

# Fourth Annual Conference on Carbon Capture & Sequestration

*Developing Potential Paths Forward Based on the  
Knowledge, Science and Experience to Date*

*Public Outreach and Education Technical Session*

## Building Public Acceptance for the Regional Carbon Sequestration Partnerships

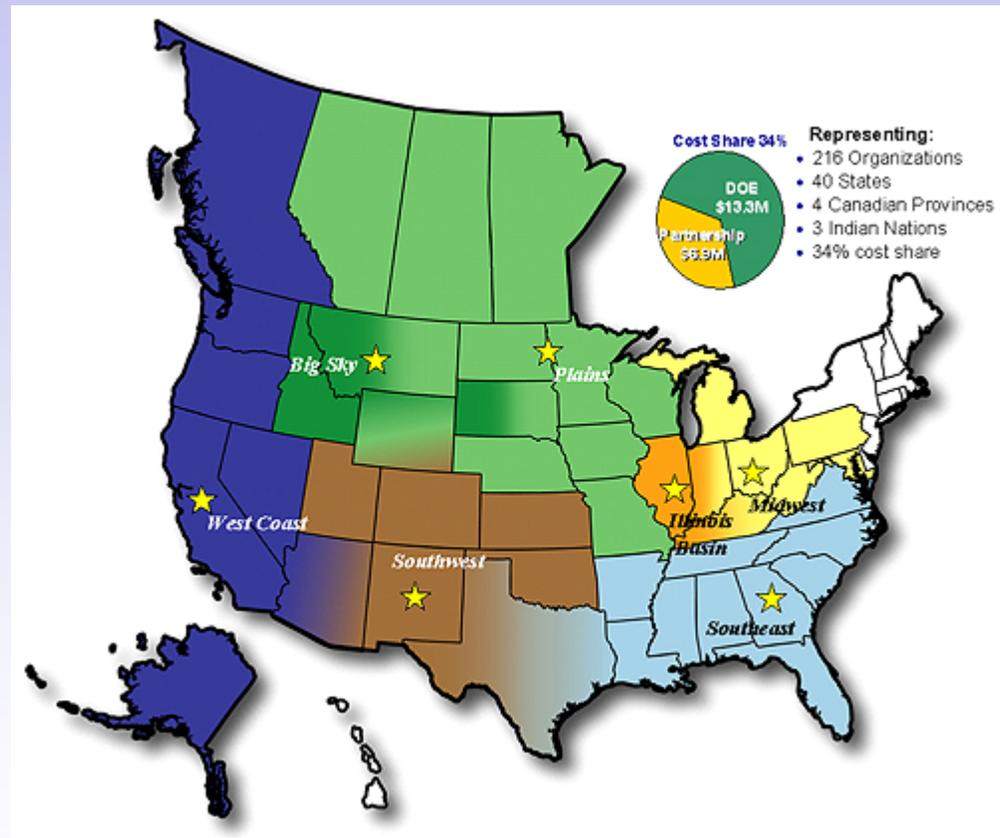
Sarah Wade

May 2-5, 2005, Hilton Alexandria Mark Center, Alexandria Virginia



# Building Public Acceptance for the Regional Carbon Sequestration Partnerships

Judith Bradbury  
David Curtiss,  
Dan Daly,  
James Dobbs,  
Martha Krebs,  
Hannes Leetaru,  
Richard Myhre,  
Tarla Peterson,  
Pamela Tomski,  
and Sarah Wade



# Outline

- The formation of seven Regional Carbon Sequestration Partnerships
- The challenges in building public acceptance for carbon sequestration
- The Regional Carbon Sequestration Partnerships
  - Midwest Regional Carbon Sequestration Partnership
  - An Assessment of Geological Carbon Sequestration Options in the Illinois Basin
  - Southeast Regional Carbon Sequestration Partnership
  - Southwest Regional Carbon Sequestration Partnership
  - West Coast Regional Carbon Sequestration Partnership
  - Big Sky Regional Carbon Sequestration Partnership (Big Sky)
  - Plains CO<sub>2</sub> Reduction Partnership (PCOR Partnership)
- Summary

# Background

- August 2003 DOE and NETL named 7 Regional Carbon Sequestration Partnerships
- Purpose: to establish the infrastructure for carbon sequestration across the country
- Not technology R&D, instead focus on planning for and beginning to build infrastructure
- Tasks include sink and source characterization; assessment of regulatory policy, technology and public acceptance

# Issues in Outreach

- Terrestrial sequestration is somewhat familiar to the public
- Geologic sequestration is a relatively complex story compared to terrestrial and less familiar to public
- Experience from actual field tests/sites not completely analogous to partnership mandate
- Field characterization, research and demonstration activities sponsored by others than Partnerships in progress today, sometimes within Partnership regions

## Common Activities

- Participation in the Outreach Working Group: risk communication workshop, technical sessions, exposure to outreach tools/skills
- Effort to establish baseline information on regional attitudes and level of awareness
- Initial focus on general education and awareness building
- Use of websites and fact sheets

# MRCSP

- IN, KY, MI, MD, OH, PA, WV
- Heavy coal use, produces much electric energy, existing field test (Mountaineer), low familiarity with sequestration
- Engaged partners to create stakeholder database; initial contact thru mailing and website
- Interactive website in Jan 2005, based on fact sheets, provides opportunity to offer feedback
- More than 2,660 visitors; 300 copies of fact sheets downloaded
- Supplemented with phone calls and briefings
- Phase II – focus groups to provide additional input to help in selecting final field tests, use of “bottom up” effort at each site working in partnership with host facility staff

# MRCSP Website

Midwest Regional Carbon Sequestration Partnership - Microsoft Internet Explorer

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Address <http://198.87.0.58/> Go Links

## MRCSP

MIDWEST REGIONAL CARBON SEQUESTRATION PARTNERSHIP

Home

Learn about Climate Change and Carbon Sequestration

- Climate Change
- Carbon Sequestration
- We Want to Hear from You

About MRCSP

- Regional Partnerships
- Midwest Regional Carbon Sequestration Partnership
- Team List

Fact Sheets

Links & Resources

Presentations

Feedback

Members Area

Username:  Password:  [Login](#) [Forgot password?](#) [Register as a stakeholder](#)

## Managing Climate Change and Securing a Future for the Midwest's Industrial Base

The Midwest Carbon Sequestration Partnership (MRCSP) is led by Battelle, which is operating this web site on its behalf. The MRCSP is one of seven regional partnerships established by the U.S. Department of Energy's National Energy Technology Laboratory (DOE/NETL) to study carbon sequestration as one option for mitigating climate change. The goal of this first phase of the MRCSP is to assess the technical, economic and social feasibility of carbon sequestration in our region and to recommend small-scale field tests of sequestration opportunities in a second phase of the program. We invite you to learn more by exploring this website.

For general inquiries, please contact David Ball at: [balld@battelle.org](mailto:balld@battelle.org)

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# MGSC

- IL, IN, KY
- Unique – smallest region, single geology (1 basin and 1 stratigraphic column)
- History of oil production, interest in EOR, background familiarity with drilling, mining, gas storage in saline formations
- Phase I focus on developing complete technical picture in anticipation of questions about mechanics and cost
- Large briefings for policymakers and industry
- Phase II focus on specific field tests

# MGSC Stratigraphic Column

Midwest Geological Carbon Sequestration Consortium - Microsoft Internet Explorer

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Address [http://www.sequestration.org/sc\\_strat.htm](http://www.sequestration.org/sc_strat.htm)



[Abstract](#) | [Stratigraphic Column](#) | [Site Selection](#)  
[Coal Beds](#) | [Oil Reservoirs](#) | [Enhanced Oil Recovery](#) | [Saline Aquifers](#) | [Geologic Model](#)

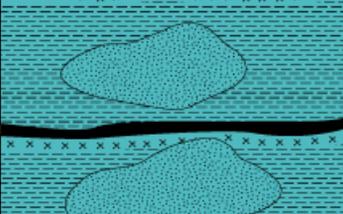
## Stratigraphic Column for the Illinois Basin Showing Vertically Stacked Reservoirs

Pennsylvanian coal beds are continuous across large areas of the Illinois Basin and are an active exploration target for coalbed methane.

Mississippian oil reservoirs are the most prolific oil reservoirs within the Illinois Basin and represent 80 percent of Illinois oil production.

The Mount Simon Sandstone underlies the Illinois Basin, except in local areas where it failed to cover the hills on the Pre-Cambrian surface. The Mount Simon Sandstone attains a maximum thickness of 2,600 feet in east-central Illinois and west-central Indiana.

Coal Bed Potential Sink and Seal    
  Potential Sink    
  Potential Seal

SYSTEM	SERIES	LITHOLOGY	FORMATION	INFORMAL "OILFIELD" TERM
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# SECARB

- AL, AR, FL, GA, LA, MS, NC, SC, TN, TX, VA
- Strong reliance on coal for production of energy in region
- Used focus group and in-depth interviews to assess opinion: some in industry concerned about cost, others in public not focused on carbon sequestration, fear concerns may not arise until specific field tests are identified
- Focus on raising awareness
- Used Carbon Offset Opportunity Program to inform stakeholders and potentially facilitate investment in projects to reduce GHG emissions
- Phase II – developing teams for each field test

# CO-OP

CO-OP About CO-OP - Microsoft Internet Explorer

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Address <http://www.offsetopportunity.com/Common/AboutCOOP.aspx> Go Links

**CO-OP** CARBON OFFSET OPPORTUNITY PROGRAM  
*A tool for collaborative project development*

User Name:  Password:  Log In  
[Forgot Password?](#) [Register Now](#)

[Home](#) [About CO-OP](#) [Links](#) [Resources](#) [Contact](#) [Search](#)

## About CO-OP

Version 1.0

### Overview

The primary purpose of CO-OP is to assist industry, government, and non-governmental organizations in catalyzing collaborative greenhouse gas (GHG) offset and reduction projects and activities with a focus on carbon sequestration, and in a way that emphasizes voluntary actions by industry.

CO-OP provides a number of benefits to its users, including: facilitating collaboration among organizations interested in participating in GHG offset and reduction projects; providing an educational resource regarding GHG offset and reduction projects; and, promoting voluntary action by industry and other organizations.

[To learn more about CO-OP, click here to view the CO-OP Fact Sheet](#)

### Using CO-OP

To view listings of opportunities related to GHG offset and reduction projects click on the Search link.

To add an opportunity to CO-OP, you first need to log in to the system. If you have not already registered with CO-OP, click the Register Now link. Once you have registered with CO-OP, you will be able to post opportunities, search for potential matches to your listings, view opportunities, and save opportunities to your account for easy reference in the future.

CO-OP is a public database; therefore, any information entered into CO-OP can be accessed by the public.

CO-OP is best viewed using Internet Explorer version 5.5 and above, but is also compatible with previous versions of internet Explorer and Netscape version 6.2 and above.

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# SOUTHWEST

- AZ, CO, KS, NM, OK, TX, UT, WY
- Important oil and gas region, strong interest in EOR, basic infrastructure in place to support
- Used Mediated Modeling to develop model of carbon sequestration to be used in planning, education and selecting field tests
- Used online Town Hall meetings to provide access, opportunity for interaction across region
- Faced challenge in getting participants from environmental community

# Mediated Modeling

http://www.southwestcarbonpartnership.org/workshops/workshopdata/modeling\_intro.ppt#350,6,Slide - Microsoft Internet Explorer

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Address http://www.southwestcarbonpartnership.org/workshops/workshopdata/modeling\_intro.ppt#350,6,Slide 6 Go Links

*US National*

Population & Economy

$CO_2$  Emissions

Fossil Fuel Combustion

Population & Economy

*Future SW Region*

Financial Social Political Costs/Benefits

Sequestration Options?

WY UT CO KS AZ NM OK TX

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# WESTCARB

- AK, AZ, CA, NV, OR, WA
- Recognition of need for expanded energy supplies and reliance on auto transportation somewhat at odds with environmental ethic
- Focus on 2-way communication – kick-off and Town Hall meetings
- Target audiences and contact lists established  
WESTCARB director interviewed on TechTV
- Characterization results publicly available via GIS web tool
- Links to regional efforts: WGA and West Coast Governors, CA Climate Registry

# WESTCARB's Carbon Atlas

WESTCARB Carbon Atlas - Microsoft Internet Explorer

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Address <http://www.westcarb.org/carbonatlas.htm> Go Links

**westcarb.org** HOME CONTACT US PARTNER LOG-IN

WEST COAST REGIONAL CARBON SEQUESTRATION PARTNERSHIP

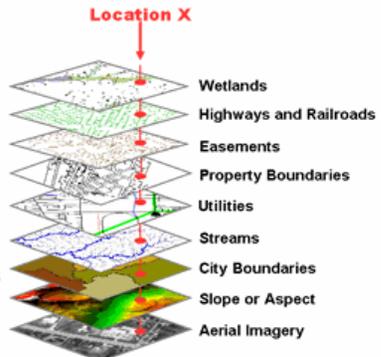
[Expand Menu](#) | [Collapse Menu](#)

- About WESTCARB
- What Is Sequestration?
- Activities
- News & Information
- CARBON ATLAS**

## WESTCARB Carbon Atlas

The [WESTCARB Carbon Atlas](#) is an interactive geographical information system (GIS) showing the location of major "point sources" of CO<sub>2</sub> emissions; geologic formations capable of storing CO<sub>2</sub>; rights-of-way for potential CO<sub>2</sub> pipelines; boundaries of publicly owned lands relevant to geologic and terrestrial sequestration opportunity characterization (e.g., national forests); and vital existing features, such as transportation arteries (e.g., interstate highways and railroads), rivers and streams, and jurisdictional boundaries (e.g., state, county, and municipal limits).

Organizing various pieces of data by location—the premise of GIS knowledge bases—is an effective means of combining data from numerous existing public domain sources with new information being developed by WESTCARB. GIS databases are widely used throughout the public and private sectors, and the GIS-based WESTCARB Carbon Atlas will facilitate communication and application of WESTCARB results.



The WESTCARB Carbon Atlas is hosted by the Utah Automated

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# Big Sky

- ID, MT, SD, WY
- Although large area, a “small community” at heart
- Major focus on leveraging work of others through partnerships and joint initiatives
- Hosted series of roundtable discussions of the energy future in the region; gained insight and built stakeholder network
- Conducted about 40 briefings and 2 tribal workshops to raise awareness and engage the public
- Helped to establish the National Carbon Offset Coalition – a market based conservation program to facilitate investment in terrestrial sequestration and improved land management activities

# NCOC

National Carbon Offset Coalition :: National Carbon Offset Coalition - Microsoft Internet Explorer

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Address <http://www.ncoc.us/index.php?PHPSESSID=901cb451b95d9a4f2f15d9da66150912> Go Links

## National Carbon Offset Coalition

305 W. Mercury, Room 408, Butte MT 59701  
406-723-6262 ~or~ 406-491-4471 ~or~ 406-491-4472, [info@ncoc.us](mailto:info@ncoc.us)

Name:  Password:

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### Online

There are 1 unregistered user and 0 registered users on-line.

You can [log-in or register for a user account here](#)

**The National Carbon Offset Coalition, Inc. (NCOC)** is comprised of seven Montana non-profit corporations. NCOC provides a unique opportunity for landowners, public and private corporations, tribal, local, and state governments to participate in a market-based conservation program that can help offset the environmental impacts of greenhouse gases. The sequestration of carbon through natural resource based programs can help reverse soil, water and air degradations, while providing enhancement of wildlife and recreational opportunities. The transfer of carbon sequestration units is a potential new marketable commodity that provides landowners and communities with a new source of revenue. Technical consulting services is provided by The Sampson Group, Inc., Alexandria, VA, and marketing consulting services are provided by Chicago Climate Exchange, Chicago, IL and Natsource, New York.

The NCOC program is designed to assist landowners in planning carbon sequestration activities and documenting the resulting Carbon Sequestration Units (CSU's) in a manner that adheres to international standards and protocols, and meets the needs of potential buyers. The program offers participating corporations a cost-effective way to achieve their carbon dioxide emission reduction goals. Those CSU's are packaged into portfolio units and offered for sale on the emerging private markets. Funds realized from the sale of CSU's provide cost-sharing for participating landowners, funds to the seven Montana non-profit organizations, and helps further the NCOC's efforts.

The NCOC has conducted workshops and focus groups, and engaged teams of experts in developing planning and measurement protocols, and completed the planning and sale of one forestry project.

The NCOC has developed for the first time in the United States a carbon sequestration handbook which is available by registering your name onto the website. In addition, forms such as Initial Proposals, Agroforestry and Forestry Carbon Sequestration Manual, and other forms are available. These documents and other forms were created in the anticipation that the experimental private market in CSU's will continue to develop, providing additional economic incentive for landowners to improve the conservation and management of their soil, water, and plant resources while contributing to national and international efforts to address climate change concerns.

If you need additional information about NCOC, contact us at [Info@ncoc.us](mailto:Info@ncoc.us).

### NCOC Calendar

<< April 2005 >>

S	M	T	W	T	F	S
> 27	28	29	30	31	01	02
> 03	04	05	06	07	08	09
> 10	11	12	13	14	15	16
> 17	18	19	20	21	22	23
> 24	25	26	27	28	29	30

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# PCOR Partnership

- IS, MO, MN, ND, NE, MT, SD, WI, WY
- Home to one of the world's major value added anthropogenic CO<sub>2</sub> oilfield flooding operation at Weyburn Field
- Focus on raising awareness for the general public as well as key groups
- Significant coal, oil, gas, and hydro industry and emerging biomass and wind energy development
- Some differences in CO<sub>2</sub> priorities between U.S. and Canadian portions of the region
- Focus Groups held to test outreach materials
- Outreach materials include fact sheets, web site, newspaper articles and 30-minute video co-produced with Prairie Public Television (May 12, 2005 broadcast date)

# PCOR Partnership Video

## Nature in the Balance – CO<sub>2</sub> Sequestration

Produced for a general audience, "Nature in the Balance: CO<sub>2</sub> Sequestration" provides a 30-minute introduction to CO<sub>2</sub> management with a focus on the North American heartland. The video introduces audiences to the U.S. Department of Energy (DOE) National Energy Technology Laboratory's (NETL's) seven Regional Carbon Sequestration Partnerships and describes their role in assessing opportunities for carbon sequestration across North America.

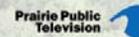
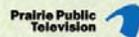
"Nature in the Balance" was produced by Prairie Public Television, Fargo, North Dakota, in collaboration with the Plains CO<sub>2</sub> Reduction (PCOR) Partnership led by the University of North Dakota's Energy & Environmental Research Center (EERC). The PCOR Partnership represents more than 40 public and private sector partners located in nine states and three Canadian provinces in the heartland of North America. Funding is provided by DOE's NETL and program partners. To learn more about CO<sub>2</sub> sequestration, visit the PCOR Partnership Web site at [www.undeerc.org/PCOR](http://www.undeerc.org/PCOR).

30 minutes

Executive Producers – Edward Steadman and Robert Dambach  
Videographer/Editor – Eric Carlson  
Writers – Charlene Crocker and Daniel Daly  
Narration – Hope Deutscher

© May 2005

Cover photograph: Antelope Valley Station Unit 2, Beulah, North Dakota, Basin Electric Power Cooperative



## Nature in the Balance – CO<sub>2</sub> Sequestration



Nature in the Balance – CO<sub>2</sub> Sequestration

# SUMMARY

- Common elements include fact sheets, websites and briefings
- Additional activities include interactive websites, access to technical information, mediated modeling and online meeting techniques, focus group interviews and roundtable discussions, links to market based programs and video materials.
- Moving from opinion assessment and general awareness building to targeted activities tied to field tests