Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Summarize light requirements for germination and establishment of subalpine species used in restoration efforts in GLAC and determine efficacy of established restoration protocols used in this environment.

Discipline: Natural Resources
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: June 1, 2009 – September 30, 2011
Funding Amount: $5,875

Investigators and Agency Representative:
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Investigator: Cathy Zabinski, Department of Plant Sciences & Plant Pathology
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Project Abstract: There are two parts to the work covered by this proposal. The first is related to light requirements for native species in Glacier NP, and the second is related to analysis of an extensive monitoring data base. Our RM-CESU cooperator has selected an interested student, Erin Gunnink, to work on the literature reviews related to light requirements. Joyce Lapp, GLAC, will provide a list of species and information required, and Cathy Zabinski, MSU, will establish a format for data collection and reporting to best facilitate a data summary. Erin Gunnink will review the literature, and take the lead on the development of a comprehensive list of light requirements for up to 100 species of plants commonly found in subalpine park lands that are routinely used in restoration efforts by the Park. Erin will also prepare a comprehensive bibliography of literature pertaining to the subject of the light requirements for the germination of subalpine species, preparing a publication that summarizes all the information. Ms. Gunnink will work out of MSU with several week long trips to Glacier during the summer season of 2009. The list of species, a summary of information to be included, and a format for the data to be collected will be developed by the 15th of June. The literature review will occur over the subsequent 6 weeks, and the manuscript will be prepared during the month of August.

The review of the monitoring data base will be a collaborative project that includes work with monitoring staff to review data collected over the past 15 years related to GLAC restoration work funded by the Federal Lands Highway Program and other projects in disturbed subalpine park lands. Dr. Zabinski will review the monitoring data, and provide some suggestions for what kind of analysis and publications could result from this work. Dr. Zabinski will visit the Park during the week of August 16th, 2009 to conduct field work and discuss monitoring data. The end products would be a summary of our monitoring data with species specific findings and suggested strategies for subalpine restoration. This information will have significant value to any park in this region engaged in native plant restoration at higher elevations. These environments are often the most vulnerable to degradation and the most difficult and expensive to treat successfully. This information may be published in Native Plants Journal and will be made available to other interested parks and on GLAC web page.

Outcomes with Completion Dates: A literature review of light requirements of native plant species found in the subalpine environs of the Rocky Mountain region; a review/summary of findings for 15 years of monitoring data from GLAC, with specific species recommendations for subalpine restoration; a listing of light requirements for approximately 100 +/- subalpine plant species from GNP that are commonly used in revegetation efforts; publication of this investigation and results in restoration literature.

Keywords: restoration, plants, germination, light requirements, monitoring data,

Glacier National Park, Montana State University