

Tape Transcription

Interview with Arleyn Simon, Tempe, AZ, 13 May 2008. Interviewer is Adam Luke

AL: Adam Luke

AS: Arleyn Simon

Arleyn Simon is the director of the Archaeological Research Institute and a Professor in the School of Human Evolution and Social Change at Arizona State University. This interview pertains to Southwest Archaeology and role early inhabitants had on the development of the Tempe area. This interview is for the Tempe Historical Museum's upcoming renovation. The interview is approximately 40 minutes long.

AL: K, All right, I'm meeting with Arleyn Simon at the Archaeological Research Institute, and it is May 13, 2008. I'm just going to ask her some general questions about the valley, and water, and how people anciently have used it here in the area. But first to start out, what was the natural environment of the Salt River Valley like prior to human settlement?

AS: **[00:37]** Well it differed in various time periods. We know that, um, there were a lot of geologic processes that went on here and there's a tremendous amount of fill that has washed down from the rivers, the mountain slopes, from half of Arizona (laughs) ...

AL: Really?

AS: **[01:03]** Along the Salt River. There are a few instances where very early Pleistocene deposits have been found. A few years ago there was a skeleton of a mammoth found in a construction project in Mesa. We don't know of any human artifacts that were found with it, but they obviously required a much cooler climate,

AL: Mmm hmm

AS: **[01:35]** a lot more vegetation, different kind of vegetation than what we have today. But then in the Archaic period a few thousand years ago, there were semi-nomadic hunting and gathering bands and people that lived in the area, and, uh, made use of the rivers and also various waterholes as they moved across the landscape. Uh, about 2000 years ago people really started settling down and becoming agriculturalists and started really channeling, literally, water into some of the early water control systems and irrigation systems. And then that has continued on up into our present day irrigation systems. So water has been a very central and essential commodity here in the valley to support human occupation.

AL: You mentioned how they found remains of a mammoth which pointed to different type of climate during that time, and sounds like it's shifted somewhat since then. But

you mentioned when people started coming in, started practicing agriculture, what type of climate was it? Pretty similar to what it is now?

AS: **[3:08]** Well, somewhat similar to what we have today. Also, there were climate fluctuations where there would be moister, cooler periods and hotter, dryer periods. Probably beyond the scope of the droughts that we've witnessed today. **[3:39]** But, um, one of the huge differences in the vegetation in modern times is that our ability to pump groundwater has lowered the water table tremendously. When early Euro-American settlers first came in to the Salt and the Gila River Valley, the water table was very high, easily dig-able distance to make your own well or whatever. Supported a lot of trees and shrubs and various kinds of vegetation, and as that has diminished over the years, it's affected what kind of vegetation we can grow and how much we have to support it by watering and irrigation and things like that.

AL: So you mentioned the water table and how that's diminished since the Euro-Americans moved in and how that's supported different types of vegetation.

AS: Right.

AL: So, from, say, a few thousand years ago, what types of vegetation have been here and how has it changed?

AS: **[4:58]** Well, I think that we still, out in the desert areas, still see a lot of the native plants that have been on the landscape for thousands of years. **[5:11]** But, proportions of them have changed over time and the plant communities, depending on those water tables, and that type of thing, have changed with the availability of water. And, if you go outside the metro area now, you see a rather parched landscape that wouldn't have been like that with the higher water table. And there were at one time very dense stands of Saguaro cacti here along the Salt River and Papago Parks and, uh, the area around Papago Park was actually once a National Monument in the first part of the 1900s, but then people took all the Saguaro cacti out of there and it was decommissioned as a National Monument. **[6:20]** So, you look over in the area around the zoo and botanical garden and Papago Park and the buttes, at one time that may have looked very much like the area around Saguaro National Monument. Of course, the River itself was a very lush, rich, riparian zone with Cottonwood forests and willows and cattails and cane and marshes and fish, birds and things like that. And once the dams were built, that stopped the ability to support that kind of a riparian zone; although, there are areas of the river into Phoenix that are being restored as a riparian zone.

AL: You mentioned how the Papago, the area around Papago was once a National Monument and was decommissioned later. Was that primarily because people were taking these Saguaro cactus?

AS: Mmhmm, yes.

AL: Interesting.

AS: **[7:32]** (Laughs) Yes. Rumor has it that a lot of them ended up at the Tovrea Castle. I don't have any documentation to that, that's speculation.

AL: Interesting. Going back a little more, how did some of these prehistoric peoples in the valley adapt to living in the desert? What were some of their practices?

AS: **[8:00]** Well, uh, the, the main irrigation canals and side canals to distribute the water to their various villages and fields and each major canal had a large village near the head gates where they took water in from the river, but then there would be other villages farther along the system. And in the Tempe area, actually, one of the largest villages, Los Muertos was located quite far south, uh, where Tempe now borders Chandler. So that area is where the canals really branched out and there was a huge network of fields and quite a dense population spread over that area with some centralized core areas.

AL: And so, what made it possible was the canals it sounds like? People able to spread out a little more?

AS: **[9:05]** Right.

AL: And how dense was the population? What were the estimates?

AS: Well, those are variable across different time periods, so I would have a difficult time putting a number on that, but probably, we're talking thousands or tens of thousands of people in the area.

AL: Um, you kind of described this a little already, but could you describe a little more detail of the ways that water was important to early inhabitants and the general idea?

AS: **[9:40]** Well, of course it's essential to life. (Laughs) Water's very essential. Um, irrigating their crops of course, cotton, was a huge crop in prehistoric times, and their corn, beans, and squash complex and other kinds of plants that required irrigation as well. Um, just the, um, I think in prehistoric times they had to deal with major flood events. Which, sometimes too much water all at once can be incredibly damaging. They had, well, of course that was the impetus for building the Roosevelt Dam, as flood control, as well as hydroelectric power. **[10:46]** But, one of the unique things about Tempe is that we have this bedrock structure, of these series of buttes that run from the A Mountain, Hayden Butte across the river to the Papago Buttes on the north, so this stretch of the river here in Tempe is the only place on the Salt River in the valley that has a hard rock bottom. And that was a real geologic advantage in terms of being able to ford the river and not be on just thousands feet of fill. It's also what has kept the Mill Avenue Bridge from washing out. Now the new one that they built, uh, did start, we had that big flood in 93 that took out the scaffolding when it was half built, but the original Mill Avenue Bridge is the only one that has withstood all the flood events in recent

times. And that's also why the Hayden family built the ferry here, because of that hard rock bottom. But the hard rock bottom is also important in terms of the irrigation of the prehistoric irrigation because those flood events upstream from this hard rock bottom may have been protected a little bit, where the head gates were formed, that they were still able to rebuild those and still take water out of the river on down into Tempe.

Whereas on the other side of the hard rock it kind of makes a bottleneck, and that may have contributed to some of the head gate erosion around Pueblo Grande, which may have had a severe impact on Canal System 2, which went over into Phoenix, uh, to where it may have cut those head gates to the point where they couldn't again get them to take water out of the river. But, the real expert on all of that with irrigation is of course Jerry Howard, at the Mesa Southwest Museum, which now has a different name. Is it the Mesa Natural History Museum? But, he is the real expert on irrigation. He did his MA thesis and his Ph.D. on irrigation system through the whole valley.

AL: Oh really, wow.

AS: **[13:49]** So, he'll be very knowledgeable about the canal systems, prehistoric canal systems in Tempe as well as elsewhere in the valley and he's spent several decades in this life just studying every scrap of information about that. So you definitely need to talk to him. He's very good to talk with, kind of hard to get a hold of.

[Talks about contacting Jerry Howard]

AL: Sounds good, I'll definitely try that. You mentioned that hard rock bottom was really important to early canal systems, especially the Tempe area, how they were able to use it there.

AS: **[14:43]** Yeah. There was a canal, and Jerry would have the details on it, but it, the end take for it was east of where the butte is and the big football, ASU football stadium would come around the front side of A Mountain. And so where the ASU football stadium sits, there's a lot of rock art on those mountains. City of Tempe should have a report on that at the museum. And Amy was instrumental in getting that a few years ago. And then there was a village right below there.

AL: I'm sure they have the information on that.

AS: So the campus has kind of grown over it now.

AL: Um, this reminds me, I was talking to someone yesterday, and they mentioned how, Tempe Town Lake, something they didn't know about when they built it, was that they didn't lose as much from leeching underground because there's hard rock. I don't know if that's the same...

AS: **[15:58]** Well, it could be. It could have a real effect on it because if it had been built over by Sky Harbor Airport, that's probably just hundreds of thousands of feet of loose fill. So, yeah.

AL: All right, um, I guess, uh, what were some of the uses of water? I mean primarily agriculture, irrigation, as you mentioned, were there other uses?

AS: **[15:25]** Oh sure, agriculture, irrigation. Some of the prehistoric sites had areas in them that may have actually been reservoirs, where water from the canal would have been siphoned off into a big, open cistern type of thing where it would have been allowed to settle. Because of course the river water and the irrigation water has a lot of sediment, sludge, that's carried along with it. So it would kind of go into this big pool and then all that dirt and debris would settle down out of it. And they probably had some walk in areas where people would walk down there with their big clay pots and get a pot full of water to take back to their home for cooking and washing, and all those typical -- drinking -- all those typical, necessary household activities. **[17:30]** The irrigation canals would have been the closest thing to running water that they would have had.

AL: Maybe this is a question for Jerry Howard, but how do modern-day canals differ from some of the Hohokam canals?

AS: **[17:51]** Well, Jerry will be able to tell you more details about this, but the early Euro-American settlers that came in here, there was one man in particular, **[18:04]** I think his name was Jack Swilling, or something close to that, and he recognized the abandoned prehistoric canals for what they were, and gathered up people that he convinced this is what they are, and if we just clean these out, make a new head gate, we can reuse them. So that's actually how some of the very first irrigation happened here in the valley was by clearing out some of these ancient canals and reusing them. And many of our modern canals that go through the valley follow very closely the routes of those original canals, which have to follow a certain topography to transport the water across the landscape. So, that's pretty exciting stuff.

AL: Yeah it is, it's very interesting we continue to use those same ones.

AS: Mmhmm.

AL: It's probably easier than trying to figure it out yourself.

AS: Yeah.

AL: Kind of, maybe comparing in some ways, but were there any methods, or what methods did the early inhabitants use or practice to conserve water?

AS: **[19:32]** Well, I think they conserved water simply because they couldn't use it to the extent that we do today with our mechanized systems. And they also didn't have this dense a population here, so a higher proportion of the water went for agricultural purposes, and then just basic household purposes. **[20:03]** But, it was basically, what

water you can transport either through irrigation canals or carrying it in a clay pot. Which is a rather limiting factor.

AL: Kind of, forced conservation almost, if you will.

AS: [20:24] Yeah, yeah. Well, and, typically, Native American people in the southwest recognize that it's a very arid environment. Even today, many of them have what you might call a xeriscape front yard or back yard. They don't typically plant lawns or have lots of greenery right around their home because it's, would take a lot of water to make that stuff grow. But it also would harbor a lot of unpleasant pests such as rattlesnakes and things like that that might then get into your home that would be hiding in the grass. Things like that.

AL: You kind of mentioned a little about contemporary Native peoples and how they -- xeriscape -- and some of those things they practice and continue to do -- going about the arid nature of the area...

AS: Right,

AL: Could you explain how water is considered a sacred commodity or maybe, in the past, by some of these people or if it continues to be and how?

AS: [20:42] Well, it was, early Native Americans, there's a lot of the imagery that shows up on the pottery and also on the rock art which has to do with water birds and sometimes fish and turtles which go in and out of the water. And also snakes throughout North America, but particularly in the arid southwest and into Mexico, snakes are considered associated with water and rainfall and fertility. So it was recognized just how essential water is for life and that without it nothing would exist. And, um, I think that's something that with our modern technology is easy to overlook and take for granted. And certainly water is, and will become increasingly, a very important commodity that there is a limited amount of with the population growth. And so.

AL: Definitely. You kind of mentioned snakes and water birds and things like that they used on pottery, and imagery because it was recognized with water and such for certain reasons. What, why snakes, why water birds, what was it . . .?

AS: [23:21] Well, snakes, that's, at first glance we think of snakes as a dry land animal and water is something different, but there are a lot of snakes, including rattlesnakes that do swim. And perhaps part of it is the undulating motion too, it's kind of like waves on water and snakes go back and forth between the underworld and the above-world, and they do inhabit dry land but they will also swim. So I think that may be part of the association, is maybe when you get a lot of rain it drives the snakes out of the ground, out of their burrows. Could be a lot of natural conditions that are then interpreted as symbolic associations.

AL: Um, kind of going back with the Hohokam, I guess there's some evidence considering the ethnicity of the Hohokam and how diverse or not their population was. Could you kind of describe that?

AS: **[24:42]** Well, um, archaeologists and anthropologists have evolved in their own abilities to study prehistoric cultures and work with the early ethnographies and contemporary Native American people who still are very active in interpreting their cultural history and the past. And when archaeology was first starting out, it focused on just a few very large, very obvious, very important sites and these were excavated and interpreted as the way those people lived in their core areas. So you had the Hohokam Core Area and the Anasazi Core area and the Mogollon Core area, but actually with all of the work that's been done in cultural resource management since the early 70s, there's such a growth in the information that's available from many different locations -- small sites, medium sites, in-between sites. **[26:04]** And also we have much more sophisticated methods of tracking interactions among people through stylistic and chemical analysis of their pottery -- chemical analysis of obsidian, where it originated from, where it was traded to, turquoise shell, other commodities that now we can trace out trade relationships and exchange routes among these and also archaeologists have learned that through dating techniques that there can be very different architectural styles that are actually contemporaneous with each other. You get different sets of architecture, different kinds of artifacts for cooking and serving food, and for ceremonies that occur side by side or even intermingled with each other that date from the same time period. **[27:15]** That's direct evidence that you've got different people with different cultural and different ethnic backgrounds living together. So, just like today, in prehistoric times, societies were much more pluralistic and an amalgam of different people coming together.

AL: Sounds like there was a lot more travel and trade between groups that we first thought.

AS: **[27:42]** There was, and there were also, conditions could be very extreme in one part of the southwest, and not so bad in others. And from about the AD 1100s onward for a few hundred years, conditions were very severe and dry up on the Colorado Plateau and the Four Corners area and there was a big dispersal of ancient Puebloan people away from those areas farther south into Mexico and Arizona. **[28:23]** And there were probably other periods of that earlier that are just now starting to be recognized. And then there's also movement backwards and there's people that came in from the south. A lot of different groups.

AL: So was kind of this valley, the Tempe area, as it was then, was it a major place where trade and travel would take place?

AS: **[28:51]** Yeah, just because of the physiography of the landscape. Wherever you have major rivers -- you've got the Salt coming down out of the highlands, Central Arizona, and then the Gila just south -- and of course they join not too far from the west of here, both of those were really the heartland of major production of food for

thousands of years. So that in itself, that ability, to have those rivers to make use of to produce large quantities of food would have been a real magnet to peoples from the hinterlands who were having a difficult time due to drought or conflict or whatever pressures.

AL: So it sounds like water was, as usual, the big reason people would settle here.

AS: Yeah.

AL: The ability to transport in canals helped out considerably as well

AS: **[29:57]** Yeah, oh yeah.

AL: I can't think of any more questions,

AS: (Laughs)

AL: I know there are thousands more I could ask you, but is there anything you feel that maybe I've missed?

AS: **[30:17]** Not really, it's just, I think it's important for people to gain an appreciation of what was here before and that cultural heritage is still with us today and to realize that there are many parts of the city and the whole valley that had prehistoric communities underneath them. And we have put together an exhibit on our website, done by a student that just graduated this last year, of the various archaeological projects that have been done on the campus here. And that might be an interesting thing for you to take a look at, just in terms of what all's here.

AL: Definitely. And this is just on the campus?

AS: **[31:09]** Yeah, well it's the campus and the adjacent river -- there's a little site called Loa Del Rio that's just north of the river --

AL: Okay.

AS: -- that's administered through the City of Tempe; that was a little Salado village. And probably a lot of fields of agave production along the upper terraces of the river. And agave was processed there and made into fiber and the hearts of the plants were roasted and that was made into food, but also perhaps fermented beverage -- agave wine. Which would have made it much more nutritious and also important in ceremonies and that type of thing.

AL: So is this something that's still grown at all here, agave, produced at all?

AS: **[32:06]** There are a few agave plants around, but not so much. Just in the desert areas. I mean people have them in their yards, many different varieties that were

brought from other areas. You know, some of them are the big Mexican agaves, they're not necessarily the indigenous Arizona agaves, but agave is a dryer crop, so it would not have been irrigated. If you think of the flatter, irrigated zones and then when you get into the hill slopes of these buttes and mountain ranges around the valley, that's where the agave would have been grown. Because it can grow in very rocky ground with just a little bit of soil and lots of drainage.

AL: That makes me think of another question actually though. What other types of crops were grown? You mentioned a few, you mentioned cotton.

AS: Cotton.

AL: That kind of surprised me, I thought that was something that was brought in later, but I guess not.

AS: Well I'm sure most people have heard of Pima cotton,

AL: Okay.

AS: **[33:19]** you know the finest cotton. Right now there's a big comfort fad to get high count cotton sheets -- they're so much softer -- those are the long fiber cottons that are really soft. And Pima cotton was grown here in Arizona for perhaps a few thousand years and so that was a big crop and prehistorically. And the foods, the complex of corn, beans and squash that grow together that most people know about, but the basic with that is that corn uses a lot of nitrogen out of the soil and beans are a legume so they fix nitrogen in the soil. So if you grow them together, they complement each other.

AL: I see, smart.

AS: **[34:30]** Because just growing corn will strip the nutrients from the soil and then it loses its productivity. But in historic times, there were a lot of grains that were introduced by European-Americans that were also grown in Arizona and are often still grown today as winter crops of wheat and barley that are planted in the fall after the cotton is harvested, grown through the cool winter months, and then harvested in the late spring, and then you plant your cotton.

AL: And you talk about the wheat and barley, that's something that --

AS: Those were introduced crops. But there were some other grain type of things, I mean not on the scale of the modern varieties of wheat and barley, but there was a wild little barley that was probably grown and harvested. And also amaranth is a little plant that has a lot of little tiny seeds in it --

AL: Mmhmm.

AS: **[35:53]** -- and that would have been an important food source too. And you may want to talk to Glenn Rice with Rio Salado Archaeology, he has, they're located in Tempe, he's retired from ASU now, but he has put a lot of thought into the subsistence of the people and how they did a combination of domesticated plants, but also harvesting the wild foods. And he has a good sense of those different crops, much more extensive than my knowledge.

AL: (Laughs) Those are the questions that I had prepared, and a few others, unless there's anything you'd like to add.

AS: **[36:52]** Well, um, let me think about it for a minute here. I guess one of the things with the groundwater and the water tables is that I think landscaping techniques are evolving with a lot of consciousness about ecological concerns and retaining water. But, when we first moved to Tempe in the mid-80s, one of our neighbors explained to us about how each yard in the neighborhood had to have a sunken area in the front yard of a certain size to gather rainwater so it didn't all flood out into the streets. And I haven't heard anything about that since that time, but I think people's landscaping approaches are now starting to think about getting more water to soak into the ground rather than just losing it all out in the storm drains, which would help replenish some of that water that's lost. And of course there were periods where everyone was putting black plastic underneath their granite which would repel the water and now there's a lot of filter cloths and things like that that can help control the weeds but allow the water to soak in.

[38:39] So I think being cognizant of the ancient need for water can help us think about what we're doing in our own little micro-local environment of our own home. And whether we're allowing nature to replenish itself, or helping it to do that, rather than hindering it.

AL: I think that's interesting as well. What you said, aware of that ancient need for water, so we can change practices to be aware of that, I guess you said. That's very important, very interesting. But, I think that's all I have for you, if that's all right.

AS: **[39:34]** Well I've got a little booklet that I just want to give you that was written by another archaeologist for the State Historic Preservation Office, but it deals with water in the valley and I think it might be very useful,

AL: Yes.

AS: so I'll give you that.

AL: I appreciate that very much.