

**NASA EARTH SCIENCE DIVISION
Carbon Cycle Science
ROSES 2010 Program Element A.5
NNH10ZDA001N-CARBON**

Panel Review Summary

PI Name: Robert Kennedy

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Proposal Number: 10-CARBON10-0070

Proposal Title: Integrated, observation-based carbon monitoring for wooded lands of Washington, Oregon, and California

BRIEF SUMMARY OF RESEARCH OBJECTIVES: (2-6 sentences. In your own words, summarize the actual research proposed; note major objectives, approaches, and the results you would expect.)

The objectives of this research are to integrate different tools and data sources to characterize uncertainties in carbon stocks and fluxes over a large geographic region (CA, OR, WA) and diverse composition of forest types. The proposed research will also examine the impacts of a range of disturbances (insect, fire, harvesting) on C stocks and fluxes, which have management and policy implications.

EVALUATION

1) INTRINSIC MERIT -- Evaluation of intrinsic scientific and technical merit includes consideration of the following factors based on what is presented in the proposal: 1. The overall scientific or technical merit of the proposal and/or unique and innovative methods, approaches, concepts, or advanced technologies. 2. The offeror's capabilities, related experience, facilities, techniques, or unique combination of these that are integral factors for achieving the proposal's objectives. 3. The qualifications, capabilities, and experience of the proposed Principal Investigator, team leader, or key personnel critical to achieving the proposal objectives. 4. The overall standing of the proposal against the state-of-the-art. (Review panels are instructed not to compare proposals to each other; all comparative evaluations are conducted by NASA and USDA program personnel.) 5. The experience of the offeror (investigators and their institutions) in engaging in data sharing and providing timely access to data and research products on related and relevant projects.

Strengths:

This proposal has a high potential for success, given that the offerors are proposing to expand the geographic scope of previous analyses and link a range of different tools for examining LULUC impacts on C dynamics. One of the greatest strengths of this proposal is that the offeror's have a methodology in place for quantifying the error inherent in each module and determining how this error will influence the outcome. Other exciting aspects of this work include 1) integrating data from plot based measurements, statistical models, and remotely sensed data; 2) the examination of disturbances on regional C stocks and fluxes; and 3) the modular design of the

integration to allow for the inclusion of new data sources and improved allometric equations. Work in this arena is progressing at a rapid clip and having a tool that can be easily updated for integrating data sources on C stocks and fluxes at regional scales will provide forest managers and policy makers with outputs that incorporate these changes.

The Principal Investigator and project team are well established experts in the Pacific Northwest (PNW) in the fields of forest and landscape ecology and in applying advanced remote sensing tools and techniques to their analysis, monitoring, and modeling work in the region. They bring to the table considerable experience backed by lengthy records of publication in the integration of field data with remote sensing information including the development of state-of-the-art approaches to the remote measurement and monitoring of forest structure, composition, and disturbance.

The proposed research should result in both interesting methodological advances and in the production of significant science results.

Weaknesses:

The size of the proposal team is large, including 7 investigators and 10 collaborators, which is not inconsistent with the complex nature of the project. On the one hand, it would be somewhat a concern if the team were not as large (and robust) as it is. On the other hand, this project has a lot of moving parts and individuals/groups that will be responsible for moving them. Project management will undoubtedly be challenging.

2) RELEVANCE – Relevance includes the consideration of the potential contribution to NASA's mission and/or USDA-NIFA's mission as expressed in their strategy documents and the specific objectives and goals given in the solicitation to which the proposal is submitted. Because the solicitation includes a specific description of how it is relevant to NASA and USDA-NIFA strategy documents, it is not necessary for individual proposals to show relevance to these broader goals and objectives. The proposal only needs to demonstrate relevance by discussing how the proposed investigation addresses the goals and objectives of the specific program element (i.e., A.5 of ROSES-2010).

Strengths:

The project addresses both sections 3.1 and 3.4 of the A.5 solicitation by addressing the effects of land management and land use on carbon, and developing the scientific foundations and analytical approaches for monitoring effects/efficacy of management-based carbon mitigation strategies. More broadly, the proposal addresses several NASA Earth Science and Applied Sciences goals by quantifying changes in terrestrial carbon in response to land use, land cover change, and other human and natural events by quantifying impacts and consequences of human management on systems vulnerable to unplanned carbon loss, particularly those that serve multiple needs to society, and by setting up the understanding needed to implement a society- and management-relevant carbon monitoring system for forests.

The work is also relevant to broader NASA goals by including explicit characterization of uncertainty in products derived from space-based platforms and providing a flexible framework that can incorporate new input or validation data (such as that from the upcoming LDCM and DESDynI missions).

Weaknesses:

Although the work is certainly relevant to a wide range of stakeholders (several are collaborators on the project), not much detail is presented on how the results of this project will be translated and packaged into information readily consummable by stakeholders.

3) COST – Evaluation of the cost of a proposed effort shall include the realism and reasonableness of the proposed cost, and the comparison of that proposed cost to available funds. Low cost, while desirable, does not offset the importance of realism and reasonableness of the proposed budget. Review panels evaluate cost realism and reasonableness; however, comparison of the proposed cost to available funds is performed by NASA and USDA program personnel.

Strengths:

The costs are reasonable and appropriate given the scope of the proposed work.

Weaknesses:

None.

OVERALL EVALUATION AND RATIONALE FOR OVERALL SCORE:

The proposal is ambitious yet well conceived and compelling with no other group being better placed to develop such a comprehensive system for the PNW region (or anywhere else in the country). The work is highly relevant, incorporates state-of-the-art approaches to forest measurement and monitoring and is likely to serve as a model for the development of carbon monitoring systems outside of the PNW and perhaps even outside of the U.S.

Overall Score: E _15_ VG _4_ G ____ F ____ P ____ // Excellent_____

(Please show the voting distribution above and also provide the overall adjectival rating to the right.)

SUGGESTIONS FOR PROPOSERS: