



UNIVERSITY OF CALIFORNIA, IRVINE

INNOVATION CENTER FOR ADVANCING ECOSYSTEM CLIMATE SOLUTIONS

PRINCIPAL INVESTIGATOR: Michael Goulden, Professor of Earth System Science

INNOVATION CENTER RESEARCH GRANT \$4,584,720.42 Duration: 36 Months	RESEARCH INNOVATION FIELD <input checked="" type="checkbox"/> Carbon Dioxide Removal <input type="checkbox"/> Methane Reduction <input type="checkbox"/> Heating, Cooling, and Thermal Storage
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This Innovation Center will develop the science and technology solutions needed to manage California's natural lands for climate change, as there remain critical research gaps in understanding how to implement adaptive management and maintain carbon sequestration under climate change. The proposal will help the state implement its policy goals, including objectives under the Scoping and Forest Carbon Plans.

PARTNERS:	<ul style="list-style-type: none"> ➤ Tulare Basin Wildlife Partners ➤ Blue Forest Conservation ➤ U.S. Forest Service, Pacific Southwest Region ➤ U.S. Forest Service, Pacific Southwest Research Station
RESEARCH ACTIVITIES	<ul style="list-style-type: none"> ➤ The proposal aims to develop new knowledge through measurements and modeling, synthesize the resulting data to produce information for a range of stakeholders, test and refine these tools and data in adaptive management, improve valuation of benefits, advance implementation approaches, and communicate results through a range of outreach efforts for various audiences. The proposal initially focuses on montane forests in the Sierra Nevada and Southern California, with the ultimate goal of addressing similar questions for wildlands across the state.
FACILITATES GREENHOUSE GAS EMISSIONS REDUCTIONS:	<ul style="list-style-type: none"> ➤ Land management has potential to address both mitigation of emissions and C sequestration, as well as adaptation to climate change by reducing wildfire spread, protecting watersheds, and increasing ecological and community resilience. The Center targets a low-risk, high-yield opportunity to reduce California's GHG contribution, as a small improvement in management efficiency will have large benefits. Initial back-of-the-envelope calculations indicate a net statewide uptake of several million metric tons CO₂/yr. This enhanced sequestration could require little incremental cost, given the state's ongoing investment in management. The approach will increase co-benefits, which in many cases accrue to low income and rural areas.
BENEFITS DISADVANTAGED AND LOW INCOME COMMUNITIES:	<ul style="list-style-type: none"> ➤ Improved wildland management offers co-benefits that disproportionately aid low-income communities. Co-benefits include: 1. Reduced wildfire risk, as wildfires are increasingly impacting low-income parts of the state. 2. Maintaining water quantity through vegetation management - climate assessments indicate significantly reduced water availability with climate change, which will impact agriculture and disadvantaged communities. 3. Maintain tourism economy - many rural areas depend on tourism, and improved wildland management will be needed to maintain these economies. 4. Direct employment and training - wildland management creates employment, and the Center includes an internship program that will recruit from disadvantaged populations to prepare students for careers in climate resilience.
ENGAGEMENT ACTIVITIES	<ul style="list-style-type: none"> ➤ Stakeholders include land management practitioners, as well as the state's residents, especially in and around rural communities. Engagement with managers is built into all stages of the project, with a goal of identifying the state of the art from the practitioners' perspective through workshops and meetings, and then collaboratively developing, testing, improving and disseminating the information and tools managers most need through workshops and websites. Engagement with the broader public focuses on sharing information on the need for land management that addresses climate change.