

Project analyzing if meadows reduce carbon dioxide

By Jane Braxton, *Scientific American*

The record piles of snow across California's Sierra Nevada are melting away, exposing once again its breathtaking alpine meadows. As temperatures warm the moist soil, the meadows quicken, cycling carbon from the ground into the atmosphere and back again in a pattern essential to the planet's health. Scientists and land managers are heading into the mountains to measure the greenhouse gas activity at 16 hand-picked meadows—some recently restored, others degraded from a century of grazing and logging.

The four-year study is part of California's pioneering effort to reduce carbon emissions. The project is designed to determine whether restored meadows hold more carbon than those that have been degraded. The outcome could prove pivotal for California and the planet. Worldwide, soils store three times more carbon than vegetation and the atmosphere combined. If the research shows restored meadows improve carbon storage, it could stimulate meadow restoration around the world.

The \$4.8-million project has an unusual twist, too. It is funded by the California Air Resources Board, which wants to know if restored meadows can hold enough tonnage of carbon dioxide equivalents, per acre per year, to qualify as carbon credits in California's cap-and-trade market. "It's kind of geeky but we're poised to do something that's never been done with alpine meadows," says Mark Drew, Sierra Headwaters director at California Trout, who is coordinating the work.

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