

2015 SOUTHERN PAIUTE CONSORTIUM
Colorado River Corridor Resource Evaluation Program
Annual Report of Activities

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Introduction

The traditional lands of the Southern Paiute people are bounded by more than 600 miles of the Colorado River from the Kaiparowits Plateau in the north to Blythe, California in the south. According to Southern Paiute traditional knowledge, Southern Paiutes were the first inhabitants of this region and are responsible for protecting and managing this land along with the water and all that is upon and within it.

Today, the Colorado River flows through Grand Canyon National Park and Glen Canyon National Recreation Area, as well as the Navajo and Hualapai reservations. The Bureau of Reclamation (BOR) completed the construction Glen Canyon Dam on the Colorado River in 1963 and became responsible for management of the Dam. U.S. federal law requires that Glen Canyon Dam be operated with minimal impact to the natural, recreational, and cultural resources of the *Colorado River Corridor*, the region of the Colorado River between Glen Canyon Dam and Lake Mead that is potentially impacted by flows from the Dam. The National Historic Preservation Act mandates that the impacts of any federal undertaking that will negatively affect historic and traditional cultural properties be evaluated, and the Southern Paiute monitoring program is designed to address this mandate. The Grand Canyon Protection Act and the Environmental Impact Statement for the Operation of the Glen Canyon Dam (GCDEIS) establish a program of long-term research and monitoring of the effects of the Dam on these resources.

In 1991, three Southern Paiute tribes – the Kaibab Band of Paiute Indians, the Paiute Indian Tribe of Utah (representing the Shivwits Band of Paiute Indians), and the San Juan Southern Paiute Tribe – agreed to participate in studies to identify cultural resources impacted by Glen Canyon Dam and to recommend strategies for their protection. In 1993, the Kaibab Band of Paiute Indians and the Paiute Indian Tribe of Utah created the Southern Paiute Consortium (SPC) to ensure more effective government-to-government interactions between the tribes and the BOR. The SPC took over the cultural resource studies being conducted under the GCDEIS.

The BOR and National Park Service (NPS) developed a Programmatic Agreement (PA) on Cultural Resources for Glen Canyon Dam Operations. On February 9, 1994, the PA was signed by the Advisory Council on Historic Preservation, the Arizona State Historic Preservation Office, the BOR, the NPS, the Hopi Tribe, the Hualapai Tribe, the Navajo Nation, the Paiute Indian Tribe of Utah, the Kaibab Band of Paiute Indians, the San Juan Southern Paiute Tribe, and Zuni Pueblo. The PA lays out a plan for agency compliance with Section 106 of the National Historic Preservation Act through the development of monitoring and management protocols for cultural resources in the *Colorado River Corridor*. It directs the BOR and NPS to develop and implement a plan for monitoring the remedial actions and to develop a Historic Preservation Plan (HPP) for long-term monitoring and management.

In 1995, the GCDEIS was completed and transition to the Adaptive Management Program called for in the Grand Canyon Protection Act was begun. At that time, the SPC expanded the research activities it began under the GCDEIS to include assessing potential environmental impacts, developing monitoring procedures, and interacting with the BOR and other PA signatories. It established the Colorado River Monitoring and Environmental Education program.

The basis for the program and the results of its initial development and implementation are fully discussed in the report, *Itus, Auv, Te'ek (Past, Present, Future): Managing Southern Paiute Resources in the Colorado River Corridor* (Stoffle, Austin, Fulfroost, Phillips, and Drye 1995). The results of each succeeding year's activities are reported in annual reports to the BOR.

The 2015 program had four goals: (1) implementation of the SPC's monitoring program; (2) training and education of Southern Paiute monitors; (3) education of Southern Paiute tribal youth and the general public; and (4) discussion and evaluation of traditional cultural properties protection and management. All of these goals were accomplished during 2015. Regular monitoring activities were conducted during a ten-day trip between Lees Ferry and Diamond Creek.

This report summarizes the activities of the SPC undertaken as part of its responsibilities to protect and manage the land, water, and resources within Southern Paiute traditional territory and as a PA signatory. Chapter One, "Cultural Resources Evaluation," describes the results of the SPC's 2015 river trip to monitor SPC cultural resources, gather information for tribal members and leaders, and otherwise conduct activities deemed necessary for fulfilling those responsibilities. Education and training are critical facets of the SPC program that ensure that the Southern Paiutes can continue to fulfill their responsibilities into the future. Chapter Two summarizes the results of the education and training components of the SPC program. There are many diverse stakeholders in the Adaptive Management Program, and a great amount of time is spent in meetings and conferences where information is shared. Chapter Three describes the SPC's participation in those meetings and the other activities it undertakes to enhance its ability to successfully carry out its responsibilities.

Chapter One

Cultural Resource Evaluation

The SPC cultural resource monitoring program was developed to evaluate the effects of the operation of Glen Canyon Dam on cultural resources that have been identified by Southern Paiute consultants within the Colorado River Corridor. Indirect effects of dam operations on important cultural sites may extend well beyond the river's edge, and variations in river level may affect site access, frequency of visitor use, and plant and animal communities well beyond the shoreline of the river (see *Itus, Auv, Te'ek* [Past, Present, Future]: Managing Southern Paiute Resources in the *Colorado River Corridor*, [Stoffle, Austin, Fulfroft, Phillips, and Drye [1995]]). Evaluating the effects of dam operation on the holistic integrity of river corridor cultural sites requires that some monitoring activities take place within portions of sites beyond the immediate influence of the Dam.

Southern Paiutes have worked with the Bureau of Reclamation (BOR) to investigate cultural resource issues since 1992. In 1995, the SPC, on behalf of the Kaibab Band of Paiute Indians and the Paiute Indian Tribe of Utah (PITU), began the development and testing of a cultural resource monitoring program. The SPC designed the 2015 monitoring research efforts to advance the existing program.

The FY2015 Southern Paiute Consortium (SPC) Colorado River Corridor cultural resource monitoring program operated between September 2014 and September 2015. A major component of the monitoring program is the annual SPC monitoring river trip. This year's program included one river trip between Lees Ferry and Diamond Creek, data entry and analysis, and report preparation. The purpose of the program was to continue tribal monitoring as recommended by the Glen Canyon Dam Environmental Impact Statement and Record of Decision (GCDEIS). The monitoring program included training and was conducted at the same time as the environmental education program (see Chapter Two). This chapter summarizes the activities of the trip into the Colorado River Corridor and provides recommendations for the FY2016 cultural resource monitoring program. Other SPC activities are detailed in Chapter Three.

Methodology

The SPC monitoring program developed in 1996 was utilized in 2015 (see Austin, Fulfroft, Osife, Drye, and Rogers 1996 for details). The program included the use of: (1) a composite cultural resource monitoring form; (2) site-specific monitoring checklists and data collection forms; (3) the SPC Monitoring Training Program; (4) a SPC plant reference guide; (5) standardized methodologies and forms for plant transect and plot monitoring; and (6) a monitoring program manager's handbook. In addition, the Southern Paiute River Guide was shared with river trip participants.

As noted in the 2013 report, the SPC is continually evaluating its program in an effort to collect data in as straightforward and replicable a process as possible. Given that there have been no increases in program resources even as costs have increased, the SPC has also been mindful

of working within its budget. Finally, the SPC monitoring program is careful to preserve the natural resources in the Colorado River Corridor, limiting travel to and monitoring at fragile sites. In 2013, the SPC decided to adjust its long-term monitoring schedule, addressing these goals and limitations while maintaining continuity with the SPC monitoring data that have been collected since 1996. Instead of continuing with the six-year planning cycle, the SPC is shifting to a four-year planning cycle. In the new four-year plan, the SPC will continue to visit some sites annually, will visit other sites every other year, and will visit the most fragile sites every four years. Plant data will be collected every other year, with a botanist monitoring plant change. The cultural, archaeology, and beach sites that receive the highest visitor traffic and are greatly affected by the potential impacts of the high flows will be monitored annually. Table 1.1 depicts the new monitoring schedule.

Table 1.1. Southern Paiute Consortium – 4 year plan

Site	2014	2015	2016	2017
South Canyon	beach, archaeology	beach, cultural*	beach, archaeology	beach, cultural
Nankoweap	archaeology	cultural	Plants, archaeology	plants, cultural
Lava/Chuar	archaeology		archaeology	
Tanner	archaeology			archaeology
Bedrock		plants, cultural		
Deer Creek	beach, archaeology, plants	beach, archaeology, plants	beach, archaeology, plants	beach, archaeology, plants
Kanab Creek	beach, archaeology	beach, archaeology	beach, archaeology	beach, archaeology, plants
Vulcan's Anvil	cultural	cultural	plants, cultural	cultural
Whitmore	beach, archaeology	beach, archaeology	beach, archaeology	beach, archaeology
Pre-Parashant				archaeology, plants
Ompi	cultural	cultural	cultural	cultural
Spring Canyon	archaeology, plants	plants, cultural	archaeology, plants	plants, cultural
Indian Canyon	archaeology	cultural	archaeology	cultural
Pumpkin Spring	spring, cultural	spring, cultural	spring, cultural	spring, cultural
Ledges	archaeology, spring			archaeology, spring
Granite Park	cultural	cultural	cultural	cultural

*Southern Paiutes recognize sites with archaeology, plant gathering areas, springs, and many other features as cultural sites. Terminology used in this table reflects designations commonly

used by scientists and resource managers and is used to aid in communication. Sites indicated as “cultural” in this table are those which do not fit into the other categories.

The focus of the 2015 monitoring program was a river trip through the *Colorado River Corridor* between Lees Ferry and Diamond Creek. Prior to the trip, the SPC monitoring team worked together to coordinate the monitoring program plan. The trip began on June 2nd and ended on June 11th. One day prior to the trip (June 1st), training and orientation were carried out for all participants at the Lees Ferry Campground. Trip participants included the SPC Director; one tribal elder; two SPC monitors; two Southern Paiute cultural consultants; four participants from the Paiute Indian Tribe of Utah; four participants from the Kaibab Band of Paiute Indians; one participant from Moapa Band of Paiute Indians; one participant from the Las Vegas Paiute Tribe; and three educational and research specialists from the University of Arizona.

According to the four year plan adopted in 2013, the 2015 monitoring trip was scheduled to conduct monitoring activities at several sites necessitating participation by an experienced botanist. However, a medical emergency immediately preceding the start of the 2015 trip led the arranged botanist to cancel. Plant transect lines were scheduled for the Nankoweap and Vulcan’s Anvil sites but could not be completed without a botanist. In order to gather data from these transect lines, the SPC will bring a botanist on the 2016 monitoring trip, adding these two sites to the 2016 monitoring trip agenda. The adjusted four year schedule is detailed above in Table 1.1.

Site Discussions

In this section, site-by-site discussions describe findings at each site that was monitored during the 2015 river trip through the Colorado River Corridor. The summaries of the sites include beach, archaeology, and other cultural properties, plus any recommendations for revisions to the monitoring program or for actions to be taken by management agencies regarding the site. For detailed site descriptions, please refer to Stoffle, Austin, Fulfrost, Phillips, and Drye (1995). During 2015, the SPC monitors and consultants followed the newly-established four-year plan (with the exception of the plant transects at Nankoweap and Vulcan’s Anvil). Recommended changes to the monitoring program are discussed in each individual section.

Table 1.2. Downriver Sites Monitored During 2015

Site #	Site name	Date monitored	Features monitored	Next monitoring
-	Lees Ferry	June 1, 2015	Training, Orientation	2016 (Training, Orientation)
5	South Canyon	June 2, 2015	Beach, Cultural activities	2016 (Beach, Archaeology)
6	Nankoweap	June 3, 2015	Cultural activities	2016 (Plants, Archaeology, Cultural)
8	Salt Mines	June 4, 2015	Cultural activities	2016
9	Bedrock	June 6, 2015	Plants, Beach	2019
10	Deer Creek	June 7, 2015	Plants, Archaeology, Beach	2016 (Beach, Archaeology, Plants)

11	Kanab Creek	June 8, 2015	Beach	2016 (Beach)
12	Vulcan's Anvil	June 9, 2015	Cultural activities	2016 (Plants, Cultural activities)
13	Whitmore	June 9, 2015	Archaeology, Beach	2016 (Archaeology, Beach)
15	Ompi Cave	June 9, 2015	Cultural activities	2016 (Cultural activities)
16	Spring Canyon	June 10, 2015	Plants, Archaeology	2016 (Plants, Archaeology)
17	Indian Canyon	June 10, 2015	Cultural activities	2016 (Archaeology, Cultural activities)
20	Granite Park	June 10, 2015	Cultural activities	2016 (Cultural activities)
18	Pumpkin Spring	June 10, 2015	Spring, Beach	2016 (Spring, Beach)

Lees Ferry

Orientation and monitor training were carried out at Lees Ferry campground on June 1, the day before the river trip began. Exercises were conducted to train river trip participants in matching photos, using a compass, and running transect lines.

South Canyon Site #5

Following the four-year plan, the beach at South Canyon was monitored this year. Additionally, the archaeology at this site was visited by trip participants even though it was not on the monitoring agenda.

Archaeology: Rock Structure

No changes to the archaeology at this site were noted site this year. However, there has been an increase in hidden artifacts placed underneath rocks at the rock structure. During the SPC monitoring trip, participants saw an axe head that had been placed under one of the structure's rocks. When the SPC director went on the tribal AMWG trip one month later, he noted both that the axe head was no longer there and that pottery had been collected and hidden beneath one of the rocks in the rock structure. Finally, concerns about trailing at this site remain and trailing was noted again between the middle bench and the rock shelters.

Beach

Beach monitoring was carried out in 2015. There are several notable changes. The November High Flood Experiment (HFE) has led to even greater deposition than the 2014 HFE. Midway up the canyon the wash was silted in with sand deposits likely from the HFEs. Additional effects of flooding at the site include boulder movement, greater debris and small rocks, and different height and placement of the sandbar. The deposition has covered many of the rock landmarks used during the photo matching.



Figure 1.1. South Canyon: sediment change and continued build-up of the beach, looking upriver 2013 (left), 2014 (middle), 2015 (right)



Figure 1.2 South Canyon: sediment change and continued build-up of the beach, photos looking downriver from 2012 (left) and 2015 (right)



Figure 1.3. South Canyon: sediment change at the gully of the beach at South Canyon, showing sand bank deposits linked to HFES, photos from 2012 (left) and 2015 (right).

Recommendations

Visitation to this site remains high, so monitoring of this beach, the rock writing, hidden collection of artifacts at the rock structure, and trailing near the rock boulders will continue annually. The SPC has noted at this site that artifacts are being moved around, into collection piles, hidden, and likely sometimes removed. The SPC is concerned with this ongoing issue, and would like the NPS to address this through further monitoring and education. Furthermore, the SPC is concerned about the increase in trailing at this site, particularly from the middle bench to the rock structure. The SPC recommends that NPS address the increased trailing. Finally, continued monitoring of the effects of regular HFEs is recommended in order to track the effects of regular high flows and the associated management of the Glen Canyon Dam on the site.

Nankoweap—Monitoring Site #6

Without a botanist, the monitors this year did limited data collection at this site. The plant transect lines were laid and photos taken to enable photo matching at this site.

Plants

The vegetation at Nankoweap appeared to be thriving, and plant data will be collected in 2016. The plant transect lines were shorter when laid out. Figure 1.4 highlights the change in the water level of the Colorado River. Both images below show transect #4, taken at the same meter point, indicating some slight channeling in the Nankoweap creek bed and also a change in the Colorado River water level. In 2012 (photo on the left) the transect line measured 61 meters before reaching the Colorado River, while in 2015 (photo on the right) the transect line measured 51 meters before reaching the Colorado River. These changes will continue to be monitored.



Figure 1.4. Nankoweap: Image from transect #4, taken at the same meter point show some slight channeling in the creek bed. In 2012 (left) the transect line measured 61 meters before reaching the Colorado River, while in 2015 (right) the transect line measured 51 meters before reaching the Colorado River.

Recommendations

The SPC will bring a botanist on the 2016 monitoring trip in order to collect plant data. Additionally, the SPC will work next year to establish additional photo monitoring of the beach and vegetation in the creek bed. This effort responds to the ongoing use of high flow experiments and the Long-Term Experimental and Management Plan. The SPC will establish beach monitoring to collect additional data on the impacts of sediment and beach change brought about by the high flows.

Bedrock – Site # 9

The Bedrock site remains infrequently visited. In order to preserve the site, to not harm the cryptobiotic soil, and to not leave trails, Bedrock is only monitored every four years. In 2015, the beach, plants, and archaeology were monitored at this site.

Beach

No significant change of the beach was noted at the Bedrock site.

Plants

The plants at the Bedrock site appear similar to previous years, although slightly more verdant. Several new plants have grown.



Figure 1.5. Bedrock: Changes in vegetation and increased channeling in side canyon, photos from 2004 (left) and 2015 (right)

Archaeology

The archaeology at this site appeared without significant change, although mild erosion from natural impacts was noted. While the archaeology had not changed, the arroyo that abuts the roasting pits experienced channeling (see photos below). The channel cut alongside the roaster. At present the channel has not affected the roaster, but the SPC will continue to monitor changes in the channel. Additionally, the channeling affected two photo point locations that will need to be re-established.



Figure 1.6. Bedrock: Channeling in the arroyo at Bedrock site, photos from 1998 (left) and 2015 (right)

Recommendations

Due to the channeling in the wash, the SPC will re-establish monitoring photo points where needed when Bedrock is monitored again in 2019. Additionally, the SPC should consider adding additional monitoring photos overlooking the beach.

Deer Creek – Site # 10

Plant and archaeology monitoring were conducted at this site in 2015. The SPC remains pleased with the results of closing Deer Creek Narrows. However, the site still presents challenges to protecting the rock writing. In 2015, SPC monitors noted that flooding had occurred in between the patio and the agave plots, with cacti having washed onto the patio.

Plants

As discussed in the methodology section of this chapter (p. 4), a botanist was not able to participate in this year's monitoring trip. However, given the importance of the agave plants (*agave phillipsiana*) at Deer Creek, the two agave plots were monitored by SPC monitors in a manner consistent with previous years. In 2016, the botanist should review the plant monitoring at Deer Creek and adjust the monitoring program as needed.

At the agave plot, some plants appear to be flourishing (i.e. locoweed), while others are struggling (i.e. the catclaw acacia, *senegalia greggii*, and the willows, *salix exigua*). The primary agave plot has four dead stalks and six live agave plants. The secondary agave plot still has a proliferation of pups or offsets and one older plant with a dead stalk. At the secondary plot, seven pups have grown to a diameter of 1 foot wide, but the rest are smaller. A faint trail was observed leading from the primary hiking trail to the secondary agave plot. It is unclear the impacts of this trailing on the plants.



Figure 1.7. Deer Creek Agave: Photos of the agave at plot 1 from 2014 (left) and 2015 (right).

Archaeology: Rock Writing

The size and complexity of the site continue to present considerable challenges to monitoring. In 2015, monitors noted some erosion on the panels. However, it is unclear how recent the erosion was and what caused the erosion.

Visitor Monitoring

This year, several visitors engaged in problematic behavior in the upper portion of Deer Creek. When the SPC monitors reached the patio, they found a hiker camping in a hammock

strung between two cottonwood trees on the upriver side of the patio (see photo below). Additionally, in the afternoon when the patio was busy with visitors, one visitor was observed urinating in the upper patio waterfall. In total, 105 visitors were observed stopping at lower Deer Creek and at least 35 were observed at the patio.



Recommendations

NPS should address the issue of visitors urinating in Deer Creek and in the vicinity of the campground and agave plots. Information on bathroom procedures in side canyons and tributaries, including Deer Creek, should be included in materials handed out to hikers and river trip participants.

Kanab Creek Site # 11

Beach monitoring was carried out at this site in 2015.

Beach

The SPC monitors noted continued changes at Kanab: sediment deposition and boulder shifting. Some tamarisk trees at the site have been washed away while others have taken root in cleared areas. In the upper portion of the Kanab beach, there were noted increases in sand deposition in comparison with previous years.



Figure 1.8. Kanab Creek: Sand deposits above Kanab Creek show an increase in deposition. Photos from 2013 (left) and 2015 (right).

Recommendations

Continued monitoring of the effects of regular HFEs and changes in the river channeling are recommended.

Vulcan’s Anvil – Monitoring Site #12

Cultural monitoring was carried out at this site in 2015.

Cultural

This site was visited for spiritual and ceremonial reasons. Monitoring involved visual inspection and discussions of conditions by tribal members. Twelve objects and coins were removed from the Anvil in 2015.

Recommendations

The SPC should continue outreach and education efforts to let river guides know about the importance of the site, and to discourage placement of objects on the Anvil.

Whitmore Wash—Monitoring Site #13

In 2014, the SPC re-established photo monitoring at this site to better document the rock writing panels given the newly-created trail alongside the panels. In 2015, the SPC monitors were able to monitor based on the re-established photo matching, and the SPC will continue using the photo points established in 2014.

Archaeology: Rock Writing

Monitoring of rock writing panels was completed. No major changes or new graffiti were observed. However, some trailing continues near the panel while one trail leads from the end of the panel down towards the river.

Beach

Photos of the beach taken from across the river did not document any additional significant erosion of the bank.

Recommendations

The SPC should continue to work with the river guides to educate their visitors about the cultural significance of this site. The SPC feels that more cacti should be added to the trail reconstructed by the Zuni trail crew to further discourage both additional trailing and people getting close to the panels.

Ompi Cave – Monitoring Site #15

This site was visited for spiritual and ceremonial reasons. As part of the Grand Canyon working group of tribes, the SPC has noted that greater awareness for the sanctity of this site appears to have spread. In contrast to previous years, no tools or debris were found this past year.

Recommendations

The SPC will continue to participate in the Grand Canyon working group of tribes, so as to preserve this important natural element.

Spring Canyon—Monitoring Site #16

Spring Canyon was not monitored in 2015 because it had not flash-flooded. Given the overgrown vegetation, access to the site is extremely difficult. The thick vegetation, however, is also effectively protecting the site. Photos of Spring Canyon were taken from the river.



Figure 1.9. Spring Canyon: Photo from 2015 taken at the mouth of the canyon, which has not been scoured recently from a flash flood.

Recommendations

The SPC will monitor this site in 2016, contingent upon the flash-flooding of the canyon.

Pumpkin Spring—Monitoring Site #18

Spring and beach monitoring were conducted at this site in 2015. The water in the spring appeared murky, indicating it had not been flooded or scoured in some time, and algae was also present. SPC monitors noted that the downriver beach at Pumpkin Spring has been built up with sediment and currently has a steeper embankment than in previous years. The photos below show the change in the beach over the last two years.



Figure 1.10. Pumpkin Spring: Sand deposits on far side of beach downriver from Pumpkin Spring. Photos from 2014 (left) and 2015 (right).

Recommendations

The SPC will closely monitor the effects of regular HFEs on the spring and the adjoining beach.

Chapter Two

Education and Training

The 2015 Southern Paiute Consortium Colorado River Corridor Education and Training Program was specifically designed to provide opportunities for Southern Paiutes to learn directly from elders and cultural resource specialists from the tribes of the Southern Paiute Consortium (SPC) – the Kaibab Band of Paiute Indians and the Paiute Indian Tribe of Utah (PITU) – and from the San Juan Southern Paiute Tribe, as well as from scientists and others participating in the Glen Canyon Dam Adaptive Management Program. The program includes activities that take place along the Colorado River and elsewhere. This aspect of the overall SPC program is necessary to inform and educate future tribal leaders and train tribal monitors (see Austin, Fulfrost, Osife, Drye, and Rogers 1996). The educational component of the program continues to be supported within the University of Arizona and is an important element of the overall program.

A second purpose of the program is to provide education and outreach to non-tribal members about the Southern Paiutes, their history in and perspectives of the Colorado River Corridor, and the importance of the broader cultural landscape stretching from rim to rim. This is achieved through outreach programs to the Colorado River Guides, schools and universities, civic organizations, and others. This purpose is also achieved through interactions with other canyon visitors through the annual presence of Southern Paiutes along the Colorado River. The documentary, *The Rivers and Canyons of the Colorado: Southern Paiute Monitoring and Education*, is serving as a tool through which to educate non-tribal members about Southern Paiute monitoring program and the importance of the Colorado River Corridor for Southern Paiutes.

Preparation for the River Trip

Meetings and River Trip Participants

Each year, the SPC prepares information about the annual monitoring trip and shares this information with the participating tribes. The tribes then select trip participants. Annual participation generally alternates between adults and youth. The 2015 trip was a youth trip and included the SPC Director; one tribal elder; two SPC monitors; one Southern Paiute cultural consultant; ten youth participants; and three educational and research specialists from the University of Arizona.

Prior to the trip, the SPC Director made presentations about the trip to the Paiute Indian Tribe of Utah council in late fall 2014. Additionally, the SPC Director spoke with tribal representatives from Moapa Band of Paiute Indians and Las Vegas Paiute Tribe to inform these tribes about the annual monitoring trip and to invite interested tribal members to participate. Individuals were also given the opportunity to sign up to be considered for the annual monitoring and education trip during the annual meeting of the Kaibab Band of Paiute Indians. The SPC monitor from the Shivwits Band also informed all tribal members of the trip through printed materials. Tribal leaders then submitted names of trip participants to the SPC Director. A final

list of names was approved by the Tribal and Band Council representatives, and individuals were contacted by the SPC and sent information about the upcoming trip.

Summary of Activities

The SPC Director informed participants about the dates of the trip and the gear list, and provided information about the Colorado River Corridor, Southern Paiute history in the region, and the SPC cultural resources program. The SPC Director and Shivwits Cultural Resource Manager also met individually with many of the participants from both the Kaibab and Shivwits bands. During these meetings, participants were provided with information about the cultural significance of the Grand Canyon and the Colorado River Corridor and reminded of culturally appropriate behavior within this sacred place. Additionally, participants received training and instruction in the use of camping and rafting gear.

Following recommendations from 2013 and 2014 (see annual reports), the pre-river orientation and training of participants again took place at Lees Ferry on June 1, 2015, the day prior to the start of the downriver trip. Technical training on June 1st covered photo matching and laying of transect lines. Other topics covered included: the history and development of the Southern Paiute Consortium and the monitoring program, as well as the goals, importance, and cultural significance of the river trips. River safety training was also conducted pre-departure. The pre-river orientation and training also maximized the time spent actively monitoring while on the downriver trip.

Recommendations

River trip preparation is a key component of the education and training program. Going into the Colorado River Corridor, Southern Paiutes are entering a place rich with historic and contemporary spiritual and cultural meaning. Although there is no way to fully prepare for the experience, through stories and discussions, trip participants can gain the information they need to make themselves ready for the trip and get the most out of their experiences. The SPC has developed a suite of educational materials, including the educational documentary, and will continue to distribute them to potential participants prior to the trip so they can familiarize themselves with the nature and scope of the SPC's educational and monitoring program. The SPC should also continue to conduct the orientation and training at Lees Ferry before departing for the downriver monitoring trip.

Southern Paiute River Guide

The *Southern Paiute River Guide* includes overview maps of Southern Paiute territory and has a location finder on each page that shows the reader where she/he is along the river and within the larger territory. The guide also has space for note taking so participants can record information they wish to remember about places and events that occur along the river. The guide was updated in 2008, based on recommendations made during the 2007 downriver trip and was used on the 2015 trip. The 2015 river participants were invited to note sections, information, and recommendations for continued updating of the river guide.

Plant Reference Guide

The plant reference guide that was developed in 1997 includes over 125 pages of plants with photos; Paiute, scientific, and common plant names; and information about the significance of the plants in Southern Paiute culture. The guide was made available to trip participants during the 2015 trip.

Video Documentation and Materials

Since 2010, the SPC, with the assistance of the University of Arizona consultants, has used video to document the ethnobotany program for the SPC archives as well as to provide information about the program to participants and the general public. The documentary, *The Rivers and Canyons of the Colorado: Southern Paiute Monitoring and Education*, was made available to all river trip participants. This video covers the history of Southern Paiutes in the Colorado River Corridor, the development of the Southern Paiute Consortium, and the importance of the SPC monitoring program. The video provides an overview and background information for trip participants. Additionally, copies of the documentary were made available to visitors in the canyon as part of the SPC's effort to educate the general public. When visitors had questions and engaged with the SPC monitors while on the river, copies of the video were handed out.

Recommendations

Video archives and the documentary should continue to be made available to participants and the consulting botanist. Video documentation of the SPC program and Southern Paiute concerns about sites along the river should continue, including interviews with trip participants and further documentation of the monitoring process.

The River Trip

Summary of Activities

The river trip took place from June 2nd to June 11th, and the education and training component occurred on June 1st at Lees Ferry. The education component of the trip included (1) specialized training in monitoring skills and techniques; (2) direct information about Paiute culture provided by the Southern Paiute elder and cultural resource specialists; (3) learning through participation in Southern Paiute traditional practices and in monitoring activities; (4) information about policy and management related to the Glen Canyon Dam; (5) education about how cultural resources along the Colorado River are being protected, and what policies exist and requirements are needed for receiving protective designation of cultural resources; and (6) expert consultation about relevant political and scientific issues in the Grand Canyon. The education program was also fully integrated into the monitoring program, and the trip schedule and activities are provided in Table 2.1.

As in past years, tribal educators were an integral component of the education program, sharing information about past as well as present connections between Southern Paiutes and the

Colorado River Corridor. On the 2015 trip, the elder and cultural consultant shared their knowledge with the participants. The elder shared his extensive knowledge of plant uses. Ethnobotany, or the study of traditional plant uses, was one important component of the 2015 river trip. Trip participants learned about Southern Paiute uses of plants found in the Colorado River Corridor, where the plants grow, and methods of gathering and processing plant materials. This year during pre-trip orientation, river trip participants were visited by Superintendent Todd Brindle of Glen Canyon National Recreation.

Table 2.1. Downriver Trip Schedule and Education Activities, 2015

Date	Site	Activities Completed
June 1	Lees Ferry	<ul style="list-style-type: none"> • River safety orientation and monitor training
June 2	South Canyon	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural activities • Assist monitors – Archaeology and rock writing
June 3	Nankoweap	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural activities • Assist monitors – Archaeology
June 4	Salt mines	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural activities
June 5	Unkar	<ul style="list-style-type: none"> • Discussed interpretation panels for new NPS signs
June 6	Deer Creek	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural activities • Assist monitors— Plant and visitor monitoring • Cultural hike: Ethnobotany and history
June 8	Kanab Creek	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural transmission • Assist monitors—beach
June 9	Vulcan’s Anvil	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural activities
June 10	Whitmore Wash	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural transmission • Assist monitors— Reestablish monitoring photos
June 11	Ompi Cave	<ul style="list-style-type: none"> • Southern Paiute cultural activities
June 12	Indian Canyon	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural transmission • Cultural hike: Prehistory and history
June 13	Granite Park	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural transmission
June 14	Pumpkin Spring	<ul style="list-style-type: none"> • Southern Paiute interpretation and cultural transmission • Assist monitors—spring and beach

Other Educational Activities

During the 2015 river trip, there were many opportunities for sharing important cultural information. Discussions ranged from ethnobotany to the Long Term Experimental and Management Plan to the importance of rock writing panels.

Another educational activity that took place on the downriver trip was water quality monitoring. One of the University of Arizona researchers taught youth how to collect and record data on water quality. Youth took water samples at different sites along the Colorado River as well as in various side canyons and streams. They learned to measure levels of dissolved oxygen, pH, and nitrates and recorded water temperatures, color, and turbidity at each site. Water quality monitoring was an important way to link the visible changes in flora and fauna to the changes in

temperature along the river ecosystem as the trip moved downriver. Youth enjoyed the process involved in collecting and recording the data on water quality and could see for themselves that different fish lived in colder water with higher levels of dissolved oxygen than in warmer water with less dissolved oxygen.

Given the ongoing LTEMP process, the 2015 river trip included a discussion about the current progress of the EIS. Tribal members were informed about the impacts of the Glen Canyon Dam. Additionally, tribal members were updated about the LTEMP process, the potential impacts of this new EIS, the potential changes to the river's flow, and the impacts associated with the different LTEMP alternatives. Participants were welcomed to provide their opinions and input about the SPC program, the meaning of the Colorado River Corridor, and their views on the SPC's involvement in the LTEMP process. There was additional discussion about the LTEMP and possible effects to minerals, due to the exposure of yellow paint along the river corridor. Southern Paiute Elders discussed the importance of yellow paint with trip participants and expressed concerns about this exposure occurring.

Throughout the trip, the participating elder shared ethnobotany information about the names (in Paiute and English), uses, and history of different plants. Specific discussions covered yucca, dogbane, mesquite bean, water sage, tobacco, and agave.

Finally, many discussions and interpretation of cultural activities occurred on a site-by-site basis. Interpretations of rock writing panels and the importance of these writings were noted at each relevant site. Songs and Paiute words were shared at relevant sites. All Southern Paiute cultural activities involved an educational dimension, so that new participants could learn about the importance and history of the sites and practices.

Sharing of Daily Experience

Using the model developed in 1996, participants gathered every other evening in a circle to share thoughts and feelings about the day's experiences and prepare for the following day's work. Information shared during these group meetings included stories about the places and the culturally appropriate behaviors expected there. All participants discussed what they knew about the places and shared their feelings about visiting them, often in relation to their past experiences and contemporary lives "up on top," outside the river corridor. The participants also provided additional information about other groups and historical/political events related to places that were visited. The evenings ended with time for prayer and reflection after everyone had a chance to be heard, and to speak as much as they liked regarding the issues that affected them.

The educational experiences of all participants were enhanced by the presence of the elder, cultural specialist, and others with knowledge of the cultural sites, social and political history of the region, the Adaptive Management Program, and the Southern Paiutes' role in that program.

Recommendations

The 2015 river trip and educational program was successful because the participants were well prepared and knew what to expect. Each year, trip participants must be carefully selected

and include, if possible, elders and other cultural specialists, at least two monitors, an individual responsible for the trip's itinerary and logistics, and additional participants who are aware of the challenges of working on the Colorado River Corridor, and who have prepared for the experience through participation in pre-trip study and events.

Participants on river trips bring a very wide variety of experiences and perspectives with them on the river, and they are usually willing to share those perspectives for the benefit of all participants. The space for dialogue about and incorporation of both Western scientific methods and Southern Paiute cultural practices should be maintained so that participants can learn how scientists and management agencies perceive and manage the resources of the Colorado River Corridor.

Chapter Three

Meetings, Conferences, and Other Activities

Much of the work conducted under the PA during FY2015 was done in committees and meetings. This chapter summarizes the interactions between the Southern Paiute Consortium (SPC) and others with an interest in cultural resources in the Colorado River Corridor.

Meetings and Conferences

The Southern Paiute Consortium was represented at meetings of the Adaptive Management Work Group (AMWG), the Technical Work Group (TWG), the Cultural Resource Ad Hoc Group (CRAHG), the Long Term Experimental and Management Plan (LTEMP), and the Grand Canyon Monitoring and Research Center (GCMRC). The SPC and its member tribes, the Kaibab Band of Paiute Indians and the Paiute Indian Tribe of Utah, participated in consultation with federal agencies that are PA Signatories. All of these activities are informed by the data and information that the SPC gathers during its annual Colorado River trips. The SPC Director is responsible for ensuring that the information is passed between the Southern Paiutes and the federal managers responsible for operations of the Glen Canyon Dam and the resources within the Colorado River Corridor.

Long Term Experimental and Management Plan

The SPC Director met with representatives of the Long-Term Experimental and Management Plan (LTEMP) throughout the year, and participated in ongoing conference calls related to the developing EIS. The Kaibab Band of Paiute Indians is a signatory for the LTEMP, and the SPC Director attended a meeting in April and participated in conference calls (in January, May, and June). The SPC Director has met with consortium and tribal representatives (including past directors, tribal government officials, and cultural experts) to discuss feedback on the LTEMP process. In April, the tribe sent a letter with comments addressing Chapters 1 and 2. As of September 2015, comments on Chapter 3 were submitted to the agencies coordinating the LTEMP. The LTEMP process is still ongoing and as a stakeholder, the Kaibab Band of Paiute Indians plans to submit comments on each section of the environmental impact statement draft as they are circulated with the cooperating agencies.

Adaptive Management Work Group and Technical Work Group

The SPC Director participated in two AMWG meetings (January and August), four AMWG conference calls (February, May, June, and July), and four TWG meetings (October, December, April, and June) on behalf of the SPC. The SPC maintains its position that the Colorado River Corridor is a significant cultural landscape and is vital to the physical and spiritual well-being of Southern Paiute people (see Stoffle, Halmo, and Austin 1997).

Meetings and Interaction with Federal Agencies, Tribal Leaders, and Members

The SPC Director met with representatives from the GCMRC, Fish and Wildlife Service, and National Park Service to discuss projects and activities that could potentially impact the Colorado River Corridor. The SPC Director participated in numerous conference calls with federal agencies that are PA Signatories. The SPC Director presented reports to the Paiute Indian Tribe of Utah, the Shivwits Band of Paiute Indians, and the Kaibab Band of Paiute Indians outlining the LTEMP process and the SPC's involvement in the monitoring program.

Other Activities

The SPC has participated in activities that are beyond the scope of the PA but further the SPC's efforts to protect Southern Paiute cultural resources in the Colorado River Corridor. These include continued development of the SPC Education and Outreach Program. In May, the SPC director gave an educational presentation on Southern Paiute presence in the Grand Canyon to NPS South Rim interpreters. Additionally, the SPC director participated in a tribal AMWG river trip in July and educated adaptive management stakeholders about the Southern Paiute monitoring program. The SPC Director continues to distribute the DVD, *The Rivers and Canyons of the Colorado: Southern Paiute Monitoring and Education* to new representatives of the AMP and to others who request it.

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