

Agenda Item No.:	J
Work Plan Title & #:	Forest Vitality Work Plan 3
IBI# & Title:	IBI 5 – Development of Forest Ecosystem Service Markets and Incentives
Presentation Title:	West Coast Regional Carbon Sequestration Partnership (WESTCARB) Phase II – Final Reports
Date of Presentation:	March 9, 2011
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SUMMARY

This agenda item presents the final reports (Attachments 1 and 2) completed as part of the Department’s participation in Phase II of the West Coast Regional Carbon Sequestration Partnership (WESTCARB). WESTCARB is a multi-state, Canadian province partnership exploring geologic and terrestrial carbon sequestration opportunities, led by the California Energy Commission with funding provided by the U.S. Department of Energy.

CONTEXT

The reports are part of the Board’s research and information effort for promoting the development of carbon-offset markets that are inclusive of forestry activities and provide incentives for keeping forests as forests, improving forest management, and increasing the utilization wood products.

BACKGROUND

WESTCARB is one of seven regional carbon sequestration partnerships funded by the U.S. Department of Energy. The major focus of the partnerships is to study and demonstrate the feasibility of capturing point-source carbon dioxide emissions and transporting and storing the emissions geologically in underground land formations. Some of the partnerships, including WESTCARB, also investigated terrestrial carbon sequestration, including forests, as a means to offset carbon dioxide emissions. The Department has been a participant in WESTCARB since 2003. Phase I of WESTCARB – which characterized sources of carbon dioxide emissions, established baseline emission trends and investigated carbon sequestration and storage opportunities – concluded in 2005. The Phase I WESTCARB final reports (baselines and opportunities) were submitted to the Board in June 2008.

WESTCARB was awarded a Phase II extension in 2006 to further characterize sources of carbon dioxide emissions and to test the feasibility of specific carbon sequestration technologies (including forests) as a means to reduce or offset carbon dioxide emissions. Oregon hosted WESTCARB’s Lake County Terrestrial Sequestration Pilot Project to investigate methodologies for evaluating, validating and demonstrating the potential of utilizing hazardous fuels for biomass energy as well the potential for fuels reduction activities to reduce carbon emissions from wildfire¹.

¹ Goslee, K., T. Pearson, S. Grimland, S. Petrova, J. Walls and S. Brown. [In Press]. *Final Report on WESTCARB Fuels Management Pilot Activities in Lake County, Oregon*. Public Interest Energy Research Program (PIER) Final Project Report. Publication Number: CEC-500- XXXX-XXX. Sacramento, California: California Energy Commission.

ANALYSIS

The first report – Carbon Benefits from Fuel Treatments – investigated whether landscape scale fuel treatment projects for making forested watersheds more resilient to wildfire would result in a carbon dioxide emission benefit from avoided wildfire emissions. The case study landscape was the 169,200-acre Drews Creek watershed located within the Fremont-Winema National Forest in Lake County. The study explicitly incorporated the probabilistic nature of wildfire events by estimating wildfire burn probabilities – both the probability that wildfire would reach a stand given an ignition somewhere on the landscape and the probability of how intense the wildfire would burn in the stand once fire arrived – under extreme weather and fuel moisture conditions. Simulation results show a negative carbon offset initially, the reduction of carbon stocks from treatment is greater than the probabilistic carbon benefit from avoided wildfire emissions. However, extrapolating the case-study simulation results indicates that the landscape fuel treatment project may break even as a carbon offset after 9 years, if the treatment’s effect on reducing the probability of large, uncharacteristically severe wildfire, holds over that time.

Taking an inductive approach to the Drews Creek case-study simulation, the second report, “An Analysis of Fuel Treatments as a Carbon Offset Project Type,” investigated whether fuel treatment projects, as a class of projects, could be eligible for carbon offset funding. The report concludes that the ambiguity of when (or if) a net carbon emission benefit from avoided wildfire emissions is ever realized from the fuel treatment project, combined with the uncertainty of knowing that the large, uncharacteristically severe wildfire event had actually been avoided over the life of the project (and subsequent fuel treatment projects), makes this class of projects too risky to serve as mitigation for carbon dioxide emissions from other sources; and as such, ineligible for carbon offset funds.

RECOMMENDATION

This agenda item presents these reports for information purposes only. No recommendations are made at this time.

ATTACHMENTS

1. Cathcart, Jim; Alan A. Ager; Andrew McMahon; Mark Finney; and Brian Watt. 2010. *Carbon benefits from fuel treatments*. Pp 61-79 in Jain, Theresa B.; Graham, Russell T.; and Sandquist, Jonathan, Technical Editors. Integrated management of carbon sequestration and biomass utilization opportunities in a changing climate: Proceedings of the 2009 National Silviculture Workshop; June 15-18; Boise, Idaho. Proceedings RMRS-P-61. Fort Collins, Colorado: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 351 p.
2. Kelly, Peter and Jim Cathcart. 2010. *An analysis of wildfire fuel treatments as a carbon offset project type*. Public Interest Energy Research Program (PIER) Final Project Report. Publication Number: CEC-500-02-004. Sacramento, California: California Energy Commission. 27 p.