

**Resource Catalog of Information on
Agricultural Best Management Practices
That Positively Influence Climate Change**

**A Soil Conservation Council of Canada Project
Conducted Under the
Climate Change Action Fund
Agricultural Awareness Partnership Project**

Foreword

For several years now the debates over climate change have focused on factors such as the sources of greenhouse gas (ghg) emissions and how they negatively affect our climate. Canada's agriculture industry has been identified as a contributor to these ghg emissions. Although agricultural producers (both grain and livestock) can be considered as a source of ghg's, they should also be considered as part of a national mitigation strategy to reduce ghg's when they adopt agricultural best management practices for climate change. Many producers have already adopted best management practices through conservation land management strategies. Many more are being made aware of the potential for the agriculture industry to reduce ghg's and helps to meet our international commitments under the Kyoto Protocol.

One method of making Canada's agriculture producers aware of how to reduce ghg's and how they can contribute to climate change is to provide them with a catalog of where to find information on agricultural practices as they relate to climate change. This publication is the result of a two-month literature search that compiled extension and research information for producers to help them better understand climate change and how the adoption of best management practices can positively affect our climate.

Over two hundred agrologists, researchers, government extension specialists and producer groups across Canada and the United States were contacted and asked to provide information for the catalog. In addition the Internet was thoroughly searched to identify sources of information on climate change and carbon sequestration in relation to agricultural practices.

In Canada the task of creating extension materials for producers has been that of provincial agriculture departments and the major agriculture producer groups with Agriculture and Agri-Food Canada providing research results for the development of extension materials. In the U.S. much of the available information has been developed through the USDA, several universities and through privately funded groups. The majority of the information in this catalog has come from these sources in Canada and the US. Much more information will be forthcoming, however, as many research programs initiated in the past few years will yield results in the near future for extension materials. As this material will be generated through existing organizations, departments and institutions, a list of contact information and people has been included in the catalog. These contacts should be considered as valuable sources of future information and material.

The catalog Table of Contents lists the categories of materials with sub-categories for fact sheets, brochures, news articles, research reports etc. Individual items under each category are listed alphabetically by title or source whichever is more significant. The reader will note that some of the materials are not published specifically as climate change best management practices. I have included these materials as they are good information sources on agricultural best management practices that are considered as positive contributors to climate change even though they are not noted as such in the text.

This catalog should not be considered as a complete listing of extension materials or contributors to this information. Climate change information is constantly being produced and may not have been identified or even available during the literature search. The catalog should, however, adequately function as a starting point for producers in their search for information on how to raise agricultural products while doing the best job of protecting the environment and climate.

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Contractor

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Category - Annual Crops

Fact Sheets/Publications/Videos/Articles

Agriculture and Agri-Food Canada, Environment Bureau. Soil Carbon Sinks. General information on carbon sinks, how they function and which farming practices create sinks. General information is available on the website:

http://www.agr.ca/policy/environment/eb/public_html/ebe/c_soilcarbon.html, Also three information pamphlets are available:

- Soil sinks: repaying the carbon deficit
- Measuring Soil Carbon stocks
- Agricultural Soil Carbon Sinks and the Kyoto Protocol, A practical Opportunity for the Environment.

Available either by downloading from this site or by order from: Agriculture and Agri-Food Canada Environment Bureau, see contact information.

Alberta Agriculture, Food and Rural Development, Conservation and Development Branch. Seven fact sheets have been developed in a series called: "Things you need to know" regarding greenhouse gas emissions from the agriculture industry:

- Greenhouse gas emissions of the agriculture and agri-food industry, March 2000
- Climate change, greenhouse gases and agriculture, March 2000
- Greenhouse gas emissions and Alberta's livestock industry
- Alberta's agri-food processing industry and its greenhouse gas emissions, Sept. 2000
- Greenhouse gas emissions and Alberta's cropping industry, Nov. 2000
- Greenhouse gas emissions from composting of agricultural wastes, Feb. 2000
- Greenhouse Gas Emissions Trading and Agriculture - Risk and Opportunities

Available on their web site:

<http://www.agric.gov.ab.ca/navigation/sustain/climate/index.html>

Three more bulletins on emissions trading and alternative fuels are planned over the next year. They are also working on developing a GHG training module for a Pasture Planning Workshop focusing on pasture and range management (to be conducted in the summer of 2001). In addition, plans are underway to create environmental farm plans with a GHG component. To order materials or for further information contact the Alberta Agriculture, Food and Rural Development, Conservation and Development Branch, see contact information.

Alberta Reduced Tillage Initiative (ARTI). Reduced Tillage Linkages. Has produced a number of factsheets between 1998-2000 dealing with the promotion of direct seeding on the prairies. Although none of the factsheets specifically relate direct seeding with climate change the information should be considered as best management practices for climate change. The factsheets fall under the following categories and titles:

General

- Direct Seeding Systems: Terms, Definitions and Explanations
- Making the Move to Direct Seeding
- Direct Seeded Winter Wheat
- Seed Row Spacing and Seeding Rates in Direct Seeding
- Estimating the Value of Crop Residues
- Crop Rotations in Direct Seeding

Disease

- Controlling Canola Diseases in Direct Seeding Systems
- Controlling Wheat Diseases in Direct Seeding Systems
- Controlling Barley Diseases in Direct Seeding Systems
- Controlling Field Pea Diseases in Direct Seeding Systems

Economics

- Direct Seeding Economics for the Dark Brown Soil Zone of Alberta
- Direct Seeding Economics for the Black and Gray Wooded Soil Zone of Alberta

Equipment and Residue Management

- Residue Management for Successful Direct Seeding
- Handling Difficult Crop Residue Conditions
- Equipment Issues in Crop Residue Management
- Solving the Wheel Track Dilemma in Direct Seeding
- Anhydrous Ammonia Use at Seeding
- Ground Opener Systems

Forages and Sod Seeding

- Removing Forages from the Rotation in a Direct Seeding System

Insects and Pests

- Controlling Wildlife Damage in Direct Seeding Systems
- Controlling Canola Insect Pests in Direct Seeding Systems

Soils and Fertility

- Soil Temperature and Direct Seeding
- Soil Quality and Moisture Conservation Benefits of Direct Seeding
- Soil Fertility Implications when Converting to Direct Seeding

Weed Control

- Pre-seeding Weed Control with Herbicides
- Winter Annual Weed Control
- Perennial Weed Control for Direct Seeding
- Controlling Narrow-Leaved Hawk's-Beard in Direct Seeding
- Downy Brome Control in Direct Seeding Systems
- Foxtail Barley Control in Direct Seeding Systems
- Herbicides for Direct Seeding Weed Control in Field Peas (not available for download)
- Toadflax Control in Direct Seeding
- Canada Thistle and Perennial Sow-thistle Control in Direct seeding Systems

- Dandelion Control in Direct Seeding Systems
- Controlling Quackgrass in Direct Seeding Systems

Available from the ARTI website:

<http://paridss.usask.ca/consgroups/arti/factshee.htm>, or by contacting the ARTI office, see contact information.

Bennett, J. A farmer's view of carbon sinks and the role producers could play in climate change mitigation. Summer 1998. Available from the Saskatchewan Soil Conservation Association or the library of the Eastern Canada Soil and Water Conservation Centre. See contact information for addresses.

Bourgeois, R. Reduire les emissions de gaz carbonique. La Terre de chez nous and Union des producteurs agricoles, 555 Roland-Therrien, Longueuil, Quebec J4H 3Y9. 1998. Or available at the Eastern Canada Soil and Water Conservation Centre's library.

Catalog 1999, Educational Materials. A list of Publications, Videos, Fact Sheets, etc. with an order form which allows process and shipping to go faster. Contact: Potash & Phosphate Institute of Canada (PPIC), Suite 704, CN Tower, Midtown Plaza, Saskatoon, Saskatchewan, Canada S7K 1J5. Phone: (306) 652-3535, Fax: (306) 664-8941 or Potash & Phosphate Institute (PPI), 655 Engineering Drive, Suite 110, Norcross, Georgia 30092-2837 U.S.A. Phone: (770) 447-0335, Fax: (770) 448-0439. or order from their OnlineStore website: <http://www.store.yahoo.com/ppi-store/>.

Computer Model For Determining Carbon Storage. The Agriculture Research Service, USDA, has developed a computer model called, CQESTR, that takes user-defined tillage practices and time periods and computes amounts of organic matter stored or lost in soil given different tillage regimes. Ex. a user could discover whether changing to conventional tillage from no-till would have an unacceptable impact on carbon storage. The computer model should be available later in the year. Contact: ARS, Ronald Rickman, e-mail: Ronald.Rickman@orst.edu. Read about CQESTR at: <http://www.ars.usda.gov/is/AR/archive/feb01/bank0201.htm>.

Conservation Tillage Information Center. Midwest US. Conservation for Agriculture's Future, brochures: Available for download (Acrobat format) from their website. Although these materials do not specifically mention the link to climate change they should be considered as promoting best management practices for climate change.

- What's Conservation Tillage?
- What's a Crop Nutrient Management Plan?
- What's Weed & Pest Management (IPM)?
- What's a Conservation Buffer?

Other brochures, publications and videos available for purchase:

- Conservation Tillage: A Checklist for U.S. Farmers Guide. 36 page booklet with information on how to farm in high residues. \$5.00 each.
- Best Management Practices for Wheat Guide. 119-page booklet developed by the National Association of Wheat Growers. \$5.00.
- Crop Residue Management to Reduce Erosion and Improve Soil Quality Guide. Comes in regional editions. Has chapters on how crop residue interacts with soil and climate, economics, fertilizer management, insect

and disease control and more. \$5 per region or \$15 for the six region set.

- Profitable Midwest No-Till Soybean Production Guide. 24-page guide discusses management considerations and long-term effects of no-till based on research throughout the Midwest. \$5.00.
- Farming for Maximum Efficiency (MAX) Report. An economic insight on inputs for various management systems. Includes return on investment data for various practices on a bushel or acre basis. 40 pages, \$5.00. Software is also available.
- Water Quality and Fertility Video. How crop residues protect water quality in the Midwest. Fertility technologies and organic matter benefits of no-till. 1993, 60 min. \$10.00.
- Economics of Wheat/Fallow Rotations for Intensive Cropping plus Staying Ahead of Economics Video (Plains). Montana and Kansas farmers and South Dakota researcher discuss rotations and crop residue management. 1994, 42 min. \$10.00.
- Corn and Soybeans: No Till and Zone Till video. (Corn Belt) Features speakers on machinery selections and management, harvest, weed control and herbicides, economics and earthworms. 120 min. \$15.00.
- Corn and Soybeans: Mulch Tilling and Subsoiling video. Machinery, and residue management, subsoiling, and deep tillage, weed control and herbicides, economics and earthworms. 120 min. \$15.00.
- Corn and Soybeans: Fertility, Compaction, Ridge Tillage video. Discussion of 21 experts on manure, fertilizer and insect management; ridge-till and no-till, compaction, machinery selection and modifications for ridge-till, cultivation, rotary hoeing and irrigation for ridge-till. 120 min. \$15.00.
- Wheat and Small Grains video. Serves the Southern Great Plains, High Plains and the Northern Great Plains. Crop rotations, machinery and machinery adjustments, avoiding plow pans, weeds and diseases, economics and other topics specific to the regions. 120 min. \$15.00.
- Executive Summary of the National Crop Residue Management Survey. Compares residues for five tillage systems across the US by crops and acres planted since 1989. \$5.00.
- Zero Tillage B Production Manual. Practical systems approach to no-till in North Dakota and Minnesota. 44 pages, \$3.00.
- Soil Biology Primer. Color publication to enhance knowledge of biological systems in the soil and the importance of natural resource conservation, pest and nutrient management and soil health. \$7.50.

The Center also has a Partners newsletter, brochures, videos and links to other resources. Order from: CTIC, 1220 Potter Dr., Ste 170 W Lafayette IN 47906, Phone: 765-494-9555, Fax: 765-494-5969, website: <http://www.ctic.purdue.edu>, or www.ctic.purdue.edu/CTIC/Catalog/CropResidueManagement.html.

Curbing Greenhouse Gases: Agriculture's Role (This is a draft of an article in Choices, First Quarter 1999.) Available from Texas A&M University, Dept of Ag Economics website: <http://agecon.tamu.edu/faculty/mccarl/mitigate.html>.

Cultivating Island Solutions: Round Table on Resource Land Use and Stewardship. Available from Charlottetown, Prince Edward Island, Beryl Bujosevich, the Queen's Printer, 1997. Also available at the Eastern Canada Soil and Water Conservation Centre's library, see contact information.

Guide des Pratiques de conservation en grandes cultures. Conseil des productions végétales du Québec inc. 2000, réalisé en partenariat : Entente auxiliaire Canada-Québec pour un environnement durable en agriculture; CPVQ; FPCCQ; MAPAQ; MENV; AAC. Pour information; Conseil des productions végétales du Québec inc. 225, Grande Allée Est, 4^e étage, Québec (Québec) G1R 5G5. Téléphone : (418) 646-5766, Fax : (418) 644-5944. Le regroupement CPAQ-CPVQ-GRÉAGRI est remplacé par "Centre de référence en agriculture et agroalimentaire du Québec" (CRAAQ) voir les contacts.

Greenhouse Gases and Ontario Agriculture. Infosheet #1. This is the first fact sheet of a four part series that addresses greenhouse gas emissions and their implications for Ontario farmers. Infosheet #1 lays out some basic concepts, including climate change, sources of greenhouse gases, which farming practices contribute to emissions, and how practices can be adjusted to reduce emissions. The next sheets will cover the following information: 2. Carbon sequestration, 3. Nutrient management, 4. On-farm case studies. Infosheet #1 is available now and #2 should be available in April 2001.

Available from the Ontario Ministry of Agriculture, Food and Rural Affairs. Contact the OMAFRA website:

www.gov.on.ca/OMAFRA/english/policyClimate%20Change/Index.html, 1-877-424-1300, e-mail: ag.info@omafra.gov.on.ca or see contact information.

Grounds for Change: Linking Experience with a Vision of Sustainable Agriculture by Darrell McLaughlin. A project of the Conservation Council of New Brunswick, Published by Conservation Council of New Brunswick Inc., 180 St. John Street, Fredericton, New Brunswick, E3B 4A9, also available at the Eastern Canada Soil and Water Conservation Centre's library, see contact information.

Eastern Canada Soil and Water Conservation Centre. Their website contains some BMP (French and English) case studies adopted by an agricultural producer to protect the environment while improving the farm productivity and sustainability. Soil conservation, the basis of sustainable agriculture, Les Fermes Côté Farms Ltd. which includes the following topics; Goals of the farm, Soil conservation, Crop rotation, Soil compaction, Rock management. This can be viewed at their website:

<http://www.ccse-swcc.nb.ca/bmp/bmp2.html?numero=17&id=58>

or see contact information for address.

Integrated Erosion Control on Potato Land in Atlantic Canada (Lutte intégrée contre l'érosion dans les champs de pommes de terre du Canada atlantique) A practical guide for soil conservation. ACAE Publication No. 26. Available at Eastern Canada Soil and Water Conservation Centre's library in French and English, see contact information.

Manitoba Agriculture and Food. Fact sheets. Manitoba Ag and Food has produced a number of soil conservation fact sheets. Although they do not specifically mention the relationship with climate change they should be considered as best management practices with respect to climate change.

Soils & Fertility

- Stubble Burning Alternatives
- Map of Crop Residue Burning Zones
- Database of Proceedings from the Manitoba Soil Science Society 1957-2000
- Manitoba's Soil Fertility Guide
- Daily Soil Temperatures For Fall Fertility Decisions
- Moisture and Target Yields
- Nitrogen Dynamics
- Retrieval Strategies for Deep-leached Nitrates
- Soil Sampling Strategies for Site Specific Management

Conservation

- Annual Barriers for Special Crops
- Canada Thistle Control in Conservation Tillage
- Combine Chaff Spreader Shopping List
- Cover Crops on Special Crops Land
- Cover Crops To Protect Soil From Erosion After Potato Harvest
- Weed Management - Comparing Zero and Conventional Tillage

Available from Manitoba Agriculture and Food website:

<http://www.gov.mb.ca/agriculture/soilwater/index.html> or by ordering from Manitoba Agriculture and Food, Soils and Crops Branch, see contact information.

New Brunswick Department of Agriculture, Fisheries and Aquaculture. They have two BMP Technical Bulletins that are available in French and English :

- Grassed Waterways (Voies d'eau engazonnées)
- Water and Sediment Control Basins (Bassins de sédimentation et de rétention des eaux)

See New Brunswick Department of Agriculture's contact information.

Manitoba-North Dakota Zero Tillage Farmers Association (Mandak). Has produced three crop production management manuals:

- Zero Tillage - Production Manual
- Zero Tillage - Advancing the Art
- Integrated Insect Management on Zero Till Fields

There is also four annual Zero Tillage workshop available on their website:

- Zero Tillage - 11th Annual Workshop
- Zero Tillage - 17th Annual Workshop
- Zero Tillage - 18th Annual Workshop
- Zero Tillage - 19th Annual Workshop

Although these manuals do not specifically relate these topics to climate change they should be considered as best management practices for agriculture and climate change. Mandak also has their annual Zero Tillage workshop proceedings available on request.

Contact the Mandak office, see contact information, or visit their website:

<http://www.mandakzerotill.org/links.htm>.

Monsanto Canada Inc. Has a website called: www.reduceyourtillage.com, that is a good information center for direct seeding information. Although it does not specifically link direct seeding with climate change it is still a good reference site for this climate change best management practice. They have also produced a video on direct seeding and soil conservation. Available from Monsanto Canada Inc. or Saskatchewan Soil Conservation Association offices. See contact information.

Ontario Corn Growers Association. Good site for information on what growing corn does for the environment. Has information on greenhouse gas emissions and estimates on the removal of atmospheric CO₂ through corn production in Ontario.
<http://www.ontariocorn.org/index.html>, or contact their office, see contact information.

Ontario Ministry of Agriculture, Food and Rural Affairs. Has the following series of Best Management Books available for purchase:

- A First Look
- Farm Forestry & Habitat Management
- Field Crop Production
- Livestock & Poultry Waste Management
- Nutrient Management
- Soil Management
- Irrigation Management
- Integrated Pest Management
- Fish & Wildlife Habitat Management
- No-Till: Making it Work
- Water Wells
- Pesticide Storage, Handling and Application
- Nutrient Management Planning

Prices vary from \$10 to \$25 per book or \$150 for the complete set. Order on-line [wysiwyg://111/http://www.gov.on.ca:80/OMAFRA/english/products/best.html](http://www.wysiwyg://111/http://www.gov.on.ca:80/OMAFRA/english/products/best.html) or contact: Ontario Ministry of Agriculture, Government Information Centre, OMAFRA, see contact information.

PFRA - Soil Conservation Issues in 1999. Dennis Haak. A news release discussing soil conservation techniques that are effective in combating soil degradation. Briefly mentions the link to climate change. Available from PFRA. See contact information.

Prince Edward Island, Fisheries and Environment. Best Management Practices - Soil Conservation for Potato Production. 1/15/98. The booklet offers a basic description of the soil, climate, slope and tenure of land in PEI, as well as offering soil conservation management strategies Order from their website:
<http://www.gov.pe.ca/publications/getpublication.php3?.number=466>
or from the PEI Department of Agriculture and Forestry, see contact information.

Rainy Creek Soil Conservation Club. An Alberta producer-based soil conservation club, has produced a video on direct seeding in Alberta. Contact: Rick Taillieu, Reduced Tillage Linkages, Olds College, 4500 50th St., Olds AB, T4H 1R6, (403) 556-8235.
E-mail: rtailieu@admin.oldscollege.ab.ca

Saskatchewan Soil Conservation Association (SSCA). A Saskatchewan based producer organization, has co-produced a Direct Seeding Manual for producers. The manual can be obtained from their office or from the Prairie Agriculture Machinery Institute. The SSCA also has a good website that has links to educational climate change sites. See contact information.

Soil Conservation Council of Canada (SCC). A national non-profit organization directed by producers, government and industry with a goal of providing a non-partisan public forum to speak and act at the national level for soil conservation. SCC, in conjunction with Agriculture and Agri-Food Canada, has produced a series of six fact sheets aimed at discussing global warming, the Kyoto Protocol and their relationship to agriculture in Canada. The series contains the following volumes:

- Vol. 1. No. 1, November 2000. Global Warming and Agriculture - Meeting the Challenge. This piece discusses the issues of global warming and agriculture.
- Vol. 1. No. 2, December 2000. Global Warming and Agriculture - The Carbon Cycle. The fact sheet looks at carbon dioxide, its role in global warming and the affect agriculture has on global CO₂ levels.
- Vol 1. No. 3, January 2001. Global Warming and Agriculture - Fossil Fuel Use. This sheet explores the direct and indirect uses of fossil fuels on the farm, their link to global warming and farming practices that can help reduce fossil fuel use.
- Vol. 1. No. 4, March 2001. Global Warming and Agriculture - Nitrous Oxide. This issue deals with the issue of nitrous oxide emissions and its role in Canadian Agriculture.
- Vol. 1. No. 5, April 2001. Global Warming and Agriculture - Methane. This issue deals with the role methane plays in global warming and the affect agriculture can have on methane levels.
- Vol. 1. No. 6, May 2001. Global Warming and Agriculture - Livestock. This is the last in this series and deals with livestock issues and their affect on global warming.

These fact sheets and more information are available from the SCC website: www.soilcc.ca. They are also available from the SCC head office, see contact information.

Soil and Water Conservation Society (SWCS) All materials listed can be obtained through the SWCS website or by order. See contact information.

Brochure: Growing Carbon: A New Crop That Helps Agricultural Producers and the Climate Too. Discusses the opportunities producers have to help slow climate change and to sequester carbon. For copies, call the SWCS, 1-888-526-3227, e-mail: landcare@swcs.org, or contact the SWCS, see contact information. Also available at the Eastern Canada Soil and Water Conservation Centre's library, see contact information.

Newsletter: Conservation Voices. Published bi-monthly. Contains articles and commentaries on conservation issues (mainly US). Has a focus on rangeland but does cover climate change and cropland ex. Aug/Sept 2000, Jim Kinsella article on carbon sequestration and another "Climate Changing our Future". Also available at the Eastern Canada Soil and Water Conservation Centre's library, see contact information.

Publications:

- Adopting Conservation on the Farm. \$40.00.
- Conservation Policies for Sustainable Hillslope Farming. \$30.00.
- Cover Crops for Clean Water. \$15.00.
- Development of Conservation Farming on Hillslopes. \$30.00.
- Soil Management for Sustainability. \$15.00.
- Sustainable Agriculture Systems. \$83.95.
- Crop Residue Management for Conservation. \$10.00.

The SWCS has an excellent search feature that brings up a number of research abstracts and papers on requested subjects. Example of abstracts:

- Soil: A Critical Environmental Resource What is Soil? Discusses the properties of soil and how it is influenced by climate. Available from the SWCS website: http://www.swcs.org/t_resources_critical_fact.htm or by contacting their office. See contact information.
- First Quarter 1999. Features managing U.S. cropland to sequester carbon on soil.
- Third Quarter 2000. Features adaptive participation in watershed management.

USDA - Global Change Program Office Fact Sheets

- Greenhouse Gas Emissions and Agriculture. Names the primary greenhouse gases that are emitted directly and indirectly from agricultural activities and ways farmers may reduce them.
- Soil Carbon Sequestration: Frequently Asked Questions. Lists questions commonly asked about carbon sequestration.

Fact sheets can be downloaded from their website: <http://www.usda.gov/oce/gcpo/facts.htm>, or by ordering from their main office See contact information.

USDA Natural Resources Conservation Service - Soil Quality Institute. Agronomy Technical Notes Series. The following fact sheets are available from USDA NRCS either through their web site:

<http://www.statlab.iastate.edu/survey/SQL/agronomy.shtml> or by contacting USDA NRCS (see contact information). The internet files are in Adobe Acrobat PDF and are easily downloaded.

- Cover Crops
- Conservation Crop Rotation Effects on Soil Quality
- Effects of Residue Management, No-Till on Soil Quality
- Effect of Soil Quality on Nutrient Efficiency
- Herbicides
- Legumes and Soil Quality
- Effects of Soil Erosion on Soil Productivity and Soil Quality
- Liming to Improve Soil Quality in Acid Soils
- Managing Conservation Tillage
- Sunn Hemp a Cover Crop for Southern and Tropical Farming Systems

The Soil Quality Institute also has information sheets available on general soil quality topics.

Reports and Presentations

Agriculture & Agri-Food Canada. The issues and challenges of sustainable land management - "Think globally, act locally", R.C. Wood, J. Dumanski, Editors - Organizing committee. International workshop on sustainable land management for the 21st century - Volume 2: Plenary papers; 1993 Jun 20 - 1993 Jun 26; The University of Lethbridge, Lethbridge Alberta, Canada. Ottawa; The Agricultural Institute of Canada; 1994; c1994: 11-21. Availability: Canadian Society of Soil Science, Box 21012, Westend Postal Outlet, Brandon, Manitoba, R7B 3W8. ISBN: 0-9690453-4-4.

Agriculture & Agri-Food Canada, Environment Bureau. Environmental Sustainability of Canadian Agriculture: Report of the Agri-Environmental Indicator Project. Report contains chapters on: Environmental Farm Management, Soil Quality, Water Quality, Agroecosystem Greenhouse Gas Emissions and more. Available for download from the Agriculture & Agri-Food Canada, Environment Bureau web site: <http://www.agr.ca/policy/environment/eb>, or from their Ottawa office. See contact information.

Agriculture & Agri-Food Canada, Environment Bureau. Reports:

- The Health of Our Air. A comprehensive report on the Canadian agriculture and greenhouse gases, estimates of emissions and recommended techniques to reduce emissions. Available from the Agriculture & Agri-Food Canada website: http://aceis.agr.ca/site_e.phtml. (PDF format), or by ordering from the Agriculture & Agri-Food Canada, Environment Bureau office (see contact information).
- The Health of Our Soils. A report on the state of Canada's soil, the effect from agriculture practices and strategies to address degradation. Available from the Agriculture & Agri-Food Canada website: http://aceis.agr.ca/site_e.phtml. (PDF format), or by ordering from the Agriculture & Agri-Food Canada, Environment Bureau office. See contact information.
- The Health of Our Water. A report on Canada's water sources, agriculture's role in water quality and issues of sustainability. Available from the Agriculture & Agri-Food Canada website: http://aceis.agr.ca/site_e.phtml. (PDF format), or by ordering from the Agriculture & Agri-Food Canada, Environment Bureau office. See contact information.

Agriculture et Agroalimentaire Canada (Promotion des strategies, Direction generale de la recherche). Earth Tones...The Book: Federal Science for Sustainable Development Planete vivante...sur papier: La science et le developpement durable au federal. Ottawa, ON, Canada: Gouvernement du Canada; 016...s.

Alberta Environmentally Sustainable Agriculture (AESAs) Council. Report. A preliminary assessment of carbon dioxide and nitrous oxide emissions from agricultural soils in Alberta. J. Sauve, July 2000 for the AESA Soil Quality Committee, Alberta Agriculture, Food and Rural Development. The report discussed a model developed to estimate CO₂ and N₂O emissions from four different cropping systems (cereals, oilseed, forages and fallow) and two tillage systems (conventional and zero) from agriculture soils in Alberta. Available from: Alberta Agriculture Food and Rural Development Conservation and Development Branch, see contact information.

Agricultural Databases <http://www.internets.com/sagri.htm>, A link to Agriculture Departments in Canada and the US, plus other online databases. Has search engines. Good link to Agricola research papers site.

Canadian Fertilizer Institute. Science-based decisions: achieving Canada's Kyoto commitments. CFI discussion paper on greenhouse gas emissions, the Kyoto Protocol and the fertilizer industry. Canada: Canadian Fertilizer Institute. 2000. Available from the Canadian Fertilizer Institute or the Eastern Canada Soil and Water Conservation Centre's library. See contact information for addresses.

Carrefour Agroalimentaire. Un site internet qui contient plusieurs liens intéressant à l'agriculture. Groupe GÉAGRI, 200, chemin St-Foy, 1^{er} étage, Québec (Québec) G1R 4X6, Telephone: (418) 646-5772, Fax: (418) 646-1830. Le regroupement CPAQ-CPVQ-GRÉAGRI est remplacé par "Centre de référence en agriculture et agroalimentaire du québec" (CRAAQ) voir les contacts pour plus d'information.

Farmer Response to Changes in Climate: The Case of Corn Production. Hansen, L. 1991. The Journal of Agricultural Economics Research, 43(4): 18-25.

National Hydrology Research Centre. Estimated Impacts of Global Warming on Seeding Dates and Soil Moisture at Seeding on the Canadian Prairies. Brklacich, M., R. de Jong, and A. Bootsma, 1992. National Hydrology Research Centre, Saskatoon, Saskatchewan.

United States Department of Agriculture - Agriculture Research Service. Has a web site with programs listed under Natural Resources and Sustainable Agricultural Systems. The categories listed under this section of programs includes:

- Water Quality and Management
- Soil Resource Management
- Air Quality
- Global Change
- Rangeland, Pasture and Forages
- Manure and Byproduct Utilization
- Integrated Agricultural Systems

Although the information in these categories does not specifically relate to their impact on climate change, it is worth keeping an eye on this site as any research in this area will show up here. The best way to keep up on research performed by USDA - ARS is via their website:<http://www.nps.ars.usda.gov/>.

United States Environmental Protection Agency (EPA). Report, EPA/600/3-91/056. 28pp. The Impact of Conservation Tillage Use on Soil and Atmospheric Carbon in the Contiguous U.S. See contact information for address.

Research Papers/Reports and Abstracts

Much research has been performed in the area of climate change and agriculture. Listed here are a few significant papers or abstracts of work that relates to best management agriculture practices and climate change. Extension materials may be produced at a later date as a result of the research performed by these scientists and the institutions listed.

- Summerfallow reduction in Saskatchewan and mitigation of greenhouse gas emissions. 2000. M. Boehm and S. Kulshreshtha. Soils and Crops Workshop 2000. University of Saskatchewan, Saskatoon SK. Available from Saskatchewan Centre for Soil Research, University of Saskatchewan, Saskatoon SK. See contact information.
- Options for Mitigation of Greenhouse Gases from Agriculture: An Economic Perspective. 2000. S. Kulshreshtha and B. Junkins. Soils and Crops Workshop 2000. University of Saskatchewan. See contact information, Saskatchewan Centre for Soil Research, University of Saskatchewan, Saskatoon SK.
- Energy Efficiency effects of cropping systems and tillage systems. C. Nagy of CSALE researched the energy co-efficients of the many unit operations and inputs into crop and livestock production systems. Available from Agriculture and Agri-Food Canada Research Station, Swift Current, SK. See contact information.
- Assessment of Alternative Management Practices and Policies Affecting Soil Carbon in Agroecosystems of the Central United States. Doningan, A.S., Jr., T.O. Barnwell, R.B. Jackson, A.S. Patwardhan, K.B. Weinreich, A.L. Rowell, R.V. Chinnaswamy, and C.V. Cole. Publication No. EPA/600/R-94/067. U.S.-EPA, Athens, GA, 1994. See contact information for US Environmental Protection Agency address.
- Global Greenhouse Gases: Implications for Agriculture. (US) A good discussion of the three main greenhouse gases, carbon dioxide, methane and nitrous oxide, their agricultural sources and mitigation strategies. Prepared by: Bill Griffith, Agronomic Management Systems, 865 Seneca Road, Great Falls, VA 22066, 703-450-4835. Available from: The Fertilizer Institute, 501 Second St, NE, Washington, DC 20002. E-mail: ezillinger@tfi.org, website: www.tfi.org, Phone: 202-608-5913.
- Soil Management and Greenhouse Effect. Lai, R. et al. 1995. Advances in Soil Science. CRC Press, Boca Raton, FL. Not reviewed.
- The impact of conservation tillage use on soil and atmospheric carbon in the contiguous U.S. U.S. EPA/600/3-91/056, USEPA, Washington, D.C. 28pp. Suggested by colleagues but not reviewed. See contact information for US Environmental Protection Agency.
- Rotation and nitrogen fertilization effects on changes in soil C and N. Varvel, G.E. Better Crops, Vol. 78, No. 3. p 16-17. Not reviewed. See contact information for Newsletter; Better Crops With Plant Food.

- Role of agriculture as a source and sink of the greenhouse gases carbon dioxide and nitrous oxide. Agriculture & Agri-Food Canada, Research Branch, Swift Current, Saskatchewan. Curtin, D., F. Selles, C.A. Campbell and V.O. Biederbeck. 1993. Publication 379M0082. See contact information for Agriculture & Agri-Food Canada, Swift Current.
- United States Environmental Protection Agency. 1991. The Impact of Conservation Tillage Use on Soil and Atmospheric Carbon in the Contiguous United States. Washington, D.C. Contact USEPA.
- Greenhouse gas emissions from Canadian Prairie agriculture, B.H. Ellert and H. Janzen. Presented at the 36th Annual Alberta Soil Science Workshop; "The Soil and Air Quality Connection". The paper summarizes the understanding of how Canadian prairie agriculture contributes to greenhouse gas (CO₂, N₂O) emissions and how land management practices might influence soil carbon storage. Download the full article (Adobe Acrobat 101KB) from the AAFC Lethbridge website: <http://res2.agr.ca/lethbridge/landreso/ghg1.htm>. Order the full proceedings from: Alberta Soil Science Workshop, c/o Alberta Agriculture Food & Rural Development, Agronomy Unit, Agronomy Center, 9th Floor B O.S. Longman Bldg. Edmonton, Alberta, T6H 4P2. \$25.00.
- Impact of Tillage on Soil as a Carbon Sink. D.C. Reicosky. Available from the Soil and Water Conservation Society. See Contact Information, USDA, ARS - Soil Conservation Research.
- Sources and Sinks of Greenhouse Gases in the Soil-Plant Environment. Vegetation and Climate Interactions in Semi-Arid Regions. Denmead OT (1991). *Vegetatio* 91 (1-2): 73-86.
- Tillage Methods and CO₂ Loss: Fall vrs Spring Tillage. D.C. Reicosky. ISBN 0-00000-000-0 1997 by CRC Press, Inc. Available from Don Reicosky. See contact information, USDA, ARS - Soil Conservation Research.
- Impact of Fall Tillage on Short-Term CO₂ Flux. D.C. Reicosky, M.J. Lindstrom. *In: Advances in Soil Science - Soils and Global Change*. Contact Don Reicosky. See Contact information, USDA, ARS - Soil Conservation Research.
- Saskatchewan in a Warmer World: Preparing for the Future. Saskatchewan Research Council (SRC) pub. No. E2900-17-E-92. E. Wheaton, Editor, 1992. Contact Saskatchewan Research Council, see contact information.
- Direct emissions of nitrous oxide from agricultural soils. Nutrient cycling of agroecosystems. Kluwar Academic Publishers, 46:53-70. Bouwman, A.F., 1996.
- Carbon Storage in Soils Under Continuous Cereal Cropping: N Fertilizer and Straw. E.D. Stolberg, M. Nyborg, R.C. Izaurralde, H.H. Janzen, S.S. Malhi, and M. Molina-Ayala. Available from the Parkland Agriculture Research Initiative (PARI) Decision Support System website: <http://paridss.usask.ca/factbook/tocsoilcrop.html>.

Category - Livestock

Fact Sheets/Publications

Centre de recherche et de développement sur le bovin laitier et le porc (Dairy and Swine Research and Development Centre). Ce centre vise à optimiser les rendements biologique et économique des productions laitière et porcine dans le respect du bien-être animal et de l'environnement (The Centre's goal is to optimize biological and economic yields in dairy and swine production, while promoting animal welfare and protecting the environment). Jacques Surprenant, Ph. D., M.A.P., Director, P.O. Box 90, 2000 Route 108 East, Lennoxville, Quebec, J1M 1Z3, Canada.

Telephone: (819) 565-9174 ext. 101, Fax: (819) 564-5507 email: surprenantj@em.agr.ca, website: <http://res2.agr.ca/lennoxville/lennox.html>.

Conservation Tillage Information Center (CTIC). Fact sheet. Most Commonly asked Questions about Pork Production and the Environment. Questions about production practices, manure management, the environment, odor management, health and safety issues. Produced by the National Pork Producers Council. 32 pages. \$3.00. Order from: CTIC, see contact information, or order from their web site: <http://www.ctic.purdue.edu/CTIC/Catalog/CropResidueManagement.html>.

Dept. of Economics and Business, University of Guelph. The economics of modified manure handling systems for greenhouse gas reductions. De Vos, G., Weersink, A. Available from: the University of Guelph, Dept. of Agricultural Economics and Business, Guelph ON N1G 2W1.

Eastern Canada Soil and Water Conservation Centre. Their website contains a BMP (French and English) "case study" adopted by an agricultural producer to protect the environment while improving the farm productivity and sustainability. Improved productivity through Best Management Practices, Keohanlane Farm which includes the following topics; Production goals, Environmental farm planning, Manure management, Soil and water conservation practices, Land clearing and Other best management practices. This can be viewed at their website:

<http://www.ccse-swcc.nb.ca/bmp/bmp2.html?numero=17&id=58>.

See contact information for address.

Livestock & Poultry Waste Management. Book available from Ontario Ministry of Agriculture, Food and Rural Affairs. Best management practices, \$15.00. Order on-line: <http://www.gov.on.ca:80/OMAFRA/english/products/best.html> See contact information for address.

Manitoba Agriculture and Food. Has published a number of fact sheets on Manure Management that should be considered as best management practices for agriculture and climate change.

- Calculation of Manure Application Rates
- Controlling Runoff from Confined Livestock Areas
- Crop Rotations and Timing of Manure Applications
- Manure Applications and the Soil Environment
- Manure as a Resource
- Manure Nitrogen Losses and Prevention
- Manure Application Rate Calculator (program)
- Weed Seeds in Manure

Available from their website:

<http://www.gov.mb.ca/agriculture/soilwater/index.html> or from:

Manitoba Agriculture and Food, Soils and Crops Branch, see contact information.

Manure Management 2000 Hand Out Materials. A conference on manure management. AAFRD. Materials Include:

- Developing Intensive Livestock Operations: A Balancing Act
- Why is Nutrient Management Planning Important?
- Using the sleightfoot for applying biosolids on grass
- Northeast Manure Management Project
- Reducing Nutrient Loss in Swine Through Nutrition
- Everything you wanted to know about environmental laws...but were afraid to ask
- Improved Nutrient Utilization Can Reduce Nutrient Loss in Manure and Improve Cattle Performance
- Environmental Obligations of Livestock Producers
- Manure and Human Health
- Up the Creek with a Paddle, "caring for your land and water" newsletter
- Fan Separator - Manure Treatment
- Manure 2000 - Water Quality, Cattle and Range
- Composting...Now More Than Ever
- Cows and Fish: Facing the Issues
- Cows and Fish: "Tools" for Riparian Management
- Greenhouse Gas Emissions and Alberta's Livestock Industry
- Climate Change, Greenhouse Gases and Agriculture
- Greenhouse Gas Emissions of the Agriculture and Agri-Food Industry
- Green Matters... Greenhouse Gases - A Reasoned Response

Copies of the publications listed may be obtained from:

Livestock Expansion & Development

Alberta Agriculture, Food & Rural Development, see contact information or, (403) 340-5359 or e-mail at LEAD.

Manure Management. Research Updates from the Prairie Agriculture Research Institute (PAMI).

- Update #730 - A Guide to Swine Manure Management Methods
- Update #732 - A Slurry Injection System for an "Off the Shelf" Cultivator. Adobe download

PAMI has a couple of projects underway that are evaluating low disturbance soil openers for swine manure. In addition they have several testing reports available on soil conservation equipment. They have also conducted a study comparing fuel usage between conventional and low disturbance seeding systems. Contact the PAMI office for information, see contact information, or view their website: www.pami.ca.

New Brunswick Department of Agriculture, Fisheries and Aquaculture. They have two BMP's Technical Bulletins that are available in French and English :

- Livestock Watering Systems for Pasture (Système d'approvisionnement en eau pour le bétail au pâturage)
- Treatment of Milkhouse Effluent (Traitement des effluents de laiterie)

See New Brunswick Department of Agriculture's contact information.

Ontario Ministry of Agriculture and Food. 1986, Manure Gases. Plue, P. Contact the Ontario Ministry of Agriculture office. See contact information for address.

Prince Edward Island, Agriculture and Forestry Information Centre. Factsheet: Best Management Practices - Agricultural Waste Management. 2/27/2001. A practical guide to help the agriculture community be more environmentally responsible and gain maximum return from waste resources. Order from their website:

<http://www.gov.pe.ca/publications/getpublication.php3?.number=466>

or from the PEI Department of Agriculture and Forestry, see contact information.

Soil and Water Conservation Society. Publication.

Waste Management and Utilization. \$22.00. Available from the SWCS office, see contact information.

University of Manitoba. Rangeland cattle production and the greenhouse effect, a review. Koop, J., Wittenberg, K. Available from the University of Manitoba, Winnipeg, MB. See contact information for address.

Newspaper Articles

- **Western Producer**, May 13, p. 64. Composting Manure Leaves Less to Haul Away. Larney, F. 1999. See contact information for Western Producer.

Research Papers/Reports

- Progress report for 1999-2000 on nitrous oxide emission studies at PARC Agassiz (31 March 2000)
The study is looking at greenhouse gas emissions from dairy and swine manure applied on forage grassland plus from composted dairy manure. When the final data are analyzed a report will be available from: Dr. N. Patni, Pacific Agri-Food Research Centre (PARC), P.O. Box 1000, Agassiz, BC V0M 1A0
- Annotated literature review of greenhouse gas emissions from composted agricultural products. Prepared by: Shane Chetner, A. Arendt, and G. Hoskinson, July 19, 2000 for: Alberta Environmentally Sustainable Agriculture (AESAs) Council, Alberta Agriculture, Food & Rural Development (AAFRD). See contact information.
- Proceedings of the Agriculture Industry Climate Change/Greenhouse Gas Forum, March 13-14, 2000 Nisku, AB. Alberta Environmentally Sustainable Agriculture (AESAs) Council, Alberta Agriculture, Food and Rural Development. This presentation discusses the implications of livestock production on climate for prairie livestock producers. Available from Alberta Agriculture Food and Rural Development, see contact information.
- Report: Composting as a strategy for restoring soil organic matter (sequestering carbon), and for reducing net emissions of greenhouse gases methane and nitrous oxide. Canada: Agriculture Canada Centre for Land and Biological Resources Research Center, Research Branch, Agriculture Canada, Ottawa, K1A 0C6. Feeding Dairy Cows in Warm Weather. Evans, E. H. Country Guide, 109(8): D10.
- Report on Methane and CO₂ emissions from lactating Holsteins (1997). The report summarizes the study to determine emissions of greenhouse gasses (CH₄ and CO₂) from Holstein cattle in eastern Ontario and methods to reduce methane emissions from the rumen.
Copies of the report can be obtained from any Ontario Ministry of Agriculture, Food and Rural Affairs (see contact information).
- Poster presentation: *Methane and CO₂ Emissions from Stored Dairy Cattle Manure Slurry*. N. K. Patni, R.G. Kinsman, D.I. Masse, H.A. Jackson. Center for Food and Animal Research, Ottawa, ON K1A 0C6
This presentation is a summary of a 1996 study that investigated methane and CO₂ emissions from dairy cattle manure slurry stored in farm tanks and emission reduction strategies.
- Poster presentation: *Methane and CO₂ Emissions from Lactating Holsteins*. R.G. Kinsman, F.D. Sauer, H.A. Jackson, N.K. Patni, D.I. Masse, M. Wolynetz, J.A. Munroe. Center for Food and Animal Research, Ottawa, ON, K1A 0C6
This presentation summarizes the 1996 study that quantified greenhouse gas emissions from dairy cattle kept under farm conditions and, methods to reduce methane emissions from the rumen.
- Paper: The Potential Effects of Climate Change on Summer Season Dairy Cattle Milk Production and Reproduction. Klinedinst, P., Wilhite, D., Hahn, G., Hubbard, K. Climatic Changem 23:21-36.
- Paper: Cost-effective Methane and Nitrous Oxide Emission Reduction technologies for Animal Waste. Gerbens, S., Dept. of Agricultural, Environmental and Systems Technology, Subdepartment of Environmental Technology, Agricultural University

- Wageningen, Wageningen, The Netherlands, Unpublished and unreviewed, January 1999, pp70.
- Paper: Nitrous oxide emissions from long-term manured soils. Soil Science Society of America Journal, J.62:677-682. Chang C.; Cho, C.M.; Janzen, H.H, 1998. Available from the Agriculture and Agri-food Canada, Lethbridge Research Centre, see contact information.
 - Paper: Reducing methane emissions from ruminants. Journal of Applied Animal Research. 14:1-28, 1998. Mathison, G.W.; Okine, E.K.; McAllister, T.A.; Dong, Y.
 - Research presentation: *Greenhouse Gas Release From Stored Dairy Cattle Manure Slurry* at the Seventh International Symposium on Agricultural and Food Processing Wastes, Chicago IL 1995. A copy of the proceedings report can be obtained from the Agriculture and Agri-Food Canada, Central Experimental Farm, Ottawa, ON K1A 0C6
 - Paper: Nitrous Oxide emission from cattle excrement, pasture land: a global inventory. Flessa, H., I. Dorch and F. Beise, 1995.
 - Prairie Swine Center Inc. Publications available include:
 - Environmental impacts of swine production
 - Effect of diet manipulation on nutrient excretion by pigs (reduction in N excretion could reduce nitrous oxide emissions from pig manure)
 - Effect of low-cost feed processing on nutrient utilization and excretion by pigs. To order see contact information.
 - Hog Environmental Management Strategy (HEMS) 1998-99. A number of publications resulted from the HEMS program. They include:
 - HEMS Situation Analysis
 - Background to HEMS Workshop (April 1998)
 - Proceedings of HEMS Workshop (April 1998)
 - Proceedings of HEMS II Symposium (Dec. 1999)
 - Posters and Displays from HEMS II Symposium (Dec. 1999)
 - HEMS Newsletters, No. 1, Sept. 1998, No. 2, Feb. 1999
- These publications are listed on the Agriculture & Agri-Food Canada, Environment Canada website http://www.agr.ca/policy/environment/eb/public_html/ebe.hems.html. Attempts to open these documents failed. They may be available through the Canadian Pork Council (see contact information) or from the Agriculture & Agri-Food Canada, Environment Canada office, Ottawa (see contact information).

Category - Trees/Woodcrops

Fact sheets/Brochures

The Carbon Center: CTTC Has produced four brochures that discuss how agroforestry can play a role in environmental sustainability. The four brochures are:

- Working Trees for Carbon Cycle Balance
- Wastewater Management Using Hybrid Poplar
- Working Trees for Treating Waste
- Growing Carbon

Available from: Cquest Ltd., West Des Moines, IA
North 1101 Argonne, Suite217
Spokane, WA 99212
website: <http://www.carboncenter.net/CGrowing.htm>
e-mail Janet Kidder: nokidden@bigfoot.com
Phone: 509-893-8065, Fax: 509-893-0034

A Growers Guide to Hybrid Poplar. 1991. Ontario Ministry of Natural Resources. 148 pp. (not reviewed). Contact the Ontario Ministry of Natural Resources.

USDA NRCS. Agroforestry for Farms and Ranches. An introduction to using tree and shrub practices in sustained agricultural systems. Available on internet: http://www.ftw.nrcs.usda.gov/tech_notes.html or by contacting the NRCS office (see contact information).

USDA National Agroforestry Center. Has produced a number of brochures, fact sheets and other extension materials on agroforestry, windbreaks etc. They are:

- Working Trees for Agriculture
- Working Trees for Livestock
- Working Trees for Agroforestry: Silvopasture in the SE
- Working Trees for Wildlife
- Working Trees for Treating Waste
- Working Trees for Carbon Cycle Balance (includes estimates of metric tonnes removed by: windbreaks, riparian buffers, silvopasture and short rotation woody crops)
- Working Trees for Carbon: Windbreaks in the US
- Growing Carbon. A New Crop that Helps Agriculture Producers and the Climate Too

Newsletter

- Inside Agroforestry

Technical Notes

- Agroforestry Notes
- Conservation Buffer Job Sheets
- Agroforestry for Farms and Ranches

Videos

- Agroforestry: Agriculture and Forestry Working Together

Order on-line: www.unl.edu/nac/order.html, Contact information: USDA National Agroforestry Center, North 38th Street and East Campus Loop, East Campus-UNL, Lincoln, Nebraska 68583-0822. Web: www.unl.edu/nac. Contact: Gary Kuhn 509-358-7946.

Research Reports/Papers

Annual Carbon Accumulations in Agroforestry Plantations. An AgriFood Innovation Fund Project. J. Kort, B. Turnock, 1997. The report discussed the project to determine the annual rate at which trees and shrubs in shelterbelts fix carbon so as to determine their value as a carbon sink. Contact: John Kort, e-mail: kortj@em.agr.ca or contact the PFRA Shelterbelt Centre, Indian Head, see contact information.

ArborVitae Environmental Services Ltd. And Woodrising Consulting Inc. Benefits of afforestation programs in Ontario, Quebec, and the Atlantic Provinces. Available from the Eastern Canada Soil and Water Conservation Centre's library. See contact information for address.

Biomass production and carbon fixation by prairie shelterbelts. J. Kort, B. Turnock, PFRA, 1996. Green Plan project: The paper discusses the carbon fixation values of several tree species for carbon credits. Contact: John Kort, e-mail: kortj@em.agr.ca or contact the PFRA Shelterbelt Centre, Indian Head, see contact information.

Carbon reservoir and biomass in Canadian prairie shelterbelts. 1999 PFRA, J. Kort, R. Turnock. The paper examines how field shelterbelts build a carbon reservoir. Various species in all prairie soil zones. Author for correspondence: e-mail: kortj@em.agr.ca or contact the PFRA Shelterbelt Centre, Indian Head, see contact information.

Carbon Sequestration Through Tree Planting on Agricultural Lands. A copy of chapter 27 in Soil management and Greenhouse Effect. Available from Texas A&M University, Dept of Ag Economics website:
<http://agecon.tamu.edu/faculty/mccarl/mitigate.html>.

Carbon Sequestration via Tree Planting on Agricultural Lands: An Economic Study of Costs and Policy Design Alternatives. Available on the Texas A&M University, Dept of Ag Economics website:
<http://agecon.tamu.edu/faculty/mccarl/mitigate.html>.

Colloque sur l'agroforesterie au Québec: Pratiques actuelles et perspectives d'avenir. Alain Olivier, Département de phytologie, Université Laval, Québec, G1K 7P4. email : alain.olivier@plg.ulaval.ca.

Farm Forestry & Habitat Management. Book available for purchase from Ontario Ministry of Agriculture, Food and Rural Affairs. Outlines best management practices for farm forestry in Ontario. \$10.00. Order on-line:
[wysiwyg://111/http://www.gov.on.ca:80/OMAFRA/english/products/best.html](http://www.gov.on.ca:80/OMAFRA/english/products/best.html)
See contact information for address.

Hybrid poplars as a crop. Paper presentation at the conference “Agroforestry -Taking root in the west”, Prince Albert, SK Aug. 12-13, 1999. J. Kort. This paper introduces Hybrid poplar as a crop opportunity for agriculture. Agronomic information on production included. Paper available at: PFRA Shelterbelt Centre, see contact information.

Institut pour le développement forestier. “Le boisement des terres agricoles, guide technique”. Pascal Balleux and Philippe Van Lerberghe, 2001. This technical guide is designed as a tool for producers who want to convert agricultural land into woodlot. This guide has been realised with the financial help of the European Union under the "Boisterra" program. Available from Pascal Balleux, email: cdaf@skynet.be.

Modification of an Orchard Climate With Increasing Shelter-Belt Height. McAneney, K., Salinger, M., Porteous, A., Barber, R., *Agricultural and Forest Meteorology*, 49:177-189.

Offsetting CO₂ Emissions, Tree Planting on the Prairies. A report, for general audiences, published by the International Institute for Sustainable Development (IISD). This report discusses current levels of carbon emissions for the prairies and Canada and reviews tree planting strategies in Canada and abroad to address these emissions. Available for download (Adobe format) from the IISD website: <http://iisd1.iisd.ca/climatechange.htm> or by order from their office. See contact information.

Principales pratiques agroforestières en région tempérée: revue de littérature et étude de cas. Par Bobby Poitras, école de sciences forestières, Université de Moncton, Campus d'Edmundston. Also available at the Eastern Canada Soil and Water Conservation Centre's library. See contact information.

Shelterbelts: A Buffer to Climate on the Plains. Brandle, J.R., 1991. A Symposium on the Impacts of Climatic Change and Variability on the Great Plains, September 11 to 13, 1990, Calgary, Alberta. University of Waterloo, Waterloo, Ontario, pp.231-234. Contact the PFRA Shelterbelt Centre. See contact information.

The Carbon Sequestration Potential of Prairie Shelterbelts and their Contribution to a National Greenhouse Gas Mitigation Strategy. B. Turnock, PFRA, 2000. Contact: Bob Turnock, e-mail: turnockb@em.agr.ca or contact the PFRA Shelterbelt Centre. See contact information.

The effect of shelterbelts and agroforestry practices on carbon dioxide emissions and carbon reservoir. A farm-scale study for prairie agriculture. PFRA, J. Kort, B. Turnock 1997. This study explores the effect of prairie shelterbelts and other agroforestry practices on agricultural carbon dioxide emissions and the total amount of carbon reservoir on the farm. Twelve prairie shelterbelt species compared in brown, dark brown and black soil zones. Available from: PFRA Shelterbelt Centre. See contact information.

Tree Canada Foundation report: Planting Trees for Carbon Credits - A discussion of the Issues, Feasibility and, Environmental Benefits. The report discusses how planting trees, in various regions of Canada, will achieve carbon credits. Figures for total carbon sequestered for several tree species on three different soil types. Available from: Department of Biology and School for Resource and Environmental Studies, Dalhousie University, Halifax, Nova Scotia, Canada, B3H 4J1

Websites

Climate Change Central. A site based on the public/private sector partnership to coordinate climate change activities in Alberta. <http://www.climatechangecentral.com>.

Department of short rotation forestry at the Swedish Agricultural University. <http://www.lto.slu.se>

The International Poplar Commission of the FAO of the United Nations. The IPC studies the scientific, technical, social and economic aspects of poplar and willow cultivation. <http://www.fao.org/WAICENT/faoinfo/forestry/IPC/IPChom-e.htm> (not working)

PFRA Shelterbelt Centre, Indian Head, Saskatchewan Homepage. <http://www.agr.gc.ca/pfra/shelterbelt.htm>

The Poplar Council of Canada (PCC) Homepage. The PCC is a national non-profit organization and has members from industry, universities and government.. <http://www.poplar.ca/>

Poplar information from University of Minnesota. A site by Agricultural Utilization Research Institute and the University of Minnesota at Crookston, Minnesota to provide basic poplar information. <http://www.auri.org/poplars/Default.htm>

Potlach Corporation Hybrid Poplar Program <http://poplar2.cfr.washington.edu/commercial/potlach/>

Short Rotation Woody Crops Operations Working Group. A US private and public partnership to coordinate and share poplar and willow information. <http://www.woodycrops.org>

The Tree Genetic Engineering Research Cooperative (TGERC), Oregon State University. Conducts research on the use of genetically engineered hybrid poplars in plantations. <http://www.fsl.orst.edu/tgerc/>

The U.S. Department of Energy's (DOE) Bioenergy Feedstock Development Program (BFDP) at Oak Ridge, Tennessee. It has a searchable bibliography (BIOBIB) on poplar and biofuels. <http://bioenergy.ornl.gov/bfdpmain.html>

US Department of Energy (DOE) - energy from biomass.

<http://www.eren.doe.gov/biopower/>

University of Washington poplar research. A site for links to poplar and willow research at Washington State University and University of Washington.

<http://poplar2.cfr.washington.edu/> (not working)

Category - Water Issues/Wetlands/Buffer Zones/Wildlife Habitat

Fact Sheets/Publications

America's Wetlands - Our Vital Link Between Land and Water. Full color publication explaining what a wetland is and its role with nature and people. Conservation Tillage Information Center. \$5.00. Order from: Conservation Tillage Information Center, see contact information or order from their web site:

<http://www.ctic.purdue.edu/CTIC/Catalog/CropResidueManagement.html>.

Buffer Strips and Water Quality: A Review of the Literature (Les bandes riveraines et la qualité de l'eau: une revue de la littérature) Available in French and English at the Eastern Canada Soil and Water Conservation Centre's library, see contact information.

Earthworms: Nature's Soil Tillers plus Wildlife and Wetlands for Agriculture

Video. Conservation Tillage Information Center. Two presentations on one tape. Value of attracting wildlife and enhancing wetlands on the farm. 1993, 60 min. \$10.00. Order from their website:

<http://www.ctic.purdue.edu/CTIC/Catalog/CropResidueManagement.html>, or from their office. See contact information.

Fish & Wildlife Habitat Management. Book available from Ontario Ministry of Agriculture, Food and Rural Affairs. Best management practices, \$20.00. See contact information.

Manitoba Agriculture and Food. Has published fact sheets on water management that may be considered as best management practices for agriculture and climate change.

- Irrigation System Capacity
- Pasture Pumping Systems

Available from their website: <http://www.gov.mb.ca/agriculture/soilwater/index.html> or from: Manitoba Agriculture and Food, Soils and Crops Branch. See contact information.

Saskatchewan Wetland Conservation Corporation (SWCC). Has a number of publications that pertain to marginal land and native pasture management and bird species. Although they do not specifically pertain to the relationship with climate change they should be considered as best management practices for wetlands/native prairie as they relate to climate change. Some are available for download from the internet: <http://www.wetland.sk.ca/publications/index.htm> Also available from their head office, see contact information.

Soil and Water Conservation Society. Books published on water/grassland/wetland topics include:

- Agricultural Research to Protect Water Quality. \$35.00.
- Farmer Perspectives: Wetlands Reserve Program. \$19.50.
- Natural Channel Systems. \$25.00.
- Sources of Native Seeds and Plants. \$5.00.
- Warm Season Grasses. \$5.00.
- Water Quality: Agriculture's Role. \$15.00.
- Wetland Policy Issues. \$12.00.

Available from the SWCS office, see contact information.

US Dept of Fish and Game. Information on conservation of wildlife and habitat. Not a great link with climate change but the principles would be considered best management practices for fish and wildlife habitat in agricultural zones. Available on the internet: www.fws.gov/. Links to conservation programs and educational materials.

Research Papers/Reports

- Atlantic Chapter SWCS Workshop, Water Sector: Vulnerability and Adaption to Climate Change (11th Atlantic Region Hydrotechnical Conference) May 12-13, 2000. Available at the website: <http://personal.nbnet.nb.ca/bccse/climwksp.htm>, or at the Eastern Canada Soil and Water Conservation Centre.
- Buffer zones: Their processes and potential in water protection: The proceedings of the international conference on buffer zones; 1996 Sept; United Kingdom. Addiscott, T., UK Quest Environmental, PO. Box 45, Harpenden, Hertfordshire, AL5 5LJ, UK; 1997; A critical review of the value of buffer zone environments as a pollution control tool. See contact information.
- Canadian Water Resources Association. Climate change adaptation options for the Canadian water sector (abstract). Rural Water Management Group, Department of Geography, University of Guelph, Guelph ON. Discusses effective water management strategies. Has a section on their website for water management and soil conservation. Available from the Canadian Water Resources Association. See contact information.
- Global Warming and Prairie Wetlands. Poiani, K., Johnson, W., 1991. Bioscience, 41(9):611-618.
- Management Strategies in Anticipation of Climatic Change and the Resulting Impact on Wetlands. 1991 Clay, R.C., T. Neraasen, R. Coley B *In*: Climate Institute Wall, G. (editor), pp. 267-270.
- Potential Effects of Climate Change on a Semi-Permanent Prairie Wetland. Poiani, K., Johnson, W., 1993. Climatic Change, 24:213-232.

Category - Household

Factsheets

Office of Energy Efficiency - Fall and Winter Tips for Your Home. Eight publications available for home heating and electricity conservation.

- Fall and Winter Tips for Energy Savings at Home
- Saving Money on Your Heating Bill
- Heating Bill Savings - The Outdoor House Inspection
- Heating Bill Savings - The Indoor House Inspection
- Taking Action In Your Home
- Reducing Your Electricity Bill - In the Kitchen
- SAFETY TIPS
- Reducing Your Electricity Bill - Lighting

View them on their website: http://oee.nrcan.gc.ca.ca/winter/home_tips_e.htm, or contact Natural Resources Canada, Office of Energy Efficiency, see contact information.

Research Papers/Reports

- American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) CRC Conference, Saskatoon, SK 1991
A Short History of Low Energy Houses for Cold Climates, with an Emphasis on Canadian Contributions. Dumont, R.S.
- Climate Change Action Fund project: Saskatchewan Energuide for Houses Program. Provides advice as to what homeowners can do to reduce energy use and how these actions will help the environment. Contact: Keith Hanson, (306) 665-2525.
- Climate Change Action Fund project: Climate Protection Begins at Home. An education and action program designed to increase participation in home visits to perform energy audits. Contact: Kai Millyard (416) 469-8296.

Category - Transportation

Factsheets/Articles

Economic Potential of Biomass Fuels for Agricultural Sources. A paper prepared for workshop on "Sustainable Energy: New Challenges for Agriculture and Implications for Land Use", May 18-20, 2000 - Wageningen, The Netherlands. Available on the Texas A&M, Dept. of Ag Economics Website: <http://agecon.tamu.edu/faculty/mccarl/mitigate.html>.

Promoting Correct Tire Pressure. Project promotes proper tire pressure and the relationship to fuel economy. Climate Change Action Fund Project. Contact Mr. David R. Dilks (416) 410-3888.

Summer Tips For Your Car. Office of Energy Efficiency. The Challenges of Fuel-Efficient Winter Driving. Tips for fuel conservation when driving in winter. Available from Natural Resources Canada. See contact information. Also available on the internet: http://oee.nrcan.gc.ca/winter/car_tips_e.htm.

What is Biodiesel? Discusses how fuel made from soybean or vegetable oil can feasibly replace petroleum. Factsheets are available on the website: <http://www.biodiesel.org/fuelfactsheet.htm>.

Research Papers/Reports

Congressional Research Service. 1989. Ethanol Fuel and Global Warming. Library of Congress, Washington, D.C.

Transport and Climate Change: A Report by the Transport and Climate Change Working Group. 1992 *Change* June 10:12 van Beckhoven, B.

Category - Agri-Environmental Community

Factsheets/Publications

Bedeque Bay Environmental Management Association (BBEMA). Provide opportunities for the citizens of the Bedeque Bay watershed to conserve and enhance their watershed through planning, education, projects and partnerships. Contact: 205 Prince Street, Summerside, PE C1N 1L3. Phone: 902-436-7090, email: bbema@pei.aibn.com, website: <http://www.peisland.com/bbema/>.

Canada-Ontario Agriculture Green Plan. Best Management Practices Program includes:

- BMP Brochure - Best Management Practices Overview
- Farm Forestry and Habitat Management
- Field Crop Production
- Fish and Wildlife Habitat Management
- Horticultural Crops 7
- Integrated Pest Management
- Irrigation Management
- Livestock and Poultry Waste Management
- No-Till: Making It Work
- Nutrient Management
- Pesticide Storage, Handling and Application
- Soil Management
- Water Management
- Water Wells

All booklets available in English and French.

BMP Ordering Information

website: <http://res2.agr.ca/london/gp/bmp/bmpmenu.html>

Clean Annapolis River Project. A charitable, community-owned organization created to work with communities and organizations to foster the conservation, restoration and sustainable use of the freshwater and marine ecosystems of southwestern Nova Scotia's Annapolis River and its watershed. Contact: P.O. Box 395, Annapolis Royal, N.S., B0S 1A0. Phone: 902-532-7533, Fax: 902-532-3038, email: carp@fox.nstn.ca, website: <http://fox.nstn.ca/~carp/>.

Eastern Canada Soil and Water Conservation Centre : Atlantic Environmental Farm Plan includes (in French and English):

- Environmental Farm Plan (EFP) Workbook
- Windbreaks, Hedgerows and Shelterbelts (April 2001)
- Environmental Farm Plan (EFP) Workshop Proceedings 2001
- Green Agenda

Available at their library, see contact information, can also be downloaded at their website: http://www.ccse-swcc.nb.ca/publications/index_e.htm.

Ontario Farm Environmental Plan. A voluntary educational and awareness program delivered by the farm community. An EFP brochure is available at their website. Interesting topics which include; What EFP can do for you, What are Environmental Farm Plans, How do I get involved and Is there a Financial Incentive? OSCIA Provincial Office Phone: 1-800-265-975, e-mail: oscia@ontariosoilcrop.org, or visit their website: <http://www.ontariosoilcrop.org/>.

Farmers Working With Farmers towards a sustainable agriculture. Includes: Erosion Control of Potato Ground, Interseeding a Corn Crop, Composting Strawpack, Renovating Hay Fields. Available from Conservation Council of New Brunswick, 180 St. John Street, Fredericton New Brunswick, E3B 4A9. Phone: (506) 458-8747, Fax: (506) 458-1047, email: ccnb@nbnet.nb.ca, and on their website: <http://www.web.net/~ccnb>.

Annapolis Atmosfarm Workbook : A Component of the Annapolis Atmosfarm Outreach Pilot Project. Paul Joners, Amy Masters and Renée Després, July 2000 - February 2001. This pilot project was created to reduce greenhouse gas emissions and nitrate leaching on commercial farms in the Annapolis Valley of Nova Scotia. This project is also promoting carbon sequestration. This workbook is designed to provide information to be used to evaluate the producers operation. It provides suggestions and alternatives to reduce greenhouse gas emissions.
Website: <http://www3.ns.sympatico.ca/c.a.r.p/newpages/Atmosfarm.htm>

Research Studies

Agriculture and Agri-Food Canada:

Agriculture Environmental Stewardship Initiative (AESI). Features on Soil and Water Projects. Project reports are divided into prairie (Alberta, Saskatchewan, Manitoba) and non-prairie areas (British Columbia, Ontario, Quebec, Atlantic provinces). Completed projects by region include:

Quebec:

- Clubs Conseils en Agroenvironnement, un regroupement volontaire de producteurs agricoles dont l'objectif est de favoriser le développement durable de leurs entreprises en adoptant des pratiques agricoles respectueuses de l'environnement.

Allez au siteweb :

<http://www.clubsconseils.org/OuSommesNous/results.asp?iregionID=0> pour visualiser les différents Clubs-Conseils qui existent.

- an information booth travelling across Quebec that promotes sustainable agriculture techniques to producers,

Atlantic:

- Environmental upgrading for farmers, New Brunswick. Farmers in the Northumberland county of NB will have their fields mapped and scientifically analyzed to maximize environmental potential.
- Environmental subsidies for various local farm projects.
- Workshops to introduce new farm practices.

For information contact: John Brown (613) 759-7301 or e-mail: brownl@em.agr.ca.

Climate Change Action Fund project: Climate Change and its Impacts on Agriculture, Agri-business and the Rural Community - How to Prepare Your Business, Community and Family for the Change! Thirty sessions on climate change using a *train the trainer* format delivered in each of the provinces and territories. Contact: Wendy Bulloch (204) 727-1852.

Opportunities For Energy Reduction in Prairie Agricultural Production Systems. Examples of Strategies To Improve Energy Efficiency, Reduce Greenhouse Gas Emissions From Inputs, And Improve Farm Net Income. E. Coxworth, B. Zentner, M. Entz, G. Lafond, V.O. Biederbeck. Progress Report for the Period April 1st, 1999 - March 1st, 2000. The report discusses the energy and economic effects of tillage systems and crop rotations as they relate to greenhouse gas emissions at a number of sites in western Canada. Report is available from: Ewen Coxworth, 1332 10th St. East, Saskatoon, SK S7H 0J3 Phone: (306) 343-9281, e-mail: coxworth@the.link.ca.

Prairie Sustainable Agriculture And Rural Development Project: Prairie SARD: Centre for the Study of Agriculture, Law and the Environment (CSALE), University of Saskatchewan, Saskatoon SK.

- Bulletin #1 December, 2000: Introduction to SARD projects. Identifies areas where future work will be focused to address sustainable farming opportunities. Greenhouse gas emissions mitigation strategies are part of this framework.
- Bulletin #2. January, 2001: Integration of Activities On-Farm and Between Farms: Economic Effects. The report discusses how farmers in three areas of Saskatchewan have formed co-op operations to reduce costs and adopt sustainable farming practices. Report is available from: Ewen Coxworth, 1332 10th St. East, Saskatoon, SK S7H 0J3. Phone: (306) 343-9281 or e-mail: coxworth@the.link.ca.

Category - Grasslands

Technical Factsheets/Newsletter Articles

Science and Environment Bulletin - Environment Canada. Jan/Feb 2001, Ecological Grazing Rejuvenates Native Prairie. Available from Dept. of the Environment, Canada, inquiry centre. See contact information.

USDA NRCS - Grazing Lands Technology Institute Publications/videos/CD.

Materials include:

- Blending Buffers with Business: 4 page document discussing how four farmers cooperated in diversifying their farming operations with conservation measures.
- Dairy Farmer Profitability Using Intensive Rotational Stocking: 16 page booklet comparing rotational grazing with continuum pasture, hay, and corn silage.
- National Range and Pasture Handbook. Policy and procedures for land managers in planning and applying resource conservation on grazing land.
- Nutrition Videos and CD ROM B two videos and a CD ROM on animal nutrition. Training tools to help producers understand animal nutrition and its importance in production and conservation on grazing lands.
- Information Releases:
 - Grazing Lands Roundup. Published 3 times per year.
 - Pasture Prophet. Intermittent publication. Pertains to pasture managementBoth publications available by contacting: djohnson@ftw.nrcs.usda.gov

All above materials available for download on internet:

http://www.ftw.nrcs.usda.gov/tech_notes.html or by contacting the NRCS site (see contact information).

Research Papers/Reports

- Effect of Management of Grasslands on Greenhouse Gas Balance: 1999. R. Martin, A. Fredeen, R. Cohen, J. Cooper, D. Lynch, G. Patterson, M. Main, R. Loucks. Report to Agriculture and Agri-food Climate Change Table Environment Bureau, Agriculture and Agri-Food Canada. 66p
- Methane and Nitrous Oxide Fluxes in Native, Fertilized and Cultivated Grasslands. Mosier, A., Schimel, D., Valentine, D., Bronson, K., Parton, W. 1991. *Nature*, 350(March 28): 330-332.
- Nitrogen Fertilizer Boosts Carbon Storage in Grassland Soil. M.Nyborg, M. Molina-Ayala, E.D. Solberg, R.C. Izaurralde, and H.H. Janzen. Available on the Parkland Agriculture Research Initiative (PARI) Decision Support System website: <http://paridss.usask.ca/factbook/tocsoilcrop.html>.
- Nitrous oxide emission from arable, grassland soils: Effect of crop type and nitrification inhibitor. McTaggart, L.P. and K.A. Smith, 1996.

Category - Newsletters/Publications/Videos

Ag Review. April 1999, Type of Cropping System Affects Production of Greenhouse Gases.

AgWeek, AgLink, general farming information based in North Dakota.

375 Second Ave. N.

Grand Forks ND 58203

Phone: 701-780-1100 ext. 222, e-mail: agweek@gfherald.com,

website: www.agweek.com

Agriculture and Agri-Food Canada News Releases

<http://www.agr.ca/cb/news/newsrle.html>, AAFC news releases beginning October 1995, listed by month, location and title.

Agri-Réseau. Le réseau québécois de sites spécialisés en agriculture et agroalimentaire. Ce site Contient un lien Agroenvironnement qui touche plusieurs aspects ; Gestion des fertilisants et amendements, Conservation des sols, Gestion de l'eau, Gestion des pesticides, Entreposage et traitement des fumiers. Contact : Serge Bégin, M. Sc., agronome, Coordinateur d'Agri-Réseau. 225, Grande Allée Est, 4^e étage, Québec (QC) G1R 2H8. Tel : 418-644-2726, Fax : 418-646-1830 or 418-644-5944, email: sbegin@craaq.qc.ca, website: www.agrireseau.qc.ca.

Better Crops With Plant Food. Published quarterly by the Potash and Phosphate Institute.

655 Engineering Drive, Suite 110

Norcross, GA 30092-2837

Phone: 770-447-0335, Fax: 770-448-0439, website: www.ppi-far.org

Better Farming Magazine, general farming information based out of Ontario.

Robert Irwin, Managing Editor

RR2

VanKleek Hill ON K0B 1R0, Phone: (613) 678-2232, Fax: (613) 678-5993

website: www.betterfarming.com

Bio-bulle. Le magazine Québécois de l'agriculture biologique. Contacte : Centre d'agriculture biologique, Service à la clientèle, 401 rue Poiré, La Pocatière, Québec, G0R 1Z0. Tel: 418-856-1110, poste 340, Fax: 418-856-2541, email info@cab.qc.ca, siteweb : <http://www.cab.qc.ca/>.

Bio-energy News: Information on how biomass crops can be used for fuel production and how this can be used as a carbon offset.

Canadian Cattlemen The Beef Magazine

Box 6600

Winnipeg MB R3C 3A7

Phone: (204) 944-5753, Fax: (204) 942-8463, website: www.agcanada.com

CO₂/Climate Report. A periodical newsletter devoted to the review of climate change research. Canada Department of the Environment. Available from: Science Assessment and Integration Branch and Meteorological Service of Canada, 4905 Dufferin St., Downsview Ontario M3H 5T4, (416) 739-4432. Issues of note include:

- Fall 1998 - issue 98-2. Frequently Asked Questions About the Science of Climate Change.
- Spring 1999 - issue 99-1. 1997 in Review - An Assessment of New Research Developments Relevant to the Science of Climate Change.

CO₂ Science Magazine. A weekly review and repository of scientific research findings pertaining to carbon dioxide and global change (New issues posted every Wednesday). Contact information: P.O. Box 25697, Tempe, AZ 85285-5697. Phone: 480-899-2706, Fax: 480-899-2707, email: info@co2science.org, website: www.co2science.org.

Conservation Tillage Information Center B CTIC Partners Newsletter. Published six times per year. Contains articles on conservation tillage; crop nutrient management; weed and pest management; watershed management; water quality; and research and technologies. \$25.00 US, \$35.00 Cdn. Order from their website: <http://www.ctic.purdue.edu/CTIC/Catalog/CropResidueManagement.html>, or from their office. See contact information.

Conservation Voices. A newsletter published bi-monthly by the Soil and Water Conservation Society (SWCS). Contains articles and commentaries (mainly US) on conservation, rangeland, and climate change issues. See contact information for SWCS.

Country Guide Magazine, general farming information based in Winnipeg, Manitoba
Editor: Jay Whetter
Box 6600
Winnipeg MB R3C 3A7
Phone: (204) 944-2222, Fax: (204) 944-5624, website: www.agcanada.com/cg

Eastern Canada Soil and Water Conservation Centre. Publishes news releases periodically in French and English that includes information on agriculture and climate change. Ex: For Earth Day April 22, 2000 the news release was titled: Can agricultural soils reduce Global Warming? And for Earth Day April 22, 2001 the news release was titled: Crop rotation for soil conservation, water protection and greenhouse gas reduction To obtain their news releases contact the ECSWCC at their website: www.ccse-swcc.nb.ca or contact their office. See contact information.

Farm Focus. Covers the Atlantic Provinces and keeps farmers informed about regional, national and international news that affects their farm business or farm families. Published twice monthly by Fundy Group Publications P.O. Box 128, Yarmouth, N.S., B5A 4B1. Editor: Heather Jones. Phone: 1-800-717-4442 or (902) 742-7111, Fax: (902) 742-2311.

Farm Journal. Has columns and articles on agriculture and climate change. US Midwest states
December 95, You Can Build OM
March 96, Giving Back to the Soil, (Environment Column)
Contact: 1-800-320-7992, website: www.agweb.com, e-mail: help@agweb.com.

Farm and Ranch Guide, farm information for North Dakota, Minnesota, S. Dakota and Montana

Box 1977, 4023 State St.
Bismark ND 58502-1977

Phone: 701-255-4905, Fax: 701-255-2372, 1-800-594-8433, or visit their website:
www.farmandranchguide.com.

Grainews, general farm information based in Winnipeg, Manitoba.

Editor: Andy Sirski

P.O. Box 6600

Winnipeg, MB R3C 3A7

Phone: (204) 944-5570, Fax: (204) 944-5416, or visit their website: www.agcanada.com/gn.

Green Matters. Greenhouse Gases - A Reasoned Response. A newsletter from the Alberta Environmentally Sustainable Agriculture (AESA) Council. Issue No. 3, Winter 2000. Several articles on GHG's and agriculture. To subscribe call (780)422-4385 or contact AESA Council or the Alberta Department of Agriculture, Food and Rural Development. See contact information.

Island Farmer. Published bi-weekly in Montague, PEI. Island Press Ltd. P.O. Box 790, Montague, PEI, C0A 1R0

Phone: (902) 838-2515, Fax: (902) 838-4392, email: islandfarmer@islandpress.pe.ca.

Editor: Andy Walker.

Institut National de la Recherche Agronomique (INRA). French institute for agricultural research. They conduct various research programs on different topics and publish various papers. Information is available only in French. General information can be found on their website at www.inra.fr.

- Section regarding soil conservation and no till practices. (<http://www.inra.fr/actualites/DOSSIERS/sol/index.html>).
- "Agriculture de précision : l'enjeu français", a review of the French challenge for precision farming. (<http://www.inra.fr/actualites/DOSSIERS/DOC/agrip/agriprec.htm>)
- A bank of pictures (photothèque) : <http://www.inra.fr/Internet/Produits/phototheque>.
- "Le Courrier de l'environnement", a newsletter published by the INRA and available online at <http://www.inra.fr/Internet/Produits/dpenv/pa.htm>. NOTE: They have a special section regarding climate change (literature review and special publications) at <http://www.inra.fr/Internet/Produits/dpenv/climglob.htm>.

La terre de chez nous. Published Weekly. Éditeur : L'union des producteurs agricoles, 555 boul. Roland-Therrien, Longueuil J4H 3Y9.

Phone: (450) 679-8483, Fax: (450) 670-4788, Internet: www.tcn.upa.qc.ca, Courriel: TCN@laterre.qc.ca.

Rédacteur en chef : France Groulx

MSNBC News: Good information website on carbon sequestration. Has a unique interactive visual depicting various sources of carbon sequestration. Website only: www.msnbc.com/news/399395.asp.

National Association of Conservation Districts (NACD) news & views: (USA) Informs conservation leaders of the activities and policies of the National Association of Conservation Districts (NACD), and conservation districts and their state associations. Bi-monthly. Copies available by contacting e-mail address: Ron-Francis@necdnet.org. NACD also has a Weekly news briefs feature available on their website: <http://www.nacdnet.org/enews.htm>. Other publications available through the NACD include:

- **Buffer Notes:** (USA) Published in conjunction with NRCS. The Buffer initiative has a goal of establishing two million miles of buffer strips by 2002. The newsletter shares success stories, the latest research and new developments associated with the project. Contact NACD (see above).
- **Forestry Notes:** (USA) A joint project of NACD, USDA Forestry Service and the National Association of State Foresters for the purpose of keeping America's conservation districts informed. Available at: NACD Headquarters, 509 Capital Court, NE, Washington, DC 20002-4946 or NACD Service Center, (800) 825-5547 or 509-334-1823.

The National Conservation Tillage Digest (NCTD). Listed as containing information on tillage and its affect on climate change. Contact the NCTD, 19N. Main, P.O. Box 468, Perryville MO 63775. Phone: 314-547-2244.

No-Till Farmer. Information on no-till farming. Based in the US Midwest (Wisconsin).

Editor: Frank Lessiter

P.O. Box 624

Brookfield, WI 53008-0624

Phone 1-800-645-8455 (US) or 262-782-4480, Fax: 262-782-1252, e-mail:

info@lesspub.com, or visit their website: www.lesspub.com/ntf.

NRCS News: USDA Question and Answer factsheet on carbon credits and trading.

Available on the internet: www.nhg.nrcs.usda.gov/FEEDBACK/natural_resources1i.html.

Plant Biotechnology Bulletin (PBI) May 1999. National Research Council Canada. SRC Pub. No. 11182.1A99. See contact information for National Research Council.

Prairie Steward. Published three times per year by the Saskatchewan Soil Conservation Association (SSCA). Contains articles written by researchers, producers and extension specialists. Content includes information on climate change and agriculture. Available to members of SSCA. See contact information.

The Protector. Published by the Soil Conservation Council of Canada (SCC). Contains articles by producers, industry and government with respect to agriculture and climate change. Available from SCC. See contact information.

Science and Environment Bulletin. A newsletter published bi-monthly by the Department of the Environment, Canada. Available from the Dept. of the Environment, Canada, inquiry centre, Phone: 1-800-668-6767. See Contact information. Also available on the internet: www.ec.gc.ca/science/back_e.html. Back issues include:

- May/June 2001. Technologies Turn Manure Into Fertilizer, Energy and Water.
- Jan/Feb 2001. Ecological Grazing Rejuvenates Native Prairie/ The Science of Climate Change.
- May/June 1999. Preserving Canada's Wetlands / Harnessing the Power of Landfill Gas.
- Nov/Dec. 1998. Worms Dig Environmentally Friendly and Farming.
- July/Aug. 1998. Agricultural Cultivation and Thunderstorm Patterns in the Prairies..

Small Grains News: Story on Carbon Credits. Available on the internet: www.smallgrains.org/dtnfiles/102999.htm.

SPARC Newsletter. Published by the Semiarid Parkland Agricultural Research Centre, see contact information. SPARC is at the leading edge for research into soil carbon sequestration and the potential for prairie soils as carbon sinks. Future publications on results from current research will be forthcoming.

Successful Farming Magazine, general farming information based in US Midwest.

P.O. Box 37466

Boone IA 50037-0446

Phone 1-800-374-3276, or visit their website: www.agriculture.com/sfonline/index.html.

University of Saskatchewan. EnerInfo Agricultural. A newsletter about the development, management and analysis of data on the end-uses of energy in the agricultural sector. April 1998, Vol.1 No. 7 Published three times per year.

Contact: Canadian Agricultural Energy End-Use Data and Analysis Centre

Department of Agricultural Economics

51 Campus Drive

University of Saskatchewan

Saskatoon, SK S7N 5A8

Phone (306) 966-4025, Fax: (306) 966-8413

e-mail: caeedac.ag@usask.ca

website: <http://www.usask.ca/agriculture.caedac> (not working)

Western Producer

Box 2500

Saskatoon, SK S7K 2C4

Phone: (306) 665-3500

Whole Farm Planning. Provides farmers with the management tools they need to manage biologically complex farming systems in a profitable manner. Contact: The Minnesota Project, 1885 University Avenue West, Suite 315, St. Paul, MN 55104. Phone: 651-645-6159, Fax: 651-645-1262, email (general interest): mnproject@mnproject.org, (website comments): kdavidson@mnproject.org, or visit their website: <http://www.misa.umn.edu/~mnproj/wfp/index.htm>

Videos

Manitoba: Produced a video: "Zero Tillage: Advancing the Art", that concerns; Sustainability & Zero Till Soils; Economics, Rotations & Forages; Seed & Fertilizer; Weed & Diseases. From Manitoba- North Dakota Zero Tillage Farmers Association by Solnes Productions, Box 1203, Roblin, MB, Canada R0L 1P0.

Ontario Environmental Farm Plan. Produced three videos; 1) EFP: Your Blueprint for the Future (12 min.) 2) EFP: A Step-by-Step Approach (48 min.) 3) Making it Work (17 min.), which are all on the "Home Study Video".

PennState; College of Agricultural Sciences. Produced a video "Crop Rotations that Make Sense (and Money) On Dairy Farms" A video Package to help dairy farmers improve profits and the environment. Department of Agronomy, The Pennsylvania State University, 116 Agricultural Sciences and Industries Building, University Park, PA, 16802-9976.

Prince Edward Island Produced videos: "Reducing the Risk of Contamination from Agricultural Run-off" that includes; Residue Management; Mulching; Measuring Our Progress. Another video "Mulching; Erosion Control for Late Harvested Potato Land".

Québec : A produit des vidéos concernant ; Culture sur billons; Modifications et calibrage des épandeurs et la conservation des sols et de l'eau, ça se cultive.

Rainy Creek Soil Conservation Club. Has produced a video on direct seeding in Alberta. Contact the Alberta Reduced Tillage Initiative, see contact information.

Soil Conservation Council of Canada. Taking Charge, a video on Best Management Practices (available in French and English), see the Soil Conservation Council of Canada's contact or is available at the Eastern Canada Soil and Water Conservation Centre's library.

State of Maine Department of Environmental protection, published a video "Vegetated Buffers: Protecting Property Values and Water Quality" in 1998.

The Fundy Model Forest Produced a video "Forestry Best Management Practices and Water Quality" that includes; Planning, Road & Trail Construction; Tree Harvesting & Silviculture and Fuel & Chemical Use/Storage. 181 Aiton Road, Sussex East, NB, E4G 2V5. Phone: (506) 432-2800, email: fundyfor@nbnet.nb.ca.

Web sites - Agricultural Magazines Online

Ag Care. <http://www.agcare.org/> (Agricultural Groups Concerned about Resources and the Environment)

Agri-Alternatives. <http://www.agrialt.com>

Agricultural-Related Electronic Magazines

<http://www.interaccess.com/consulting/agpubs.html>. A list of links to Ag magazines and resources.

ANGUS - The Magazine http://www.jdainc.net/Angus/angus_the_magazine.htm

AgInnovator <http://www.agriculture.com/technology/index.html>

Beef Today <http://www.beeftoday.com/>

California Cattleman <http://www.calcattlemanmag.com>

Canadian Agriculture Online. <http://www.agcanada.com/>, Provides access to several news services. Has an ag talk feature that connects farmers in a chat line format. Has a search feature for specific topics.

CPM Magazine Online <http://crop-net.com/cpmmagazine/Rooms/HomePage>

Dairy Today <http://www.dairytoday.com>

Eastern Ontario AgriNews <http://www.agrinenewsinteractive.com>, Current agrinews items and OMAFRA updates. Has an archives and ability to e-mail the editor for specific information searches.

Farm Journal Today <http://farmjournal.com/> Farm Journal Magazine's homepage.

Farm Progress <http://www.farmprogressshow.com>

High Plains Journal <http://www.hpj.com>

Hogs Today Has been discontinued as a publication of Farm Journal. There will be no new issues. However, back issues are available to browse through at the website: <http://www.farmjournal.com/magazines/backissues.cfm?ID=3>.

The Home Farm <http://www.homefarm.com> (not working)

Limousin World Magazine <http://www.limousinworld.com>

List of Electronic Magazines <http://www.agpr.com/consulting/zines.html> (not working)

Ontario Crops Forum Discussion

<http://www.gov.on.ca/OMAFRA/english/crops/forum/index.html>, Discussion chat groups focussing on the crops sector in Ontario. Conservation and climate change issues may be discussed.

Ontario Farmer <http://www.ontariofarmer.com>, Daily editorials and farm news, some on conservation issues. Searchable by issue but not by subject.

Progressive Farmer Daily <http://progressivefarmer.com>

Ranch & Rural Living Magazine <http://biz3.iadfw.net/ranchmag>

Successful Farming Magazine <http://www.agriculture.com/sfonline>

Top Producer <http://www.topproducer.com>

UT Agriculture http://www.agriculture.utk.edu/dev/ut_ag.htm

Published three times per year. Covers news and events from the College of Agricultural Sciences and Natural Resources, Veterinary Medicine, Agricultural Extension Service, and the Agricultural Experiment Station.

The Western Producer <http://www.producer.com/>, Offers articles from the current issue of the Western Producer, plus special reports from past issues.

Category - General Carbon Sequestration Information

Agriculture & Agri-Food Canada Climate Change Table. Reducing greenhouse gas emissions from Canadian agriculture. Options Report. Jan. 2000. Contains recommendations on management strategies for; soil, water, manure, nutrients and livestock production. Available from: Agriculture and Agri-Food Canada, Environment Bureau. See contact information. Or other information on Issues Tables (such as Foundation Paper and Options Report) at the websites:

www.nccp.ca/NCCP/national_process/issues/agriculture_e.html, and
www.nccp.ca/NCCP/national_process/issues/sinks_e.html.

Agricultural Soils. *In*: National Workshop on Agriculture and Climate Change, April 1992, Ottawa, Ontario. Pp. 1-9. Anderson, D.W. Carbon storage and CO₂ emissions.

Carbon Cycle and Agricultural Best Practices Research Act. (US) March 25, 1999 A good indication of US intentions regarding agriculture practices, climate change and pending legislation. Has implications for best management practices, extension information and advice for US producers. Available from: The Fertilizer Institute, 501 Second St. NE, Washington, DC 20002. Phone 202-608-5913. Fax: 202-544-8123. E-mail: ezillinger@tfi.org
website: www.tfi.org. or at <http://www.va.nrcs.usda.gov/DataTechRefs/Microsoft Word - Greenhouse Gases and Global Change.pdf>.

Carbon in Our Soils. Abstract: Discusses how sequestered carbon in soils can be a short-term solution to increased CO₂ levels in the earth's atmosphere. Features Jim Kinsella, Illinois farmer. Available from the Soil and Water Conservation Society website: http://www.swcs.org/t_pubs/voices_arch_carboninsoils.htm.
See contact information for address.

Council for Agricultural Science and Technology (CAST). Storing carbon in agricultural soils to help mitigate global warming. US. CAST; 2000 April issue paper no. 14. Rosenberg, N., Izaurralde, R. Malone, E. Available from the library of the Eastern Canada Soil and Water Conservation Centre. See contact information for address.

GemCo News. Newsletter on carbon sequestration activities such as: the Iowa Farm Project. Contact: Aldyen Donnelly, President, Suite 101-1965 West Fourth Avenue, Vancouver BC V6J 1M8, Phone (604) 731-4666, Fax: (604) 731-4664, e-mail: aldyen@mindlink.bc.ca, or visit the website at: www.gemco.org/news.htm.

IGF Insurance Company Factsheet. Discusses carbon credit trading and how farmers can qualify for their program in Iowa. Available on the internet: <http://www.igfinsurance.com/services/train.htm>, Contact: IGF Insurance company, 6000 Grand Ave., Des Moines Iowa 50312, Phone: (800) 274-2766, or e-mail: glivingston@ifginsurance.com.

National Association of Resource Conservation and Development Councils - Goals for organizations in Climate Change. News Release: December, 2000. A news release on the Montana Carbon Offset Coalition, (MCO), a carbon sink project. Available from: Ted Dodge (406) 587-6965, or Larry Van Rinsum (406) 857-2285.

News for North Dakotans. Interest in Carbon Sequestration May Benefit Region's Farmers. An article from the Agriculture Communications dept of the North Dakota State University (NDSU). Discusses carbon sequestration, what is known about the concept in North Dakota and how it may benefit North Dakota farmers. Available on their website: <http://www.ext.nodak.edu/extnews/newsrelease/2000/021700/02intere.htm>. Contact Larry Cihacek 701-231-8572 or NDSU, see contact information.

Pacific Rim Regional Association of RC&D's A good site that explains what carbon offsets are and how the carbon credit process works. Has a few brochures on carbon offsets and the aggregation process. They are:

- Carbon Aggregator Brochure Explains how the Pacific Rim Regional RC&D organization will act as a carbon project aggregator in conjunction with brokers for carbon emission reduction certificates (CERCs).
- Carbon Technology Transfer Center (CTTC) A brochure explaining the center and it's goals to shed light on carbon credits and carbon offset opportunities in the Pacific rim region.
- Overview of the Entire Process. Outlines the various parts of the carbon offset process, who is all involved.

Brochures available in pdf format from their web site:

http://pacrimrc-d.com/Carbon_Aggregator.htm, or from their Regional office at:

Pacific Rim Regional Association of RC&D's
1101 North Argonne Rd., 217
Spokane, WA 9921
Phone: 509-893-3970, Fax: 509-893-0034
e-mail: tim@carboncenter.net
website: carboncenter.com

Soil and Water Conservation Society. Abstract: Voices Archive Aug-Sept00. Carbon In Our Soils. Discusses how building carbon in agricultural soils may offer a short-term solution to CO₂ emissions in the earth's atmosphere. Available from the SWCS website: http://www.swcs.org/t_pubs_voices_arch_aug-sept00.htm or by contacting their office. See contact information.

US Department of Energy (DOE) Center for Research on Enhancing Carbon Sequestration in Terrestrial Ecosystems. (CsiTE).

Emphasis is research on forest, prairie and croplands as it relates to carbon sequestration. Discusses how amendments from fossil fuel and paper production and, biological waste can be used to reclaim land that has been poorly managed.

Contact: Anthony Palumbo, Environmental Sciences Division, P.O. Box 2008, Oak Ridge National Laboratory, Oak Ridge Tennessee 37831-6038,
Phone: 865-576-8002, Fax: 865-576-8646, or e-mail:
palumboav@ornl.gov.

- Article: Carbon Sequestration. A discussion of the potential for carbon sequestration in the US. Much of this information involves sequestration by non-agriculture methods i.e. geological reservoirs. Available on the internet: http://www.fe.doe.gov/coal_power/sequestration/index.shtml. This site does, however, warrant a look for future developments in agriculture. Information contact: Robert Kane, Sequestration issue Manager, Office of Fossil Energy (FE-26), US Department of Energy, Washington, DC 20585, 202-586-4753, e-mail: robert.kane@hq.doe.gov.

University of Nebraska, Institute of Agriculture and Natural Resources, News Bulletin, September 7, 2000. "UNL Center Helps Company Monitor Carbon Storage Tillage Practices". Article discusses farmer's efforts to sell carbon credits to business. Available on internet: <http://ianrhome.unl.edu/static/0009070.shtml>. Newsletter available at: IANR News Service, 203 Ag Communications Building, University of Nebraska-Lincoln, Lincoln NE 68583-0918, 402-472-3030.

Web sites associated with carbon sequestration. These sites are listed through NRCS and were noted as having information on conservation practices and carbon storage. They were not successfully accessed.

www.statlab.iastate.edu/survey/SQL/sqiinfo.shtml (currently not working)

www.statlab.iastate.edu/survey/SQL/agronomy.shtml (currently not working)

Category - General Climate Change Information

Agriculture & Agri-Food Canada, Environment Bureau Publications/Factsheets

The following publications from **Agriculture & Agri-Food Canada, Environment Bureau** discuss the issues and impacts on agriculture.

Air Quality:

- Agricultural NH₃ and NO₂ Emissions in Canada
- The Health of Our Air

Soil and Water Quality: Agriculture & Agri-Food Canada, Environment Bureau.

- Health of Our Soil
- Health of Our Water

Climate Change: Agriculture & Agri-Food Canada, Environment Bureau.

- Measuring Soil Carbon Stocks: A System for Quantifying and Verifying Change in Soil Carbon Stocks due to Changes in Management Practices on Agricultural Land.

Available in PDF format from the Agriculture & Agri-Food Canada, Environment Bureau website or from their Ottawa office. See contact information.

AgInfoNet. News articles and other agricultural related information. Has a farmer chat line, newsletters, an archives and is searchable.

Contact: <http://www.aginfonet.sk.ca/>.

Alberta Environmentally Sustainable Agriculture (AESA) Program. Proceedings from the Agriculture Industry Climate Change/Greenhouse Gas Forum, March 12-14, 2000, Nisku, Alberta. Information on: the science of climate change, current situation on sink negotiations, Alberta's strategy on climate change and a farmers perspective. Available from the AESA council office. See contact information.

Atlantic Canada Climate Change Workshop 2000. Miramichi, NB. Designed to provide delegates, from an array of community groups through Atlantic Canada, with an enhanced awareness of the issue, and provide each with an array of community level initiatives that can be conveyed to their respective communities. Contact information: Harry Collins, Executive Director, Miramichi River Environmental Assessment Committee (MREAC), 133 Newcastle Blvd., Miramichi, New Brunswick, E1V 2L9.

Phone: (506) 778-8591, Fax: (506) 773-9755, email: mreac@nbnet.nb.ca, Website: http://www.ns.ec.gc.ca/community/acap/miramichi_river.html.

A Workbook on Greenhouse Gas Mitigation for Agricultural Managers (Version 1; April 2001). Prepared by: Noel McNaughton. Concerning; Greenhouse Gases in Livestock Operations; Manure Handling and Greenhouse Gases; Cropping and Greenhouse Gases; Agroforestry and Greenhouse Gases; Carbon Credits. See Alberta Environmental Sustainable Agriculture (AESA) contact information.

Canada's National Climate Change Program.

- Report: An Assessment of the Economic and Environmental Implication for Canada of the Kyoto Protocol. Analysis and Modeling Group, Climate Change Secretariat, Nov. 2000. Available from Canada's National Climate Change Secretariat, see contact information. or download from their website: http://www.nccp.ca/NCCP/pdf/AMG_finalreport_eng.pdf (125 pages).
- Report: Government of Canada's Action Plan 2000 on Climate Change. Shows action plan for the Agriculture and Forestry industries. Also some information pertaining to buildings. Available from Canada's National Climate Change Secretariat, see contact information or for Hard Copy phone 1-800 O-Canada (1-800-622-6232).
- Information publication: Canada's First National Climate Change Business Plan. Oct. 2000. Contains a look at agriculture projects currently under development. Available from Canada's National Climate Change Secretariat, see contact information or download from their website: <http://www.nccp.ca/NCCP/pdf/media/FNBP2-eng.pdf>.

Climate Change Handbook for Agriculture 2000. Editor: Joanne Kowalski. Compiled by: Chair in Environmentally Sustainable Agriculture, Centre for Studies in Agriculture, Law and the Environment (CSALE), Canadian Agricultural Energy End-use Data Analysis Centre, University of Saskatchewan. A considerable volume of information which would be valuable to producers, policy makers, and others interested in the topic. See CSALE contact information.

Climate Change Skills and Knowledge Transfer Program. The Soil Conservation Council of Canada is delivering the "Taking Charge" program to assist farmers in understanding climate change issues and identifying best management practices to reduce greenhouse gases. For information on this ongoing project, contact John Brown, Phone: (613) 759-7301, e-mail: brownl@em.agr.ca.

Climate Change and Agriculture: The Role of Farmer Adaptation. *In:* Mendelsohn, R., and J. Neumann, The Impact of Climate Change on the United States Economy. Cambridge University Press, Cambridge, United Kingdom, pp. 75-93.

Conservation Information Co-operative: Connecting the World in Conservation. A web page that houses a comprehensive listing of conservation and stewardship information sources for all users, students, landowners, government, non-profit and for-profit organizations. Contact: University of Guelph, Guelph, Ontario N1G 2W1. email: cic@uoguelph.ca, Website: <http://www.cic.envsci.uoguelph.ca/>.

Environmental Defense. Publishes fact sheets on a variety of climate change topics including:

- Atmospheric Nitrogen Deposition from Agricultural Activities
- Air Pollution from Large Diesel Trucks and Buses
- Global Warming and Climate Change
- Hog Farm Facts

Available on their website: <http://www.environmentaldefense.org/pubs/Factsheets/>.

Contact: 1-800-684-3322 Environmental Defense, 257 Park Ave. South, New York, NY 10010.

EPA Global Warming Site: Actions.

<http://www.epa.gov/oppeoee1/globalwarming/actions/agforestry/index.html> Highlights Best Management Practices in the "Agriculture Systems Management" link.

Global Climate Change. Canadian federal government climate change website.

www.climatechange.gc.ca. Has a package of information that includes the following brochures:

- Climate Change. Science, Impacts and Adaptation. Contains general information on climate change in Canada plus some links to other related websites.
- Global Climate Change. It's About Our Environment, Our Economy, Our Future. General information about climate change in Canada and programs to mitigate greenhouse gas emissions. Ex. Climate Change Action Fund (CCAF).
- Environment Canada Publications. Order Form.
 - Fact Sheets - general information, some wetlands.
 - Agriculture Paper
 - Canada's Second National Report on Climate Change, 1997, \$20 + shipping and taxes.
 - A Change In Our Climate, general information on climate change
 - Car Economy Calculator. Shows fuel efficiency.
 - Energy Efficiency at Home and on the Road. Energy savings tips.
 - Taking Actions on Climate Change. General information on climate change.
 - Office of Energy Efficiency Programs. Outlines programs to encourage energy efficiency in buildings and vehicles.

Publications also available from Canada's National Climate Change Secretariat. See contact details.

Global Warming Central. Pace University School of Law's Pace Energy Project.

Information on global warming.

Website: <http://www.law.pace.edu/env/energy/globalwarming.html>, nothing found on agriculture issues but may be worth noting for future information.

Global Warming Focus on the Future. General information on Global Warming. Not great information on agriculture. Available on internet: www.enviroweb.org/edf/.

Global Warming News Zone. General information on global warming. Focuses on the down side of global warming. Available on internet: <http://explorezone.com/news/globalwarm.htm>.

Government of Canada, Department of Environment.

- Report: Climate Change Digest - Projections for Canada's Climate Change Future. CCD 00-01. Available from the internet: www.tor.ec.gc.ca/apac/ or from their office, see contact information.
- Report: Communicating the Science of Climate Change: A Mutual Challenge for Scientists and Educators. (Published in the Canadian Journal of Environmental Education, Spring 2000)
- Report: CO₂ Climate Report, Spring 2001 (A review of scientific literature published in 1999).
- Report: CO₂ Climate Report, Winter 2001 (Devoted to three brief assessments recently published reports on Carbon Sinks, Radiative forcing and the IPCC Special Report on Emission Scenarios.
- The Reports are available from the internet: http://www.msc-smc.ec.gc.ca/saib/climate/ccsci_e.cfm.
- Factsheet: Global Climate Change B The Greenhouse Gas Emissions Outlook to 2020. Outlines projections for GHG (CO₂, N₂O, CH₄) emissions by sector and province. Available on internet: www.ec.gc.ca/climate/fact/greenhou.html, or from their office, see contact information.

NASA's Earth Observing System. General information on climate change. Available on the internet: <http://eospsso.gsfc.nasa.gov/>.

Prairie Farm Rehabilitation Administration (PFRA). Has produced a large poster (one of a future series) on climate change in Canada. Available from PFRA, see contact information, catalog #M41-8/70E ISBN 0-660-18357-9. Also available from the Geological Survey of Canada. Contact their website: www.nrcan.gc.ca/gsc/education_e.html.

The Role of Agriculture in Climate change: A Preliminary Evaluation of Emission Control Strategies. Available from Texas A&M University, Dept of Ag Economics website: <http://agecon.tamu.edu/faculty/mccarl/mitigate.html>.

Soil and Water Conservation Society. Abstract: Where Are We Falling Short. Discusses how land care affects water, air quality and general health safety. Available from the SWCS website: http://www.swcs.org/t_pubs_voices_arch_fallingshort.htm or by contacting their office (see contact information).

Saskatchewan Wheat Pool. 1998. Greenhouse Gases, Climate Change, the link to Agriculture. Quickfacts, 54:1-4. Available from: Saskatchewan Wheat Pool, Communications Division, 2625 Victoria Ave., Regina SK S4T 7T9.

USDA's Climate Change Role. Describes the department's commitment to understanding the impact of climate on agriculture, along with a summary of domestic actions and outreach efforts. Available to download (Adobe Acrobat format) from the USDA Global Change Program Office (GCPO) website: <http://www.usda.gov/oce/gcpo/facts.htm>, or by ordering from the USDA GCPO office (see contact information).

Category - Contact Information/Contact People

Agriculture & Agri-Food Canada

<http://aceis.agr.ca>, The home page for Agriculture and Agri-Food Canada.

Agriculture and Agri-Food Canada, Environment Bureau.

930 Carling Ave. Rm 367

Ottawa, ON K1A 0C5

Phone: (613) 759-7309, Fax: (613) 759-7238

e-mail: enviro@em.agr.ca

website:

http://www.agr.ca/policy/environment/eb/public_html/ebe/publications.html

General information on climate change and agriculture, technical fact sheets and publications.

Hilary Girt, (613) 759-7937

Carlos Monreal

Christian de Kimpe

National Coordinators for new carbon sequestration and greenhouse gas research programs and initiatives at Agriculture & Agri-Food Canada.

Contact: Carlos Monreal, Ph.D.
Special Advisor, Environment/Energy
Research Planning and Coordination Directorate
Agriculture and Agri-Food Canada
Room 771, Sir John Carling Building
Ottawa, Ontario
Canada, K1A 0C5

Lethbridge Research Centre

5403-1st Ave. South, P.O. Box 3000

Lethbridge Alberta T1J 4B1

Phone: (403) 327-4561, Fax: (403) 382-3156

website: <http://res.agr.ca/leth>, e-mail: morganjones@em.agr.ca,

Dr. Henry Janzen, Has expertise in the area of carbon cycling and is one of the scientists involved in the Prairie Soil Carbon Balance Project that is modeling carbon sequestration in the prairies. e-mail: Janzen@abrsle.agr.ca.

Dr. Chi Chang, Expertise in waste disposal, nitrate leaching, water conservation and the effects on climate. e-mail: Chang@abrsle.agr.ca.

Semi-arid Parkland Agricultural Research Centre

P.O. Box 1030, Airport Road

Swift Current, SK S9H 3X2

Phone: (306) 778-7200, Fax: (306) 773-9123

Wayne Lindwall, Expertise in carbon sequestration research and a member of Canada's negotiating team in the Conference of Parties Climate Change meetings.

e-mail: Lindwallw@em.agr.ca

Reynald Lemkey and **Brian McConkey** are conducting research into carbon and nutrient cycling (methane, N₂O).

Bob Zentner is involved with the energy related aspects and modeling issues of agricultural practices and climate change on the prairies.

Agri-ville. An agriculture information site. Has a chat site where comments on agriculture and climate change could be initiated.

Website: <http://www.agri-ville.com/coffee/schedule.htm/>

**Alberta Agriculture, Food and Rural Development
Conservation and Development Branch**

Jilene Sauve, M.Sc.

Climate Change Agrologist

#206 7000 B 13th Street

Edmonton Alberta T6H 5T6

Phone: (780) 427-3347 Fax:(780) 422-0474

Website: <http://www.agric.gov.ab.ca/>

Alberta Conservation Tillage Society (ACTS)/ Reduced Tillage Linkages

Box 41029

114th St. & 40th Ave.

Edmonton, Alberta T6J 6M7

Phone: (780) 427-3361, **Peter Gamache**, Manager

Alberta Environmentally Sustainable Agriculture (AESAs) Council

Program Coordinator, **Carol Bettac**

Suite 206, JG O'Donoghue Bldg.

7000 - 13th St.

Edmonton AB T6H 5T6

Phone: (780) 427-3885, Website: <http://www.agric.gov.ab.ca/sustain/aesaprog.htm>

Alberta Reduced Tillage Initiative (ARTI)

Box 41029, 114th St. 40th Ave., Edmonton AB T6J 6M7.

Phone: (780) 427-3361, Fax: (780) 436-3693. Contact: **Peter Gamache**.

<http://paridss.usask.ca/consgroups/arti/index.htm>, Promotes direct seeding and reduced tillage. Information on no-till techniques, events and links to agronomists and partners.

Alberta Strategy for Action on Climate Change

Website: <http://www.gov.ab.ca/pab/documents.cfm>

A Matter of Degrees: A Primer on Climate Change. General information on climate change. Website: <http://www.ec.gc.ca/climate/primer/index.htm>

American Society of Agronomy. Agronomic information with respect to climate change in the United States.

677 South Segoe Rd

Madison, WI 53711

Phone: 608-273-8080, Fax: 608-273-2021, Website: <http://www.agronomy.org/>

John Bennett, farmer representative on Canadian Federal Sinks Table and has expertise in direct seeding as it relates to carbon sequestration and climate change.

Box 703

Biggar, SK SOK OMO

Phone: (306) 948-2862

British Columbia Ministry of Agriculture, Fisheries and Food

Mailing Address: PO Box 9120, STN PROVG0VT, Victoria BC V8W 9B4

Phone: (250) 387-5121, website: <http://www.gov.bc.ca/agf>

e-mail: agf.webmaster@gems2.gov.bc.ca

Contains information on BC's Agriculture industry.

Canada Country Study: Climate Inputs. National summary for policy makers and highlights for Canadians. Website: <http://www.ec.gc.ca/climate/ccs>

Canada's Second National Report on Climate Change. Policy information.

Website: <http://www.ec.gc.ca/climate/doing/>

Canadian Cattleman's Association

Peggy Strankman

Phone: (403) 274-5686 or e-mail: strankmanp@cattle.ca

Canadian Fertilizer Institute

Suite 802, 350 Sparks St.

Ottawa, ON K1R 7S8

Phone: (613) 230-2600, Fax: (613) 230-5142, e-mail: fertilizer@cfi.ca,

website: www.cfi.ca

Canadian Institute for Climate Studies

General climate change information.

Website: <http://www.cics.uvic.ca/>

Canadian Society of Soil Science. Information on issues that relate to soils and soil science including climate change information.

Contact: Agriculture Institute of Canada
141 Laurier Ave. W., Suite 1112
Ottawa ON K1P 5J3
Phone: (613) 232-9459, Fax: (613) 594-5190
website:www.aic.ca, or <http://www.csss.ca>

Canadian Water Resources Association

Website: <http://www.cwra.org>

Carbon Trading. Sites that information on carbon trading activities.

www.gert.org, www.pert.org, www.nescaum.org, www.airbank.com

Canada's National Climate Change Secretariat. From this site one can link to the Climate Change Action Fund database to look at projects being conducted to address climate change.

Website: <http://www.nccp.ca>
e-mail: ccaf@climatechange.gc.ca

Climate Change Action Fund Applicant's Guide

Website: http://www.solutions.ca/thechangestartshere/english/peo_e.htm

Canada's Climate Change Voluntary Challenge and Registry. Information on programs related to climate change and carbon offset programs.

Website: <http://www.vcr-mvr.ca/>

Center for the Study of Agriculture, Law and the Environment (CSALE)

Richard Gray, Director

51 Campus Drive

Saskatoon, Saskatchewan S7N 5A8

Phone: (306) 966-8893 Fax: (306) 966-8894

E-mail: csale.ag@usask.ca Website: <http://www.ag.usask.ca/centres/csale/>

Climate Change Central. A site based on the public/private sector partnership to coordinate climate change activities in Alberta. <http://www.climatechangecentral.com>

Conservation Technology Information Center

John Hebblethwait, Executive Director

1220 Potter Drive, Room 170

West Lafayette, Indiana 47906

Phone: 765-494-6956, e-mail: heb@purdue.edu

Website: www.ctic.purdue.edu/CTIC/CTIC.html

Centre de Référence en agriculture et agroalimentaire du Québec (CRAAQ)

2875, boul Laurier, 9^e étage

Ste-Foy (Québec)

G1V 2M2

Téléphone: (418) 523-5411 (pour Québec et les environs)

Téléphone: 1 888 525-2537 (partout au Canada)

Télécopieur: (418) 646-1830 ou (418) 644-5944

Internet: www.craaq.qc.ca

Danny Blair, Department of Geography, University of Winnipeg. Climate change information. Website: <http://www.uwinnipeg.ca/~blair/>

Eastern Canada Soil & Water Conservation Centre (ECSWCC), Jean-Louis Daigle, director and **Gordon Fairchild,** Soil Specialist. The ECSWCC has a library containing over 20,000 items that are related to soil and water conservation and agriculture. The bibliography of the documents in the library can be searched on their website (see below) which has search capability by topic and title.

Contact: ECSWCC

1010, ch. de l'Eglise

St-André, NB E3Y 2X9

Phone: (506) 475-4040, Fax: (506) 475-4030

e-mail: ccse-swcc@cuslm.ca, website: <http://www.ccse-swcc.nb.ca>

Environment Canada's Greenland. General information on climate change and Canada's dept of the Environment programs and information.

Website: <http://www.ec.gc.ca>

Environment Canada, general information on programs, services and publications.

Inquiry Centre

351 St. Joseph Boulevard

Hull, Quebec K1A 0H3

Phone: 1-800-668-6767, or (819)-953-2800, Fax: (819)953-2225,

e-mail: enviroinfo@ec.gc.ca

The Fertilizer Institute

501 Second St. NE

Washington, DC 20002

Phone: 202-608-5913, Fax: 202-544-8123

e-mail: ezillinger@tfi.org, website: www.tfi.org

GemCo

Aldyen Donnelly, President

Suite 101-1965 West Fourth Avenue

Vancouver BC ,V6J 1M8

Phone: (604) 731-4666, Fax: (604) 731-4664, e-mail: aldyen@mindlink.bc.ca

Internet: www.gemco.org/news.htm

Global Warming Information Center (US). General information on global warming.
Website: <http://www.globalwarming.net/>
Global warming information page. <http://www.globalwarming.org/index.htm>

Government of Canada's Climate Change Site. Main source of information for Canada's climate change programs and links to related areas.
Website: <http://www.climatechange.gc.ca>

Government of New Brunswick, Department of Agriculture, Fisheries & Aquaculture.
P.O. Box 6000, Fredericton, NB E3B 5H1
Phone: (506) 453-2251, , Fax: (506) 453-7170, e-mail: agrit@gnb.ca,
Website: <http://www.gnb.ca/AFA-APA/index.htm>

Government of Newfoundland and Labrador, Forest Resources and Agrifoods.
Soil and Land Management Division, Provincial Agriculture Building, P.O. Box 8700,
Brookfield Road, St. Johns Road, St. Johns NF A1B 4J6,
Fax: (709) 729-6046, website: <http://www.gov.nf.ca/agric/>

John Hastie, Expertise in agricultural practices that sequester carbon. Organized original "Sinks" paper.
Contact: Valdrew Environmental Services Ltd.
459 Queen Charlotte Road, SE
Calgary, AB T2J 5H8
Phone: (403) 225-1822, Fax: (403) 225-1284,
e-mail: valdrew@cadvision.com

Health Canada. Click on "Healthy Living" for climate change information.
Website: <http://www.hc-sc.gc.ca>

International Institute for Sustainable Development (IISD)
161 Portage Ave. E, 6th Floor
Winnipeg MB R3B 0Y4
Phone: (204) 958-7700, Fax: (204) 958-7710, e-mail: inf@iisd.ca, website: <http://iisd.ca>

International Panel on Climate Change
Website: <http://www.ipcc.ch>

Manitoba Agriculture and Food. Has information relating to climate change/agriculture programs.
Manitoba Agriculture and Food.
Soils and Crops Branch
65 - 3rd Ave. NE
Box 1149
Carman, MB R0G 0J0
Phone: (204) 745-5630, Fax: (204) 745-5690
website: <http://www.gov.mb.ca/agriculture/>

Manitoba-North Dakota Zero Tillage Farmers Association (Mandak)

7 - 31st St.

Brandon, Manitoba R7B 2J6

Phone: (204) 727-5355, Fax: (204) 727-5245

e-mail: mandak99@mb.sympatico.ca, website: <http://www.mandakzerotill.org/>

Three educational manuals are available online: 1) Zero Tillage Production Manual, 2) Zero Tillage: Advancing the Art, and 3) Integrated Insect Management on Zero Till Fields.

Manitoba Soil Science Society. Through the University of Manitoba, this site keeps up on issues surrounding soils and the effect of climate change.

Website: http://www.umanitoba.ca/faculties/afs/soil_science/msss/

Monsanto Canada Inc.

Head Office, Agricultural Products

67 Scurfield Blvd.

Winnipeg, MB R3Y 1G4

1-800-667-4944

Website: <http://www.farmcentral.com/>

National Association of Conservation Districts

Head Office, 509 Capitol Court NE,

Washington DC 20002-4946

Phone: 202-547-6223, Fax: 202-547-6450, e-mail: washington@nacdnet.org

This association, started in 1935, now represents over 3000 conservation districts, almost one in every county. Their focus is on land, water, forests and wildlife conservation issues, including climate change. They have a good newsletter e-mailed weekly free of charge. To subscribe, contact them at their website: <http://www.nacdnet.org/enews.htm>.

National Association of State Conservation Agencies

Executive Director, **Jim Cox**

4564 Dunbrooke Rd.

Tappahannock VA 22560

Phone: 804-443-1527, Fax: 804-443-1751, e-mail: jwcox@crosslink.net

Internet: <http://www.nascanet.org>,

A new site that may have good climate change information at a later date. US based information on conservation programs and information that involves agriculture.

National Agriculture Environment Committee

Chair: **Jeff Wilson**, Phone: (519) 855-6519, Fax: (519) 855-6061,

e-mail: naecfors@magi.com

National Climate Change Data Center - NOAA

El Nino/La Nina information

Website: <http://www.ncdc.noaa.gov/ol/climate/elnino/elnino.html>

Natural Resources Canada: General climate change information available here.

Website: <http://www.climatechange.nrcan.gc.ca>

Natural Resources Canada Office of Energy. <http://www.oee.nrcan.gc.ca>

Natural Resources Canada Climate Change Adaptation
Website: <http://sts.gsc.nrcan.gc.ca/adaptation>

North Dakota State University, Agriculture Extension

Agriculture and Natural Resources
Morrill Hall 311, Box 5437, Fargo ND 58105-5437
Administration Office: 701-231-7193

Nova Scotia Agriculture College

Dr. Robert Gordon, Climate Change Research Chair
e-mail: rgordon@nsac.ns.ca

Nova Scotia Department of Agriculture and Fisheries

General Information
PO Box 190, 7th Floor, Joseph Howe Building,
Halifax, Nova Scotia B3J 2M4
Phone: (902) 424-6734, Fax: (902) 424-3948
Internet: <http://www.gov.ns.ca/nsaf/home.htm>

Ontario Cattleman's Association

Peter Doris

Phone: (519) 824-0334, Fax: (519) 824-9101
E-mail: ontbeef@cattle.guelph.on.ca

Ontario Corn Growers Association

Terry Daynard, President

Phone: (519) 837-1660, Fax: (519) 837-1674, e-mail: tdaynard@ontariocorn.org

Ontario Ministry of Agriculture, Food and Rural Affairs

1 Stone Road West, 2nd Floor
Guelph, ON N1G 4Y4
1-888-466-2372 ext 63139
e-mail: webmaste@omafra.gov.on.ca

Ontario Ministry of Natural Resources

Main Office - Peterborough, ON
300 Water St.
P.O. Box 7000
Peterborough, ON K9J 8M5
(705) 755-2000, General Inquiry: 1(800) 667-1940 English, 1(800) 667-1840 French.

Ontario Soil And Crop Improvement Assoc.

Harold Rudy, President, Phone: (519) 826-4217, Fax: (519) 767-4605
E-mail: oscia@netcom.ca

Parkland Agriculture Research Initiative - Decision Support System

Website: <http://paridss.usask.ca/>

Prairie Agriculture Machinery Institute (PAMI)

Box 1150, Highway 5 West

Humboldt, SK S0A 2A0

Phone: 1(800) 567-7264 (USA and Canada), (306) 682-5033, Fax: (306) 682-5080,

e-mail: humboldt@pami.ca, website: www.pami.ca

Prairie Farm Rehabilitation Administration (PFRA)

PFRA Headquarters

603-1800 Hamilton St.

Regina, Saskatchewan, S4P 4L2

Phone: (306) 780-5070, Fax: (306) 780-5018

Website: www.agr.gc.ca/pfra/

Ted O'Brien and Brian Abrahamson

Are involved in the longer term changing climate and necessary prairie adaptations and drought prediction modeling. Drought Watch website: www.agr.gc.ca/pfra/drought.htm.

Brant Kirychuk

Is working with Saskatchewan Power and Agriculture & Agri-Food Canada Research Branch to determine management options and GHG coefficients for PFRA pastures and prairie rangelands.

PFRA Shelterbelt Centre

Box 940

Indian Head, Saskatchewan

SOG 2K0

Phone: (306) 695-2284, Fax: (306) 695-2568

e-mail: pfratree@em.agr.ca

website: <http://www.agr.gc.ca/pfra/shelterbelt.htm>

John Kort and **Bob Turnock** are conducting research on energy savings for farms through agroforestry and carbon sequestration from prairie grown trees and shelterbelts.

Tricia Pollock and **Laura Poppy** are involved with the Climate Change Action Fund (CCAF) - Agricultural Awareness Partnership Project.

Prairie Swine Center Inc.

Phone: (306) 373-9922, Fax: (306) 955-2510, e-mail: whittington@sask.usask.ca,

Internet: <http://adminsrv.usask.ca/psci/>

Prince Edward Island, Department of Agriculture & Forestry

Agriculture and Forestry Information Centre, toll free: 1-866-734-3276

Communications Officer, **Wayne MacKinnon**

5th Floor, Jones building, 11 Kent St. PO Box 2000,

Charlottetown, PEI C1A 7N8, Phone: (902) 368-4888.

Website: www.gov.pe.ca/af/

Quebec Agriculture

Website: <http://www.agr.gouv.qc.ca/>

Saskatchewan Agriculture and Food

Walter Scott Building

125-3085 Albert St.

Regina SK S4S 0B1

Website: www.agr.gov.sk.ca/

Contact: **Ken Panchuk**, Phone: (306) 787-0556, Fax: (306) 787-0428,

e-mail: kpanchuk@agr.gov.sk.ca

Saskatchewan Centre For Soil Research

University of Saskatchewan

51 Campus Drive

Saskatoon, SK S7N 5A8

Main office: (306) 966-6823, Website: <http://www.ag.usask.ca/departments/scsr/>

Saskatchewan Research Council

15 Innovation Blvd.

Saskatoon, SK S7N 2X8

Phone: (306) 933-5400, Fax: (306) 933-7446, website: <http://www.src.sk.ca>

Prairie Adaptation Network

Website: <http://www.src.sk.ca/climatology/pan/mainframeset.html> (not working)

Saskatchewan Research Council: Preparing For Climate Variability and Change on the Prairies. Information on climate change and the impact on the Canadian prairies.

Website: <http://sts.gsc.nrcan.gc.ca/pagel/clim/palliser/geosci.pdf>

Saskatchewan Soil Conservation Assoc.

Box 1360

Indian Head, SK S0G SK0

Phone: (306) 695-4233, Fax: (306) 695-4235

e-mail: ssca@sk.sympatico.ca, website: <http://ssca.usask.ca>

Saskatchewan Wetlands Conservation Corp (SWCC)

Soil, water and wetland conservation information. Some emphasis on climate change.

Contact: SWCC

Room 101-2022 Cornwall St.

Regina, Saskatchewan S4P 2K5

Phone: (306) 787-0726, Fax:(306) 787-0780, e-mail:swccnet@wetland.sk.ca

website:www.wetland.sk.ca

Soil Conservation Council of Canada

Box 234
Indian Head, Saskatchewan
Phone: (306) 695-3709, Fax: (306) 695-2701
e-mail: info@soilcc.ca, website: www.soilcc.ca

Soil and Water Conservation Society (SWCS)

7515 NE Ankeny Road
Ankeny Iowa 50021
Phone: 515-289-2331, Fax: 515-289-1227
Website: www.swcs.org

Transport Canada. Climate change information as it relates to transportation issues. Options paper has some good information. Website: <http://www.tc.gc.ca>

Texas A&M University

2124 TAMU
College Station TX 77843-2124
Phone: 979-845-2116, Fax: 979-862-1563
website: agecon.tamu.edu

Dr. Bruce McCarl. Has expertise in carbon sequestration and sinks. Department of Agriculture Economics.

United Nations Framework Convention on Climate Change (UNFCCC)

P.O. Box 260124
D-53153 Bonn
Germany
Phone: 49-228-815-1000, Fax: 49-228-815-1999
Email: secretariat@unfccc.int
Internet: <http://www.unfccc.de/>

United States Environmental Protection Agency (EPA)

Ariel Rios Building, 1200 Pennsylvania Ave. NW
Washington DC 20460
Phone: (202) 260-2090, website: <http://www.epa.gov/>
Website has a good search feature to access archives for older documents.

University of Regina

Prairie Adaptation Research Collaborative
Suite 300, 6 Research Drive
Regina, SK S4S 7J7
General Inquiries (306) 337-2300, **Malcolm Wilson**, Director: (306) 337-2287
Website: www.parc.ca

USDA

Agricultural Research Service

Website: <http://www.mrsars.usda.gov>

ARS - Soil Conservation Research Don Reicosky

North Central Soil Conservation Research Lab

803 Iowa Ave.

Morris, MN 56267

Phone: 320-589-3411 ext 144

Fax: 320-589-3787, website: www.nps.ars.usda.gov

Natural Resources Conservation Service

Attn. Conservation Communication Staff

P.O. Box 2890

Washington DC 20013

Website: <http://www.nrcs.usda.gov/>

Natural Resources Conservation Service

Soil Quality Institute

2150 Pammel Drive

Ames, Iowa 50011

Phone: 515-294-4592, Fax: 515-294-8125

Internet: <http://www.statlab.iastate.edu/survey/SQL/index.html>

Other offices in: Auburn, Alabama, Corvallis, Oregon, Las Cruces, New

Mexico, St. Paul, Minnesota, Mandan, North Dakota

North Central Soil Conservation Research Lab. Research on how farm practices affect climate change.

Website: <http://www.mrsars.usda.gov/>

USDA Global Change Program Office

1400 Independence Ave. SW

Mail Stop 3814

U.S. Department of Agriculture

Washington, DC 20250-3814

Phone: 202-720-6698

Fax: 202-401-1176

Website: www.usda.gov/oce/gcpo/index.htm

e-mail: WHohenst@oce.usda.gov

U.S. Department of Energy. The Fossil Energy section of their website contains a Feature Site called, Carbon Sequestration. The site focuses more on non-agricultural sources for sequestration (such as geological formations and oceans). It may be worth reviewing from time to time to check on any agricultural information.

Website: <http://www.fe.doe.gov/index.html>. Link to Carbon Sequestration, Featured Site Sequestration Issue Manager

Robert Kane

Office of Fossil Energy (FE-26)

U.S. Dept. of Energy

Washington, DC 20585

Phone: 202-586-4753

e-mail: robert.kane@hq.doe.gov

Weathervane, Climate change information

Website: <http://www.weathervane.rff.org/>

Western Canada Wheat Growers Association

Phone: (306) 892-2169, Fax: (306) 892-2192, e-mail: wcwga@sk.sympatico.ca