

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: NPS (Terrestrial) Ecosystem Climate Change Adaptation: A Framework for Goal-Setting

Discipline: Natural Resources

Type of Project: Technical Assistance

Funding Agency: National Park Service

Other Partners/Cooperators: University of Montana

Effective Dates: 9/1/2010 - 12/31/2011

Funding Amount: \$20,000

Investigators and Agency Representative:

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Project Abstract: NPS Management Policies (2006) frame the range of appropriate management actions that park managers may take when faced with decisions about resource conservation, visitor use, adjacent land effects, concessions management, etc. However, describing goals for long-range, larger-scale programmatic plans (e.g. General Management Plans, Resource Stewardship Strategies, or Fire, or Wilderness Management Plans, etc.) at a level of specificity and clarity to guide project-level work can be a challenge for park managers. Ubiquitous stressors such as contaminants, biological invasions and climate change increase the level of uncertainty in how resources respond to these stressors and/or to management actions in this context. Effects of climate change on ecosystems will present challenges and questions that are unprecedented in the history of protected area management. In the context of climate change and the developing partnerships across landscapes (Landscape Conservation Cooperatives), park managers will need to revise and refine vegetation management, fire, invasive plant, and restoration programs and prescriptions to restore or maintain adaptive capacity, or to prepare for change. Adaptation actions will take many forms, at multiple scales. Park managers will need to know how to make local decisions that are also effective in the larger landscape context.

While emerging tools such as vulnerability assessments and scenario planning exist to prepare managers for surprises and/or condition shifts in the context of climate change, guidance on determining appropriate goals and measurable target conditions is still lacking.

The objective of this task is to engage a small group of NPS and other land managers, scientists and other experts to develop a process that assists managers in defining desired conditions (targets, or operational objectives) for managing terrestrial ecosystems in the face of climate change and other stressors. Such goals should encompass important system drivers (e.g. fire), and be relevant at a local level, while minimizing risk and effectively contributing to landscape strategies at large spatial scales. The work will utilize one or more case-study areas to ensure applicability at the "real world" (beyond conceptual) level. Development of a goal structuring process may consider multiple, plausible future scenarios.

Also, as land managers confront new challenges associated with climate change and confounding stressors, an important factor is the institutional capacity to learn and respond. This project will also incorporate expertise in social and institutional aspects of climate change adaptation, including organizational learning, change, and structure. We will also include expertise in science delivery and adoption to develop a strategy to bring this process, and other innovative tools for planners and managers to implementation as quickly as possible.

A report describing results of the workshop will (1) describe a process to define management targets for terrestrial ecosystems under climate change and other broad stressors, (2) contain example goal descriptions at multiple, nested scales, based on a case-study application of the process, (3) illustrate specific, near-term examples, questions, or decision-points for policy-makers that the process reveals, and (4) recommend a delivery strategy for transfer of the goal-setting framework/process to managers.

Outcomes with Completion Dates: 12/31/2011 1) A workshop to be convened in early 2011 with attendance by federal and non-federal managers and scientists; 2) Two hard copies and one electronic copy of a project report delivered to the key official at the end of the project; and 3) The Principal Investigator and other leads in this project will present results of the work (which may be via webinar) to Natural Resource Program Center and Climate Change Response Program staff.

Keywords: Terrestrial ecosystems, climate change, management goal setting, workshop, NPS, University of Montana