

**PROGRESS REPORT ON THE HOPI TRIBE'S INVOLVEMENT IN THE
TRANSITION TOWARD IMPLEMENTATION OF THE PREFERRED
ALTERNATIVE OF THE GLEN CANYON DAM
ENVIRONMENTAL IMPACT STATEMENT**

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Submitted to

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Introduction

In 1991 the Bureau of Reclamation and the Hopi Tribe entered into a Cooperative Agreement No. 1-FC-40-10560, entitled Cooperative Agreement for Hopi Tribe Coordination with the Glen Canyon Environmental Studies and the Glen Canyon Environmental Impact Statement, as a means to allow for Hopi Tribe involvement in the technical programs. This involvement focused on the technical areas of archaeological resource studies, cultural resource coordination, ethnography, hydrology, and GCD-EIS coordination. The Hopi Tribe participated as a full cooperating member of the Cooperating Committee directing the overall GCD-EIS program.

In 1992, the Bureau of Reclamation initiated the Section 106 process of the National Historic Preservation Act of 1966, as amended. This process identifies that any change in the operations of the Glen Canyon Dam is considered a federal undertaking and as such requires the identification, evaluation, and consideration of all historic properties within the area of potential effect of that undertaking. This process also mandates consultation with concerned Native American Tribes for the identification, evaluation, and treatment of historic properties of significance to these Native American Tribes. The Hopi Tribe participated in this process to identify, evaluate, monitor, and be an equal participant in the long term management of all historic properties, sacred areas, and areas of traditional Hopi cultural use that are within the Glen Canyon Dam's area of potential effect. The Hopi Tribe is a Consulting Signatory to the Programmatic Agreement for the Glen Canyon Dam which specifically delineates the responsibilities of the Bureau of Reclamation.

The Hopi Tribe's concerns include not only cultural resource aspects, but also the impacts of operations of Glen Canyon Dam on the biological and physical processes and resources, including the endangered fish in the mainstem Colorado River and in the Little Colorado River (LCR).

In March of 1995 the Final Environmental Impact Statement for the Operation of the Glen Canyon Dam was issued by the Bureau of Reclamation. On the following September 30, 1995 the Cooperative Agreement No. 1-FC-40-10560 between the Hopi Tribe and the Bureau of Reclamation was successfully concluded. The period beginning October 1, 1995 and ending with the Secretary of the Interior signing the Record of Decision for the Glen Canyon Dam Final Environmental Impact Statement is considered a transition period in which efforts will be activated toward implementing the preferred alternative. During this period, the Bureau of Reclamation has entered into a Cooperative Agreement with the Cultural Preservation Office of the Hopi Tribe for the collection and analysis of cultural resources along the Colorado River, Glen and Grand Canyons below Glen Canyon Dam, Arizona. This Cooperative Agreement No. 1425-96-FC-81-05007 and entitled Glen Canyon Dam Transition Monitoring Program is to be a part of the Transition Monitoring and Long-term Monitoring studies that are being conducted to determine future options for operations of the Glen Canyon Dam.

This Cooperative Agreement identifies a cultural resource monitoring program that will collect information for the Glen Canyon Dam Programmatic Agreement and the Glen Canyon Dam Transition Monitoring program being conducted to determine future cultural resource impacts related to the operations of the dam. The Hopi Tribe will benefit from the augmentation of its information data base on the cultural resource knowledge of the Colorado River and provide an avenue for dispersion of scientific information to the tribal population and the elders.

Two major areas of monitoring and coordination are proposed under this agreement: 1) Cultural Resource Monitoring and 2) Transition Monitoring and Adaptive Management Coordination. The primary objectives of these work areas are to ensure that a consistent and appropriate level of monitoring of the cultural resources occurs during the Transition Monitoring period and that the Hopi Tribe is provided the resources to adequately participate in the Transition Monitoring and Adaptive Management programs.

The Hopi Tribe's scope of work encompasses the implementation of activities related to the transition period until the finalization and implementation of the Final Glen Canyon Dam Environmental Impact Statement Record of Decision. The scope of work includes the monitoring of sacred places and places and resources of traditional cultural importance to the Hopi people within the Glen and Grand Canyons, and guidance and development of specific technical and cultural resource recommendations. The primary focus of the Hopi Tribe's involvement is concentrated on providing a traditional Hopi perspective and related concerns within all aspects of the transition period in order to develop the appropriate monitoring, management, and research needs that are sensitive to a Hopi cultural perspective.

According to the objectives outlined in the cooperative agreement, this progress report addresses the advancement and action that has been accomplished by the Cultural Preservation Office for the period beginning July 1, 1996 and ending September 30, 1996, encompassing the fourth and final quarter of the 1996 fiscal year, towards fulfillment of those objectives. This report fulfills the September 1996 deliverable requirement of the cooperative agreement between the Bureau of Reclamation and the Hopi Tribe.

Progress Completed Towards Fulfillment of Objectives

The first objective is to represent the Hopi Tribe in all Transition Work Group meetings and associated technical work subgroup meetings during the transition period and the concurrent development of the Long-term Monitoring and Adaptive Management Programs and the development and implementation of the Research Center. Efforts to accomplish this objective by the Cultural Preservation Office, during this reporting period, consisted of representing the Hopi Tribe at one Transition Work Group meetings and four Grand Canyon Monitoring and Research Center Subgroup meetings.

Grand Canyon Monitoring and Research Center Subgroup Meetings

On 16 July 1996, Kurt Dongoske attended a meeting of the Grand Canyon Monitoring and Research Center held at the Fountain Suites Hotel, Phoenix, Arizona. During this meeting the management objectives, identified by the Management Objectives Subgroup, were discussed and the corresponding proposed research needs. The role of the Grand Canyon Monitoring and Research Center in achieving these management objectives were also discussed.

On 20-21 August 1996, Kurt Dongoske and Mike Yeatts attended a meeting of the Grand Canyon Monitoring and Research Center held at the USGS Field Office, Flagstaff, Arizona. This meeting was designed to receive input from the scientific community concerning the management objectives and the research needs developed by the Grand Canyon Monitoring and Research Center Subgroup. The discussion also focused on scientific approaches to resource issues in the Grand Canyon as identified by the stakeholders.

On 28 August 1996, Kurt Dongoske attended a meeting of the Grand Canyon Monitoring and Research Center which was held at the USGS Field Office, Flagstaff, Arizona. The purpose of this meeting was to review the revised resource management objects and the corresponding identified research needs. This newest version incorporated the comments and suggestions of the scientific community as identified in the 20-21 August meeting. It was also pointed out, during this meeting, that the research needs identified in the Biological Opinion needs to be integrated with the fish and aquatic resource management objectives information needs.

On 26 and 27 September 1996, Kurt Dongoske, representing the Hopi Tribe, attended a meeting of the science team convened by Grand Canyon Monitoring and Research Center which was held at the Forestry Building on the campus of Northern Arizona University. This meeting was designed to have the scientific community comment on the revised resource management objects and the corresponding research needs as identified by the management planning group in the 28 August meeting. During this meeting the physical and cultural resource scientists broke into one working group and the biological scientist into another. Each group reviewed and discussed the individual resource categories, the identified management objectives or targets, and the corresponding research needs. Additional research needs were identified by the scientists and incorporated into this working draft. The discussion of the management objectives and associated research needs for the sediment resource are crucial to the reduction in river terrace erosion and the preservation of archaeological sites contained on those terraces. Thus, the discussion of cultural resources and sediment was a focus of the physical and cultural working group. The results of this meeting will be presented to the management planning subgroup on 8 October 1996 in Phoenix, Arizona.

Transition Work Group Meeting

On 29 August 1996, Kurt Dongoske, representing the Hopi Tribe, attended a meeting of the Glen Canyon Dam Transition Work Group, held at the La Quinta Inn, Phoenix, Arizona. The Adaptive Management Work Group Charter was discussed and the Bureau of Reclamation indicated that the draft charter had been sent to Washington D.C. for review and comment. The geographic scope of the Glen Canyon Dam EIS and the Grand Canyon Protection Act was another issue that was discussed. The National Park Service supports the introduction and inclusion of Lake Powell studies into the scope of the Long-Term Monitoring and Research program. This position was support by the Grand Canyon Trust which stated that it was uncomfortable with the focus being primarily on downstream resources. The Grand Canyon Trust further suggested that we stop segmenting the Colorado River based on arbitrary lines and that the focus has been too much on geography and not the resource needs.

The Transition Work Group also discussed the status of the GAO audit and that the Bureau of Reclamation has received a portion of the draft audit and has responded with comments. The final draft of the GAO audit was sent, on 22 August 1996, to the Secretary of the Interior for review. The Record of Decision is expected to be signed before the national elections and the Secretary of the Interior is prepared to sign the ROD upon receipt of the final GAO audit. Additional topics discussed at this meeting were the selective withdrawal structure, progress on the Reasonable and Prudent Alternative pursuant to the Endangered Species Act, the transition from the Glen Canyon Environmental Studies to the Grand Canyon Monitoring and Research Center, the Beach/Habitat Building Test flows and cultural resources.

The second objective is to provide transition monitoring and management consultation to the Bureau of Reclamation concerning archaeological, sacred, and places and resource of traditional importance within the context of a Hopi cultural perspective. Assistance and consultation will be provided to the Bureau of Reclamation as part of their National Historic Preservation Act, Section 106 responsibilities pursuant to the Glen Canyon Dam Operations Programmatic Agreement. Principally this objective has been accomplished through the Hopi Tribe's participation in the meetings of the signatories to the Programmatic Agreement and through the review and comment on the National Park Service's cultural resource monitoring reports and annual report. The principal Hopi representatives to the Programmatic Agreement meetings are Mr. Dongoske and Mr. Michael Yeatts, Hopi/GCES Archaeologist.

On 18 July 1996, Mr. Dongoske and Mr. Yeatts met with Dr. Signa Larralde, Regional Archaeologist, Upper Colorado Regional Office, Bureau of Reclamation, Ms. Jan Balsom, Cultural Resources Manager, Grand Canyon National Park, and Mr. Tim Burchett, Archaeologist, Glen Canyon National Recreation Area, regarding the preliminary revisions suggested for the Historic Preservation Plan based primarily on the comments of the Hopi Tribe and the Grand Canyon National Park. The meeting was held in the Grand Canyon National Park Service cooperative agreement offices on the campus of Northern Arizona

University.

On 19 July 1996, Mr. Dongoske and Mr. Yeatts attended a meeting of the Programmatic Agreement Signatories held in Bilby Hall on the campus of Northern Arizona University. During the meeting, the nomination to the National Register of the historic properties located within the Colorado River corridor was discussed. Also Signa Larralde requested all tribal budgets for FY97 be submitted to her by August 23, 1996. The participants also discussed submitting a session proposal on the Glen Canyon Dam cultural resources work for the annual meeting of the George Wright Society, a society comprised of professional managers. The Bureau of Reclamation will submit a letter to the Advisory Council requesting an extension of the deadline for the final version of the Historic Preservation Plan. The BOR will request an extension to September 30, 1997. Also during this meeting the State Historic Preservation Office requested that a public education program be developed as part of the Historic Preservation Plan. Two groups were selected to work on revising the Historic Preservation Plan. Group 1, chaired by Kurt Dongoske, will take the lead on revising chapters 5 & 6 of the Historic Preservation Plan, and Group 2, chaired by Jan Balsom, will revise the remaining portion of the document.

On 29 August 1996, Mr. Dongoske, represented the Hopi Tribe, at a meeting of the Programmatic Agreement Signatories held, subsequent to the Transition Work Group Meeting, at La Quinta Inn, Phoenix. During this meeting, Signa Larralde reiterated the need to receive the FY97 budgets from the tribes and that the programmatic group had decided to participate in the George Wright Society annual meetings. She also stated that both the Grand Canyon National Park and the Glen Canyon National Recreation Area have submitted their draft annual reports. The majority of the meeting centered around proposing to nominate the historic properties located within the Colorado River corridor as a cultural landscape or a historic district to the *National Register of Historic Places*. This nomination would encompass a multiple listing, that is prehistoric, historic sites, and traditional cultural properties. Dr. Larralde pointed out that many federal land managers and non-cultural resource people tend to give more attention and concern to properties listed on the *National Register*, than they do to historic properties that are considered eligible, but are not listed.

On 13 September 1996, Kurt Dongoske convened a meeting of the subgroup, work group 1, to discuss the suggested revisions to chapters 5 and 6 of the Historic Preservation Plan. The meeting was held at the USGS Flagstaff Field Office. Jan Balsom, chair of work group 2, also attended the meeting and the discussion focused on a revision of the entire Historic Preservation Plan. Also attending this meeting were Lisa Leap of the Grand Canyon National Park, Tim Burchett of the Glen Canyon National Recreation Area, Nancy Andrews of the Grand Canyon/Northern Arizona University Cooperative Office, Mike Yeatts of the Hopi Tribe, and Joe Dishta of the Pueblo of Zuni. The entire revised table of contents for the Historic Preservation Plan was reviewed, revised, and writing assignments assigned to various meeting participants to have completed prior to the Historic Preservation Plan writing session in October. Most significant changes were suggested to chapter 5, wherein research domains were defined for the application of data in order to understand the broad patterns of

human occupation of the Grand Canyon. Some of these research domains included demography and cultural affiliation, socio-political-ideological systems, technology and industry, exchange, trade, and commerce, subsistence, and chronology.

Also during this reporting period Mr. Yeatts prepared a article for the GCES newsletter which detailed the cultural resource work and research that was associated with the Habitat/Beach Building Experimental Test Flow.

The third objective consists of designing appropriate avoidance measures for the protection of shrines and other areas of traditional importance. Buffer zones may be established according to the relative sensitivity of the individual resource types.

The Hopi Tribe considers all ancestral puebloan archaeological sites to be places of traditional cultural importance and to contain shrines if they represent habitation sites. As such, a considerable amount of effort is expended, toward accomplishing this objective, by the Cultural Preservation Office in reviewing and commenting on the monitoring and suggested remedial action reports generated by the National Park Service. Through this commenting process, the Hopi Tribe communicates their traditional concerns and recommendations for the appropriate management and remedial measures for the protection of these important places.

During this reporting period, Mr. Mike Yeatts spent a considerable amount of time preparing the draft report on the Hopi research associated with the Habitat/Beach Building Experimental Test Flow. This research focused on understanding and quantifying the amount of sediment that is deposited, as a result of the flood, within the head cuts of the side channel arroyos. This is extremely important in that it will provide empirical data concerning the effectiveness of these flood flow events in stabilizing and protecting archaeological sites from the constant threat of side channel erosion. This is of primary importance to the Hopi Tribe because many of the Hopi ancestral archaeological sites located within the impact zone of the river corridor are adversely effected by these side channel arroyos. The draft report covering the Hopi research was submitted to Mr. Dave Wegner, Program Manager, GCES, and Dr. Signa Larralde, Regional Archaeologist, Upper Colorado Region, Bureau of Reclamation on 30 September 1996. The final draft is due on 31 December 1996.

The fourth objective is to actively develop a Hopi transition monitoring program to assure the effective management and preservation of Hopi sacred sites and resources of traditional importance. Additionally, the Hopi Tribe will assist in the development of an agreement document delineating the proper treatment of human remains as specified under the Native American Graves Protection and Repatriation Act. This will include all proposed monitoring activities associated with the Interim Flows during this transition period and their potential impacts on Hopi traditional cultural properties and sacred places.

Steps to achieve this objective were performed by Mr. Mike Yeatts who spent from August 24 to September 8, 1996 on a joint Hopi, Grand Canyon National Park, and GCES

survey river trip. This trip georeferenced archaeological and other sites of concern and interest to the Hopi Tribe, revisited the Habitat/Beach Building Experimental Test Flow Hopi research study sites, and examined archaeological sites proposed for data recovery activities in FY 97 in order to prepare a technical proposal for the necessary work.

During this trip, efforts were made to locate 75 archaeological sites with GIS compatible coordinates. At 21 sites, GPS locations were obtained; at 11 sites, direct measurements with a total station from known georeferenced coordinates were made; 11 sites are part of the intensive mapping effort and are being located through that effort; one site was directly plotted on the GIS map; 16 sites were visited but not located due to poor GPS resolution or lack of visibility from a known point; and 15 sites were examined but felt to be outside of the area for river induced erosional effects and therefore, not georeferenced. In the reach of the river between Nankoweap and Palisades, a number of sites that were planned for visitation were not visited as the GPS results were not adequate. It is not known whether this was due to poor satellite visibility, geometry, or military activities in Iraq.

The locational information for all sites will be converted into the same GIS compatible coordinate system and maintained in a spreadsheet. As new locations are obtained on future trips, they too will be added to the data base. Once all sites are georeferenced, the information will be converted into an ArcInfo coverage.

Three of the high-flow study sites were revisited to examine changes that may have occurred since the post-flood mapping effort in May of 1996. All of the sites were examined and photographed; no remapping was undertaken on this trip.

A common observation at all of the study sites was that no appreciable precipitation had occurred. None of the sites showed evidence of flowing water, and therefore, sand deposited in the arroyos was still intact. Changes at all of the sites was primarily due to aeolian reworking at the higher levels and direct impacts by the post-flood flows in the lower elevations.

At the Palisades site, the most pronounced changes were an increase in vegetation across the study site and reworking of the sand deposits adjacent to the river at the upper end of the study site. It appears that the upstream sand deposit has been eroded back into the eddy, though it will take remapping to validate and quantify this assumption.

There was very little visible change at the Upper Furnace Flats site apart from some rounding of the sand deposits by wind action. The principle change noted was some collapse of the arroyo walls behind where the new sand was deposited. While currently not related to the flood flow deposits, should the collapsed material be retained, it had been leveled out and colonized with *Phragmites*. The higher elevation sand deposits appeared the same as following the flood event.

The final task undertaken was the examination of those archaeological sites

recommended for data recovery during FY97 in order to evaluate an appropriate approach and to allow for the development of a focused data recovery proposal. Four of the six proposed sites were visited and evaluated; the other two sites will be examined during the November river trip when they are mapped. The four sites examined were AZ:C:2:98, AZ:C:13:338, AZ:A:16:189, and AZ:A:15:30. It was determined that features at all of these sites were in need of data recovery or the scientific information would be lost as a result of erosional forces. The two that still need to be examined are AZ:C:13:349 and AZ:C:13:359. In the course of mapping at AZ:C:13:273, a new feature was encountered that was also determined in immediate need of data recovery. Based on the field observations, a data recovery proposal will be developed for mitigating the erosional impacts at the sites related to dam operations.

Objective five is to review reports and other technical documentation to assure that a Hopi traditional perspective and the associated concerns are duly considered and additionally to prevent inadvertent public dissemination of privileged and restricted cultural knowledge.

This objective is concurrently achieved through the efforts of the Cultural Preservation Office in participating in the Transition Work Group, all related subgroups, and the review and comment on all reports, and proposals reviewed in conjunction with the Programmatic Agreement or other aspects of the transition period. See above for a detailed accounting of these activities.

The sixth objective is to develop the Hopi/NAU office which will provide education opportunities and support for Hopi students and other students interested in pursuing technical and scientific fields. Coordinate and integrate this program with the development of the Research Center.

Toward this end, Mike Yeatts and Kurt Dongoske have been establishing a branch of the Cultural Preservation Office within the Department of Anthropology at Northern Arizona University. Currently, Mr. Yeatts is occupying the office on a part time basis. The office has recently received a phone line, associated parking accommodations, and a computer. Mr. Yeatts continues to establish the general organization of the office and, in conjunction with the Anthropology Department, is developing a draft of an informational brochure which explain the organization, structure, and goals of the Hopi/NAU program. Mr. Yeatts also meets frequently with Dr. Downum and recently attended a class of Dr. Miguel Vasquez where they were establishing a world-wide web page for information about Hopi. Mr. Yeatts also has compiled a list of Hopi and other students who are interested in the Hopi program and has contacted other students via telephone.

The seventh objective is to review proposals, work plans, intended fieldwork, and review draft and final reports to prevent any potential conflicts described above in the previous objectives.

This objective is accomplished through the efforts detailed in objectives 1 through 5.

Please see above discussion under these respective objectives for a detailed accounting of efforts and accomplishments achieved during this reporting period.

The above summarizes the Hopi Tribe's involvement as a agency in the transition period of implementing the preferred alternative delineated in the final Glen Canyon Dam Environmental Impact Statement as of 30 September 1996. If you should have any questions concerning this progress report or if you need additional information please contact Mr. Leigh Jenkins, Director, or Mr. Kurt Dongoske, Tribal Archaeologist, at 602/734-2441, extensions 751 and 761, respectively.

REVIEW AND CONCURRENCE



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