

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Develop and implement a regional GYA science agenda for climate change; including climate change adaptation strategies

Discipline: Natural
Type of Project: Technical assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: August 1, 2009 – June 30, 2014
Funding Amount: \$17,600

Investigators and Agency Representative:

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Project Abstract: Climate change, land-use change, and invasions of non-native species are external drivers that threaten to dramatically alter the Greater Yellowstone Area (GYA). Understanding how these drivers influence wildlands and their consequences for ecosystem management in the GYA are important challenges for scientists and managers. A workshop, to be held in November 2009, will bring together topical experts, agency and NGO scientists, and managers to identify high-priority science needed over the next 10-20 years. This effort is needed to support the formulation of science agendas (a follow-up exercise) for land management agencies in the GYA. The science agendas are vision documents intended to identify critical information gaps, steer the research community toward the most important science needs of managers, and guide future funding and permitting decisions by the agencies.

A review of past and current research (annotated bibliographies) and monitoring that addresses the three drivers, and a written summary of the current funding mechanisms available to facilitate science in the GYA will be compiled and made available to workshop participants by Montana State University's Big Sky Institute (BSI). The climate change publications and ongoing research will be synthesized in a written report to include an executive summary for a management audience. The geographic scope of inquiry (e.g., review of existing and ongoing science) by workshop participants will be unconstrained by jurisdictional or ecosystem boundaries. However, the list of priority science projects for each driver will emphasize applications to GYA wildlands, an area that will be mapped and known to participants.

The objectives of the workshop are to:

1. Review current understanding of how climate change, land-use change, and invasive species act as drivers of ecological change in the GYA over a 10-50 year time period, using expertise of participants as well as using analyses and summaries of past science;
2. Identify the critical knowledge gaps and science needed by managers over the next 10-20 years to adaptively address expected changes and challenges associated with the drivers;
3. Prioritize the needed science for each driver, and make recommendations on how science agendas can be strategically implemented based on existing institutional capacities, and identify needs for new capacity as appropriate; and
4. Identify the next steps ("who", "what", and "when") in generating written workshop products and developing science agendas.

After completion of the workshop, the GYCC funds may support an identified high priority climate change science need, and/or may support adaptation planning for the GYA.

Outcomes with Completion Dates:

October 2009: Complete annotated bibliography and list of ongoing/proposed research.

November 3-5, 2009: *Climate change, land use change, and invasive species as drivers of ecological change in the Greater Yellowstone Area*: A workshop to identify priority science and implementation strategies.

June 30, 2010: Synthesis of climate change information and executive summary and/or initiate priority climate project or adaptation strategies development.

March 1, 2014: All final reports and other products to be completed and submitted by BSI to GYCC for approval.

Keywords: Montana State University, Greater Yellowstone I&M network, climate change, adaptation strategies, workshop