



## United States Department of the Interior

NATIONAL PARK SERVICE  
GRAND CANYON NATIONAL PARK  
P.O. BOX 129  
GRAND CANYON, ARIZONA 86023-0129

IN REPLY REFER TO:  
N2219 (GRCA-8213)

May 18, 2009

John Hamill, Chief  
Grand Canyon Monitoring and Research Center  
U. S. Geological Survey  
2255 N Gemini Dr. MS 9394  
Flagstaff, AZ 86001

Dear Mr. Hamill:

This letter is to inform you that we will not approve the FY07-FY11 Archaeological Site Monitoring Research and Development Project: Proposed Spring 2009 Field Activities (Application No. 45899), that proposes the use of Lidar for the purpose of long-term monitoring of archaeology sites in Grand Canyon National Park. Two other aspects of the proposal include continued use of the weather station and camera station data. Those portions have been approved under a permit extension with Draut and Rubin (GRCA-2008-SCI-0020).

Please refer to this letter as official notice that the above referenced research and associated river permit will not be issued. Attached is the memorandum to the Superintendent that outlines the primary reasons for this decision. We look forward to our scheduled discussion for developing an appropriate role for the GCMRC cultural program and identification of research monitoring protocols that meet NPS and the Adaptive Management Program needs. If you have any questions, please call me at 928-606-7809.

Sincerely,

/s/ Martha G. Hahn

Martha Hahn  
Chief, Science and Resource Management  
Grand Canyon National Park

Enclosure: Memorandum (5/18/09 -- Initial Review & Recommended Action for Grand Canyon Monitoring and Research Center (GCMRC) Research Permit Application for Cultural Monitoring Research and Development Project)

Cc: Steve Martin, Mike Snyder, Palma Wilson, Bert Frost



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### Memorandum

**To:** Superintendent, Grand Canyon National Park (GRCA)

**From:** Chief, GRCA Science & Resource Management /s/ Martha G. Hahn

**Subject:** Recommended Action for Grand Canyon Monitoring and Research Center (GCMRC) Research Permit Application for Cultural Monitoring Research and Development Project (March 4, 2009)

On March 4, 2009 we received a research permit application from GCMRC to conduct research using Lidar at multiple archaeology sites and utilize data collection at existing weather and camera stations established by Draut and Rubin. Park staff has been discussing the research proposal with Helen Fairley since February, 2009, including meetings regarding her September 2008 proposal that was not approved. On April 15, 2009, GRCA received a response from Helen Fairley regarding our latest evaluation of her research permit, described in correspondence to her dated April 6, 2009.

There are three distinct aspects to the research proposal. The second and third portions have been approved under a permit extension with Draut and Rubin (weather stations and camera stations – NPS research permit # GRCA-2008-SCI-0020). Based on the most recent response from GCMRC, I have determined it is best to disapprove that portion of the proposal to conduct research using Lidar at multiple archaeological sites.

#### **Background**

On September 3<sup>rd</sup> 2008, GRCA sent GCMRC a letter of determination to not approve the 2008 Fairley research permit based on her proposal dated July 15, 2008 (FY07-FY11 Archaeological Site Monitoring Research and Development Project: Review of FY06-07 Accomplishments and Description of Proposed FY08 Activities). Per Fairley's request, park staff held a meeting on February 27, 2009 to discuss the details of her July 15, 2008 proposal. The evening prior to this meeting, Fairley emailed GRCA a revised research proposal titled "FY07-FY11 Archaeological

Site Monitoring Research and Development Project: Proposed Spring 2009 Field Activities.” During the February 27 meeting, GRCA requested a copy of the draft Collins and Draut reports, and Fairley requested a meeting with Park staff to discuss the Colorado River Management Plan (CRMP) Archaeology Monitoring Program.

After the February 27, 2009 meeting, several additional meetings, phone conversations and exchange of documents, Fairley submitted a Scientific Collection and Research Permit (Application No. 45899) to our office March 4, 2009. An accompanying Research River Trip Application was received by our office April 17, 2009. GRCA also received (March 12, 2009) the two draft reports requested on February 27, 2009. Park staff used these reports to further review the revised proposal.

Also on March 12, 2009, Jane Rodgers met with Fairley to discuss this years GCMRC-GRCA Interagency Agreement to transfer the NPS allocated funds for FY09 (\$70,000). At the conclusion of this meeting, it remained unclear if GCMRC would be providing these funds to the NPS; to date the transfer has not occurred.

On April 10, 2009 GRCA River Archaeologist Jennifer Dierker held a meeting with Fairley to review the Colorado River Management Plan resource implementation program and explore opportunities to use and enhance this existing monitoring program to meet AMP needs and objectives.

#### **Revised Research Proposal and Permit Application**

The revised (March 4, 2009) Fairley proposal focuses on Archaeological Site Monitoring Research & Design to test and establish monitoring techniques using Lidar, weather station data, and repeat photography data. The proposal includes changes from the July 15, 2008 submittal. For instance, the visitor use component was eliminated from the July 15, 2008 version, and the revised proposal has been paired down to the three portions stated previously.

Unfortunately, the use of Lidar as a measurement of change for long-term monitoring is still being proposed. GRCA continues to object to this technique being “tested” on sites within the park and that it is being considered as a viable monitoring tool when it lacks the ability to provide the critical information required for GRCA to mitigate impacts in a reliable and timely fashion.

#### **Recommended Action**

Based on similar reasons identified for denial of the 2008 research permit application, I am recommending not approving this research permit and associated river trip application. My hope is that GRCA and GCMRC can come to a resolution on the appropriate role of the GCMRC cultural program and we are able to identify research and monitoring protocols that meet NPS and AMP needs.

#### **Reasons for Recommendation:**

- While GRCA has used Lidar mapping in the past, this use was focused on the documentation of architectural sites, not for detecting long-term change. We believe (based on documented evidence) that although the use of Lidar can detect change, it is unable to identify the mechanism of that change.

- To meet the obligations set forth in the 2006 NPS Management Policies, we are in need of a monitoring protocol that is able to detect where change is happening, the cause of that change, and the ability to identify what suite of remediation methods can preserve sites from this change. We have expressed this need with GCMRC for several years and the proposed monitoring protocol (use of Lidar) will not fulfill this need.
- This proposal is focused on testing technology; testing on National Register eligible sites in GRCA is not appropriate for experimentation.
- The proposal mentions collecting depth and chemical characteristics; however, there is no elaboration as to how this will occur.
- The proposal does not identify how many trips will be made to each site during the testing phase and what the long-term site monitoring frequency would be.
- As mentioned in the February 27, 2009 meeting, GRCA remains concerned about implementation of the cultural resource monitoring protocol developed by GCMRC. It is unlikely that GRCA will have the capacity and/or funding to implement the proposed cultural resource monitoring protocol. If we are unable to implement this long-term protocol, the utility of this research is unclear.
- The current process for developing cultural monitoring research as a part of the AMP has not met the needs of GRCA.
- The Minimum Requirement Analysis submitted raises concerns regarding potential wilderness-resource impairment. This proposal suggests that use of Lidar will become the proposed long-term cultural resources monitoring protocol. This protocol would require the use of motorized boats and generators within proposed wilderness for an unknown number of days per year at an unknown number of locations. It also requires site visitation of unknown quantities.