Carbon storage often provides economic and environmental co-benefits. Terrestrial storage, for example, can improve the health of forests and streams. CO$_2$ injected into older oilfields is used to boost oil recovery. Similar benefits may be achieved from CO$_2$ injection into gas fields and natural gas storage reservoirs. Other revenue-generating uses for CO$_2$ are under development, ranging from cement and plastics manufacturing to growing algae for conversion to biofuels. Collectively, such greenhouse gas reducing applications are referred to as carbon utilization.

Proving the Best Regional Storage Options

To determine which geologic storage approaches are best suited to WESTCARB's territory, researchers reviewed geologic maps and data from public agencies and private companies. The geologic formations identified for storage were deep saline formations (underground strata of porous rocks filled with saltwater), deep unmineable coal seams, and depleting oil and natural gas fields. Currently, WESTCARB is focused on developing more detailed subsurface information through characterization wells and seismic surveys in areas with high potential for geologic CO$_2$ storage. This field work helps validate the feasibility, safety, and efficacy of carbon storage techniques.
Additionally, WESTCARB addresses issues such as regulatory and permitting requirements for CO₂ storage, CO₂ monitoring and verification protocols, and protection of public health and the environment.

For terrestrial carbon storage, researchers worked with forest products companies, ranchers, conservation groups, and public lands foresters. Together, they characterized terrestrial storage options by cost, storage capacity, and co-benefit potential to create state-by-state analyses of carbon storage opportunities.

WESTCARB’s small-scale terrestrial storage projects (now concluded) involved reforestation of marginal lands, extended timber harvest cycles, and removal of forest brush that could stoke wildfires. At some locations, cleared brush was taken to a biomass power plant, helping displace fossil fuel use.

Community Involvement

To increase public awareness of carbon storage opportunities, WESTCARB engages stakeholders through public meetings, a website, presentations and technical papers at conferences, and research on community concerns and decision making. Combined with its field project results, these WESTCARB efforts support a more thorough understanding of the role that carbon storage can play in mitigating adverse climate change.

WESTCARB reports are publicly available. Supporting geographic information system data can be accessed at: www.westcarb.org/carbonatlas.htm and www.netl.doe.gov/technologies/carbon_seq/natcarb/index.html.

For More Information

Please visit our website at www.westcarb.org.

You may also e-mail WESTCARB’s technical advisor, Elizabeth Burton (eburton@lbl.gov).