

In addition to EOR, the Aneth site also possesses deep saline formations ideal for CO<sub>2</sub> injection. These saline formations have a very large storage capacity and are typically located within easy access to CO<sub>2</sub> sources. This leads to lower transport costs.

### San Juan Basin, New Mexico - Enhanced Coalbed Methane

The San Juan Basin is located near Navajo City, New Mexico and is one of the top ranked basins in the world for CO<sub>2</sub> coalbed sequestration. Coal has a unique ability to store massive quantities of carbon, and injecting CO<sub>2</sub> into these coalbeds enhances the recovery of coalbed methane, the primary energy source for natural gas.

The San Juan Basin site is also a perfect fit for terrestrial sequestration. The water produced by the Enhanced Coalbed Methane process is desalinated and used for terrestrial sequestration. With this method, scientists can



**Conoco-Phillips Site, New Mexico**  
Photo by Israel Parker

enhance the natural cycle of CO<sub>2</sub> absorption by plants simply by using the water to irrigate grasslands for new vegetation growth.



**Pueblo ruins in Bloomfield, New Mexico**  
Photo by Andrea Feldpausch

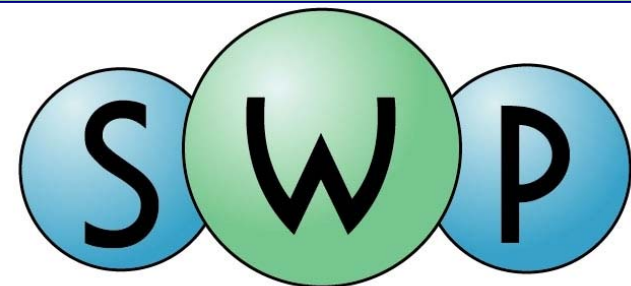
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#### SWP Phase II Members:

- Advanced Resources International
- AIST
- Applied Science Laboratory
- Arizona Geological Survey
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**SOUTHWEST PARTNERSHIP  
CO<sub>2</sub> SEQUESTRATION**



**Responding to global warming:  
the technological frontier**



## How does carbon dioxide affect global climate change?

When the Intergovernmental Panel on Climate Change (IPCC) released its *Climate Change 2007 Report*, it named carbon dioxide (CO<sub>2</sub>) the most important human produced greenhouse gas. The report confirmed that the high levels of CO<sub>2</sub> in our atmosphere are caused by fossil fuel emissions and are a major contributor to global warming. The increased occurrence of extreme weather such as droughts, heavy precipitation, heat waves, and intensity of hurricanes and typhoons is a symptom of climate change.

Several options will be needed to moderate CO<sub>2</sub> levels in our atmosphere. One approach to lowering atmospheric CO<sub>2</sub> levels, called **Terrestrial Carbon Sequestration**, includes planting vegetation or enhancing an already present ecosystem to increase CO<sub>2</sub> absorption. This is a gradual, long-term strategy that allows us to absorb CO<sub>2</sub> while rehabilitating ecological systems.



**Local ecological systems**  
Photo by Mark Holtz

Another exciting approach is called **Geologic Carbon Sequestration**, meaning to sequester or capture CO<sub>2</sub> and store it in rock formations deep beneath the earth's surface. While our world's energy providers race to find new ways to produce energy with less CO<sub>2</sub> emissions, geologic carbon sequestration is an action we can take *today* to lower CO<sub>2</sub> in our atmosphere.

## Who are we?

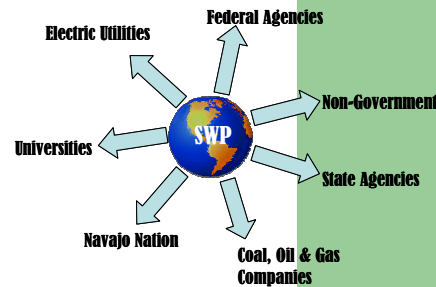
The **Southwest Regional Partnership on Carbon Sequestration**, also known as SWP, was developed as a part of the U.S. Department of Energy's effort to respond to global climate change. The SWP, along with six other regional partnerships around the United States, have been challenged to evaluate available technologies that capture and store CO<sub>2</sub> in the southwest region. The SWP includes portions of: Arizona, Colorado, Kansas, Nevada, New Mexico, Oklahoma, Texas, Utah and Wyoming.

SW Regional Partnership on Carbon Sequestration:  
Test Site Locations



Produced by Jodi Minion

Participants include the coal, oil and gas industries, electric utilities, the Navajo Nation, non-governmental organizations, universities, and U.S. federal agencies.



Produced by Kristin Jungman

The SWP benefits from the built infrastructure and natural geologic formations that exist throughout the region. Our unique mix of pipelines and geology makes the southwestern United States an ideal location for carbon sequestration.

## What are some CO<sub>2</sub> sequestration strategies and where is the SWP implementing them?

### Permian Basin, Texas - Enhanced Oil Recovery

The SACROC oil field located near Snyder, Texas was the first Enhanced Oil Recovery (EOR) operation in the world. EOR is a recovery method which involves pushing carbon dioxide down into a non-producing oil well. This strategy allows the CO<sub>2</sub> to be captured and stored deep within the oil well, while as a byproduct, reviving the well to produce more oil. The Geologic CO<sub>2</sub> Sequestration process is constantly monitored to ensure safe storage. CO<sub>2</sub> measurement, monitoring and verification (MMV) systems are an important part of the SWP's field tests.



**Kinder Morgan Site, Texas**  
Photo by Mark Holtz

### Paradox Basin, Utah - Enhanced Oil Recovery and Deep Saline Formations

The Aneth oil field is located near Bluff, Utah and is one of the largest oil fields in the nation. This site is perfect for the EOR method. Because the oil field is located on Navajo Nation land, mineral royalties go to the Navajo nation and are utilized in many ways, including a scholarship fund.



**Resolute Site, Utah**  
Photo by Jason Heath