-out of Past Environmental Monitoring and Assessment, Chemicals Inventory and Mercury Activities in Mexico**

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Building on the CEC's work on persistent, toxic, and bioaccumulative chemicals since 1999, this project supported Mexico's efforts to manage such chemicals, including mercury. Policies and practices were developed for chemical inventories and environmental monitoring, and the project helped Mexico consider sound management strategies consistent with international standards.

### **Key Accomplishments**

- Assessed work accomplished by the three countries under the Environmental Monitoring and Assessment (EM&A) North American Regional Action Plan (NARAP), during which Mexico strengthened its *Programa Nacional de Monitoreo y Evaluación Ambiental* (Proname) and expanded its capacity to conduct environmental and human health monitoring programs through the establishment of nine monitoring sites and of a network of 21 laboratories
- Prepared a report on institutional and policy options to inform decision makers in Mexico regarding the implementation of a chemicals registry
- Prepared a set of policy recommendations and instruments for the sound management of mercury in Mexico, including guidance for compliance with UNEP's Minamata Convention on Mercury

### **Products**

- *Close-out Report: North American Regional Action Plan on Environmental Monitoring and Assessment*
  - Study of the impact of possible legal reforms in relation to the management of chemical substances in Mexico
  - *Recommendations on Law and Policy Instruments for Mercury Management Decision-Making in Mexico*
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### **Partners, Stakeholders and Beneficiaries**

Partners include the federal agencies in Canada, Mexico and the United States and their laboratory specialists with responsibility for health, environment, natural resources, agriculture, and customs. Stakeholders and beneficiaries include private sector participants (such as various chemical manufacturing, processing, transporting and importing associations and member companies); environmental, health and other nongovernmental organizations interested in chemical safety in the region; academics who conduct environmental and human health monitoring of chemicals used in North America; and industry associations.





## About the CEC

The Commission for Environmental Cooperation (CEC) was established by the governments of Canada, Mexico and the United States through the North American Agreement on Environmental Cooperation, the environmental side agreement to NAFTA. An intergovernmental organization, the CEC is composed of a Council of cabinet-level environmental officials from the three countries, a Joint Public Advisory Committee and a Secretariat that provides operational support for cooperative work between the three countries. The organization brings together citizens and experts from governments, nongovernmental organizations, scientists, researchers and businesses to seek solutions to protect North America's shared environment while supporting sustainable economic development.



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