



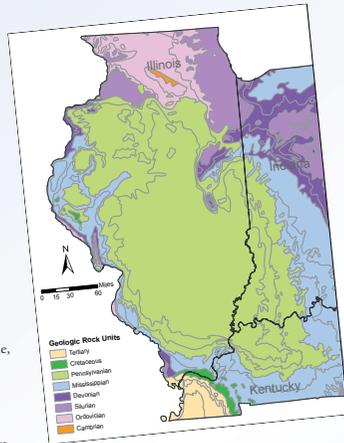
# Geologic Sequestration: An Opportunity for Educational Outreach

- Disseminate Information.
- Constructively Engage General Public.
- Build Public Understanding of Geologic Carbon Sequestration.
- Actively Work with General Public to Understand Concerns.

## Abstract

The Midwest Geological Sequestration Consortium (MGSC) has developed an educational curriculum and a physical model to demonstrate geologic sequestration concepts. The model is a Lucite box filled with sediment that is used for illustrating enhanced oil recovery (EOR) and saline reservoir characteristics. Based on an educational groundwater model design, the sequestration model uses carbon dioxide, water, and oil to illustrate difficult to understand processes involved in carbon sequestration. The model is useful as a starting point for educational and public outreach discussions.

The educational curriculum and model will be piloted in a series of professional teacher development workshops focusing on climate change and geologic sequestration beginning in July 2006. Included in the curriculum are six newly created activities focusing on petroleum uses, climate change, geologic structure, EOR, coal bed methane, and geologic sequestration. In addition, preexisting materials from additional sources, such as the Keystone Center Global Climate Change curriculum, are incorporated into the workshop format. The goal is to provide a well-rounded two-day informational workshop for teachers focused on global warming, climate change, the greenhouse effect, carbon sequestration, and related topics.



## Phase I—Outreach and Educational Initiatives

### General Public

- Web site.
- Develop informational resources.
- Design and develop format for public outreach sessions.

### Professionals and Partnerships

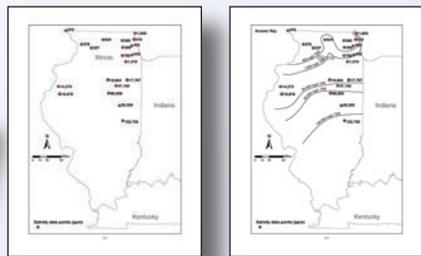
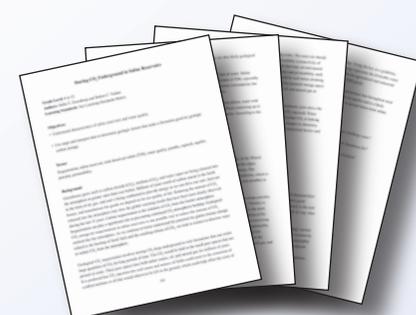
- Web site.
- Presentations at professional societies.
- PAG.
- Consortium meetings.
- Presentations to business groups.

### Media Exposure

- Local newspapers.
- Corporation newsletters.

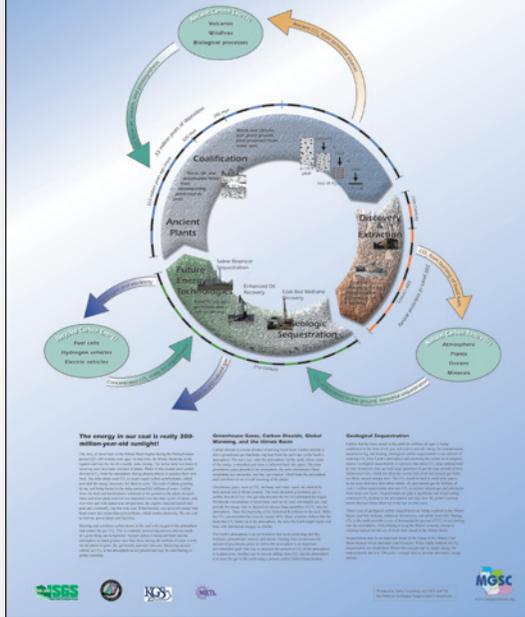
### Educational Initiatives

- Development of curriculum based on project research results.
- Development of informational resources.
- Design of Phase II educational workshops.



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Midwest Geological Sequestration Consortium

## The Geologic Carbon Cycle in the Illinois Coal Basin



## Reaching Out to the General Public

- Conduct public forums informing about carbon sequestration throughout MGSC.
- Develop flexible series of talks.
- Site specific public outreach.
- Use feedback to continually develop, incorporate, and adapt information delivery.
- Collaborate with public to further the success of carbon sequestration.



## Phase II—Outreach and Educational Initiative

Outreach for the general public and the educational community have different, yet related needs, impacts, and audiences.

### General Public Outreach

- Localized—site specific
- Go out to communities impacted, and incorporate feedback and respond

### Educational Community

- Regional—tri-state opportunity
- Bring teachers in for workshops, return to community with information



**Carbon Sequestration in the Illinois Coal Basin**

The energy in our coal is really 300-million-year-old sunlight!

**Greenhouse Gases, Carbon Dioxide, Global Warming, and the Illinois Basin**

**Geological Sequestration**

**Coal Bed Methane**

**Enhanced Oil Recovery**

**Saline Reservoirs**

**CO<sub>2</sub> Storage in the Illinois Basin**

### Educational Community: Building Bridges—A Unique Opportunity

- Conduct teacher workshops, bringing together teachers from entire MGSC.
- Distribute existing educational materials from partners.
- Refine and test workshop activities for GeoActivities Notebook.
- Continue developing new activities in collaboration with teachers and scientists.



## Teacher Workshops

- Two-day workshops on University of Illinois campus.
- Focus on regional geologic sequestration in environmental context.
- Provide teachers with content, hands-on activities, and demonstrations.
- Receive tub of materials and publications for classroom use.
- Content and curriculum tied to national learning standards.

## Sequestration Model

- Demonstrate enhanced oil recovery and saline reservoir sequestration.
- Based on educational groundwater model.
- Uses carbon dioxide, water, and mineral oil to illustrate concepts.
- Conversation starter for public outreach and educational initiatives.

**Global Warming? Greenhouse Gases? Carbon Sequestration?**

**How are Global Warming, Greenhouse Gases and Carbon Sequestration connected?**

**Greenhouse Effect**

**Common Greenhouse Gases**

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Water vapor (H<sub>2</sub>O)

**Carbon Sequestration**

**Global Warming**



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