

Big Sky
(Northern Rockies and Great Plains)
Regional Carbon Sequestration Partnership

<http://www.bigskyco2.org>

May 6, 2004
Third Annual Conference on Carbon Capture and Sequestration

Big Sky
Regional Carbon Sequestration Partnership:

Montana State University-Bozeman
University of Idaho
Boise State University
South Dakota School of Mines and Technology
Texas A&M University

Idaho National Engineering and Environmental Laboratory
Los Alamos National Laboratory

EnTech Strategies and New Directions
National Carbon Offset Coalition

Inland Northwest Regional Alliance
State of Montana, Governor's Office
Nez Perce Tribe
The Confederated Salish and Kootenai Tribes
Energy companies and other coalitions

Unique Attributes:

- Diverse geologic formations
- Extensive terrestrial sinks;
- Focus on economic tradeoffs;
- Market-based, voluntary approaches to carbon storage;
- Tribal Nation involvement.

Idaho-Snake River Downwash Province - Plays

Explanation

- Recent Lacustrine Lake Basins Play
- Pleistocene Lacustrine Lake Basins Play
- Older Tertiary Play
- Idaho-Snake River Downwash Province
- State Boundaries

• SEDIMENTARY AND VOLCANIC BASINS

- Idaho, Montana, South Dakota, Wyoming, and contiguous areas of ND

• GEOLOGICAL FORMATION TYPES

- Deep saline aquifers, depleted oil/gas reservoirs, unminerable coal beds, mafic/ultramafic rocks

• POTENTIAL FOR SEQUESTRATION BASED ON:

- Potential for hydrodynamic trapping
- Potential for solubility trapping
- Potential for mineralization trapping
- Technical feasibility
- Economic feasibility and offsetting benefits

Three Major Areas:

- Snake River Plain
- Williston Basin
- Powder River area
- Other non-traditional plays

Terrestrial Sinks in the Region

- Cropland, rangeland, forested lands, abandoned mine lands
 - Idaho, Montana, South Dakota, Wyoming, and contiguous areas of ND
- Land management practices
 - Tillage, rotations, land use options
- Potential for Sequestration based on:
 - Technical feasibility (C-Lock system)
 - Economic feasibility and offsetting benefits

Land Use

- Agricultural
- Rangeland
- Forest
- Other
- Missing Data

Market based Voluntary Approaches to Carbon Storage

- Working with the Chicago Climate Exchange
- Developing protocols and planning standards to terrestrial sequestration opportunities (revised 1605B National GHG Registry)
- Addressing concerns of buyers and sellers of terrestrial carbon credits in a market-based setting

Education and Outreach Goals

- Increase awareness, understanding and acceptance
- Build advocacy
- Explore economic development opportunities
- Determine implementation barriers
- Establish networks of key constituencies

University Community
Environmental NGOs and Professional Societies (ASME)
Industry (ENERGY SECTOR, AG SECTOR)
Farmers, Ranchers and Land Owners
Native American Tribal Nations
State Legislative and Regulatory Officials
Congressional Delegations
General Public



Take Home Messages From Big Sky Partnership:

- **EARLY AND SUSTAINED CARBON SEQUESTRATION STRATEGIES**
Terrestrial sinks
Geological sinks
- **TECHNICAL AND ECONOMIC FEASIBILITY**
Common risk assessment framework
Optimize region's geological and terrestrial storage potentials
- **ENHANCED MARKET-BASED CARBON-STORAGE OPTIONS**
Formation of Big Sky Climate Trust in Idaho and Montana
- **LONG TERM STEWARDSHIP**
Collaboration with Industry and stakeholders to design technologies and policies that gain public acceptance, can be successfully deployed, and actively managed for the future



Contact for the Big Sky Regional Carbon Partnership

Dr. Susan M. Capalbo, Project PI
VP for Research Office
Montana State University
406-994-5619
scapalbo@montana.edu

www.bigskyco2.org

