# Project Summary
# Rocky Mountains Cooperative Ecosystem Studies Unit

**Project Title:** Modeling future vegetation composition and structure in Grand Teton
National Park
**Discipline:**       Natural
**Type of Project:**         Research
**Funding Agency:**          National Park Service
**Other Partners/Cooperators:** Montana State University
**Effective Dates:** 9/5/2006 – 12/31/2009
**Funding Amount:**  $70,570
**Investigators and Agency Representative:**
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Project Abstract: Grand Teton NP (GRTE) staff and Montana State University researchers
will work cooperatively to develop a spatially explicit simulation model to make use
of existing plot-level vegetation data.  These data and the GRTE vegetation map will
be entered into an ARC/GIS system at MSU.  If needed additional field data will be
collected by GRTE to complete the database and allow for mapping of vegetation
composition and structure into the future based on scenarios provided by GRTE.

Products and Completion dates:  Due by the end of 2008:
   1. GIS layers of projected future vegetation and structure for GRTE based on
      scenarios developed in conjunction with GRTE ecologists.
   2. Description of simulation model and parameters used to derive projected
      vegetation maps.
   3. If possible (based on computer system power and compatibility) a simulation
      modeling tool which would allow GRTE ecologists/data managers to run the
      models with a variety of scenarios on GRTE computers and view results in
      GIS.  If it is not possible to provide the modeling tool a variety of models
      will be run for different scenarios and timeframes with resultant GIS layers
      provided to GRTE.

Due by the end of 2009:
   - A detailed analysis of fuel load distributions – projected into the future
     based on vegetation growth and dynamics, which will significantly improve the
     ability to run scenarios or forecast future disturbance regimes.
   - Produce potential vegetation maps for Grand Teton which can be used in
     conjunction with the existing vegetation map, and layered with the park's fire
     atlas data, to provide more quantitative information on fire regime condition
     classes for the vegetation types in the park.
   - Provide a deliverable that includes, at a minimum, several time steps of
     projected fuel loadings (i.e. 20-year, 50-year, 100-year intervals) or, if
     possible, to deliver a simulation modeling tool which allows GTNP ecologists
     and fire managers to run scenarios and time-steps on their own, for use in
     projecting vegetation, fuels, and the impacts of fires or other disturbances on
     vegetation over time.


**Keywords:**   vegetation model, GIS, fire, fuels, Grand Teton National Park, Montana
State University,

Publications, etc. on file: