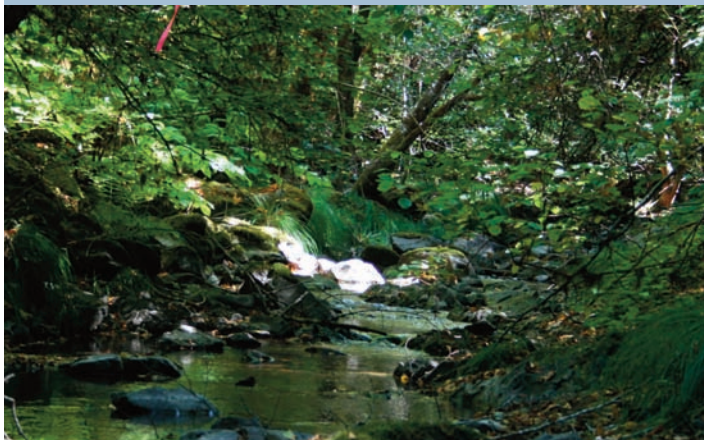


The loss of forests and other land use changes contribute about one-fifth of the carbon dioxide (CO<sub>2</sub>) released into Earth's atmosphere each year. Restoration through conservation-based forest management is a necessary and important part of any comprehensive approach to decreasing atmospheric CO<sub>2</sub> levels and reducing the impacts of climate change.



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## Restoring Forests to Reduce Global Warming

### GARCIA RIVER FOREST PROJECT SNAPSHOT

**Location:** Mendocino County, California, United States

**Size:** 23,780 acres

**Emissions Impact:** Absorption of 4.2 million metric tons of CO<sub>2</sub> over 100 years

**Conservation Impact:** Restoration of Redwood-Douglas fir forest ecosystems

**Community Impact:** Direct economic support through timber and jobs

**Partners:** The Conservation Fund (land owner), California Wildlife Conservation Board, California Coastal Conservancy

The Garcia River Forest Project is restoring 23,780 acres of productive forest on California's north coast. Over its 100 year lifetime, The Nature Conservancy estimates that the project will absorb and store 4.19 million metric tons carbon dioxide (CO<sub>2</sub>) by ensuring high forest growth rates and the development of larger and denser stands of Redwood and Douglas fir. In 2004, the Conservancy and The Conservation Fund acquired this heavily cut forest property to restore important habitat and to help reduce global warming by removing greenhouse gases from the air and setting a new model for sustainable forest management by a non-profit organization.

Following the robust scientific measurement, quantification and monitoring protocols established by the California Climate Action Registry (CCAR), the Garcia River Forest Project demonstrates that forest restoration can achieve verifiable emissions reductions by sequestering carbon in the living biomass of forests. In addition to capturing and storing carbon, the restoration of this commercial forest land is:

- Restoring Redwood-Douglas fir forest ecosystems on a landscape scale, conserving one-third of this important California coastal watershed;
- Rehabilitating the watershed and improving water quality;

- Protecting regional biodiversity by restoring habitats critical to endangered spotted owl and coho salmon, as well as numerous other birds, plants, mammals and other species of salmon;
- Demonstrating the compatibility of working forests with climate change protection by contributing timber and jobs to the local community; and
- Establishing a site for ground-breaking research on estimating above-ground forest carbon and monitoring biodiversity conservation on working forests.

In early 2007, the first climate-friendly, light-touch timber harvest took place on the Garcia River Forest, supporting conservation-based, sustainable forest management. Light-touch logging maximizes carbon storage and accelerates the recovery of the forest ecosystem by individually selecting inferior trees for removal, promoting the growth of stronger trees. Through this process, the local mill received 350,000 board feet of timber, the first time in seven years that the Garcia Forest contributed to the local economy.

### Validating Emissions Avoided by Garcia River Forest Project

**Additionality:** The CCAR forest project protocols — the most prescriptive set of standards for forest management carbon projects in the world — establish a standardized baseline by determining how much logging would be legally allowed under the detailed California Forest Practice Rules. The results of the light-touch logging at the Garcia River Forest are compared to this standardized baseline to determine the carbon benefits of the project.

**Leakage:** The CCAR forest project protocols address leakage by monitoring all of the logging by the registered entity. This ensures that the landowner does not increase logging elsewhere to compensate for a decrease at the project to produce the carbon.

**Permanence:** As required by the CCAR rules, The Nature Conservancy holds a conservation easement on the property to ensure that it remains forest land through the project's 100-year life and beyond into perpetuity. Even if the property is sold, it will remain forest land forever.

**Monitoring:** Initial carbon estimates are verified by an independent third party certifier. Then, annual monitoring of the project area is required by CCAR to ensure that the projected carbon actually is stored. A research collaboration of The Nature Conservancy, Carnegie Institution of Washington, Colorado State University, Stanford University, and the University of California, Berkeley, established a network of permanent forest inventory plots to track carbon over time.

**Verification:** The project was fully verified by CCAR in February 2008 following its approval of the third-party verification report prepared by Scientific Certification Systems (SCS). SCS also certifies the property for environmental integrity and sustainable forest practices under the rigorous Forest Stewardship Council system.

### Allocation of Carbon Credits

As the owner of the property, The Conservation Fund is actively working with potential buyers of forest carbon from the Garcia River Forest. The stringency of the CCAR protocols ensures that the emission reductions from the Garcia River Forest represent high value, real, permanent and verified reductions.

## VALIDATING FOREST CARBON PROJECTS

**Additionality:** Refers to the amount of carbon dioxide captured, stored or prevented from reaching the atmosphere compared to what would happen under business as usual practices.

**Leakage:** Occurs when the project causes carbon-emitting activities to be shifted to another location, canceling out a portion or all of the project's carbon benefits.

**Permanence:** Refers to how robust the project is to potential changes that could allow the stored carbon to be emitted, as well as to the ability of the project to offset any emissions associated with such changes. The most desirable carbon sequestration projects are those where the protected land is likely to remain intact indefinitely.

**Carbon inventories and monitoring:** Refers to the periodic assessment of the net difference between carbon stored with the project activities and the carbon that would have been stored without the project activities. The difference, when extrapolated across the project area and adjusted for leakage, represents the greenhouse gas benefit of a project.

**Verification:** Occurs throughout the life of a project to ensure it meets its intended goals of carbon sequestration, increased biodiversity and sustainable livelihoods.

### Forest Carbon: A Credible and Critical Climate Change Solution

Forest carbon projects, such as Garcia River Forest, demonstrate that forest carbon is an effective, feasible, and important part of an overall solution to climate change. The Nature Conservancy believes that effective international and U.S. climate change policy frameworks must achieve significant reductions in emissions from all major sources, create incentives to reduce emissions from deforestation and to absorb carbon from the atmosphere by conservation-based forest management and forest restoration, and support adaptation strategies that help the natural world cope with the impacts of climate change.

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