

ORAL HISTORY INTERVIEW

Leigh Kuwanwisiwma

Kykotsmovi, AZ

8 September 2018

Interview conducted by:

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and

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Glen Canyon Dam Adaptive Management Program Administrative History Project

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Subject Leigh Kuwanwisiwma
Date 9/8/18
Location Kykotsmovi Village, Arizona
Interviewer Paul Hirt
Annotator Jennifer Sweeney
Project Glen Canyon Dam Adaptive Management Program Administrative History
Bio Leigh Kuwanwisiwma was Director of the Hopi Cultural Preservation Office for thirty years. He is a member of the Hopi Tribe. Kuwanwisiwma has been involved with adaptive management in the Grand Canyon since around 1989. He was part of the Environmental Impact Statement (EIS) process that resulted in implementation of the Glen Canyon Dam Adaptive Management Program (GCDAMP), and at the time of this interview continued to represent Hopi interests on the Adaptive Management Work Group (AMWG).

Notes Note 1: The planned indoor recording area was not available, and the subject suggested that the interview be conducted outdoors. The interviewer set up the audio equipment at a picnic area selected by the subject, about a quarter mile outside the village center. While the area was generally quiet during the interview, sporadic automobile traffic and occasional gusts of wind are audible on the recording. Note 2: The annotator did not render the Hopi language used by the subject into writing, except when it is in general use by non-Hopi (such as place names). Ellipses are used to indicate when Hopi words or terms were omitted from direct quotes.

Minutes Summaries of interview content during each minute of the interview

- 0 Introduction. Kuwanwisiwma is a member of the Hopi Tribe. He was director of the Hopi Cultural Preservation Office for 30 years. He retired in December 2017. The Glen Canyon Dam Adaptive Management Program (GCDAMP) and associated programs first came to his attention about 1989, when the Environmental Impact Statement (EIS) process started for Glen Canyon Dam operations.
- 1 **Q:** You were hired as the Hopi Cultural Preservation Officer in 1988? **A:** Yes. **Q:** And it was 1989 when the federal government decided to start an EIS? **A:** Yes. **Q:** Who first came to you and asked for Hopi participation in the process? **A:** "Well, to be frank, nobody came to the Hopi, much less to any tribe that is currently engaged with the whole history of the dam."
- 2 In early 1990 Kuwanwisiwma read in the Arizona [subject says Flagstaff] *Daily Sun* about a meeting regarding Glen Canyon Dam in which the U.S. Bureau of Reclamation (USBR) was involved. He attended out of curiosity about the dam, not realizing the meeting would be focused on the Grand Canyon. "That was how I got a whiff of something happening."

- 3 Each participating agency introduced itself at the meeting, including the Bureau of Indian Affairs (BIA) out of Phoenix. "I learned later that they were representing all nineteen tribes in the state of Arizona." Kuwanwisiwma believes he was the only Native person at the meeting. He thought it was important for the Hopi to be involved in the EIS process and brought home literature for tribal members to review.
- 4 Kuwanwisiwma was convinced that the downstream effects of water releases were of interest to the Hopi Tribe. He met with Tribal officials to discuss Hopi involvement in the EIS process. The next meeting was in Salt Lake City, Utah [at the USBR regional office].
- 5 Kuwanwisiwma expressed the Hopi Tribe's interest in being included in future meetings. The next meeting was in Phoenix. The trips represented a significant investment of time and money. The Hopi Tribal Council let Kuwanwisiwma know that they were committed to active participation in what was to become GCDAMP. Kuwanwisiwma introduced himself to other participants at the Phoenix meeting. There were no representatives from other Native communities.
- 6 Kuwanwisiwma made clear that the Hopi would represent themselves, independent of BIA representation. He realized there were many parties interested in the EIS process aside from federal agencies.
- 7 Kuwanwisiwma was somewhat overwhelmed thinking about the future of the process and the nature of the various entities' involvement with it. They all had some interest in lands that touched the Colorado River.
- 8 Kuwanwisiwma realized that the EIS would require a lot of scientific research. The Hopi needed to determine what their focus would be. "It was the whole gamut of all three sciences, you know: biological, natural, and cultural." The Hopi emphasis would be on the cultural science aspect, although they believe all three are interconnected.
- 9 Kuwanwisiwma is not a "professional archaeologist." He has a degree in business. Still, he has been exposed to the cultural sciences through his work. "I grew up being Hopi, but back then, as I look back, I was pretty young. Culturally, I was wet behind the ear. You think you know everything when you're thirty-eight, but you don't. And over the time of my career, I was taught good lessons, that I loved to learn."
- 10 Growing up Hopi, Kuwanwisiwma learned stories about how highly respected the Grand Canyon is in his culture. Through the stories, he could "understand different parts of what importance or sacredness means." His grandfather, who was probably born around 1880, was part of "the last group of young men who got initiated into these highly ritual societies in 1902, from Oraibi, village of Third Mesa, here."

- 11 In the autumn of the year following initiation, the young men made a salt pilgrimage. Kuwanwisiwma and others listened to their stories of how long it took to travel on foot, with pack animals, to the place on the Little Colorado River from which they would descend into the Grand Canyon. "Going down into the gorge, how precarious that is, and that part of the initiations was to really test the manhood of everyone, both their physical, emotional and spiritual manhood."
- 12 Making it back to the village from the area of salt deposits near the confluence of the Colorado and Little Colorado rivers concluded the initiation. He heard these stories as a teen, but Kuwanwisiwma did not understand their significance until later in life. The place of emergence of the Hopi is in the Grand Canyon.
- 13 It is both a symbolic and a physical place, "where the Hopi clans emerged into the present world. We were greeted here by a spiritual person . . . and he accepted us." The newly emerged Hopis had an immediate physical knowledge of the Grand Canyon. Hopi villages were settled around 1040 CE.
- 14 "We believe that when a person passes on, your spirit rises after the fourth day, and travels to the Grand Canyon. That's our spiritual home down there. Then from there, you turn into a spirit that we call . . . , and they're the people that continue to visit us, ancestral people, in the form of clouds. You know, this is who we petition to come visit us and bring us rain. So, our genesis and our spiritual home is how the Hopis view Grand Canyon. So, I thought and thought, and said, 'We have to be involved.'"
- 15 It was important that Hopi interests in Grand Canyon be documented in the EIS. This was the first research project with which Kuwanwisiwma engaged in association with GCDAMP. Lack of money was an impediment to Hopi participation. A lot of money was being allocated to scientific research, and Kuwanwisiwma stated at one meeting that the Hopi should get some money as well.
- 16 The EIS process had not anticipated that tribes would be interested in participating. Kuwanwisiwma said he would submit a research plan and a budget, and he expected it to be funded. It took a year to devise the plan and to solidify participation from the Hopi Tribal Council.
- 17 By around 1990/1991, a cultural advisory team of Hopi elders had been assembled. Kuwanwisiwma brought on archaeologists Kurt Dongoske and, for a brief time, David Carmichael.
- 18 The advisory board gave Kuwanwisiwma and the archaeologists "a lot of cultural advice and caution." Kuwanwisiwma asked Dongoske to accompany him to the next EIS meeting. They became acquainted with Dave Wegner, who was present when Kuwanwisiwma demanded funding for Hopi research participation.
- 19 Kuwanwisiwma talked directly with Wegner about funding. Wegner apologized on behalf of USBR for not seeking out tribal participation. Wegner came to the Hopi reservation and was introduced to the cultural advisory team, which received him warmly.

- 20 Kuwanwisiwma had initially budgeted for one year's participation and research. He was surprised that the process stretched out over seven years.
- 21 The Hopi Tribal Council issued a resolution declaring that the Tribe would have the status of a cooperating agency in the EIS process. Kuwanwisiwma was given a designated seat at the next EIS meeting. He was named the Hopi Tribe's voting member by the Chairman of the Tribal Council. "I became the first tribal voting member--and this needs to be highlighted--we became the first cooperating agency...."
- 22 The original Hopi research design captured how the Hopi look at biological, natural and cultural sciences as integrated with each other. Kuwanwisiwma says that, in writing the research design, he and Kurt Dongoske were writing the initial concept of adaptive management in the Grand Canyon.
- 23 In early 1990, Kuwanwisiwma went on a Colorado River trip with Dave Wegner and some other members of the Hopi Tribe.
- 24 The first formal river trip to do science in accordance with the Hopi research plan, with Jan Balsom of the NPS, was in 1991. Kuwanwisiwma says of the trip, "It was an eye-opener for me." The Hopi are advised not to go to the Grand Canyon very often, "out of respect for the spiritual people, that's their domain."
- 25 "You can go to the rim, and you're all shaken. It's so huge, you know, and every time you go there it still impacts you. And no wonder our grandfathers talk about how Hopis have to be so respectful for the Canyon. It's alive. It talks to you. Everything down there, the ecosystem, it's alive, and it talks to you." Kuwanwisiwma likes to reminisce about the times he has looked over the Grand Canyon's rim.
- 26 "It is different looking down, when you see the little river, and then being down there, and seeing how massive the Canyon is." It is easy for Kuwanwisiwma to understand the respect his elders felt for it. Being in the Grand Canyon teaches humility.
- 27 **Q:** On that trip, did you bring some of the Hopi elders who were on the cultural advisory committee? **A:** No. The two other Hopi who went with Kuwanwisiwma were older than him, in their sixties. The trip utilized smaller boats and was "pretty arduous."
- 28 The focus of the river trip was investigation of archaeological sites. From Lees Ferry to Phantom Ranch are more than 300 cultural resource sites, "a lot of it clearly ancestral Hopi" based on the ceramics identified.
- 29 The Grand Canyon was a location for trade among Native communities. The parallels between Hopi traditional knowledge and archaeological evidence reinforce the Tribe's interest in the Grand Canyon. The river trip enabled the team to examine archaeological sites in the study corridor, which the EIS process defined as extending up the canyon walls to the high water level.

- 30 The study corridor definition prevented the Hopi team from considering many of the known sites along the route, although they were examined on later research trips. Balsom was still relatively new to the Grand Canyon at the time, and was open to learning Hopi viewpoints on their ancestral sites.
- 31 The Hopi crew was interested in collecting culturally important plants, such as willow sticks and certain kinds of pollen, during the river trips.
- 32 The team "harvested armfuls" of a particular kind of wild spinach from the canyon walls on one of the trips, and cooked it for supper. Such activities underlined the Hopi connection to the Grand Canyon. The Hopi researchers learned about invasive species.
- 33 Tamarisk and camelthorn are particular problems. Eradication of invasive species brings up complex issues. On one trip, Kuwanwisiwma noticed that a large tamarisk grove harbored a number of finches. "So one guy said, 'Look! How can we destroy their habitat? They're alive and well up here!'"
- 34 On the very first river trip in which only three Hopi participated, Kuwanwisiwma noticed how the river level fluctuated overnight: the water was high when they camped, and the boat was stuck on the beach when they woke in the morning.
- 35 **Q:** And that's because of the dam operations, releasing less water? **A:** That's what we learned. Water releases affect the ecosystem, and before the EIS process they were unregulated. When more electricity is needed, more water is released through the dam turbines.
- 36 The large fluctuations surprised Kuwanwisiwma. He and Dongoske thought regulation of water flows was badly needed. The river trip helped clarify the Hopi vision of how the Tribe could contribute to the EIS process.
- 37 Wegner funded Hopi research efforts after the initial one-year plan had expired, and the Tribe contracted with archaeologist T.J. Ferguson. With his help, the Hopi produced a Grand Canyon ethnohistory report. [Lomaomvaya, Micah, T.J. Ferguson and Michael Yeatts. Öngtuvqava sakwtala : Hopi Ethnobotany in the Grand Canyon. Kykotsmovi, AZ: Hopi Cultural Preservation Office, 2001.] The Record of Decision (ROD) issued after the EIS process was completed narrowed the allowable range of fluctuations in the river level. Of all of the Native communities represented in GCDAMP, Kuwanwisiwma believes the Hopi have created the broadest and most robust body of research.
- 38 The Hopi have monitored sediments and have documented conflicts between species such as tamarisk and willow.
- 39 Each year, a contingent of around ten Hopi go into the Grand Canyon on a river trip. Kuwanwisiwma makes an effort to include younger people. There is consistency from year to year regarding participants' personal views of the Canyon before and after making the trip. The trips engender appreciation of the cultural resources in Grand Canyon and the Hopi-supported research being done there.

- 40 The consistency of thought regarding Grand Canyon is an "indication that the Hopi culture is unwavering. Our villages are a thousand years old. The Hopi still have a full twelve-month ceremonial cycle. And today we're going into the woman's ceremonies right now. So it never ends for us."
- 41 Kuwanwisiwma thinks Hopi participation in GCDAMP has been worth the time and effort. Since 1998 the Tribe has engaged in monitoring trips. This adds to the body of Hopi scientific work in Grand Canyon. **Q:** Each year there is a river trip? **A:** Every year. **Q:** I think Mike Yeatts told me he just got off the river. **A:** Yeah, that was our Hopi trip. **Q:** Do you miss going down the river? **A:** Yes, out of thirty years' involvement with GCDAMP and related programs, Kuwanwisiwma has made about eleven river trips. Hopi culture advises him not to visit the Canyon too much, but as leader of Hopi engagement in Grand Canyon adaptive management research, others saw his participation as important.
- 42 Eventually other Native representatives joined the Hopi as GCDAMP stakeholders. **Q:** Do you remember who the second one was? **A:** I think it was the Zuni, then the Navajo, Hualapai and Paiute. This caused Kuwanwisiwma some concern. "Our Hopi trips are very, very, I think, culturally respectful." He did not want alcohol brought along on the river trips.
- 43 The Hopi reputation among other Grand Canyon researchers grew because of their knowledge of cultural resource sites, and the Hopi values and emotions attached to them. "Everybody wanted to be on the Hopi trips." Kuwanwisiwma says that boatmen who guided the Hopi outings were positively influenced and vowed not to bring alcohol on their trips.
- 44 Kuwanwisiwma thinks that other Native communities involved in GCDAMP do not take the river trips as seriously as the Hopi do. He sees Hopi practices on their river trips as reflections of the respect they have for the Grand Canyon. The Hopi bring ceremonial pipes and tobacco on their trips.
- 45 At the end of the day's boating, the Hopi sit in a circle and pass the pipe. "We give thanks for a nice day and a good day, thanks for everything. There's many times where the Hopi are right next to a commercial camp, and these guys are drinking, and laughing, we're here and the Hopis are trying to meditate." [laughs] "It's like that throughout the river." Kuwanwisiwma values his river trip experiences.
- 46 He is glad to have been able to facilitate more Hopi experiencing the Grand Canyon in person. **Q:** You mentioned Dave Wegner being very supportive and helpful. Can you talk about how, as leadership of GCDAMP evolved over time, your personal relationship with others on the Adaptive Management Work Group (AMWG) and the Hopi Tribe's larger relationship with the adaptive management program changed over time?

- 47 **A:** Initially, before the ROD was issued, the people who came together were members of cooperating agencies. Kuwanwisiwma watched the list of adaptive management stakeholders grow larger. He alternated with, initially, Kurt Dongoske, and later with Mike Yeatts, as a voting member representing the Hopi.
- 48 The process for the cooperating agency group "was pretty routine." Each stakeholder had a particular interest. There was an emphasis on biological resources, especially the humpback chub. The humpback chub issue "is given a lot more money than the tribes together. That's how disproportionate the budgets were. And I learned that fast, especially when it got into this whole process of fighting for money. Your university was getting millions of dollars to pump out PhDs, and when you look at the pie chart, we're buried into recreation, a little slice. It's still like that."
- 49 Contending over budgets was constant after AMWG was formed. The program had to justify the money it was spending. The participating tribes were able to form a voting bloc with the Department of Interior (DOI) agencies.
- 50 The solicitor [probably the Solicitor of the Department of the Interior] intervened to end the voting agreement between the tribes and the agencies. **Q:** That was under Anne Castle [Assistant Secretary of the Interior for Water and Science]? **A:** Yes. **Q:** And the DOI agencies stopped voting. **A:** Right. "That's when they stopped and they took those votes away from us. So now, we were again in a minority." **Q:** Did the tribes often vote as a bloc, do you all talk to each other and coordinate?
- 51 **A:** Yes, for the last ten years a tribal caucus is held the day before AMWG meetings. The participants review the agenda packets and determine if any of the action items are important to the tribes. During AMWG meetings, other tribal representatives often turned to Kuwanwisiwma to ask what he thought.
- 52 The meeting procedures were complicated, and Kuwanwisiwma often acted as a leader for the group in discussions. He mentions colleagues Charley Bullets of the Paiute [Southern Paiute Consortium/Kaibab Band of Paiute] and Tim [Timothy C.] Begay of the Navajo Nation [Navajo Cultural Specialist]. The Zuni appoint different council members to AMWG every two years.
- 53 Al [Alan] Downer [archaeologist, former Director of the Navajo Nation Historic Preservation Department] occasionally represented the Navajo at AMWG meetings.
- 54 Richard Begay is the current Director of the Navajo Nation Historic Preservation Department. **Q:** Who did you work with from Zuni Pueblo? **A:** Octavius Seowtewa [Zuni Cultural Resource Advisory Team]. **Q:** Who did you work with from the Hualapai? **A:** Loretta Jackson [Loretta Jackson-Kelly, formerly of the Hualapai Cultural Center].

- 55 **Q:** We have heard from other people interviewed that the Havasupai have not been involved. **A:** Kuwanwisiwma visited the Havasupai, trying to encourage them to participate in the adaptive management program. He thinks it is unfortunate that they do not wish to be involved, considering the community's proximity to the Grand Canyon. **Q:** Can I ask you why you thought it would be important to get as many tribes represented as possible?
- 56 **A:** "I learned quickly that once, in particular, the AMWG got organized, was seated, it was plain and simple politics. Budget, debate on water releases and their timing. The Hopi Tribe had its own hydrologist, who could help with technical matters. The caucus of tribal representatives could decide what positions it was going to take within the larger group."
- 57 One big issue was electrofishing [extermination] of trout in parts of the Colorado River. "That was a big controversy. Initially, to Hopi. Because we were the only ones who commented on that proposal. The main problem was that "the area where they were gonna zap those trout, by the thousands, was right at the confluence, you know." [The culturally significant confluence of the Colorado and Little Colorado rivers] "While it's our finality, as I told you, it was also the beginning of our spiritual life. I, one day, hope to become a cloud person, to visit all of you people. That's how we believe, it was the beginning of life for us."
- 58 Exterminating fish in the Grand Canyon would mean taking life away from the Canyon. When the Hopi pray, it is for the perpetuation of life. Kuwanwisiwma understands that the purpose of the program was to benefit humpback chub and alleviate trout overpopulation. But the electrofishing program would create an "aura of death" in the Canyon.
- 59 The trout control program ended up being conducted at a different area. **Q:** About when did this tribal caucus begin to form? Was it after the ROD? **A:** Yes, after AMWG was established. There was no "united front" before that--any meeting was informal.
- 60 **Q:** Is that still functioning today? Is there still a caucus day before the regular AMWG meeting? **A:** Yes. **Q:** And if you had more tribal representatives, you would have a more powerful caucus? **A:** Yes. **Q:** You mentioned funding problems a couple of times. Was there ever any thought that more tribal participants would mean less money for each of the tribes, or was there a set amount of money that everybody got regardless? **A:** There was a set amount of money given to each tribe. The Hopi Tribe got additional funding for some specific research proposals.
- 61 The additional money came from the terrestrial funding program. Hopi research had been documenting a variety of plants and animals in Grand Canyon because everything there has value to the Tribe. One Hopi elder saw a rattlesnake and made a "very interesting comment."

- 62 When the weather gets colder in the fall, rattlesnakes hibernate in underground dens. The elder was concerned that the snakes would suffocate if the water in the river reached high levels. Other people involved in GCDAMP had not thought of that. Rattlesnakes are Hopi relatives. The Hopis still have the Snake Dance, an ancient ceremony. The snakes that participate in the ceremony are returned to the ground and become messengers. Kuwanwisiwma himself had not considered the welfare of the snakes until the elder expressed his concerns.
- 63 "Like I said, it's just an amazing ecosystem, you wouldn't imagine until you go down there, and there's creeks coming in from the top somewhere, from different aquifers, some wide, some small, but they're coming into the Canyon. You know, and you go up in some of those creeks, it is just rich in vegetation. Just--ahh, man, all kinds of plants, it's an oasis. And you would never guess that that was in the Canyon. Right?"
- 64 The Hopi developed a handbook of the biological and cultural resources located in the Grand Canyon. People who take river trips with the Hopi must read the handbook before departure. The handbook is also used by students in area schools. **Q:** Can you talk about how you think the tribal caucus related to the rest of the AMWG stakeholders? Was it cooperative, tense, did it change over time?
- 65 **A:** The tribal participants did not have to argue for many controversial positions. Kuwanwisiwma regards other AMWG participants as highly professional and very courteous to each other, "and the tribes showed that respect in return, too. So I don't think it was contentious." The tribal representative voting bloc impressed other AMWG members with the fact that tribal participation "was there to stay."
- 66 The Hopi do a presentation every year on why the Tribe chose to participate in GCDAMP and what the Grand Canyon means to the community.
- 67 Tribal representatives were included in the agenda and not afraid to ask questions. Kuwanwisiwma considers some fellow AMWG members his friends. Some of the non-government organizations, such as the river guides and environmental organizations, became allies of the tribes.
- 68 **Q:** There was some resistance, very early in the program, from hydropower interests like USBR and Western Area Power Administration (WAPA) to making changes to dam operations. Did you experience any of that in the years you were involved? Were there caucuses of water user and hydropower interests? **A:** Yes. "The power interests were usually on one end of the table. The tribes would be here, [gestures] and the NGOs would be here, like that."

- 69 "They were very strong in their opinions. All of the state representatives were attorneys. Their specialty was argument. "That's sort of the chasm that, I think, existed in some ways between the power interests [and the rest of AMWG]. It was really obvious." The way in which they expressed their "strong views" was nonetheless respectful. **Q:** So you feel the structure of the AMWG was set up in such a way that even though there were caucuses and some inequities in power dynamics, it was still fair, everyone got a chance to speak, everyone listened?
- 70 **A:** Moderator Mary Orton gets much of the credit for respectful communication within AMWG. "I have the highest respect for her. When they somehow didn't renew her contract, I was the only one that objected to it, and they've now got her back."
- 71 Orton also deserves credit for procedures that reduce frustration and conflict. "The technical help she has, in terms of motions, and they would flash it on the screen, get it edited right there and debated--wow, she had a big brain to remember all of the discussions." She would remember details of what different people had said and go back to them for clarification. **Q:** She told us, when we interviewed her, about a very important river trip, in which a key group of stakeholders hammered out a new way of working together. Were you on that river trip?
- 72 **A:** Yes. Kuwanwisiwma thinks that Kurt Dongoske was on the trip as well. It was right after the ROD, and the federal parties were putting together river trips for GCDAMP stakeholders. The Hopi proposed to integrate biological, natural and cultural sciences in their research. Kuwanwisiwma talked with Dave Wegner about the future of Glen Canyon Dam after the ROD. Science would be ongoing, guiding stakeholder decisions and dam operations.
- 73 Wegner, Dongoske and Kuwanwisiwma formalized that adaptive management concept for use in AMWG. **Q:** That was in the early 1990s? **A:** Yes.
- 74 **Q:** Looking long-term at the program, your long decades of experience with it, do you think that it's been largely successful? **A:** The level of effort put in is "highly commendable." There was support from within the community, direction from the Hopi religious community, for involvement with AMWG. There were people in USBR who were good to work with. **Q:** Do you remember names of any of those people from USBR?
- 75 **A:** Some are no longer there. **Q:** Do you remember Dave Garrett? **A:** Dave Garrett was one of them. He was invited to the tribal representative caucuses. Sometimes the Secretary of the Interior's (SOI) designee [usually the Assistant Secretary for Water and Science] was invited as well. Kuwanwisiwma thinks the SOI's designee appreciated getting information directly from the tribes.

- 76 During its discussion, a member of the caucus would be designated to speak on a specific issue at the regular AMWG meeting. Kuwanwisiwma lobbied to have more money dedicated to the natural science research component. Kuwanwisiwma's goal was to bring geology students from Northern Arizona University (NAU) and fund their participation in Hopi-sponsored research. The effort was not successful.
- 77 The Hopi Cultural Preservation Office has a memorandum of understanding with NAU to facilitate such exchanges. Kuwanwisiwma would still like to see such a program implemented. He sees it as a way to provide internships and other support for undergraduate, masters and doctoral students. **Q:** Other than struggles with adequate funding to support research and participation, are there any other disappointments, or what you consider to be limitations or flaws, in the program?
- 78 **A:** "Well, it's adaptive management, [laughs] so I suppose you're going to have changes." Resources will always be a problem. Power interests will continue to be part of every discussion, as they are a major stakeholder. From the cooperating agencies phase [pre-ROD], "a lot of us floated into the AMWG."
- 79 The process amongst cooperating agencies was semi-formal. While the EIS process was being conducted, interested parties were coming forward to participate. People who worked together during this phase, "even people from WAPA," got to know each other quite well.
- 80 "That in itself was a key moderator in how AMWG later shaped itself, to continue to conduct business in that way. That, I think, was a good transition." **Q:** It sounds like you think the program has substantial value and ought to be continued? **A:** [Kuwanwisiwma pauses.] "I think so." For example, experimental water releases [High Flow Experiments (HFEs)] are intermittent. The river downstream of the dam is sediment-starved. The releases are meant to help.
- 81 AMWG is part of the decision to continue these. Kuwanwisiwma thinks it will take a long period of management "before the whole ecosystem at least has some evidence of recovery." The Hopi will always have an interest in this, so the program has to continue.
- 82 **Q:** So the long-term perspective and the learning and relationship-building, you're saying, is really valuable? **A:** Yes. Kuwanwisiwma has tried to do that as Director of the Hopi Cultural Preservation Office. "Rather than be an adversary, I encourage partnership. And that's been my philosophy as a Hopi person." **Q:** You have kind of stepped down from the central role that you played for so many decades, and others are stepping in. What advice do you have for people who will be coming on to the AMWG in the coming years?
- 83 **A:** Kuwanwisiwma is still a voting member of AMWG. His term has not yet ended. A person on his staff, with a background in anthropology, will succeed him.

- 84 Kuwanwisiwma is mentoring his replacement and orienting him to the AMWG process. One important thing for Hopi is to review the agenda packet prepared in advance of each AMWG meeting and identify items that are relevant to the Hopi. Mike Yeatts, who has worked with the Hopi for a number of years, will retire soon as well. Kurt Dongoske worked with Kuwanwisiwma for quite a while and is now working with the Zuni.
- 85 Kuwanwisiwma wants Hopi participation to continue for a long time. **Q:** What are your hopes for the future? There is almost thirty years of history with this program, things related to water flows, history, cultural resources have been addressed. What issues aren't being addressed, or what new issues do you think are going to come up that AMWG will have to face?
- 86 [Kuwanwisiwma pauses] **A:** He is curious about how water releases will be handled, considering the low water levels in Lake Powell.
- 87 Kuwanwisiwma wonders if a supplemental EIS will be needed if water levels continue to drop. As a Hopi farmer, he sees the evidence of the twenty-year drought we are now in. This is an issue that needs to be addressed and prepared for. Control of trout populations will continue to be a problem. Kuwanwisiwma is not sure how the issue will be addressed.
- 88 The most pressing thing is Lake Powell's water level. **Q:** When you started with GCDAMP, in the 1990s, it was only about ten years after the huge flood of 1983, and the reservoir was still full in 2000. But now Lake Mead is a third full, and Lake Powell is half full. Do you think about what kinds of adaptations might be facing us in the next ten or twenty years?
- 89 **A:** Kuwanwisiwma is not a scientist, but he sees the low water level in Lake Powell, the height of the dam, where the generators are located, and worries about how the power interests will deal with dam operations.
- 90 Power interests may fight efforts to reduce the range of water release fluctuations. Kuwanwisiwma just returned from a meeting in Page, AZ, where he was surprised to see parts of the dam that are usually covered by water. "Maybe if it goes lower we'll see our archaeological sites again--2,000 plus that were inundated." [laughs] Occasionally, remains from eroded sites are found on beaches and must be reburied.
- 91 A long-term effect of low water levels, Kuwanwisiwma believes, is that Central Arizona Project (CAP) will be more directly involved so that it can meet the demands of water users, including the tribes that have a legal right to certain amounts of CAP water.
- 92 **Q:** Is there anybody else that you haven't mentioned who you think we should interview, who played an important role or would have an unusual perspective?
- 93 **A:** Former Grand Canyon National Park (GCNP) Superintendents Dave [Uberuaga], Rob Arnsberger.
- 94 The Superintendents supported the tribes and often attended the pre-meeting caucuses. The USBR did not: "we never invited them."

- 95 (Continued from above)
- 96 In the ROD is an appendix with chapters devoted to each of the tribes involved in the EIS process. It contains the tribes' original recommendations.
- 97 Funding for GCDAMP is in question under the current presidential administration. Kuwanwisiwma expresses his disappointment at this. The program has been of great value.
- 98 END OF INTERVIEW

Paul Hirt: 00:00:01 This is Paul Hirt and Jennifer Sweeney of Arizona State University speaking with Lee Kuwanwisiwma of the Hopi Tribe up in Kykotsmovi on Saturday, September 8, 2018. Leigh, thanks so much for speaking with us.

Leigh Kuwanwisiwma: 00:00:18 Well, thanks for inviting me on this discussion. I appreciate it.

Paul Hirt: 00:00:22 Great. Can you start by telling us your name, the positions that you've held with the adaptive management program, and the years that you've been involved?

Leigh Kuwanwisiwma: 00:00:33 I was the former director for the Hopi Tribe's Cultural Preservation Office, um, for thirty years and I retired last year in December of, oh, '17. So, in my capacity, um, I got actually right in the front when the new EIS [Environmental Impact Statement] was happening back in the late 1980s. I got hired in 1988 and so my involvement [sound of vehicle passing] with this whole initiative on the effects of the fluctuating dam releases, it's been thirty years.

Paul Hirt: 00:01:23 Wow. Yeah. So you were hired as the Hopi Cultural Preservation Officer in 1988?

Leigh Kuwanwisiwma: 00:01:27 Yeah.

Paul Hirt: 00:01:27 And it was 1989 when the federal government decided to start an Environmental Impact Statement?

Leigh Kuwanwisiwma: 00:01:32 Right. Yeah.

Paul Hirt: 00:01:33 Okay. All right. And what role, like, who first came to you and said, "We would like some Hopi participation in this EIS, and how did that evolve over time?"

Leigh Kuwanwisiwma: 00:01:48 Well, to be frank, nobody came to the Hopi, much less to any tribe that is currently engaged with the whole history of the dam. And um, [road noise] I just happened to, I believe back around early 1990, read in the Flagstaff *Daily Sun*, that there was a meeting on the Glen Canyon Dam, by the Bureau of Reclamation, and I was reading the newspaper and I just out of curiosity, I didn't know--I didn't know really what it was about except that, you know, it, it, I pictured the dam up there. But I never realized that it wasn't dealing with the whole Canyon. But that was how I got [a] whiff of something happening. So I went to that meeting, it was an evening meeting, and I sat there listening to it and there was a whole series of presentations on,

on jump starting the EIS. And, um, as the initial introductions came around, all the federal agencies of course introduced themselves and the Bureau of Indian Affairs was introduced from Phoenix.

Leigh Kuwanwisiwma: 00:03:23

I learned later that they were representing all nineteen tribes in the state of Arizona. And I sat there and, and actually at that meeting I was probably the only Native person there, you know, and I was kind of bewil-- bewildered, and that's when I began to say, uh, we've got to learn more about this, what's going on, this EIS. And so I got some, a lot of handouts then, some background information. And I took home a whole bunch of that and, um, began to read it. And it was indeed about the Grand, uh, Glen Canyon Dam. But what was it interesting to me was that the whole issue was again, the water releases and the effects on the ecosystem. And then I said, this has to be of interest to the Tribe, I mean it *is* an interest to the Tribe. So, I got around to, um, just studying it more, and then meeting with, um, our tribal officials over there, and I said, "Look, this is something that I think we've got to pay attention to." And that's where, you know, I personally got involved with it. And so on the next meeting, which was up in Salt Lake, of course--

Paul Hirt: 00:05:04

The regional office of the Bureau of Reclamation [road noise].

Leigh Kuwanwisiwma: 00:05:05

Yeah, and of course, that's time and money to us. And so I ended up doing some calls up there and pretty much still articulating [road noise] at least my personal interest as the director [of the Cultural Preservation Office] on behalf of the Tribe to follow it and to keep us abreast of it with information, that kind of stuff, that's about the only thing I did [road noise]. And then the next meeting, again, was in Phoenix, so I went to that one. And by that time, I had reasonable assurance that the Tribe, meaning the Tribal Council, wanted to actively participate. So, I finally had the floor given to me and I introduced myself. And at that time, I was still the only tribal representative and I said, "The Hopi Tribe will engage in this whole EIS, but independent of the Bureau of Indian Affairs and their representation of other tribes, we're, I believe, quite capable of representing ourselves." That's what I said. So that was put on record. All right, so that was sort of my foot in the door, so to speak [road noise]. And so that was, that began our start in trying to figure out, well, how are we going to participate, you know? And by that time, I think by the third or fourth meeting I was in [road noise], then I began to know that there were, beyond the federal agencies there were now a lot of other interested parties to this whole initiative, and that suddenly just blossomed in front of me. And, and so that was

something that I was a bit overwhelmed with, as to what that really, um, looked into the future, how was all of this thing going to work out and, um, how is that agency involved, how is that state involved, you know. It all centered around, quite simply, around contiguous lands to the Colorado River, all up to Wyoming. You know, that's, that's what I learned [road noise]. They were interested parties in the dam, even though they were upstream.

Leigh Kuwanwisiwma: 00:07:57

Well, and then so I went back and I, in the nineties I, I was trying to figure out what we were going to do, and then I finally said, well, looks like this EIS is going to require a lot of science, a lot of research, and by golly, I've got to determine what our, what our focus was going to be. And it was the whole gamut of all three sciences, you know, biological, natural, and cultural. And of course, our forte, even though I was just beginning the office at that time, was going to be culture, even though I kind of was already thinking they're all interconnected, you know, for Hopi. They're not specific unto themselves. We have values going all over those three sciences. I knew that as a Hopi, in here [points to his heart], but we have to develop a baseline for the other two sciences. So that's why, what was kind on my mind and, I'm not a professional archaeologist, you know. My degree is in uh, is in business. You know, but I've been, uh, in different capacities with the Tribe, I've been exposed to different kinds of, of components of our culture. And I grew up being Hopi but, back then, as I look back, I was pretty young. Culturally, I was wet behind the ear. You think you know everything when you're thirty-eight, but you don't. And over the time of my career I was taught good lessons that I loved to learn. But in here I was Hopi. And growing up, you learned about, stories about the Grand Canyon. This is a very highly respected place as you begin to understand different (pause) different parts of what importance or sacredness means, you know.

Leigh Kuwanwisiwma: 00:10:33

My grandfather, who I suspect was born in about 1880, they were among the last, they were the last group of young men who got initiated into these highly ritual societies in 1902 from Oraibi Village of Third Mesa here. And they're required after that initiations, the following year in the fall, they did those salt pilgrimages [P.H.: uh-huh], and that's what they did. And we listened to those stories and all he could tell us was that it took a long time to travel on foot, with mule, donkeys and some horses all the way up to the descent place on the little Colorado [River], and then going down into the gorge and how precarious that is. And, that part of the initiations was to really test the manhood of everyone. Their, both their physical, emotional, and spiritual manhood. And that's what these men and young

men undertook [road noise]. And this was the stories that we heard where they finally got salt from those Hopi salt mines and then traveled back to the village. That concluded their full initiation.

Paul Hirt: 00:12:19 That was the salt deposits in the canyon wall [L.K.: Yeah], down near the confluence of the Colorado River and Little Colorado?

Leigh Kuwanwisiwma: 00:12:23 (Talking simultaneously) Yeah, right there. Yeah, right there.

Paul Hirt: 00:12:26 And your grandfather took those pilgrimages.

Leigh Kuwanwisiwma: 00:12:29 Yeah. So you kind of learn a little bit about it, but as a youngster, as a teenager, you don't really, really, um (pause) really sense the importance of these stories until later, you know. So the Canyon is, is, uh, is so significant to the Hopi people. You know, our genesis, we say, comes from the Grand Canyon. We emerged from a place called *Sipapuni*. It's of course a symbolic place, but it's a shrine down there [road noise], where the Hopi clans emerged into the present world. We were greeted here by a spiritual person we call *Maasaw*, and he accepted us. He accepted us. So out of this encounter and emergence, we immediately already had a physical knowledge of the Grand Canyon. So today, after the Hopi villages were settled around 1040 or so, then the Hopi culture of course, fully evolved, evolved into what it is today. And part of what our belief system is, is that we believe that when a person passes on, your spirit rises after the fourth day and travels to the Grand Canyon. That's our spiritual home down there. Then from there you turn into a spirit that we call the Cloud People, and they're the people that continue to visit us, our ancestral people, in the form of clouds. You know, this is who we petition to come visit us and bring us rain. So, the genesis and then our spiritual home is how the Hopis view the Grand Canyon. So I thought and thought, I said we have to be involved, and I said we are going to have to look at our own culture and we're going to have to, in this EIS, if we're going to make any kind of impact, we're going to have to document our interests into there. So that was the first, actually, research project that I engaged in.

Leigh Kuwanwisiwma: 00:15:34 Money was the, was the part that I didn't know how, we didn't have. But after a series of meetings they were now engaging in, in, in, uh, contractors to conduct different sciences within the scope of the EIS. And I said at one of the meetings, "I want that money too, you know, I want that money too."

Leigh Kuwanwisiwma: 00:16:11 And they didn't plan for that. They didn't plan that the tribes were going to be interested parties into the EIS. So they

basically didn't have any allocations for "a tribal component of the whole research." And I said, "Well, you've got to find it, and I'm going to give you a research design, and I'm going to give you our budget. And you're going to give me that money." So that took about a year for me to kind of really absorb things. And then also internally I had to do my internal, what do you call it? Uh, education--

Paul Hirt: 00:16:58 Relationship building with the Tribal Council, you mean?

Leigh Kuwanwisiwma: 00:17:00 With the Tribal Council. And then by that time, probably by 1990, '91, I had a kind of like a cultural advisory team of elders and they were my advisors on a lot of things. But this was a good project for me to bring to them. And--

Paul Hirt: 00:17:20 Do you remember about what year that was?

Leigh Kuwanwisiwma: 00:17:22 Ninety-one. [P.H.: '91] Yeah. Because that's when I hired [Kurt] Dongoske, too. I hired Dongoske. I had hired another archaeologist, David Carmichael, who is currently teaching up at UTEP [University of Texas at El Paso]. I think he was in the initial stages of this EIS with me. He was an archaeologist too, but he didn't stay for too long. Then I hired Kurt. So we teamed up together and we, we, um, we worked with our advisory team and they were really, really good, very honorable gentlemen that worked with us. They were religious priests and some of them were religious leaders, you know. So they gave us a lot of cultural advice and, and, and caution. So with that then, I told Kurt, "Well, you go to the next meeting with me," which we did. And that's how both of us began to get immersed into the process. And um, I think around that time they hired Dave Wegner. Dave Wegner. And he had been, um, he was helping all of, some of the contracts that were being dished out and he was in an office over in Flagstaff. So we got acquainted with him. So he, I guess he was in the audience when I told them that I want that money too. So we met with him and that was still the question: we want our share of the pot and we're prepared to give you a research proposal with our budget.

Leigh Kuwanwisiwma: 00:19:19 And so he advised us that he had to do his internal, um--he was, he was, he was very receptive. He was very receptive and he generally apologized to us on behalf of the whole effort, the Bureau of Reclamation, that the tribes were just forgotten on this whole, whole process. And he, but he was good. He immediately said, "Oh, I'm going to see that you get the money." So within two, three weeks he said, "All right, we've got to meet." So he came out to Hopi and he got introduced to our advisory team which gave him a really nice warm reception,

and then we talked nuts and bolts [road noise]. And so then Kurt handed him our research design, which had the review of the advisory team, gave it to him and gave him our initial project, our initial budget. And initially I was under the impression that it was just going to be, like, a year. I've never been engaged in an EIS. [P.H. laughs]. And so I was inclined to say we'd give them a one year budget, get as much money as we can, you know [road noise]. But as it turned out, It was, it was going to linger on, you know, like seven years.

Leigh Kuwanwisiwma: 00:20:57

All right, so, so we hammered out a contract and then I went before the Tribal Council, and with the Tribal Council, oh, by nineteen, early '91, 1991, when we were starting meeting with Wegner, I went before the Tribal Council and got a resolution declaring that we were going to be a cooperating agency. We would have that status. So, I remember at the next meeting I introduced that resolution, gave it to them, and they gave me a seat. And the chairman wrote to them that I would be the Hopi tribe's voting member. So, I became the first tribal voting member, and this needs to be highlighted: we became the first cooperating agency. See, Hopi. And I became the first voting member on the cooperating agency. So that was taken care of in that manner. And then we got our budget and we took a look at all three sciences. How are we going to look at each one of them? So our initial research design did capture that, that again, they're, they're integrated. See, that's how our initial proposal went into. And (pause) and that became part of this later history of how the Hopi Tribe, actually me and Kurt writing, really, the concept of adaptive management of the Glen Canyon Dam. Hopi wrote that, the initial concept. All right, and I'll tell you why. So out of that then, in '91 I believe, prior to the awarding of our contract and our status, I went on a river trip, me and two other staff. We went on a river trip and it was an eye-opener—[loud traffic noise in background]. Sorry about that. It was an eye-opener for me. You know--

Paul Hirt: 00:23:43

That would have been like 1990 that you went on a river trip?

Leigh Kuwanwisiwma: 00:23:45

I think, yeah, I think early '90 I was on that river trip just because they offered it to us.

Paul Hirt: 00:23:54

Was this other members of the EIS team were taking one of their (speaking simultaneously) research trips--?

Leigh Kuwanwisiwma: 00:23:56

No, it was just a Hopi trip [P.H.: Just a Hopi trip] with Dave Wegner. And then '91 thereabouts we had our first formal [road noise] science trip with Jan Balsom, I think that's was the date-- so we were the first tribe and people to actually engage in this

investigation. And um [road noise], and that first trip was an eye-opener for me. And so, you know, you're (pause for traffic noise) They actually advise not to go to the Grand Canyon that much, the Hopis, because of our respect for the spiritual people. That's their domain. So, so Hopis have that in themselves, that we shouldn't be visiting, and visiting, and visiting it. We don't do that. And I still don't do that, you know. Just occasionally when I have to, but--so that was an eye-opener for me because you can go to the rim and you're awe-stricken. It is so huge, you know? And every time you go there, it still impacts you. And no wonder our grandfathers talk about how Hopis have to be so respectful for the Canyon. It's alive. It talks to you.

Leigh Kuwanwisiwma: 00:25:41

Everything down there, the ecosystem, is alive and it talks to you. And I looked over, I go back, and, and, go back and reminisce about times I looked over the rim. When you finally get out of Marble Canyon, get out of Marble Canyon, out of this one bend [road noise], the Canyon just--Ahhh! Opens up, you say it swallows you. It is different looking down, when you see the little river, and then being down there, and seeing how massive the Canyon is. That was a teacher. And that's why I said no wonder our grandparents talk about this trip down there, about how significant the Canyon is and what it does to you. If there's any experience that gave, gave my grandpa humility and me humility, it was that trip into the Canyon.

Paul Hirt: 00:27:01

On that trip, did you bring some of your Hopi elders who were on the [L.K.: Couple of them] advisory committee?

Leigh Kuwanwisiwma: 00:27:08

No, I didn't do it, yeah, well, two staff were older people. There were three of us that went. Yeah. And they were in their sixties by that time and I was like thirty-eight or thirty-nine [road noise]. So it was an eye-opener in that way and we went through and, of course at that time we're still doing the little boats. That was a heck of an experience, you know [road noise], to eventually survive all of the rapids downstream. I don't know if you guys have ever been down there. But it's, it's a pretty arduous trip, you know, and it's just an amazing ecosystem [loud traffic noise]. So by '91, I believe around that time, we got our funding and we got our first river trip down there. And at that time I began to know Jan Balsom, too, I think she was just getting started as well, too, about the same time. I think maybe--I think she started with the Grand Canyon in about '88, too, that thereabouts. So, um [road noise] she went with us, because one of our, uh, our efforts was to investigate as many archaeological sites down there. All right, so that was our first attention down there. And from Lees Ferry all the way to Phantom Ranch, there's three hundred-plus archaeological sites

all the way from there. A lot of it clearly ancestral Hopi because of the Hopi polychrome and yellow were down there, and it matches our traditions in there because the Hopis, they say they traded with other clans down the Grand Canyon from here, you know. And, and they say that Wupatki people from Flagstaff, they traded with the Grand Canyon people, you know, things like that are our traditions. So when you go down there and begin to learn about the archaeology, archaeologists will tell us, well there's evidence of, of Hopi yellow ware here. Could it be trade items? Could it be actually visitations by people? Probably both, you know.

Leigh Kuwanwisiwma: 00:29:40

So that reinforced our interest down the Canyon. So, we went through that Canyon first and we began to take a look at arch[eology] sites that were in what they call the study corridor, which was the high water level, you know. And that prevented us from doing much with other sites adjacent, on, on, within the canyons. We--

Paul Hirt: 00:30:15

Higher above the river--(unintelligible, both talking at once)

Leigh Kuwanwisiwma: 00:30:16

Yeah, higher, yeah. And, and things like that that kind of were restricting us. Although we, later we did visit a lot of those sites in the Canyon. But initially that was our attention span. And so talking with Jan, who was still also then learning about the whole impact and archaeology down there [wind noise], I think we began to help her understand our viewpoints on what we call our, our ancestral sites. See. So, so that's how we started with those visits down there. And so, and then as we took that first trip with our, with our crew and some elders, there was one, I think, seventy-eight-year-old guy that went with on that first trip, first research trip. Actually, two of them.

Leigh Kuwanwisiwma: 00:31:22

Now-- [road noise] as we went through, we were interested in collecting some of the plants, because they were culturally important to us, you know?. So, we were inquiring, let's take a little bit here because that's what we make, we use these willow to make our prayer sticks, things like that were popping up, you know? And there were other types of pollen, pollen out there I think that was during the spring trip [road noise]. They began to gather that as well.

Leigh Kuwanwisiwma: 00:32:06

And one of the sites, the hikes that we went into, Buck Canyon I think, one guy said, he was telling us, he said, "Hey, you guys come here." So we went back there and he said, "There's wild spinach all over here," he said. And we looked up, "Yeah, uh-huh!" Ahh, there were nice spinach, we call *wiwa*.

Leigh Kuwanwisiwma: 00:32:32 So coming back then we harvested armfuls of that, and we had that for supper, you know? So clearly our interest in (pause) the biological research was there, you know? And it grew. It grew over the seven years we were doing the river trips like that. See. So, for example, we learned about the invasive species of which, of course, is um, tamarisk. We learned about other invasive species of the Little Colorado River--because we went up to *Sipapuni*--thorn, uh, camelthorn, you know.

Paul Hirt: 00:33:16 Terrible plant.

Leigh Kuwanwisiwma: 00:33:18 And all of that we learned. But, so, some of the questions is how do you feel about eradication of tamarisk down there? Well, on one of the trips we went, I think we were going, uh, somewhere we stopped and there was a whole tamarisk, kind of like this here, that's tamarisk over there, kind of really thick. And you know what? There were a lot of finches through there. And someone, one guy said, "Look, how can we destroy their habitat? They're alive and well up here." So this dichotomy of trying to mitigate invasive species [road noise] now went this way, and the tribe even saw value in the tamarisk thickets. See? This is what we were doing down there. So, and then, and then (laughs) I remember on our first first [sic] trip, where only three of us went, I remember camping that one night, first night [he makes a "sheew" sound]. Next morning, the river was way down here! [The river level had dropped significantly.] And we were camped up where our boat was stuck. And so, the boatmen knew it, but at the time that we landed at camp it was high water. So of course, they had to unload everything. So they pitched the boat right there and, and then those boats are really, really heavy, I mean those little boats, they're pushing, tugging.

Paul Hirt: 00:35:12 Trying to get back to the water level. And that's because the, the [L.K.: Yeah] dam operations, were releasing less water and it's not that, you know, there was--(unintelligible)

Leigh Kuwanwisiwma: 00:35:22 So now that's what we learned, you know, it's really the effects on, on this whole ecosystem though, there were, were because of especially the initial releases where it was basically unregulated, you know, and how WAPA [Western Area Power Administration] of course is just, goes with what the power demand is, right? Vegas and elsewhere that they sell that power. So, in the high-power demand periods then they go as high as 100,000 cfs.

Leigh Kuwanwisiwma: 00:36:01 And so we had to explain to our elders, what is cfs, you know--cubic feet per second. So kind of, this box here, it holds about

five gallons, you know, that kind of stuff. Then during low power demand, it goes to as low as 3,000 cfs. This was this huge fluctuation, so that captured my attention. No wonder! And it's about time, it's about time they regulate that. Was my, me and Kurt's opinion. So, we came in later with a clear vision of the purpose of the EIS, and what the tribal contrib--[road noise] contributions (pause) were going to look like from Hopi.

Leigh Kuwanwisiwma: 00:37:01 So, we hired a contractor, and Dave Wegner was kind enough to give us money after a year, and we hired our contractor by the name of T.J. Ferguson. You're probably familiar with the name or have met him.

Paul Hirt: 00:37:17 Yeah, saw his report.

Leigh Kuwanwisiwma: 00:37:19 And we eventually filed the Grand Canyon ethnohistory report, a very extensive report.

Paul Hirt: 00:37:27 That was a great study.

Leigh Kuwanwisiwma: 00:37:29 Very gre—very, very significant stuff. And that took that many years and a couple of years of writing it to fi--finally come up with the report. So of course, out of that, um, the Record of Decision came about, so it narrowed the fluctuation [road noise]. So today, the Hopi, I believe if you take a look at the Bureau of Reclamation's tribal reports, I believe we have the most extensive science--scientific reports based on our research design and then, later, how we identified certain research areas as we traveled, from the first time that we started going down there. You know, so in one area we monitor sediments. In another area we hired the, um--well the sediments throughout, but on several occasions, what is clearly has a conflict between tamarisk and willow. We monitored that. So of course all the time we're taking photographs, and initially we were looking at old photographs of those respective areas. And that's our record up to now that we're doing, see. And at the same time, annually we'd take about ten Hopis down the Grand Canyon, and they give us either--uh, this past, uh, month, in September we took, um, early September we took ten, and six of them were new people and younger people. So, so we've tried to mix them up. But every year we get new pers--we get perspectives, and technically new perspectives, but really the perspectives are consistent. The prior, before going into the Grand Canyon, how they feel about it, that's pretty consistent. After they go through the river trip and learning about what we do down there, and the science we're doing, the cultural resources down there [road noise] you know, coming out, a lot of the new timers are, they have a better, better perspective on how those

are being affected by the dam operations. But they're pretty consistent all throughout. And so I think that's, that's an indication that the Hopi culture is unwavering. It--you know, our villages are a thousand years old. The Hopi still have a full, twelve-month ceremonial cycle, you know. And today, we're going into the women's ceremonies right now. So it never ends for us. It never ends. We're always in the kiva. So, so I think it's, it reflects the vibrancy of the Hopi culture. And we're fortunate to be able to say that. So I think our--really, our um (pause) our um (pause). When I think back, I think our participation was worth our while. And today, since ninety--since '98, thereabouts, we're engaged in what they call monitoring, monitoring trips now. So those, we still are building up our record through there.

- Paul Hirt: 00:41:26 Each year there's a river trip, then?
- Leigh Kuwanwisiwma: 00:41:29 Every year.
- Paul Hirt: 00:41:29 I think Mike Yeatts just told me he just got off the river.
- Leigh Kuwanwisiwma: 00:41:33 Yeah. That was our Hopi trip. Yeah.
- Paul Hirt: 00:41:36 Do you miss going down the river?
- Leigh Kuwanwisiwma: 00:41:38 Yeah. I missed going. I've gone down there about, maybe, out of thirty years, about, uh, eleven times. Because I, maybe even less, because I just had that respect for the Canyon. But I'm the leader too, you know, and Mike [Yeatts] always, kind of always desires that I should be on the trip, but you know, here, I said I-- shouldn't be doing that many times. But. So yeah. So later, other tribes joined us. Other tribes joined us.
- Paul Hirt: 00:42:15 Do you remember who the next, the second one was?
- Leigh Kuwanwisiwma: 00:42:18 I think it was the Zunis.
- Paul Hirt: 00:42:21 The Zunis then got on?
- Leigh Kuwanwisiwma: 00:42:21 Yeah. And then the Navajos came in, the Hualapais and Paiutes came in and, and uh, I don't know. I said we have a, I [traffic noise]-- the thing that I guess personally concerns me, you know, because our Hopi trips are very, very, I think, culturally respectful. From day one, I said no alcohol on our trip. No alcohol, period. And when our first trip with Jan, I remember our boatman took alcohol, you know, and, and, uh, we advised him that our trips are non-alcoholic. So over time our reputation

grew. That we knew so much about the history of the Grand Canyon culturally, the archaeological sites, the petroglyphs we're interpreting left and right down there. Our values in terms of the erosion of, the effects of erosion on burials, what that causes us, to have to now re-bury only a partial of a remain, right [road noise]. Those were emotional. So the boatmen of course were learning, and the Hopi trip just grew, and everybody wanted to be on the Hopi trips. And every one of those trips, the boatmen later vowed that they would not be taking alcohol on it. So since then our trips have been non-alcohol. And I think the Tribe's reputation on the river is there, you know. Whereas through today, and I still complain to the other tribes, the Zunis still take alcohol. Navajos is a big fishing trip for them. Paiutes take alcohol. Hualapais take alcohol. I told them one time, "You guys just need to stop. You guys keep telling everybody that you have respect for the Canyon. At least stop that." I mean that's just kind of my personal thing, but that's 'cause, you know, how much I think we value the Canyon. Kind of ironic too, because of course all the commercial trips take that, and there's a lot of occasions, um, [road noise] because we take our ceremonial pipes, and our native tobacco. So at the end of the day, at the end of the day, after we pitch camp, then the Hopis gather in a circle and we pass the pipe. Give thanks for a nice day and a good day. You know, thank for everything. There's, there's many times where the Hopi camp, it's right next to a commercial camp, where the Hopis are meditating and these guys are drinking and laughing over here and the Hopis are trying to meditate (laughs). It's like that throughout the river. And, um--

Paul Hirt: 00:45:45

Quite a contrast?

Leigh Kuwanwisiwma: 00:45:46

Yeah. And so, it's (pause) yeah it's been a good experience for me [road noise] to engage in the river trips. And then later, now these monitoring trips that we have now, and to be able to be a part of getting new people to go down there. And to, so that they can also begin to get another view of the Grand Canyon, which I, like I did. And um--

Paul Hirt: 00:46:32

You mentioned Dave Wegner being very supportive [L.K.: Yeah] and helpful. I wonder if you can talk just a little bit about, um, how as leadership of the adaptive management program evolved over time, how, um, your personal relationship with other members of the AMWG [Adaptive Management Work Group] and the Hopi Tribe's larger relationship with the whole adaptive management program, how that changed over time. Were there phases where things were really cooperative, and then other phases when not so much? How did it evolve?

Leigh Kuwanwisiwma: 00:47:08 Well, after, you know, initially it was (coughs)-- was the, um, members as cooperating agencies. You know, that was the first cohort of people coming together, throughout the, until the Record of Decision came about. So, um, they were already now developing a list of stakeholders. It grew. And so I went through that and Mike became the, uh, my alternate as a voting member, Mike Yeatts. Well, Kurt, initially, and then more recently, uh, Mike. And um, I think the adaptive, I mean, the cooperating agency group, I think, was, um, pretty, uh, I think, routine. Everyone, every one of those stakeholders had a different kind of interest in it, you know [road noise]. And, and-- there was a lot of emphasis on biological resources, particularly the humpback chub (laughs) [more road noise]. So, um--the humpback chub budget even until today takes more, is given a lot of more money than the tribes together. That's how disproportionate the budgets were. And I learned that fast, especially once it got into this whole process of fighting for money. Your university was getting millions of dollars to pump out PhDs. And when you look at the pie chart we're buried into recreation. Little slice. It's still like that.

Leigh Kuwanwisiwma: 00:49:20 And then when in, uh, and then when-- so we were fighting for budgets through, once it got into the monitoring and the Adaptive Management Work Group, that's where, you know, again, budgets came around all the time. And people were still justifying their money. And that became a challenge to all the tribes. But we were able to form a bloc of votes between the four or five tribes, and then the [Department of the] Interior agencies. That's how it was set up. So if the tribes made a motion on their, on their whatever they wanted to put before the whole group, when it came to a vote, then those Interior people would vote for the tribes [road noise]. That's how the politics were working out. Until, um, until the, uh-- until the Solicitor [of the Department of the Interior] said that they couldn't do that anymore. So we lost about four or five agencies for blocking for blocking votes (both talking at same time)--

Paul Hirt: 00:50:31 That was under Anne Castle?

Leigh Kuwanwisiwma: 00:50:34 Anne Castle.

Paul Hirt: 00:50:35 When the interior agencies stopped voting.

Leigh Kuwanwisiwma: 00:50:38 Right. Yeah. That's when they stopped and it took those votes away from us. So now we're again in the minority [P.H.: uh-huh]. See, still through today. And, um, so, yeah, so--

Paul Hirt: 00:50:56 Did the tribes often vote as a bloc? Do they—do you all talk to each other and coordinate (speaking simultaneously) your positions?

Leigh Kuwanwisiwma: 00:51:03 No, we're [unintelligible]. Over the last ten years prior to the AMWG meetings, we have a, a day before, we have a tribal caucus. So we have, of course, by that time we have the full packets, so we have an idea of what's going to be in store for us and what some of the action items, if any, are going to be important to us and what the tribal discussion is going to be. And I tell you--this is not being, um, sort of (pause)-- I don't know how you would put it. When it came to something like some kind of turn of events where a discussion started and we start, the whole group started talking, almost all the tribes would look at me and said, "Leigh, what do you think?" You know, I was going through that and the action item and the motions and amendments to the motions, all of the thing that goes on. And then the subject at hand. What do you think, Leigh? And I'm trying to scratch my head and then I give it my best shot.

Leigh Kuwanwisiwma: 00:52:24 So in that way I was sort of still kind of leading the group in discussions too. And I'm glad for my colleagues. You know, Charley Bullets from Paiute, Tim Begay from Navajo. There were several councilmen from Zuni. They get appointed every two years, I think, to AMWG. Al [Alan] Downer from Navajo initially, too, as well.

Paul Hirt: 00:53:00 Which, what was the name of the first Navajo you mentioned?

Leigh Kuwanwisiwma: 00:53:04 Tim Begay.

Paul Hirt: 00:53:04 Tim Begay.

Leigh Kuwanwisiwma: 00:53:05 Tim Begay. [Road noise.] He was usually the one that was usually present. Al Downer came in occasionally. He was their director.

Paul Hirt: 00:53:16 How do you spell his name?

Leigh Kuwanwisiwma: 00:53:19 Alan Downer. D-o-w-n-e-r.

Paul Hirt: 00:53:24 And he was also a Navajo rep.

Leigh Kuwanwisiwma: 00:53:26 Yeah, he was the tribal historic preservation officer. And Tim Begay was their cultural specialist.

Paul Hirt: 00:53:35 And Char--you said Charley Bullets? [L.K.: Yeah.] How do you spell his last name?

Leigh Kuwanwisiwma: 00:53:38 B-u-l-l-e-t-s [Correct spelling is Bullets.]

Paul Hirt: 00:53:41 E-T-S. [L.K.: Yeah.] And he represented one, or the whole collection of, Paiute?

Leigh Kuwanwisiwma: 00:53:48 He, no, he represented the consortium of Paiutes. And then, um--

Paul Hirt: 00:53:59 These were early participants?

Leigh Kuwanwisiwma: 00:54:00 Yeah, these were-- well, these, were some of the people that I work with early on. Tim is still engaged. Tim Begay. Now they have a new director called Richard Begay, so, they're pretty nice guys.

Paul Hirt: 00:54:17 Who did you work with, with the Zuni?

Leigh Kuwanwisiwma: 00:54:19 It was Octavius Seowtewa. Octavius S-e-o-t-e-o-t-e-w-a, I think. [Correct spelling is Seowtewa.] Seowtewa.

Paul Hirt: 00:54:37 Seowtewa. Zuni. [L.K.: Yeah.] And uh, who did you work with with the Hualapai Tribe?

Leigh Kuwanwisiwma: 00:54:47 With Loretta Jackson [road noise].

Leigh Kuwanwisiwma: 00:54:50 She was a very strong advocate, too. She was articulate.

Paul Hirt: 00:54:54 She's on our list to do soon.

Leigh Kuwanwisiwma: 00:54:55 Yeah, she was a very strong advocate of our collective involvement.

Paul Hirt: 00:55:06 It's strange. We hear from, uh, we've heard from other people too, besides you, that the Havasupai tribe was not often represented--

Leigh Kuwanwisiwma: 00:55:15 I went down, actually, and because they weren't willing to participate and I and one of the chairmen went down there and I presented, uh, at least some guidance to them, trying to encourage them that they should be participating, but they never did. They never did. Which is unfortunate thing because, of course, their canyon goes right into the Canyon. The Canyon. [Road noise.]

Paul Hirt: 00:55:50 Why, um, can I ask you why you thought it would be important to get as many tribes represented as possible?

Leigh Kuwanwisiwma: 00:56:01 Well, like I said, I learned quickly that once in particular the AMWG got organized and it was seated, um, it was plain and simple politics, for a number of reasons, you know. One I mentioned, of course, is budget. And then of course, some of the debate on when different, for example, water releases for example, and the timing of those releases [road noise]. I think at our caucuses, fortunately the Hopi Tribe had a hydrologist too, we had our own hydrologist, so he was helping us from the technical side. So, we were able to, to kind of roundtable some of these issues and then go in to see what we can do. And then the big one was the, uh, the electrocution of those, uh-- [P.H.: fish?] the trout. That was a big controversy initially to Hopi, because we were the only ones that commented on that proposal. So our record stands that one, the initial area that they were going to zap those trout by the thousands was right at the confluence, you know?

Paul Hirt: 00:57:39 A sacred site.

Leigh Kuwanwisiwma: 00:57:40 A very sacred site to us. You know. And it encompasses this kind of concept of the spiritual domain. So, well, it's our finality, as I told you, it was also the beginning of our spiritual life. I one day hope to become a Cloud Person to visit all of you people. That's how we believe. So it's the beginning of life for us. So, our [road noise]-- I said to Kurt, you know how I would best explain it? Is that they kill all these fish. They're taking life away from living creatures. And Hopi, when they do their prayer feathers and prayer offerings, it's for the perpetuation of life. It's not for the end of life. Nah. So even though that proposal had a purpose, because the effect on the humpback chub, and overpopulation, you know, it just didn't sit well with me (road noise and wind noise). If they dare do that, it's going to create this aura of death. That was our argument. And we got the Bureau of Reclamation in. So they moved, they moved that area to someplace further up, up the river. See, these are some of the things that we were, we were engaging into.

Paul Hirt: 00:59:20 Yeah. Yeah. Did you, um, about when did this tribal caucus begin to form? Was it after the Record of Decision [L.K.: Yeah], or did it start forming before that?

Leigh Kuwanwisiwma: 00:59:32 No, I think the actual caucus itself began to form after AMWG was established [road noise]. Prior to that with the research part of it, we were pretty independent. And we would, as cooperating agencies, meet, but we didn't have really a, as I

understood, really have a quote, "a united front," so to speak. We would talk during lunch and stuff like that, but it was right after AMWG that we, we dedicated ourselves having this caucus prior to the AMWG meetings [road noise].

- Paul Hirt: 01:00:09 And is that still functioning today? Is there still a caucus day before the regular AMWG meetings?
- Leigh Kuwanwisiwma: 01:00:16 Yes. Yeah. [Road noise.]
- Paul Hirt: 01:00:18 And if you had more a tribal representatives, you would have a more powerful caucus, you were thinking?
- Leigh Kuwanwisiwma: 01:00:25 Yeah, uh-huh.
- Paul Hirt: 01:00:26 But you didn't--was there any problem with, you know, you mentioned funding problems a couple of times. Many other people that we talked to, this is a really--you can't get anything done if you don't have financing [L.K.: Yeah] to get it done, um, and there's a limited pie. Was there ever any thought that more tribal participants would mean less money for each of the tribes [road noise], or was there a set amount of money that everybody got regardless?
- Leigh Kuwanwisiwma: 01:00:50 It was a set of money that was eventually given to each tribe, respective tribes. Um--although the Hopi tribe got funded for some specific proposals.
- Paul Hirt: 01:01:09 Some research proposals?
- Leigh Kuwanwisiwma: 01:01:11 Research proposals. I don't know if other tribes did, but we got additional money. It was coming out of something called the terrestrial funding program. And--
- Paul Hirt: 01:01:25 For biological research?
- Leigh Kuwanwisiwma: 01:01:26 For biological research, 'cause we were beginning to document everything down there, not just the plants. But because everything that we have around here has some cultural value, the water life, and of course the fish, the frogs, the snakes, the birds, even the wildlife up there. One elder said that, when we saw a rattlesnake around there, he made a very interesting comment. You know, during the fall, towards the winter, when it gets cold, they hibernate. They're going to go into their den somewhere. Isn't the water going to suffocate them when they go up? [Road noise.] You know? No one really thought about that.

Leigh Kuwanwisiwma: 01:02:20 And that's right, because we still have the snake dance today. It's an ancient, ancient ceremony that was just performed three weeks ago again. So the value on our reptilian relatives, we call them, because once we go through that snake ceremony, they're presented back to the ground after they're captured [road noise] and they became, become our messengers, our prayers. So there's a value, and this elder said, doesn't that happen? To the snakes? When the water goes up and floods? And that was something I never thought of. So we engaged in that, we talked about the bird life up there, um, and then the, like I said, it's just an amazing ecosystem. You wouldn't imagine until you go down there and there's creeks coming in from the top, somewhere from, from different aquifers. Just some wide, some small, but they're coming into the Canyon. You know? And if you go up in some of those creeks (clears throat), it is just rich in vegetation, just, ahh man, you know, all kind of plants, it's an oasis. And you will never guess that that was in the Canyon, right? [Road noise.] So yeah, so we began to get, um, information and research into all kinds of biological resources. You know. So yeah. So, we got money to do that part too. So today we have a handbook that we got developed of all of the biological, and particularly the biological and the cultural resources, in a handbook like that. And that's given to all of our river participants to read prior to going down there to look at what all that's been documented, you know, and doing that. So that was a product of it and that product is now also available into the school system.

Paul Hirt: 01:04:48 So you use these as educational (speaking simultaneously)--

Leigh Kuwanwisiwma: 01:04:50 [Unintelligible] Students are learning from that handbook too. Yeah.

Paul Hirt: 01:04:56 Can you talk a little bit about how you think the caucus [road noise], the tribal caucus related to the rest of the members and stakeholders of the AMWG, and how, what that relationship was like? Was it real cooperative? Was it tense? (L.K. coughs) Did it change over time?

Leigh Kuwanwisiwma: 01:05:19 I don't think there were that many really controversial issues that [unintelligible] the tribe had to argue for the merits of their position. I think, I think, um, as best as I know and remember, I think all of the AMWG membership, were highly professional, very, very professional and very courteous to each other [road noise]. And the Tribe showed that respect in return too. So I don't think it was contentious. They just knew that we now had a voting bloc, and I think there was, um, slowly some recognition that our participation was there to stay. So I think

they had to accept that. So I think, when we did our presentations, and Hopi did their presentations too, you know, for example (L.K. clears throat), we did PowerPoints initially, and still do, about why we chose to participate, what the values of the Canyon is to the Hopis is and how the dam operations affected that [road noise]. We outline that every year and remind the people that that's the Hopi reason why we're here. We do that too. So, me and Mike were doing PowerPoint presentations. And then other tribes came in, too, and they would be agreeing to have slots within the agenda. So they would provide us those, opportunity to do that too. Then of course, during the discussions we would, if we had any kind of comments or questions, we would ask those questions too. So, I think the dialogue was basically good [road noise]. I think, I, I got to know a lot of people. You know, some became my friends, you know. And certainly, you know, the non-government organizations, the river guides, for example, they became allies with the tribes. The Sierra-- I don't know if the Sierra Club was in there, but other organizations--

- Paul Hirt: 01:07:45 Grand Canyon Trust, maybe? (Speaking simultaneously)
- Leigh Kuwanwisiwma: 01:07:47 Grand Canyon Trust. They, they, you know they were-- certain times they voted for the tribes too. So things like that. But it wasn't really "political" political, but they knew our presence was there. Yeah.
- Paul Hirt: 01:08:01 That's good. I know that there was some resistance early on, very early in the program. We keep hearing from interviewees that the, uh, the water and hydropower interests, like the Bureau of Reclamation and WAPA [road noise], really resisted making significant adjustments to the management of the dam to accommodate biological and cultural issues. Did you experience any of that in the years that you were involved?
- Leigh Kuwanwisiwma: 01:08:33 Oh, yeah.
- Paul Hirt: 01:08:34 Were there caucuses of the, say, the hydropower and water interests (unintelligible, both talking at once)?
- Leigh Kuwanwisiwma: 01:08:40 Oh, yeah. Once you got to know all the agencies represented, I mean, you know, that you had respective caucuses. The power interests were usually on one end of the table (laughter) and the tribes would be here, and the NGOs would be here, like that. You know? And the feds would be one--yeah. And sometimes, yeah, they were very, very strong in their opinions. And I told the chairman, you know, every one of the state representations on AMWG are attorneys, lawyers (P.H. laughs).

That's who we battle with, you know, I'm not an attorney, but they are. And they argue that, they argue that. And so that's sort of the chasm that I think existed in some ways between the power interests, you know. I--it was really, really obvious. But I think overall, I think the way they, um, I think discuss matters in representing their strong views was still respectful.

- Paul Hirt: 01:09:53 Uh-huh [road noise]. [L.K.: Yeah.] So you feel the structure of the AMWG was set up in such a way that even though there were some caucuses and there were some inequities and power dynamics, that it was still a structured process that was fair and everybody got a chance to speak and everybody listened, you know—(speaking simultaneously) respectfully to each other?
- Leigh Kuwanwisiwma: 01:10:19 I think, uh-- Gosh, I forgot her name, but they hired, um--
- Paul Hirt: 01:10:27 Mary Orton?
- Leigh Kuwanwisiwma: 01:10:29 Mary Orton. (Wind noise.) And she was good. I tell you, I have the highest respect for her. And when I, when they somehow didn't renew her contract, I was the only one that objected to it, and they now got her back. She was good.
- Paul Hirt: 01:10:50 Yeah, we interviewed her, she had a (speaking simultaneously)--
- Leigh Kuwanwisiwma: 01:10:52 Yeah, I was the only one from the AMWG that objected to her contract [not being renewed]. But, you know, but she's back. But I think she was the one who kept AMWG on an even keel. She was very, very highly proficient in her role, in moderating the discussion, and the technical help she has in terms of motions and they would flash it on the screen, get it edited right there and debated and--wow. She had a big brain to remember all of the discussions. "Remember you said this thing? Is that what you meant?" [road noise] Yeah, Mary Orton was her name and I-- I went back, back and forth after she wasn't working anymore, and I told her I would try to get her back on, which we did. [Road noise.]
- Paul Hirt: 01:11:48 She told us when we interviewed her, she told us about a very important river trip in which a key group of stakeholders went and kind of hammered out a new way of thinking about and working together. Were you on that river trip?
- Leigh Kuwanwisiwma: 01:12:05 That's what I'm saying. Me and Kurt were on that river trip, I believe. But, see, that was right after the Record of Decisions [road noise], when the feds were now also getting these river trips together for the stakeholders. See. But early on when we

were writing our research proposal, the Hopi proposal was to have an integrated approach [road noise], to put the three, the three sciences and um, and um--so we were talking with Dave Wegner about the future of the dam after the Record of Decision already. So, between the three of us, we were beginning to try to formulate how is this going to work, you know. [Road noise.] Because we're now realizing the enormity of stakeholders, right. And we would have, now, science to guide us, right? And science would still be ongoing, so the whole management had to adapt to those circumstances. Me, Kurt, and Dave Wegner were the ones that formulated that. And that's what we brought in to some of the first cooperating agency meetings where that term and concept later became formal.

- Paul Hirt: 01:13:35 So that's again in the early 1990s.
- Leigh Kuwanwisiwma: 01:13:37 Yeah. Well, we began to talk about that early on, and then now to implement it through AMWG [road noise], to establish the AMWG, you know. (Coughs) Yeah, we talked about it a lot, and I think Dave also needs to be credited in giving us a sense of that concept too.
- Paul Hirt: 01:14:01 So looking long-term at the program in your long decades of experience with it, do you think that it's been largely successful, and how so?
- Leigh Kuwanwisiwma: 01:14:18 (Pause.) Well, I (clears throat) I think, with the level of effort we did, I think, um, I think it's highly commendable. I think the support we have internally, the um-- the religious community coming in to give us that direction. And individuals within the Bureau of Reclamation that were very, uh, very good people to work with, you know. And--
- Paul Hirt: 01:14:54 Do you remember any specific people in the Bureau of Reclamation that you felt were good to work with?
- Leigh Kuwanwisiwma: 01:15:00 Um-- Let's see, some have gone already, too, back then. And then--
- Paul Hirt: 01:15:08 Do you remember Dave Garrett?
- Leigh Kuwanwisiwma: 01:15:09 Dave Garrett was one of them too, yeah--
- Paul Hirt: 01:15:11 We interviewed him and he expressed a lot of support and concern for getting more robust tribal participation.

Leigh Kuwanwisiwma: 01:15:20 Yeah, he was one that supported us a lot and we actually would invite him to our tribal caucuses, too. [P.H.: Oh.] And sometimes we would ask the Secretary [of the Interior] to come in too, on the tribal caucuses. So they would sit in and have lunch with us and we would roundtable these things. So it was a matter of courtesy to them.

Paul Hirt: 01:15:42 You mean the Secretary of the Interior's designee [L.K.: Yeah, designee], like Anne Castle? (Speaking simultaneously.)

Leigh Kuwanwisiwma: 01:15:46 Yeah, Anne Castle would sit in with us and have lunch with us. Yeah. So, so I think they appreciated that, because there was now some discussions from the respective tribes that she would hear direct, from one to one, too. And so then they would, after the caucuses then, on these very specific issues, then they would designate someone to articulate that during that discussion. That that's how we worked--

Paul Hirt: 01:16:18 The regular AMWG meetings?

Leigh Kuwanwisiwma: 01:16:19 Yeah, at AMWG-- like that. And they were privy to that. So Garrett was one of them. Yeah. So I think that those kinds of support, I think, helped a lot. I advocated for, particularly for more money to get into the natural science component of it. But I wasn't successful in doing that. I wanted to get, um, some of our younger people who were over at NAU [Northern Arizona University] in geology, for example, to actually come in and get funded or a program funded at NAU to support those students. But I never was able to find justification to do that. We have an MOU with NAU, the Hopi Cultural Preservation Office, and that's meant to facilitate that. But, we just couldn't break loose the money. And we still have some students in there. I mean, it's still going on and I wish we could get money to get a strong science, natural resource, natural science program over at NAU. And that would be one of my recommendations, you know, is that the tribes need support to offer scholarships and internships, you know, to continue to support them through their masters and even into their doctoral programs.

Paul Hirt: 01:17:59 [Road noise.] Other than some struggles with adequate funding to support research and participation, are there any other, um, disappointments, or what you consider to be limitations or flaws in the program as it's developed over time?

Leigh Kuwanwisiwma: 01:18:19 Well, it's adaptive management (laughs). So I suppose you're going to have changes throughout the implementation of the Record of Decision. And, um, I think resources are always going to be a problem. I think the power interests are still going to

present their views on everything. They're a major stakeholder. Um--but I think, I think the way it started, even from the cooperating agency standpoint—because a lot of us floated into the AMWG, a lot of us did—was that at that level of cooperating agency, I think everything was formal but yet informal. All right. It was different types of meeting that we would engage in as cooperating agencies, because we were still heading towards the Record of Decision, but you already had your complement of people now coming forward to be part of the cooperating agencies. So from that point on, I think the acquaintances that I had early on with some of those same individuals, even people from WAPA, we began to know each other, you know. Every day, I mean every meeting, we would say, "Hey!" Some would call each other by their name, do high fives. And so I think that in itself was a key moderator in how AMWG later shaped itself to continue to conduct business in that way. So I think, that, I think, was a good transition and some of us holdovers contributed to that, I think.

- Paul Hirt: 01:20:28 So, it sounds like you think the program has substantial value and ought to be continued?
- Leigh Kuwanwisiwma: 01:20:40 (Pause.) I think so. I think so. You know, with the experimental water releases, for example, they're intermittent, right? (Wind noise.) They're intermittent. The fact of the matter is, is that there's still no sediment going downstream. That's, that's a reality [road noise]. So the water releases are intermittent. That's meant to help, right? Um--
- Paul Hirt: 01:21:04 These high flow releases?
- Leigh Kuwanwisiwma: 01:21:05 High flow, high flow releases. Yeah. So that's going to be ongoing [road noise] and that was part of AMWG's decision eventually to do those. See. So that's happening now [road noise]. So I think over time it's going to take a long time before the whole ecosystem (pause) at least has some evidence of recovery. It ain't going to happen, but some over time. You know. And that has to be still part of Hopi's interest. So I think from our part it has to continue. That monitoring has to continue. And whether WAPA likes it or not, I think that has to happen.
- Paul Hirt: 01:21:58 Yeah. The long-term perspective, we--you can't learn a lot if you're only looking at something for a few years or a decade [road noise]. So that long-term perspective and that learning and relationship building, you're saying, is really valuable and--

Leigh Kuwanwisiwma: 01:22:17 I think so, and I've always tried to do that in my capacity as a director, you know. Rather than being adversarial, I encourage partnership and that's been my philosophy as a Hopi person. And that's how I tried to represent the office here.

Paul Hirt: 01:22:39 You have kind of stepped down from the really central role that you played for so many decades, and others are stepping in. So that's my next question is, what advice do you have for people who will be coming onto the AMWG in the coming years? What, what advice would you give them about how to approach the task, how to think about their role, how to prepare to be effective?

Leigh Kuwanwisiwma: 01:23:07 Well, I'm still actually a voting member of AMWG. [P.H.: Good!] Yeah, um-- my term hasn't ended, and the chairman hasn't replaced me with anybody, so I'm technically still a member of AMWG and, like I said, one of my staff is my successor and I think he's academically--oh, what do you call it? Founded?

Paul Hirt: 01:23:39 Well-trained--

Leigh Kuwanwisiwma: 01:23:40 Yeah, he's got a Masters in Anthropology and has worked for me for about twelve years as an anthropologist and as a researcher. So, um, he's been atten-- he attended the last one over in Flagstaff, uh, with me and so I said that this is what happens here. A bunch of boring stuff (laughter).

Paul Hirt: 01:24:07 So you're mentoring him.

Leigh Kuwanwisiwma: 01:24:09 Yeah. So-- so this is what happens and these are the issues, so make sure that you, when you get the packet, make sure you take a look at it (road noise) and see what is relevant to either Hopi or tribes, and continue to communicate with Mike Yeatts, who by the way is also retiring. [P.H.: Yeah?] Yeah. End of this year too. So he's been with me for, he's going on thirty years this year, too. [P/H.: Wow.] Yeah. Kurt worked for me for about a dozen or maybe fifteen years.

Paul Hirt: 01:24:45 And now he's working for the Zuni [L.K.: Zuni. Yeah.]. Yeah, we interviewed him about a month ago.

Leigh Kuwanwisiwma: 01:24:50 Yeah. Yeah, he kept, he helped me get our archaeology program off the ground, so we now have our full staff of archaeologists and everything. Yeah, so, um, I think over time, I hope the Hopi Tribe's participation doesn't, uh, wane, but continues to be as strong as it has been. And I think Stewart [Koyiyumptewa] will

again, like he's doing, he's learning the ropes, will learn the ropes on this whole program called AMWG [road noise].

- Paul Hirt: 01:25:31 What are your hopes for the future? I mean we've had almost thirty years of history with this program and things related to water flows and fisheries and cultural resources have been addressed. What issues aren't being addressed, or what new issues do you think are going to come up that the AMWG will have to face in the future? (Long pause before L.K. answers.)
- Leigh Kuwanwisiwma: 01:26:08 Oh, let me see. So, um--so I think some of the new changing facing AMWG is something that I was curious about. In terms of--the range of releases [road noise] that's dictated by the Record of Decision. Because the, Lake Powell is at 40 per--60 percent capacity right now. [P.H.: Yeah, it's going down--] And you see it physically, you see it, right? The white lines. It's-- [speaking simultaneously, unintelligible]
- Paul Hirt: 01:26:58 The bathtub rings, right-- (speaking simultaneously)
- Leigh Kuwanwisiwma: 01:26:00 It's a lot of water. So I think that needs to be taken note of [road noise], how does that affect WAPA's water releases. You know, and would that require a supplemental EIS at some point? If it continue to goes down, right? See, and we've got to look at the data and we're technically in a twenty-year drought and this is huge, and I know as a Hopi farmer, I know it, you know, and so I think that's a new issue that I think hopefully can be addressed at some point too, or prepared for. I think the control of trout, there's going to still be a population so it will be a problem. I don't know how we address it because there's so many of them in there from Lees Ferry on all the way down to the confluence.
- Paul Hirt: 01:28:06 Because of the colder, clearer water, it's good habitat for them?
- Leigh Kuwanwisiwma: 01:28:08 Yeah, and that's been a big, big change for them. And-- so that was one thing I was thinking about, the Lake Powell, um--
- Paul Hirt: 01:28:28 Yeah, that's what I had in mind. I mean we, uh, we're looking at a situation where it's possible that that lake could continue to fall. It's, you know, it was when you started this program in the 1990s, that was only about ten years after that huge flood of 1983 [L.K.: Yeah], the reservoir was still full as of about the year 2000. But now, you know, Lake Mead is a third full [L.K.: Yeah] and Lake Powell is half full [L.K.: Yeah] and there's no guarantee that the new climate regime isn't, you know, going to change and go back to what it was before [L.K.: Yeah]. There's a chance that everything's going to be different. And this is an adaptive

management program. Do you think about what kinds of adaptations might be facing us in the next ten or twenty years if this is the new normal? This climate regime that we have now?

Leigh Kuwanwisiwma: 01:29:25 Yeah, well [road noise], I think as a non-scientist, of course, I see the low levels of Lake Powell and I look at the dam in itself, the height it is, and where the generators are located, you know. Because over time, I don't know what the projections was, but eventually it will fill up with sediment anyway. But I'm just worried as the water goes down, what are the power [interests] going to deal with that in terms of the fluctuations? Because they're currently allowed a certain range and they'll probably put a big fight if we're going to do it [P.H.: Reduce the range even more?] reduce it because of the low levels of Lake Powell. I think that's the circumstances again that I'm speaking to right now. That's because I, uh, we had a meeting up at Page the other day and I went through it again, Lake Powell, the bridge and over and, gaah, you know, the ramps are getting longer and longer, the boat ramps (L.K. laughs), like that. And it's sad, you know. (Wind noise.) Maybe if it goes low we'll see our archaeological sites again (P.H. laughs), two thousand-plus that were inundated [P.H.: buried, yeah] (L.K. laughs). Occasionally I have to react to a remain that's eroded from somewhere and is found on the beach somewhere, a bone determined to be prehistoric, whatever, then we do reburials (laughs) on that? And then, uh (pause)--

Leigh Kuwanwisiwma: 01:31:17 (Wind noise) I think because of water shortage, I think there's going to be more impact like with CAP, like CAP--

Paul Hirt: 01:31:30 Central Arizona Project (speaking simultaneously)--

Leigh Kuwanwisiwma: 01:31:31 Central Arizona Project, because of the water shortage. Because that's what they're drawing on to feed water into Phoenix and other areas. They're going to probably want to up that, you know, and the tribes adjacent are going to want to demand their share. So I think that's a long-term effect of the ecosystem down there, where more water will have to be drawn out to address the drought right now. [Road noise.] I think that's one thing that I've been thinking about too.

Paul Hirt: 01:32:09 Well, um, last question, is there anybody else that you think we should be sure to interview? You've already mentioned a good number of people like Charley Bulletts and Tim Begay and Octavius Seowtewa, Loretta Jackson, Alan Downer.

Leigh Kuwanwisiwma: 01:32:29 Alan Downer's over in Hawaii, sipping margaritas (laughter).

Paul Hirt: 01:32:34 Maybe we can go join him and interview him there (laughs). Anybody else that you thought played an important role or would have an unusual perspective?

Leigh Kuwanwisiwma: 01:32:44 Well, you interviewed Jan, for example. But um--

Paul Hirt: 01:32:51 And we interviewed Dave Wegner.

Leigh Kuwanwisiwma: 01:32:56 Let me see. the other two, if you're able to reach them because they were instrumental in AMWG recently, are the former Park Service superintendent.

Paul Hirt: 01:33:08 Steve Martin, or somebody before him? Or after him?

Leigh Kuwanwisiwma: 01:33:11 After him. Well, Steve Martin was involved too.

Paul Hirt: 01:33:17 Yeah, I think he might be back in the Flagstaff area. I'm thinking about--

Leigh Kuwanwisiwma: 01:33:22 Steve? (Speaking simultaneously) Steve? They have a home there.

Paul Hirt: 01:33:28 But it was the person who came after Steve Martin-- I forgot his name too, sorry.

Leigh Kuwanwisiwma: 01:33:42 Yeah... Dave--dang. What was his last name? He had a kind of funny last name.

Paul Hirt: 01:33:48 I thought Steve Martin was a funny name too.

Leigh Kuwanwisiwma: 01:33:50 I thought he was the comedian (laughter).

Paul Hirt: 01:33:51 Exactly. Yeah, I can look it up. Dave somebody (speaking simultaneously).

Leigh Kuwanwisiwma: 01:33:55 And then, uh, and then, after Steve was another superintendent, what was his name, Unger?

Paul Hirt: 01:34:07 Dave Unger?

Leigh Kuwanwisiwma: 01:34:08 Dave Unger? Yeah, Unger, I think. Or--

Paul Hirt: 01:34:13 I'll look it up. And you remember him as important because--

Leigh Kuwanwisiwma: 01:34:18 Well, they were instrumental when, um, see Steve was there during the, the initial phases where we were in the '90s, and

then he left and then another superintendent took over and he was there for a long time. Uh, Unsberger?

Paul Hirt: 01:34:45 Arsberger.

Leigh Kuwanwisiwma: 01:34:46 Ars-- Arnsberger. (Speaking simultaneously)--

Paul Hirt: 01:34:47 Arnsberger. That's right.

Leigh Kuwanwisiwma: 01:34:48 Yeah. Dave.

Paul Hirt: 01:34:50 Arnsberger. And so he was there for quite a while [L.K.: Yeah] and he would be a good person to talk to.

Leigh Kuwanwisiwma: 01:34:54 Yeah. They, they were on our tribal caucus when it came to votes (laughs).

Paul Hirt: 01:35:02 You had a lot of support from the Department of Interior agencies, it sounds like [L.K.: Yeah--], other than maybe Bureau of Reclamation (laughs). Would, did they attend your caucuses, BOR?

Leigh Kuwanwisiwma: 01:35:13 No, we never invited them (laughter).

Paul Hirt: 01:35:18 All right. Well I think we've covered everything. Is there any last comments you'd like to make before we shut off the tape recorder?

Leigh Kuwanwisiwma: 01:35:27 Well, let me see (long pause). Since you have our-- it looks like you have our report, the one that we did, we took a look at it, that [P.H.: Yes] of course 9road noise) lays out really the cultural values of the Grand Canyon, so feel free to draw on that.

Paul Hirt: 01:35:51 Thank you. (Pause.)

Leigh Kuwanwisiwma: 01:35:52 Um-- (pause).

Paul Hirt: 01:36:00 Any other documents that you can think of [L.K.: Yeah, right--] that were important?

Leigh Kuwanwisiwma: 01:36:05 Well, on the Record of Decision, um, there is a, there's this appendices of all the tribal chapters [road noise]. So there's a Hopi chapter, Paiute chapter, Navajo chapter, Zuni chapter. They're all in there, as part of the EI-- uh the Record of Decision. So I think that would be a good source for you to-- it pretty much synthesizes what is in our big report, but it has all of our

initial recommendations. So that comes to my mind. (Pause.)
Just tell Bureau of Reclamation I want more money (laughter).

Paul Hirt: 01:36:57 Yes, you know, you're probably aware of this, just in the last couple of months, the Trump administration has announced that they're sweeping all the funds, that all the hydropower revenue that had been funding this program is going to Treasury, and there's a chance that the program may no longer exist by 2019.

Leigh Kuwanwisiwma: 01:37:17 Yeah.

Paul Hirt: 01:37:18 That would be a shame.

Leigh Kuwanwisiwma: 01:37:19 Yeah, there was an alert last fall already on that. It's going to be too bad if it does, you know, because there's just so much energy, you know, (wind noise) put into this effort here. And it's uh-- in my opinion it's an effort worthwhile [road noise]. And I think with what's at stake in terms of the Canyon being a very special place for us, all of America, and I think a sense of monitoring and caretaking and good management is really, it's really needed it into the future. That's what I think.

Paul Hirt: 01:38:07 I think that's a great place to stop.

Leigh Kuwanwisiwma: 01:38:10 Yeah.

Paul Hirt: 01:38:11 Wonderful.

End of interview