

# **Project Completion Report**

## **Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU)**

**Project Title:** *Acoustic Data Analysis and Park Planning Support*

**Project Code :** CSURM-171 , J8219091319

**Type of Project (Research, Technical Assistance or Education):** Technical Assistance

**Funding Agency:** National Park Service

**Partner University:** Colorado State University

**NPS Agreement Technical Representative (with complete contact information):**

*Jane Rodgers, Grand Canyon NP, Science & Resource Management, Grand Canyon National Park, 823 San Francisco, Flagstaff, AZ 86001. Jane\_rodgers@nps.gov (928) 606-5793*

**Principal Investigators (with complete contact information):**

**INVESTIGATOR:** Mahmood Azimi-Sadjadi, Professor, Department of Electrical and Computer Engineering, C201E Engineering Building, Colorado State University, Fort Collins, CO 80523, 970-491-7956, azimi@engr.colostate.edu

**Start Date of Project:** 9/30/2009

**End Date of Project:** 12/31/2010

**Funding Amount:** \$15,280

### **Project Summary**

**Accomplishments:**

- Analysis of acoustic data from four Mexican spotted owl sites and draft report provided to GRCA wildlife biologists to finalize. Trained three GRCA wildlife biologists on use of Natural Sounds Program custom software SPLAT. Reviewed use of Adobe Audition and entries of sound source codes into Day Audibility excel spreadsheets. A preliminary snapshot of acoustical results was completed for the 2009 monitoring sites. Established a sampling plan and analyzed data.
- Organized and provided sampled recordings from summer and winter months including analysis of decibel data for GRCA contractor. Created SOP for acoustical data analysis using Adobe Audition and Day Audibility excel spreadsheets.
- Analysis of decibel data from two sites (GRCA031 and GRCA032) for analysis by contractor.
- Took down sound station GRCA065. Raw data was saved on Maxtor external hard drive and site visit sheets updated. Interpretive data has been analyzed and preliminary results were provided to GRCA Interpretation staff.
- Provided input on soundscape topics for GRCA River Stewardship Action Guide (in draft).
- Managed GRCA Soundscape equipment (repairs, calibrating, etc.). Packaged equipment for office move.

**Number of students participating in this project:** Ericka Pilcher, Research Asst.

**Lessons Learned from this project.**

This project demonstrated that even in a short period of time, a well-trained and experienced research assistant can accomplish a great deal. CSU provide an excellent candidate for this type of work. Ms. Pilcher was able to quickly assimilate herself into Grand Canyon National Park culture, establishing excellent working relationships and organized approach to her ambitious work plan. This project exceeded park expectations.