



R O C K Y M O U N T A I N S
C E S U
COOPERATIVE ECOSYSTEM STUDIES UNIT

FY2006
ANNUAL REPORT

The **Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU)**, founded in June 1999, is now a partnership between ten Rocky Mountain universities and six federal agencies. At the end of FY2006 the University of Calgary was being added to the RM-CESU. Members of the RM-CESU are the following:

- ❖ **University of Montana-host**
- ❖ **University of Idaho** 1999
- ❖ **Montana State University** 1999
- ❖ **Salish Kootenai College** 1999
- ❖ **Utah State University** 1999
- ❖ **Washington State University** 1999
- ❖ **University of Wyoming** 2002
- ❖ **Colorado State University** 2004
- ❖ **University of Colorado at Boulder & at Denver** 2002
- ❖ **University of Northern Colorado** 2006

- USDI**
- ❖ **Bureau of Land Management** 1999
 - ❖ **Bureau of Reclamation** 2004
 - ❖ **National Park Service** 1999
 - ❖ **Geological Survey** 1999
- USDA**
- ❖ **Natural Resources Conservation Service** 2004
 - ❖ **Forest Service** 1999

The purpose of the RM-CESU is to foster a partnership among universities and federal agencies in the conduct of research, education, and technical assistance focused on natural resource, cultural resource and environment issues of the Rocky Mountain states and selected national issues.

Mission

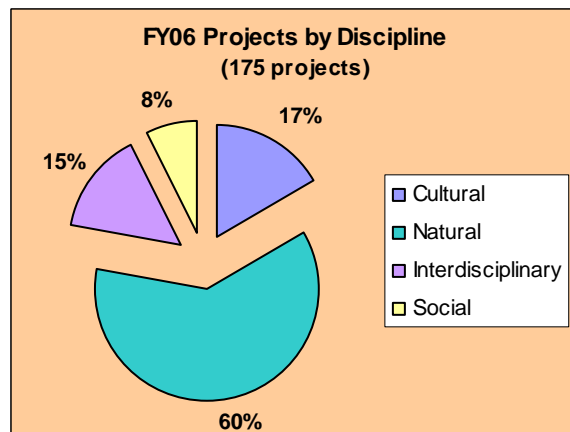
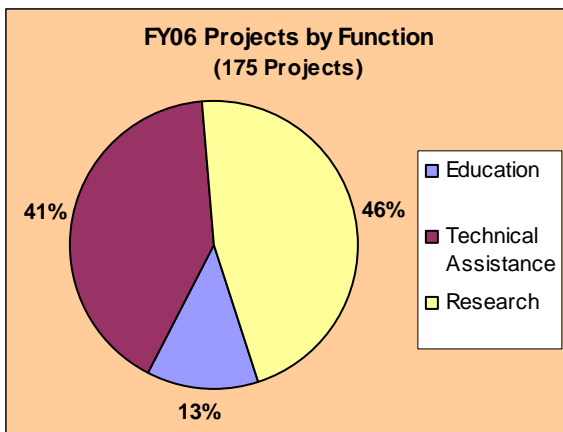
The mission of the Rocky Mountains Cooperative Ecosystem Studies Unit is to improve and disseminate the knowledge base for managing natural and cultural resources in the rapidly changing social, cultural, and environmental landscape of the Rocky Mountain Region, and to extend its expertise to national issues where appropriate.

RM-CESU PROJECTS/FUNDS FOR FY06

Funds obligated through the Rocky Mountains Cooperative Ecosystem Studies Unit in FY 2006 included **\$12,584,210** for **175 projects or continuation of projects**. A listing of all the projects may be found on the attached RM-CESU Project List for FY06.

RM-CESU Total Project Numbers & Funds by Agency for FY2006

| | RM-CESU | NPS | BLM | USFS | USGS | BOR | NRCS |
|-------------------|---------------------|------------------|------------------|------------------|----------------|----------------|----------------|
| Project #s | 175 | 142 | 21 | 1 | 6 | 2 | 3 |
| \$ | \$12,584,210 | 7,502,073 | 2,746,030 | 1,132,560 | 572,859 | 159,810 | 470,878 |



Example Project: Technical Assistance

Title: **Providing Vision, Guidance, and Support for the Development and Maintenance of the Fire Research and Management Exchange System (FRAMES)**
 Agency: **USGS**
 PI: **Penny Morgan, College of Natural Resources, University of Idaho**

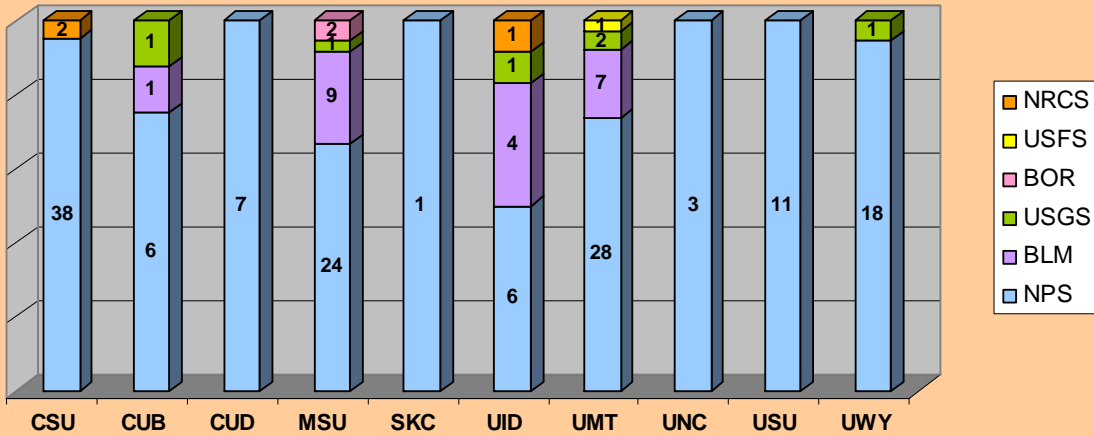
The goal of the FRAMES project is to make wildland fire and fuels information resources and tools easy to find, access, distribute, compare, and use. The use of enterprise portal technology by FRAMES in collaboration with the USGS/ NMII helps accomplish this goal. By fully utilizing portal technology, FRAMES can provide common access to information and technology generated by federal and other research dollars as well as meeting individual needs at various administrative levels.

Example Project: Cultural

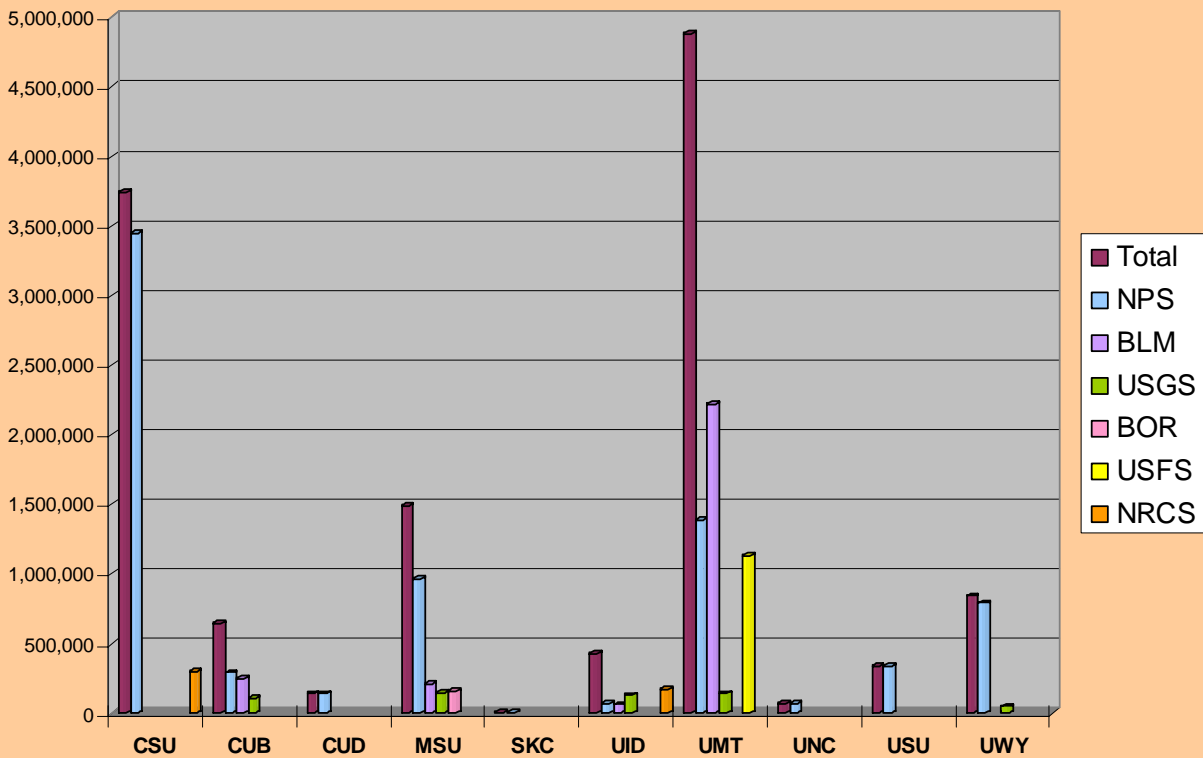
Title: **Comb Wash Heritage Initiative**
 Agency: **BLM**
 PI: **Catherine M. Cameron, Department of Anthropology, University of Colorado at Boulder**

The Comb Ridge Heritage Initiative involves a large-scale archaeological survey of the area around Comb Ridge in southeastern Utah. The land that will be surveyed belongs to the Bureau of Land Management and is heavily used by the public for recreation. It is an area with a wealth of important archaeological sites, many of which are eligible to the National Register of Historic Places. These sites include small prehistoric homesteads, large villages, cliff-dwellings, rock art, and more. Because the area has never been systematically surveyed, the BLM does not know the nature of the cultural resources, and as a result cannot adequately protect them. The BLM intends to develop a campground in one part of the Comb Wash area and this will bring even more visitors. The survey, when it is completed, will provide the BLM with information about the numbers and types of archaeological sites in the Comb Ridge area and will allow them to protect these sites while allowing recreation in the area.

Distribution of Projects by University/Agency for FY06



Distribution of Funds by University/Agency for FY06



Smallest Project: \$2,350, NPS/USU, Bison Literature Review
 Largest Project: \$1,478,000, BLM/UMT, National Center for Landscape Fire Analysis
 Mean: \$71, 910
 Median: \$25,000

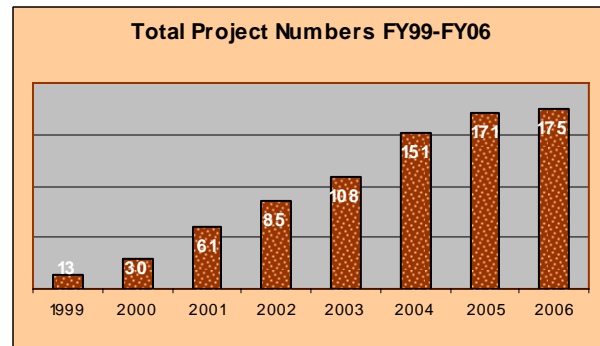
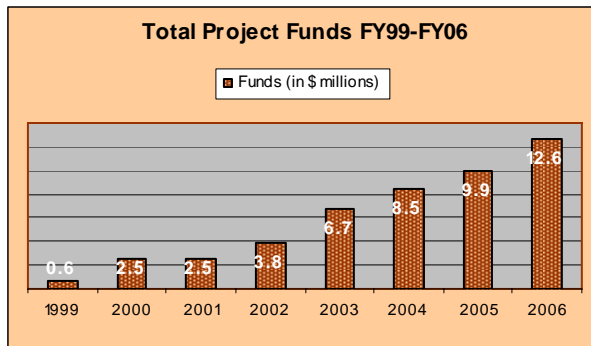
To view Project Summary Reports for 2006 go to
http://www.cfc.umn.edu/research/CESU/NEWCESU/Projects/Agency_reports.htm ; click on "Agency"
 and then "Year"

Projects Affiliated with the RM-CESU in FY06, but not using the CESU Agreement

Many additional projects are affiliated with the RM-CESU even though they did not use the CESU protocols to become established. Examples include interagency projects and projects with the USFS-RMRS and USGS, which have other mechanisms to move funds to the university partners. The table below does **not** represent all RM-CESU affiliated projects; it only represents the projects that the RM-CESU was able to identify and record.

| | University | |
|------------------|---------------|----------------|
| | # of Projects | \$ |
| USFS-RMRS | 19 | 755,435 |

RM-CESU PROJECT ACTIVITY FY99-FY06



RM-CESU grew by 21% over FY05, with projects totaling \$12,584,210 for FY06. In the seven and a half years of the RM-CESU \$45.5 million for 794 projects has moved from the federal partners to university partners for projects that benefit resource management.

RM-CESU HIGHLIGHTS & ACCOMPLISHMENTS

- **April 18th, 2006: Great Plains / Rocky Mountain CESU Joint Managers Meeting, hosted by Colorado State University, Fort Collins, CO.** The joint managers meeting of Great Plains and Rocky Mountain CESU managers and representatives focused on the idea of bringing together participants to discuss current issues facing land managers, and to generate ideas for potential future projects within these issues. The three themes identified were Wildlife Disease; Tourism; and Drought/Drought Mitigation.
- **Addition of new members**
 - **University of Northern Colorado** (effective date December 14, 2006)
 - **University of Calgary** (membership approved FY06; effective date early FY07- October 10, 2006)
- **Jerry O’Neal National Park Service Student Fellowship**
 The National Park Service will work with the University of Montana to organize and administer a student fellowship program to allow students to work on projects at Glacier NP, Little Bighorn Battlefield NM, and Grant-Kohrs Ranch NHS.
 Applications will be judged on scientific merit, technical feasibility, and relevance of the proposed work to park managers. Proposals may cover a portion of an ongoing research project, a one-time survey or project, or the expansion of an existing project that includes the above mentioned criteria. Projects may be of one to three year duration. Projects will need to comply with

appropriate agency regulations and permits (separately administered from this fellowship.). For the first year of this program, the student applicants must be graduate students or superior upper division undergraduate students (3.2 GPA or above) at one of the RM-CESU member universities. As the program expands, the NPS and University of Montana may consider extending the program to all colleges and universities nationwide. All applications must show endorsement by a faculty member at the student's institution who has agreed to oversee the student's research.

Fellowships will range from \$1,000-\$5,000 per project, and may include housing provided at Glacier National Park. In addition to a summary report or publication, students are expected to provide one or more educational products to facilitate information transfer beyond the scientific audience, such as a presentation to site managers, a public seminar, CD, or non-technical article.

- **CU-Boulder Technical Rep to RM-CESU recognized for his Research by the National Park Service**

Dr. Mark Williams of the University of Colorado at Boulder won the Award for research to support resource management by a non-federal scientist. This award is for outstanding contributions to natural or cultural resource research by a university, state or non-governmental organization (NGO) researcher in 2005. This award, presented by the NPS Intermountain Regional Director, was created to reward excellence in developing scientific programs or published research that is used to support natural or cultural resource management in the Intermountain Region parks. Mark's contributions include more than 20 years of work in parks throughout the Sierra Nevada and the Rocky Mountains. Mark and his



colleagues and graduate students have developed "state of the air" methods for monitoring atmospheric deposition and watershed mass balance in small, alpine watersheds in such parks as Sequoia-Kings Canyon, Yosemite, Rocky Mountain, Grand Teton, Glacier and Rocky Mountain NPs. Mark's research has led the way in helping NPS and USFS managers in setting "critical loads" of nitrogen deposition in mountain ecosystems. This contribution is now part of the science being used in air quality policy formulation by the Environmental Protection Agency and the State of Colorado.

- **"Place and Native Voice"** The Rocky Mountains CESU, University of Colorado at Denver, and the NPS Intermountain Region are collaborating on a Native American student internship program called "Place and Native Voice." In 2006, the program placed three students in Rocky Mountain NP and Bent's Old Fort NHS for summer assignments on the interpretation of the sites' natural and cultural resources from a Native American perspective. The project is being funded by the NPS RM-CESU, and the NPS Intermountain Regional Offices of Workforce Enhancement and Indian Affairs and American Culture.

- **Rocky Mountains CESU Send Tehabi Interns to Parks**


Kathy Tonnessen and Christine Whitacre, NPS staff from the Rocky Mountains CESU, attended a training session in May 2006 of the Tehabi interns at Grant-Kohrs Ranch NHS. They presented information to the graduate and undergraduate students on employment opportunities in NPS. These students received group training and then traveled to assignments at Grant-Kohrs Ranch NHS, Glen Canyon NRA, and Bighorn Canyon NRA. The internship program is organized by Utah State University.



Christine Whitacre shares her NPS experience with the Tehabi interns at Grant-Kohrs National Historic site.

RM-CESU MEETINGS & WORKSHOPS

| Meeting | Date | Host | Participating Partners |
|---|---------------------|---|--|
| <p>How Do We Design Natural Resource Science/Research Agendas for Parks?</p> <p>http://www.forestry.umt.edu/research/CESU/NEWCESU/Assets/Partner%20Activities/FY05%20activities/05Oct17_YELLOW agenda_handout.doc</p> | October 17, 2005: | <p>YNP Heritage Research Center, Gardiner, MT.</p> <p>Co-organizers: Glenn Plumb, Yellowstone NP, and Kathy Tonnessen, Rocky Mountains CESU</p> | <p>University: Montana State University, University of Colorado at Boulder, University of Colorado at Denver, University of Wyoming, University of Calgary</p> <p>Agency: NPS, USGS</p> |
| <p>8th Biennial Scientific Conference on the Greater Yellowstone Ecosystem- GREATER YELLOWSTONE PUBLIC LANDS: A Century of Discovery, Hard Lessons, and Bright Prospects</p> <p>http://www.nps.gov/yell/naturescience/conference2005.htm</p> | October 17–19, 2005 | <p>Yellowstone National Park, WY</p> <p>Sponsors included RM-CESU/NPS</p> | <p>University: University of Montana, Montana State University, Colorado State University, University of Wyoming, University of Colorado at Boulder</p> <p>Agency: NPS, USFS, USGS</p> |
| <p>RM-CESU Fall Executive Committee Meeting</p> | October 26, 2005 | <p>USFS Rocky Mountain Research Station, Fort Collins</p> <p>Highlight: Committee approves the University of Northern Colorado as a partner.</p> | <p>University: University of Montana, Montana State University, Colorado State University, University of Wyoming, University of Idaho, University of Colorado at Boulder, Utah State University, University of Northern Colorado</p> <p>Agency: NPS, USGS, USFS, BOR</p> |
| <p>Bison, Snow and Road Corridors</p> <p>A two day workshop to identify hypothesis driven questions, research, and management experiments that may resolve whether the Firehole-Mammoth corridor serves as a barrier to bison movements between the Central and Northern winter ranges during non-road grooming scenarios.</p> <p>Final Report: http://bsi.montana.edu/files/bigsky/docs/BisonWorkshopReport.pdf</p> | January 18-19, 2006 | <p>Yellowstone National Park</p> <p><u>Workshop Organizing Committee:</u> Lisa Graumlich (Big Sky Institute) Aaron Jones (Big Sky Institute) Glenn Plumb (Yellowstone National Park) Kathy Tonnessen (Rocky Mountain Cooperative Ecosystems Studies Unit) Mike Yochim (Yellowstone National Park)</p> | <p>University: Montana State University, Colorado State University, University of Calgary</p> <p>Agency: NPS, USGS</p> |

| | | | |
|--|------------------------------|--|---|
| <p>Rocky Mountain cluster resources meeting, National Park Service</p> <p>Agenda and notes: http://www.forestry.umt.edu/research/CESU/NEWCESU/Assets/Partner%20Activities/FY06%20Activities/Cluster%20Meeting/RM_Cluster06.htm</p> | <p>February 27-28, 2006:</p> | <p>Lakewood, CO</p> <p>Organizers: Kathy Tonnessen and Christine Whitacre, RM-CESU/NPS</p> | <p>University: University of Colorado at Boulder, University of Northern Colorado</p> <p>Agency: NPS</p> |
| <p>Livestock and Landscapes: A discussion of issues, obstacles and opportunities in the NPS</p> <p>Proceedings: http://www.forestry.umt.edu/research/CESU/NEWCESU/Assets/Partner%20Activities/FY06%20Activities/Apr%2014%202006%20(E)/index.htm</p> | <p>March 1-3, 2006:</p> | <p>Lakewood, CO</p> <p>Sponsored by NPS, RM-CESU/NPS, and Utah State University</p>  <p>Ben Baldwin (USU) and Ben Bobowski (NPS), Co-Chairs</p> | <p>University: Utah State University, Colorado State University</p> <p>Agency: NPS, NRCS, BLM</p> |
| <p>Great Plains / Rocky Mountain CESU Joint Managers Meeting</p> | <p>April 18th, 2006</p> | <p>Colorado State University, Fort Collins, CO.</p> <p>Meeting Notes: http://www.forestry.umt.edu/research/CESU/NEWCESU/Assets/Partner%20Activities/FY06%20Activities/GP&RM%20CESU%20Meeting/Joint_CESU-mtg06.htm</p> | <p>University: University of Montana, Colorado State University, University of Wyoming, Salish Kootenai College, University of Colorado at Boulder, Utah State University, Montana State University</p> <p>Agency: NPS, BOR, BLM, USGS, USFS</p> |
| <p>RM-CESU Executive Committee Meeting</p> | <p>April 19, 2006</p> | <p>Colorado State University, Fort Collins, CO.</p> <p>Highlight: Committee approves the University of Calgary as a partner.</p> | <p>University: University of Montana, Utah State University, University of Wyoming, University of Colorado at Boulder; Salish Kootenai College; Montana State University, University of Northern Colorado, University of Calgary</p> <p>Agency: BLM, BOR, NPS USFS-RMRS, USGS</p> |

RM-CESU WORK PLAN FY06

- Hold two Executive Committee meetings **October 26, 2005 and April 19, 2006**
- Hold a joint managers meeting with the Great Plains CESU **April 18, 2006**
- Complete amendment of RM-CESU Agreement adding the University of Calgary as a partner institution **Completed in early FY07 (The date of execution is October 10, 2006)**
- Coordinate the 4th "Wilderness Stewardship in the Rockies" workshop. Topic: Minimum Tool-Planning to begin in FY06 and workshop to take place on FY07 **Workshop scheduled for January 16-18, 2007**
- Complete the University of Northern Colorado expertise directory for the web site **completed**
- Complete the University of Calgary expertise directory for the web site **in progress**
- Update all other partners expertise directory **all completed except WSU, which is in progress**
- Work with the BLM to get its agency needs list completed and posted on the web site **in progress**
- Work with the NRCS to get its agency needs list completed and posted on the web site **in progress**
- Continue discussions with the folks on the Tehabi Program and other on internship options through the RM-CESU **in progress**
- RM-CESU Monthly Newsletter
- FY06 Annual Report (**this document**) and Project List (**attached**)

RM-CESU Executive Committee

Executive Committee is composed of one representative from each RM-CESU partner. The 2006 members of the Executive Committee were:

University Partners:

Perry Brown, Dean, College of Forestry and Conservation, University of Montana, Chair of the RM-CESU Committee

Keith Blatner, Chair, Natural Resource Sciences, Washington State University

Terry Sharik, Department Head, Environment and Society, Utah State University

Adrian Leighton, Faculty, Environmental Science Program, Salish Kootenai College

Steven Daley Laursen, Dean, College of Natural Resources, University of Idaho

Dave Roberts, Department Head, Ecology, Montana State University

Rollin Abernethy, Associate Vice President for Academic Affairs, University of Wyoming

Mark Williams, INSTARR Fellow and Candice Miller, Director Research and Information, The Graduate School (Boulder)/Michael Holleran (October 2005-July 2006), Associate Dean of Research, College of Architecture and Design/ Fahriye Sancar (August 2006-October 2006), Professor & Chair of Planning and Design (Denver), University of Colorado at Boulder and at Denver

Michael Manfredo, Department Chair, Natural Resource Recreation and Tourism, Colorado State University

Agency Partners:

Zach Bowen, Ecosystem Dynamics Science Program Director, USGS Fort Collins Science Center

John Toliver, Deputy Director, USFS Rocky Mountain Research Station.

William Volk, State Soil Scientist, Planning, and Biological Resources, Montana State Office/ Scott Davis, Central Regional Science Coordinator, National Science & Technology Center, Bureau of Land Management

Kathy Tonnessen, RM-CESU Research Coordinator, National Park Service

Jeff Lucero, Bureau of Reclamation

Sheryl H. Kunickis, National Agricultural Research Coordinator, Natural Resources Conservation Services

Other Participants in the Executive Committee Meetings:

Lisa Gerloff, RM-CESU Executive Coordinator, University of Montana

Christine Whitacre, RM-CESU Cultural Resource Specialist, National Park Service

