

TRADITIONAL RESOURCE USE OF THE FLAGSTAFF AREA MONUMENTS

FINAL REPORT



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CHAPTER ONE STUDY OVERVIEW

Project History and Purpose

For the purpose of addressing their consultation responsibilities under the Native American Graves Protection and Repatriation Act (NAGPRA), the National Park Service (NPS) contracted with the Bureau of Applied Research in Anthropology (BARA) at the University of Arizona (UofA) to complete a cultural affiliation study of four national monuments in northern Arizona: Navajo National Monument, Sunset Crater Volcano, Walnut Canyon, and Wupatki. The study (Toupal and Stoffle 2001), consisting only of a review of existing documentation in the National Park Service's Flagstaff and Regional Offices, revealed a need for ethnographic data about the traditional use of natural resources by six ethnic groups: the Pai, Southern Paiute, Hopi, Zuni, Navajo, and Western Apache.

Under Cooperative Agreement Number H8601010007, BARA contracted with the NPS to amend the document review with primary data from representatives of the tribes that were found to be historically and culturally affiliated with Sunset Crater Volcano (SUCR), Walnut Canyon (WACA), and Wupatki National Monument (WUPA). Additionally, this addendum to the affiliation study includes information about traditional uses of park resources as described by tribal representatives. This information is critical to park management and for compliance with various laws, regulations, executive orders, and policies so that park managers can better address tribal requests for continued access and use of park resources.

While the study area focuses on the three parks, it is connected in many ways to many people. Three travel corridors come together in the Flagstaff area and reflect long-established intertribal relationships. The Indian Claims Commission hearings determined these corridors were non-occupied areas illustrating a significant difference between Euro-American and Native American interpretations of relationships with the land (Figure 1.1).

Research Tasks

The first purpose of this study is to amend the completed literature search with primary data collected with tribal representatives of the six ethnic groups. This data will provide contemporary validation of the literature search and contribute additional information related to tribal affiliation.

The second purpose of this study is to provide primary data about past and present tribal uses of park resources. As a Traditional Use Study of park resources, this effort contributes information essential to park management as well as to compliance with a myriad of laws, regulations, executive orders, and NPS policies.

The specific objectives of this study include identification of natural resources at each park that are used for traditional purposes, descriptions of the cultural importance of these resources, and, where possible, links between contemporary resource use and records of historic use.

These objectives are addressed in park-specific and cultural landscape chapters with primary data and ethnographic summaries, and appendices. Linking contemporary resource use with records of historic use is achieved through appropriate in-text citations. Additional historic record ethnobotanic data pertinent to each ethnic group's traditional use of the Flagstaff area is included as appendices to cover those park plants not discussed by participants but known to be traditionally used by the groups in other areas.

Research Methods

This Traditional Use Study is based on interviews with elders or representatives who were selected by their tribal governments to participate in field visits (Table 1.1). The Hualapai Tribe, Hopi Tribe, and Navajo Nation were unable to participate in the study, however, each of them was given the opportunity to provide written material pertinent to the traditional uses of the three parks in order to include them in the report. This material has been incorporated in the appropriate ethnic group sections for each park and landscape.

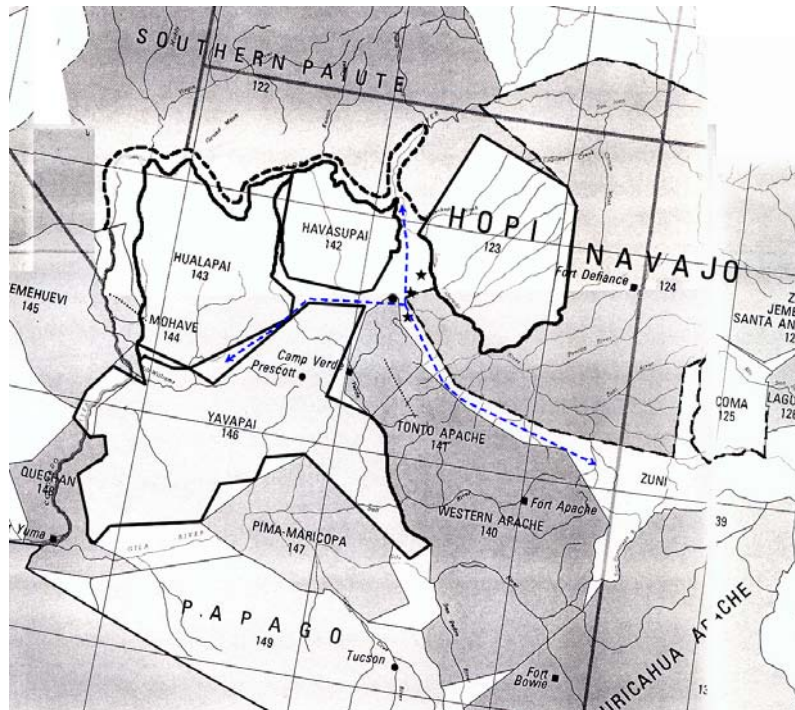


Figure 1.1. Arizona aboriginal land areas as determined by the Indian Claims Commission.

During four three-day study periods spread over two years, our assessment teams visited each park with representatives from one of the four participating ethnic groups. In the spring of 2002, our team met with representatives from the Pai and Southern Paiute groups, and in the spring of 2003, we met with representatives from the Zuni and Western Apache groups (Table 1.2). The Hualapai Tribe was unable to arrange transportation for elders to participate in the study, however, they did submit written material pertinent to the study and provided site specific and landscape data by telephone. The majority of their contribution was concerned with ethnobotanical, spiritual, and legendary use of the three parks and resources.

The assessment team spent an average of one day at each park beginning with Wupatki and ending with Walnut Canyon. After visiting specific places, quiet locations were found where private interviews could take place. At Wupatki, the Wukoki and/or Wupatki sites were discussed at Doney Mountain, while the Citadel and Lomaki site discussions occurred at those locations. At Sunset Crater, the Crater was discussed as a site at the Lava Flow Nature Trail, O’Leary Peak, and the Visitor Center. Walnut Canyon was treated in its entirety as a single site, and discussions took place along the Island Trail wherever representatives found an enjoyable setting. Discussions were held along the Rim Trail with those participants who were unable to take the Island Trail. The Walnut Canyon discussions were the most difficult in terms of visitor interruptions. Our preceding work with tribal representatives at the other two parks, however, had created a comfortable environment for the representatives with our team so the interruptions had little effect. The landscape and map discussions took place at either Lomaki or Sunset Crater. A total of 76 formal interviews and 4 informal on-site interviews were conducted (Table 1.3).

Pai	Roland Manakaja, Havasupai
	Katherine Marquez, Yavapai-Apache
	Loretta Jackson, Hualapai
	Malinda Powskey, Hualapai
Southern Paiute	Ila Bullets, Kaibab
	Warren Mayo, Kaibab
	Gevene Savela, Kaibab
	Henry Whiskers, San Juan
	Stanley Whiskers, San Juan
Zuni	Leland Kaamasee, Cultural Advisory Team Member
	Octavius Seowtewa, Cultural Advisory Team Member
	Perry Tsadiasi, Cultural Advisory Team Member
	Jerome Zuni, Supervisory Archaeologist
Western Apache	Rozella Hines, Yavapai-Apache
	Levi DeHose, White Mountain Apache
	Jeanette Cassa, San Carlos Apache
	Vincent Randall, Camp Verde/Payson

Table 1.1. Tribal Representatives Participating in the Traditional Use Study.

2002 Field Visits		2003 Field Visits	
May 5, 2002 Arrive Flagstaff	Kaibab Southern Paiute San Juan Southern Paiute	May 18, 2003 Arrive Flagstaff	Zuni Tribe
May 6, 2002 Site visits at Wupatki	Kaibab Southern Paiute San Juan Southern Paiute	May 19, 2003 Site visits at Wupatki	Zuni Tribe
May 7, 2002 Site visits at Sunset Crater	Kaibab Southern Paiute San Juan Southern Paiute	May 20, 2003 Site visits at Sunset Crater	Zuni Tribe
May 8, 2002 Site visits at Walnut Canyon	Kaibab Southern Paiute San Juan Southern Paiute	May 21, 2003 Site visits at Walnut Canyon	Zuni Tribe
May 9, 2002 Leave / Arrive Flagstaff	Kaibab Southern Paiute San Juan Southern Paiute / Havasupai Yavapai-Apache	May 22, 2003 Leave Flagstaff	Zuni Tribe
May 10, 2002 Site visits at Sunset Crater	Havasupai Yavapai-Apache		
May 11, 2002 Site visits at Walnut Canyon	Havasupai Yavapai-Apache	June 2, 2003 Arrive Flagstaff	Yavapai-Apache White Mountain Apache San Carlos Apache Camp Verde/Payson
May 12, 2002 Site visits at Wupatki NM	Havasupai Yavapai-Apache	June 3, 2003 Site visits at Sunset Crater	Yavapai-Apache White Mountain Apache San Carlos Apache Camp Verde/Payson
May 13, 2002 Leave Flagstaff	Havasupai Yavapai-Apache	June 4, 2003 Leave Flagstaff	Yavapai-Apache White Mountain Apache San Carlos Apache Camp Verde/Payson

Table 1.2. Field Schedules for the Traditional Use Study.

Park	Ethnic Group	Site Interviews	Landscape Interviews	Map Interviews	Informal Interviews	Total
Sunset Crater	<i>Pai</i>	2	2	1	3	8
	<i>Southern Paiute</i>	5	5	1	0	11
	<i>Zuni</i>	4	4	4	1	13
	<i>Western Apache</i>	4	4	1	0	9
	SUCR Total	15	15	7	4	41
Walnut Canyon	<i>Pai</i>	2	2	0	0	4
	<i>Southern Paiute</i>	4	2	0	0	6
	<i>Zuni</i>	4	0	0	0	4
	<i>Western Apache</i>	0	0	0	0	0
	WACA Total	10	4	0	0	14
Wupatki	<i>Pai</i>	2	2	1	0	5
	<i>Southern Paiute</i>	5	5	2	0	12
	<i>Zuni</i>	8	0	0	0	8
	<i>Western Apache</i>	0	0	0	0	0
	WUPA Total	15	7	3	0	25
GRAND TOTAL		40	26	10	4	80

Table 1.3. Traditional Use Interviews by Park, Ethnic Group, and Type.

Each elder or representative was interviewed by a professionally trained ethnographer from the UofA who had experience in at least two other ethnographic projects. The UofA ethnographers who assisted in recording information for this report are Dr. Richard Stoffle, Dr. Rebecca Toupal, Shawn Kelly, Jill Dumbauld, Nathan O'Meara, and Christopher Basaldu. The backgrounds for these researchers include:

Dr. Richard W. Stoffle is a senior cultural anthropologist at BARA and has more than 25 years of experience with American Indian environmental issues. He has worked successfully with more than 80 American Indian tribes and many federal agencies to address American Indian environmental concerns in land management decisions. His more recent publications include American Indian histories with the Nevada Test Site and with Nellis Air Force Base, and articles on traditional environmental knowledge in *Human Organization*, *American Indian Quarterly*, and *Current Anthropology*.

Dr. Rebecca S. Toupal is an Assistant Research Scientist with over six years of research experience with BARA that includes work with Scandinavian fishermen, and 18 American Indian tribes in the southwest and Midwest. Her degrees include a B.S. in Forestry/Range Management from the University of Montana, a Master of Landscape Architecture (MLA) from the University of Arizona (UA), and a Ph.D. in Renewable Natural Resource Studies from UA. She investigated successful conservation partnerships in the western U.S. for her MLA thesis, and four cultural landscapes of a wilderness area in southern Arizona for her Ph.D. dissertation.

Shawn Kelly is a UA graduate with a B.A. in Anthropology. His research interests in native people's relationships with the land have led him to study Mayan traditions in Guatemala. He has participated in ethnographic research with local fishermen in the Bahamas, and American Indians in the southwest and Midwest.

Jill Dumbauld is a UA graduate with a B.A. in Anthropology. Her research interests in American Indian relationships with traditional areas led her to Peace Corp work in Ecuador. She has participated in ethnographic research with local fishermen in the Bahamas, and American Indians in the southwest and Midwest.

Nathan O'Meara is a UA graduate with a B.A. in Anthropology. His research interests center on native ethnobotany and his experience includes ethnobotanical work with local fishermen in the Bahamas, and American Indians in the southwest and Midwest.

Kathleen A. Van Vlack is a UA graduate with a B.A. in Anthropology. Her research experience includes Marine Protected Area impact studies with local fishermen in the Exuma Cays, Bahamas, and cultural landscape studies with southwestern American Indian tribes in Nevada and Arizona.

Fletcher Chmara-Huff is a UA graduate with a BA in Anthropology. His research experience includes a Bahama project concerned with people's attachments to the environment, and cultural resource projects with Southern Paiute people. His senior honors thesis focused on the Pahrump Band of Southern Paiutes and their relationship with their traditional territory.

Christopher Basaldu is a Ph.D. candidate in Anthropology at UA. He has a B.A. in Religious Studies from Harvard, and an M.A. in American Indian Studies from UA. His doctoral research concerns gender roles in Hopi cultural adaptations. His research experience includes American Indians in the southwest and Midwest.

In order to facilitate the recording of traditional use information, our team employed interview instruments developed by the UofA team during the course of over fifteen years of similar ethnographic research. For this study, we used tape recorders, site and cultural landscape forms (Appendix B), landscape Geographic Information System maps, notebooks, and photography to record cultural data.

Knowledge in human societies is always unevenly distributed, usually depending upon gender, age, and specializations such as medicine people. Confidence in the findings of the research, consequently, depends directly on the number of Indian people who are interviewed. Our UofA ethnographers have found that a minimal study requires four people per ethnic group in order to begin to have some understanding of the cultural topics under investigation. A full understanding of the cultural significance of Southern Paiute plants by gender, age, and status, for example, requires as many as 16 people (Stoffle, Halmo, and Evans 1999). To meet this requirement for this study, 96 to 128 elders would have to be interviewed (16 for each ethnic group¹). Even the largest of the ethnographic studies fails to meet these requirements. In spite of the low number of representatives in this study, all of them were highly knowledgeable about the traditional relationships their tribes had with the three parks. The findings, consequently, are reliable and pertinent to management but do not provide the full cultural understanding that would be achieved with the sample size of 16 representatives per tribe.

Optimal ethnographic studies are achieved over time through tiering in which each study builds upon previous studies. Each study report must be viewed, consequently, as open-ended since it contributes something to that total body of cultural knowledge being sought. As a tiered study, this project builds on the previous cultural affiliation study, and provides direction to future studies.

Organization of Report

This report begins with a summary of the previous cultural affiliation study, the recommendations from that review, and the data gaps this study is intended to address. The next three chapters are park-specific beginning with Sunset Crater (SUCR), then Walnut Canyon (WACA) and Wupatki (WUPA). Each of these chapters includes descriptions of the sites we visited with the consultants, their responses to the questions (paraphrased from tapes and/or field notes), and ethnographic summaries. Data for the two groups who were not able to participate, the Hopi Tribe and Navajo Nation, come from a literature and document review, and are incorporated as separate sections following the site data.

Chapter Six presents cultural landscape data for each participating group and ethnographic summaries. Landscape maps for the Hopi and Navajo people from the literature are included. A regional landscape description provides a synopsis of the data and presents the area of study as a multi-ethnic landscape. The ethnographic summary contextualizes the landscape data relative to interpretive changes currently underway. The final chapter includes a summary of traditional resources and uses, tribal recommendations, the extent to which this study filled data gaps, and those topics needing additional study. Appendices are provided for a resource inventory, the data collection instruments, and a list of the documents reviewed for the previous cultural affiliation study.

¹ The Pai, as an ethnic group, are represented by the Havasupai, Hualapai, and Yavapai. These tribes have more differences than what may be found between different Southern Paiute or Western Apache tribes so 16 people from each of these tribes would be preferable to 5 or 6 from each tribe.

CHAPTER TWO

SUMMARY OF CULTURAL AFFILIATION REVIEW

In this chapter, we present an overview of the 2001 cultural affiliation review and a summary of the findings. Data from that report include summaries of the existing evidence of affiliation found in the NPS documents, a time matrix of affiliation, and tables for each of the three parks that identify the documents containing evidence of affiliation to the respective park. The document numbers used in the tables are identified in Appendix A. We conclude the chapter with a summary of the overall needs for additional evidence as determined from the document review.

Project Overview

In 2001, the UofA research team completed a cultural affiliation study to aid NPS management of the four Flagstaff monuments (Navajo National Monument, Sunset Crater, Walnut Canyon, Wupatki) with on-going efforts to comply with the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA). This initial affiliation study was confined to a review of NPS documents and provided baseline data for compliance with NAGPRA. While this review covered all four Flagstaff monuments, this report is concerned only with traditional use of the latter three parks.

Experienced with the Pai and Paiute groups, the UofA team reviewed the documents pertinent to those groups' affiliation. Our team subcontracted with other experts to review the documents for data pertaining to Navajo, Apache, Hopi, and Zuni affiliations. Klara Kelley and Harris Francis reviewed Apache and Navajo affiliation while T.J. Ferguson and Roger Anyon of Heritage Resources Management Consultants reviewed Hopi and Zuni affiliation.

The purpose of the study was to address the adequacy of 60 NPS documents for evidence of cultural affiliation for tribes of the six ethnic groups. The resulting report provided determinations of adequacy² with recommendations for additional information and future consultation efforts. The affiliation summaries for each ethnic group included document description, any evidence that was found, identifiable time frames, a determination of adequacy of the evidence, and specific needs for and sources of additional evidence.

² In the 2001 Scope of Work, adequacy referred to whether the reviewed documents provided sufficient evidence to make cultural affiliation determinations. As the term was applied by the three review teams, it came to refer to (1) whether each document covered "most of the readily available evidence of the particular type needed to assess a possible connection" between contemporary tribes, and past users and occupants of each monument (Toupal and Stoffle 2001:9); or (2) sufficiency for determination of cultural affiliation with all four monuments. Given this inconsistency and the results of this traditional use study, adequacy now refers to whether each type of evidence is clear in its implication of each tribe's cultural affiliation specific to each monument. The presence of evidence, then, is not considered adequate until one or more occurrences of it are explicit in connecting a tribe to a monument. At that point, adequacy would imply that the tribe should be included in consultations for the monument(s).

Summary of Review Findings

The three review teams found evidence of affiliation with Sunset Crater Volcano National Monument for all six ethnic groups (Table 2.1). The evidence was sparse and inadequate for affiliation purposes for Hopi and Zuni people with the exception of archaeological evidence for Hopi. While evidence was abundant for Apache, Navajo, Pai, and Paiute people, it was found to be inadequate for Apache and Paiute affiliation. The evidence for Apache, Navajo, Hopi, and Pai people spanned the four time periods of traditional, aboriginal, historic, and contemporary use. The evidence for Zuni people covered traditional and aboriginal periods, while the evidence for Paiute people spanned traditional and historic periods. Of the 60 review documents, ten contained evidence for Apache people, 15 had evidence for Navajo people, 13 contained evidence for Hopi people, ten had evidence for Zuni people, seven contained evidence for Pai people, and four had evidence for Paiute people (Table 2.4).

Existing Evidence of Affiliation (Shaded indicates adequate)											Time Matrix			
	An	Ar	B	F	G	H	K	L	Or	Ot	Traditional (time immemorial)	Aboriginal (time of extinguishment)	Historic	Today
Apache	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hopi	✓	✓							✓		✓	✓	✓	✓
Navajo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pai	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Paiute		✓	✓	✓	✓	✓			✓	✓	✓		✓	
Zuni	✓	✓			✓				✓		✓	✓		

An – Anthropological Ar – Archaeological B – Biological F – Folkloric G – Geographical
H - Historical K - Kinship L - Linguistic Or - Oral tradition Ot - Other

Table 2.1. Type of and time frame for cultural affiliation evidence for Sunset Crater Volcano NM.

The three review teams found evidence of affiliation with Walnut Canyon National Monument for all six ethnic groups (Table 2.2). Evidence was sparse for Navajo and Pai people, and inadequate for Navajo affiliation but adequate for Pai affiliation. More evidence was found for Zuni people but it was inadequate for affiliation purposes. The evidence found for Apache, Navajo, and Paiute people was adequate for affiliation purposes. Evidence for all four time frames was found for Apache, Navajo, Hopi, and Pai people. The evidence for Zuni people covered traditional and aboriginal time periods while the evidence for Paiute people was found for only the historic period. Of the 60 review documents, nine contained evidence for Apache people, 16 had evidence for Navajo people, 15 contained evidence for Hopi people, 11 had evidence for Zuni people, 11 contained evidence for Pai people, and three had evidence for Paiute people (Table 2.5).

Existing Evidence of Affiliation (Shaded indicates adequate)											Time Matrix			
	An	Ar	B	F	G	H	K	L	Or	Ot	Traditional (time immemorial)	Aboriginal (time of extinguishment)	Historic	Today
Apache	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hopi	✓	✓	✓	✓	✓	✓			✓		✓	✓	✓	✓
Navajo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pai	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
Paiute		✓	✓		✓				✓	✓			✓	
Zuni	✓	✓	✓		✓				✓		✓	✓		

An – Anthropological Ar – Archaeological B – Biological F – Folkloric G – Geographical
H - Historical K - Kinship L - Linguistic Or - Oral tradition Ot - Other

Table 2.2. Type of and time frame for cultural affiliation evidence for Walnut Canyon NM.

The three review teams found evidence of affiliation with Wupatki National Monument for all six ethnic groups (Table 2.3). Evidence was sparse for Navajo and Pai people, and inadequate for Navajo affiliation but adequate for Pai affiliation. While more evidence was found for Zuni people and an abundance of evidence was found for Apache, Navajo, and Paiute people, the evidence for Zuni affiliation was inadequate. The evidence for Apache, Navajo, Hopi, and Pai people spanned all four time periods. The evidence for Zuni people covered traditional and aboriginal time periods while the evidence for Paiute people covered the traditional and historic periods. Of the 60 review documents, nine contained evidence for Apache people, 17 had evidence for Navajo people, 17 contained evidence for Hopi people, 13 had evidence for Zuni people, eight contained evidence for Pai people, and four had evidence for Paiute people (Table 2.6).

Existing Evidence of Affiliation (Shaded indicates adequate)											Time Matrix			
	An	Ar	B	F	G	H	K	L	Or	Ot	Traditional (time immemorial)	Aboriginal (time of extinguishment)	Historic	Today
Apache	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hopi	✓	✓	✓		✓				✓	✓	✓	✓	✓	✓
Navajo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pai	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Paiute		✓	✓	✓	✓	✓			✓	✓	✓		✓	
Zuni	✓	✓	✓		✓				✓	✓	✓	✓		

An – Anthropological Ar – Archaeological B – Biological F – Folkloric G – Geographical
H - Historical K - Kinship L - Linguistic Or - Oral tradition Ot - Other

Table 2.3. Type of and time frame for cultural affiliation evidence for Wupatki NM.

Each review team completed their evaluation of the documents by identifying the types of evidence that were lacking for each group at each park, and sources for that information. They made recommendations for filling those data gaps (Table 2.7) and identified literature and other documents to consult as well (Table 2.8). Their reviews also included suggestions for future consultation efforts that could further inform managers about the groups’ cultural affiliation with and traditional use of the Flagstaff monuments.

Table 2.4. Sunset Crater National Monument – Evidence of Affiliation by Document

(bold numbers reflect adequate evidence)

	Apache*	Navajo	Hopi	Zuni	Pai	Paiute
Anthropological	8, 19, 24, 29	8, 13, 20, 24, 29	1, 2, 3, 4, 5, 6, 7, 8, 13, 17, 26	2, 3, 5, 7, 8	14	-----
Archaeological	3, 8, 12, 24, 25, 26, 27	3, 6, 8 , 12, 13 , 24, 25 , 26, 27	1, 2, 4, 8 , 13, 17, 26	5, 13, 17	2	2
Biological	27, 24, 25	20 , 22 , 24 , 25 , 27	-----	-----	8	8
Folkloric	8, 12, 24, 25, 27	6, 8, 12, 20, 24 , 25, 27	-----	-----	8	8
Geographical	3, 7, 8, 12, 24, 27	1, 2, 3, 6, 7, 8, 12, 13, 20, 24, 27	-----	8	8	8
Historical	25, 3, 8, 12, 24, 29	3, 8, 12, 13 , 24, 25 , 29	-----	-----	8, 59, 60	8
Kinship	8, 24, 25, 27	6, 8, 13 , 20, 22 , 24, 25, 27	-----	-----	8	-----
Linguistic	12, 24, 26	6, 12, 24, 26	-----	-----	-----	-----
Oral tradition	24, 8, 12, 25, 27	1, 2, 6, 8, 12, 13, 20, 24 , 25, 27	2, 4, 8, 17, 18, 26	1 , 2, 5, 8, 17, 26	8	8
Other expert opinion	3, 19, 24, 25	3, 6, 13 , 22, 24 , 25	-----	-----	8, 22	22

* Based on implications associated with data pertinent to Apache affiliation with WACA.

Table 2.5. Walnut Canyon National Monument – Evidence of Affiliation by Document*(bold numbers reflect adequate evidence)*

	Apache	Navajo	Hopi	Zuni	Pai	Paiute
Anthropological	8, 19, 24, 29	8, 13, 20, 24, 29	1, 2, 3, 4, 5, 7, 8, 12 , 17, 26	2, 3, 5, 7, 8, 12	6, 14, 15, 16	-----
Archaeological	3, 8, 12, 24, 25, 26, 27	3, 6, 8 , 12, 13 , 14, 24, 25 , 26, 27	1, 2, 4, 8 , 11 , 12 , 14, 16, 17, 25, 26	5, 16, 17	2, 13, 14, 16, 23	2
Biological	24, 25, 27	20 , 22 , 24 , 25 , 27	12 , 25	12 , 25	8	8
Folkloric	8, 27, 25, 24, 12	8, 6, 27, 25, 24 , 20, 12	8	-----	8	-----
Geographical	3, 8, 12, 24, 27	1, 2, 3, 6, 8, 12, 13, 14, 16, 20, 24, 27	12	8, 12	8	8
Historical	3, 8, 12, 24, 25, 29	3, 8, 12, 13 , 14, 24, 25 , 29	16	-----	8, 59, 60	-----
Kinship	8, 24, 25, 27	6, 8, 13 , 20, 22 , 24, 25, 27	-----	-----	8	-----
Linguistic	12, 24, 26	6, 12, 24, 26	-----	-----	-----	-----
Oral tradition	8, 12, 24, 25, 27	1, 2, 6, 8, 12, 13, 20, 24 , 25, 27	2, 4, 8, 11 , 17, 18, 25, 26	1 , 2, 5, 8, 17, 26	-----	8
Other expert opinion	3, 19, 24, 25	3, 6, 13 , 22, 24 , 25	-----	-----	22	22

Table 2.6. Wupatki National Monument – Evidence of Affiliation by Document

(bold numbers reflect adequate evidence)

	Apache*	Navajo	Hopi	Zuni	Pai	Paiute
Anthropological	8, 19, 24, 29	8, 13, 20, 24, 29	1, 2, 3, 4, 5, 7, 8, 9, 12 , 13, 17, 26	2, 3, 5, 7, 8, 12	14	-----
Archaeological	3, 8, 12, 24, 25, 26, 27	3, 6, 8 , 12, 13 , 14, 24, 25 , 26, 27	1, 2, 4, 8 , 10, 11 , 12 , 13, 14, 17, 25, 26	5, 9, 10, 13, 17	9 , 13, 14, 23	2, 8, 13
Biological	24, 25, 27	20 , 22 , 24 , 25 , 27	12 , 25	12 , 25	8	8
Folkloric	8, 12, 24, 25, 27	6, 8, 12, 17, 20, 24 , 25, 27	-----	-----	8	8
Geographical	3, 8, 12, 24, 27	1, 2, 3, 6, 8, 12, 13, 14, 20, 24, 27	12	8, 12	8	8
Historical	3, 8, 12, 24, 25, 29	3, 8, 12, 13 , 14, 24, 25 , 29	-----	-----	8 , 59, 60	8
Kinship	8, 24, 25, 27	6, 8, 13 , 17, 20, 22 , 24, 25, 27	-----	-----	8	-----
Linguistic	12, 24, 26	6, 12, 24, 26	-----	-----	-----	-----
Oral tradition	8, 12, 24, 25, 27	1, 2, 6, 8, 10, 12, 13, 17, 20, 24 , 25, 27	2, 4, 8, 10, 11 , 17, 18, 25, 26	1 , 2, 5, 8, 10, 17, 26	8	8
Other expert opinion	3, 19, 24, 25	3, 6, 13 , 22, 24 , 25	10	10	8, 22	22

* Based on implications associated with data pertinent to Apache affiliation with WACA.

Table 2.7. Overall needs determined from 2001 Document Review of Cultural Affiliation.

Pai	SUCR, WACA, WUPA
<i>Overall</i>	<ul style="list-style-type: none"> • Clarify Pai-Sinagua connection • Identify other activities, including burials that could occur with the Yavapai people’s plant and animal use of the area • Havasupai tribal elders to document stories (geographic) • Direct documentation of the traditions and stories • Inter-tribal relations and ethnic groups' uses of these areas • Clarify the impacts of inter-ethnic marriage and migration on uses and occupation of SUCR and the surrounding area • More complete account of Hualapai oral history • Pai tribal elders for complimentary stories, and review of the stories to clarify the Pai-Zuni relationship
<i>Anthropological</i>	<ul style="list-style-type: none"> • More complete account of Hualapai oral history • Inter-tribal relations and ethnic groups' uses of these areas • Clarify the impacts of inter-ethnic marriage and migration on uses and occupation of SUCR/WACA/WUPA and the surrounding area
<i>Oral Tradition</i>	<ul style="list-style-type: none"> • Pai tribal elders for complimentary stories, and review of the stories to clarify the Pai-Zuni relationship
Paiute	SUCR, WACA, WUPA
<i>Overall</i>	<ul style="list-style-type: none"> • Clarify Hopi-Paiute connections and Paiutes as part of multi-ethnic groups that represent the Sinagua • As part of an area of multi-ethnic use, SUCR, WACA, and WUPA likely contain some materials associated with Paiute activities • More complete account of the oral history and possible foundation for TCP nominations • Review of Southern Paiute and Hopi histories • Relationship between the Kaibab Paiute and the Hopi tribe regarding treatment of Anasazi remains suggests an inter-tribal recognition of Paiute affiliation with the area

Table 2.7. Overall needs determined from 2001 Document Review of Cultural Affiliation.

<i>Anthropological</i>	<ul style="list-style-type: none"> • Clarify Hopi-Paiute connections and Paiutes as part of multi-ethnic groups that represent the Sinagua • Review of Southern Paiute and Hopi histories
<i>Kinship</i>	<ul style="list-style-type: none"> • Relationship between the Kaibab Paiute and the Hopi tribe regarding treatment of Anasazi remains suggests an inter-tribal recognition of Paiute affiliation with the area
Hopi	SUCR
<i>Overall</i>	<ul style="list-style-type: none"> • Contemporary use of Bonito Park for religious activities • Continued collection of medicinal plants
<i>Archaeological</i>	<ul style="list-style-type: none"> • In some cultural affiliation studies, Kayenta and Sinagua ceramics are directly associated with Hopi. Association of these ceramics with Zuni needs investigation.
Zuni	SUCR, WACA, WUPA
<i>Archaeological</i>	<ul style="list-style-type: none"> • In some cultural affiliation studies, association of Kayenta and Sinagua ceramics with Zuni needs investigation.
Navajo	SUCR, WUPA
<i>Anthropological</i>	<ul style="list-style-type: none"> • Review reference literature on Navajo material culture, preferably with guidance from Navajo Nation Historic Preservation Department (NNHPD) and local traditionalists. • Complete inventory of “objects of cultural as described by Navajo Nation (doc. 24) in WUPA collections. (an ethnobotany collection put together by the late Clyde Peshlakai is a type of item specified by doc. 24). Do any of items that doc. 29 describes in NPS Flagstaff “ethnology collection” come from WUPA? If so, consult NNHPD and Navajo traditionalists about those items and also about “intellectual property” (cultural patrimony) in collections and interpretive materials.

Table 2.7. Overall needs determined from 2001 Document Review of Cultural Affiliation.

<i>Archaeological</i>	<ul style="list-style-type: none"> • Archaeological inventory of SUCR • Review literature on Navajo archaeology of the surrounding region. Consider what ancestral Apache/Navajo archaeological sites might look like, including undated or precolumbian small or anomalous sites, features on larger precolumbian sites, etc. • See Folkloric needs and Oral Tradition below for revising cultural affiliation of Wupatki and for dealing with petroglyphs. • Consult NNHPD and Navajo traditionalists re items in “archeology collection” at NPS Flagstaff office and re “intellectual property” (cultural patrimony) in collections and interpretive materials.
	WACA
<i>Anthropological</i>	<ul style="list-style-type: none"> • Complete inventory of “objects of cultural patrimony” as described by Navajo Nation (doc. 24) in WACA collections. Do any of items that doc. 29 describes in NPS Flagstaff “ethnology collection” come from WUPA? If so, consult NNHPD and Navajo traditionalists about those items and also about “intellectual property” (cultural patrimony) in collections and interpretive materials.
<i>Archaeological</i>	<ul style="list-style-type: none"> • Review literature on Navajo archaeology of the surrounding region.. Consider what ancestral Apache/Navajo archaeological sites might look like, including undated or precolumbian small or anomalous sites, features on larger precolumbian sites, etc.. Note cluster of late 1800s Navajo sites near junction of Walnut Creek and San Francisco Wash, with hints of early 1800s use (wood possibly re-used from early nearby Navajo dwellings) (Navajo Nation n.d.; Stokes & Smiley 1964, sites W-LLC-SF-G through L. • See Folkloric needs below for dealing with petroglyphs. • Consult NNHPD and Navajo traditionalists re items in “archeology collection” at NPS Flagstaff office and re “intellectual property” (cultural patrimony) in collections and interpretive materials.
<i>Folkloric</i>	<ul style="list-style-type: none"> • Comparisons of various Southwest and Mesoamerican oral traditions for clues to processes of oral tradition transmission that link present and past groups, including whether ancestral Navajo transmission reflects entirely postcolumbian synthesis with Puebloan groups or precolumbian synthesis as well. • More comparisons of Navajo oral tradition and Anasazi archaeology.

Table 2.7. Overall needs determined from 2001 Document Review of Cultural Affiliation.

<i>Geographical</i>	<ul style="list-style-type: none"> • Consulting more Navajo traditionalists would probably reveal more culturally significant locations and place names and answer question whether Navajo place name for Walnut Canyon really also applies to Oak Creek and, if so, whether a traditional trail connected the two.
<i>Historical</i>	<ul style="list-style-type: none"> • Flagstaff NPS office should identify any archive materials that relate to Navajos at WACA (presumably reviewed for Docs. 14-16 but not inventoried there).
<i>Kinship</i>	<ul style="list-style-type: none"> • Investigate origin stories of Navajo clans connected to surrounding region (or at least the “original” clans for Wupatki Basin and Gray Mountain). Use both literature and consultations with NNHPD and local families. • Identify similarities among Navajo clan histories and those of other groups.
<i>Linguistic</i>	<ul style="list-style-type: none"> • Compilation and systematic comparison of place names and clan names associated with WACA and surrounding region in Navajo and languages of other neighboring groups might offer clues to links of these groups with past users of WACA. Semantic, phonological, and structural convergences of languages offer evidence of intergroup contacts, past and present. • Look for possible examples of overlapping names (Zuni and Navajo around WACA, Navajo, Hopi, and Keresan around NAVA). This kind of work requires consultation with various tribal cultural resource/historic preservation offices and knowledgeable traditionalists, to whom comparative study may be offensive and therefore not feasible
<i>Oral Tradition</i>	<ul style="list-style-type: none"> • Compiling information from unpublished ceremonial and clan texts may be beyond the scope of research indicated by NAGPRA regs. • Consultations with more Navajo traditionalists, especially members of clans and practitioners of ceremonies associated with surrounding region. Consultations with practitioners of ceremonies whose origin stories include routes of travel through the Flagstaff area might be especially useful. Significance of Navajo name for Anderson Mesa and other nearby places (Mormon Lake, etc.) Should be explored, along with question of whether one place name covers both Walnut Canyon and Oak Creek and, if so, whether the link indicates a traditional trail. • Consultations with Navajo traditionalists are also necessary to guide WACA in interpreting traditional information like plant uses without infringing on traditional intellectual “property” rights.

Table 2.7. Overall needs determined from 2001 Document Review of Cultural Affiliation.

Apache	WACA
<i>Anthropological</i>	<ul style="list-style-type: none"> • Guided by Western Apache traditionalists through coordinated Western Apache cultural resource compliance programs, identify items collected from WACA as well as “intellectual property” (cultural patrimony) in collections or interpretive materials.
<i>Archaeological</i>	<ul style="list-style-type: none"> • Assemble descriptions of archaeological sites conventionally identified as early Western Apache. Such descriptions may be rare (Basso 1983:463). • Consider what possible early ancestral Apache/Navajo sites might look like, including undated or precolumbian small or anomalous sites, features on larger precolumbian sites, etc. • Guided by Western Apache traditionalists, reassess WACA archaeological inventory (Doc. 16). • Consult Western Apache traditionalists and CRM programs about items in NPS Flagstaff “archeology collection.”
<i>Folkloric</i>	<ul style="list-style-type: none"> • Compile oral tradition from the available literature and from consultations with Western Apache CRM programs and traditionalists, most likely through a study of place names in and around WACA (and WUPA/SUCR) (see Oral Tradition below). • Oral tradition contributes folkloric evidence as defined here when elements of oral tradition are analyzed for clues to the past and connections with groups who might have used the Monuments and surrounding area. Documents in this collection accomplish neither of these goals.
<i>Geographical</i>	<ul style="list-style-type: none"> • Consult today’s Western Apache CRM programs and traditionalists by extending current place name study to area around WACA (also SUCR/WUPA?). Such evidence can show where Western Apaches have links to past users.
<i>Kinship</i>	<ul style="list-style-type: none"> • Consultations with Western Apache traditionalist
<i>Linguistic</i>	<ul style="list-style-type: none"> • Extension of current Western Apache place name study to region around WACA

Table 2.8. Literature review needs determined from 2001 Document Review of Cultural Affiliation.

(A – anthropological; AR – archaeological; B – biological; F – folkloric; G – geographical; H – historic; K – kinship; L – linguistic; OT – oral tradition; OE – other expert; O – other)

GROUP	REFERENCE	EVIDENCE
Apache		
<i>SUCR</i> <i>WUPA</i>	Correll, J. Lee 1979 Through White Men's Eyes (Vol. 1 of 6 vols.) Window Rock, AZ: Navajo Nation Museum.	H
	Coues, Elliott 1900 On the Trail of a Spanish Pioneer, the Diary and Itinerary of Francisco Garcés. Vol. II. Francis P. Harper.	H
	Espinosa, J. Manuel 1934 The Legend of Sierra Azul. <i>New Mexico Historical Review</i> 9(2):113-154.	H
	Forrestal, Peter P., trans. 1954 Benavides' Memorial of 1630. Washington, D.C.: Academy of American Franciscan History	H
	Goddard, Pliny Earle 1918 Myths and Tales from the White Mountain Apache. <i>Anthropological Papers of the American Museum of Natural History</i> 24(2). New York. 1919 San Carlos Apache Texts. <i>Anthropological Papers of the American Museum of Natural History</i> 24(3):141-367. New York. 1920 White Mountain Apache Texts. <i>Anthropological Papers of the American Museum of Natural History</i> 24(4):369-527. New York.	F
	Goodwin, Grenville 1994/1939 Myths and Tales of the White Mountain Apache. Tucson: University of Arizona Press. 1942 The Social Organization of the Western Apache. Chicago, IL: University of Chicago Press.	F H
	Hammond, Goerge P., and Agapito Rey, trans. and ed. 1927 Expedition into New Mexico by Antonio de Espejo, 1582-1583, as Revealed in the Journal of Diego Perea de Luxan, a Member of the Party. Los Angeles: The Quivira Society.	H
	Hodge, Frederick W., George P. Hammond, and Agapito Rey 1945 Fray Alonso de Benavides' Revised Memorial of 1634. Albuquerque: University of New Mexico Press.	H
	Tyler, S. Lyman, and H. Darrell Taylor 1958 The Report of Fray Alonso de Posada in Relation to Quivira and Teguayo. <i>New Mexico Historical Review</i> 32(4):285-314.	H
<i>WACA</i>	Basso, Keith 1983 Western Apache. In <i>Handbook of North American Indians, Volume 10: Southwest</i> , ed. by Alfonso Ortiz,	A, O

Table 2.8. Literature review needs determined from 2001 Document Review of Cultural Affiliation.

(A – anthropological; AR – archaeological; B – biological; F – folkloric; G – geographical; H – historic; K – kinship; L – linguistic; OT – oral tradition; OE – other expert; O – other)

	pp. 462-488. Washington, D.C.: Smithsonian Institution 1990 Western Apache Language and Culture: Essays in Linguistic Anthropology. Tucson: University of Arizona Press.	F, O
Basso, Keith	1996 Wisdom Sits in Places. Albuquerque: University of New Mexico Press.	O
Brugge, David M.	1964 Vizcarra's Navajo Campaign of 1823. <i>Arizona and the West</i> 6(3):223-244.	O
Correll, J. Lee	1979 Through White Men's Eyes (Vol. 1 of 6 vols.) Window Rock, AZ: Navajo Nation Museum.	H
Coues, Elliott	1900 On the Trail of a Spanish Pioneer, the Diary and Itinerary of Francisco Garces. Vol. II. Francis P. Harper.	H
Espinosa, J. Manuel	1934 The Legend of Sierra Azul. <i>New Mexico Historical Review</i> 9(2):113-154.	H
Forbes, Jack D.	1994/1960 Apache, Navaho, and Spaniard (revised ed.) University of Oklahoma Press.	F
Forrestal, Peter P., trans.	1954 Benavides' Memorial of 1630. Washington, D.C.: Academy of American Franciscan History	H
Goddard, Pliny Earle	1918 Myths and Tales from the White Mountain Apache. <i>Anthropological Papers of the American Museum of Natural History</i> 24(2). New York. 1919 San Carlos Apache Texts. <i>Anthropological Papers of the American Museum of Natural History</i> 24(3):141-367. New York. 1920 White Mountain Apache Texts. <i>Anthropological Papers of the American Museum of Natural History</i> 24(4):369-527. New York.	O
Goodwin, Grenville	1994/1939 Myths and Tales of the White Mountain Apache. Tucson: University of Arizona Press. 1942 The Social Organization of the Western Apache. Chicago, IL: University of Chicago Press.	K, L, O A, H, K, L, O
Hammond, Goerge P., and Agapito Rey, trans. and ed.	1927 Expedition into New Mexico by Antonio de Espejo, 1582-1583, as Revealed in the Journal of Diego Perea de Luxan, a Member of the Party. Los Angeles: The Quivira Society.	H

Table 2.8. Literature review needs determined from 2001 Document Review of Cultural Affiliation.

(A – anthropological; AR – archaeological; B – biological; F – folkloric; G – geographical; H – historic; K – kinship; L – linguistic; OT – oral tradition; OE – other expert; O – other)

	Hodge, Frederick W., George P. Hammond, and Agapito Rey 1945 Fray Alonso de Benavides' Revised Memorial of 1634. Albuquerque: University of New Mexico Press.	H
	Indian Claims Commission 1969 Before the Indian Claims Commission, The Western Apache and Each Group and Band Thereof, Docket 22-D, Findings of Fact. Indian Claims Commission Decisions, Vol. 21.	A, AR, G, H
	Horr, David Agee, gen. ed. 1974 Apache Indians volumes. New York: Garland.	A, AR, G, H
	Gallagher, Marsha V.L. 1972 Contemporary Ethnobotany Among the Apache of the Clarkdale, Arizona, Area. Master's Thesis, Department of Anthropology. Flagstaff: Northern Arizona University.	G
	Mails, Thomas E. 1974 The People Called Apache. Englewood Cliffs, NJ: Prentice Hall.	A
	Matthews, Washington 1994/1897 Navajo Legends. Salt Lake City: University of Utah Press.	K
	Mierau 1963	O
	more recent (~1995-2001) CRM literature on file with cultural resource compliance programs of various Western Apache groups and with BIA	AR
	Smart, Charles 1967 Notes on the Tonto Apaches. In Report of the Smithsonian Institution, pp. 417-419. Ms. on file. Flagstaff: Museum of Northern Arizona.	A
	Tyler, S. Lyman, and H. Darrell Taylor 1958 The Report of Fray Alonso de Posada in Relation to Quivira and Teguayo. New Mexico Historical Review 32(4):285-314.	H
	Western Apache n.d. Proposed Findings of Fact on Behalf of the Western Apache Indians and each group and band thereof in area of the overall Western Apache Claim (Docket 22-D) before the Indian Claims Commission.	A
Navajo		
	Brugge, David M. 1964 Vizcarra's Navajo Campaign of 1823. Arizona and the West 6(3):223-244.	H

Table 2.8. Literature review needs determined from 2001 Document Review of Cultural Affiliation.

(A – anthropological; AR – archaeological; B – biological; F – folkloric; G – geographical; H – historic; K – kinship; L – linguistic; OT – oral tradition; OE – other expert; O – other)

	Campbell, Lyle 1997 American Indian Languages: The Historical Linguistics of Native America. New York: Oxford University Press.	L
	Comfort, Mary Apolline 1980 Rainbow to Yesterday: The John and Louisa Wetherill Story. New York: Vantage Press.	K
	Correll, J. Lee 1979 Through White Men's Eyes (Vol. 1 of 6 vols.) Window Rock, AZ: Navajo Nation Museum.	H
	Coues, Elliott 1900 On the Trail of a Spanish Pioneer, the Diary and Itinerary of Francisco Garces. Vol. II. Francis P. Harper.	H
	Espinosa, J. Manuel 1934 The Legend of Sierra Azul. New Mexico Historical Review 9(2):113-154.	H
	Faris, James 1990 The Nightway: A History and a History of Documentation of a Navajo Ceremonial. Albuquerque: University of New Mexico Press.	F
	Fewkes, Jesse Walter 1900 Tusayan Migration Traditions. 19th Annual Report of the Bureau of American Ethnology, Part 2, pp. 573-633. Washington, D.C.: Smithsonian Institution.	F
	Fishler, Stanley A. 1953 In the Beginning: A Navaho Creation. University of Utah Anthropological Paper 13. Salt Lake City: University of Utah Press.	F, K
	Forbes, Jack D. 1994/1960 Apache, Navaho, and Spaniard (revised ed.) University of Oklahoma Press.	F
	Forrestal, Peter P., trans. 1954 Benavides' Memorial of 1630. Washington, D.C.: Academy of American Franciscan History	H
	Franciscan Fathers 1910 An Ethnologic Dictionary of the Navajo Language. St. Michaels, AZ: Franciscan Fathers.	A, F, K
<i>SUCR</i> <i>WUPA</i>	Frisbie, Charlotte J. 1987 Navajo Medicine Bundles or Jish: Acquisition, Transmission, and Disposition in the Past and Present. Albuquerque: University of New Mexico Press.	A

Table 2.8. Literature review needs determined from 2001 Document Review of Cultural Affiliation.

(A – anthropological; AR – archaeological; B – biological; F – folkloric; G – geographical; H – historic; K – kinship; L – linguistic; OT – oral tradition; OE – other expert; O – other)

	Goddard, Pliny Earle 1933 Navajo Texts. New York: American Museum of Natural History.	K
	Goodwin, Grenville 1942 The Social Organization of the Western Apache. Chicago, IL: University of Chicago Press. 1994 Myths and Tales of the White Mountain Apache. Reprinted from 1939. Tucson: University of Arizona Press.	H F
	Haile, Berard 1981 The Upward Moving and Emergence Way: The Gishin Biye' Version. Lincoln and London: University of Nebraska Press.	K
	Hale, Kenneth, and David Harris 1979 Historical Linguistics and Archeology. In Handbook of North American Indians, Volume 9: Southwest, ed. by Alfonso Ortiz, pp. 170-179. Washington, D.C.: Smithsonian Institution.	L
	Hammond, Goerge P., and Agapito Rey, trans. and ed. 1927 Expedition into New Mexico by Antonio de Espejo, 1582-1583, as Revealed in the Journal of Diego Perea de Luxan, a Member of the Party. Los Angeles: The Quivira Society.	H
	Hill, W. W. 1938 The Agriculture and Hunting Methods of the Navaho Indians. Yale University Publications in Anthropology 18. New Haven, CT: Yale University Press.	A
	Hodge, Frederick W., George P. Hammond, and Agapito Rey 1945 Fray Alonso de Benavides' Revised Memorial of 1634. Albuquerque: University of New Mexico Press.	H
	Hudson, Luanne B. 1978 A Quantitative Analysis of Prehistoric Exchange in the Southwest United States. Ph.D. dissertation in Anthropology, University of California, Los Angeles. Ann Arbor: University Microfilms International.	F
	Hudson, Travis, and Ernest Underhay 1986 Crystals in the Sky: An Intellectual Odyssey Involving Chumash Astronomy, Cosmology, and Rock Art. Paper 10. Socorro, NM: Ballena Press Anthropological.	F
	Hughes, Richard E., and James A. Bennyhoff 1986 Early Trade. In Handbook of North American Indians, Volume 11: Great Basin, ed. by Warren L. D'Azevedo, pp. 238-255. Washington, D.C.: Smithsonian Institution.	F
	Jett, Stephen C., Chauncey M. Neboyia, and William Morgan, Sr.	A

Table 2.8. Literature review needs determined from 2001 Document Review of Cultural Affiliation.

(A – anthropological; AR – archaeological; B – biological; F – folkloric; G – geographical; H – historic; K – kinship; L – linguistic; OT – oral tradition; OE – other expert; O – other)

	1992	<i>Placenames and Trails of the Canyon de Chelly System, Arizona</i> . Manuscript in authors' possession.	
Jett, Stephen, and Virginia Spencer	1981	<i>Navajo Architecture: Forms, History, Distributions</i> . Tucson: University of Arizona Press.	A
Kari, James	1996	Names as Signs: The Distribution of 'Stream' and 'Mountain' in Alaskan Athabaskan Languages. In <i>Athabaskan Language Studies: Essays in Honor of Robert W. Young</i> , ed. by Eloise Jelinek, Sally Midgette, Keren Rice, and Leslie Saxon, pp. 443-475. Albuquerque: University of New Mexico Press.	L
Kelley, J. Charles	1986	The Mobile Merchants of Molino. In <i>Ripples in the Chichimec Sea</i> , ed. by Frances Joan Mathien and Randall H. McGuire, pp. 81-104. Carbondale: Southern Illinois University Press.	F
Kelley, Klara	1993	The Complexity of Navajo Origins. Appendix B in <i>Across the Colorado Plateau: Anthropological Studies for the Transwestern Pipeline Expansion Project, Navajo Country -- Diné Bikéyah, Volume VIII</i> , by Joseph C. Winter, Karen Ritts-Benally, and Orit Tamir. Office of Contract Archeology. Albuquerque: University of New Mexico.	F, K
Kelley, Klara B., and Harris Francis	1994	<i>Navajo Sacred Places</i> . Bloomington: Indiana University Press.	F
	1995	The Turquoise Trail. Paper presented at the Durango Conference in Southwestern Archaeology, Fort Lewis College, Sept.	F
	1998	Navajo (Diné) Ethnography. Chapter 23 in <i>Ethnohistorical Interpretation and Archaeological Data Recovery along Navajo Route 9101, Jeddito Road, Navajo County, Arizona</i> , prepared by David C. Eck, pp. 681-716. Zuni Cultural Resources Enterprises, Report No. ZCRE-013-96.	F, K
	2000	Pearlshell Buffalo People. Paper presented at Sixth Occasional Anasazi Symposium, Farmington, NM, Oct. 25-28, 2000. (To appear in a proceedings volume.)	F
	2001	Canyon de Chelly National Monument: Ethnographic Resources. <i>Cultural Resource Management</i> 24(5):41-43.	AR
	2001 (in progress)	Chézhin Sinil (Rock-that-defends): Navajo Cultural Landscapes and the Petroglyph National Monument. In "That Place People Talk about" <i>Ethnographic Landscape Essays, Petroglyph National Monument (tentative title)</i> , ed. by Kurt Anschuetz. Santa Fe: Rio Grande Foundation for Communities and Cultural Landscapes.	F
Klah, Hosteen	1942	Navajo Creation Myth. Recorded by Mary C. Wheelwright. Santa Fe: Museum of Navajo Ceremonial Art.	F

Table 2.8. Literature review needs determined from 2001 Document Review of Cultural Affiliation.

(A – anthropological; AR – archaeological; B – biological; F – folkloric; G – geographical; H – historic; K – kinship; L – linguistic; OT – oral tradition; OE – other expert; O – other)

	Kluckhohn, Clyde, W.W. Hill, and Lucy Wales Kluckhohn 1971 Navaho Material Culture. Cambridge, MA: The Belknap Press of Harvard University Press.	A
	Luckert, Karl W. 1977 Navajo Mountain and Rainbow Bridge Religion. Flagstaff: Museum of Northern Arizona Press.	F
	Luckert, Karl W., and Johnny C. Cooke 1979 Coyoteway: A Navajo Holyway Healing Ceremonial. Tucson: University of Arizona Press.	F
	Matthews, Washington 1994 Navajo Legends. Reprinted from 1897. Salt Lake City: University of Utah Press.	F, K
	Mitchell, Frank 1978 Navajo Blessingway Singer: The Autobiography of Frank Mitchell, 1881-1967, ed. by Charlotte J. Frisbie and David P. McAllester. Tucson: University of Arizona Press.	K
	Navajo Nation n.d. Proposed Findings of Fact in Behalf of the Navajo Tribe of Indians in Area of the Overall Navajo Claim (Docket 229) before the Indian Claims Commission. Prepared by Norman M. Littell, Attorney at Law, Washington, DC.	A, AR, G, H
	Nichols, Johanna 1997 Modeling Ancient Population Structures and Movement in Linguistics. Annual Review of Anthropology 26:359-384.	L
	O'Bryan, Aileen 1956 The Diné: Origin Myths of the Navaho Indians. Bureau of American Ethnology Bulletin 163. Washington, D.C.: Government Printing Office.	K
	Parsons, Elsie Clews, ed. 1936 Hopi Journal of Alexander M. Stephen, Part II. Anthropology 23. New York: Columbia University Contributions.	H
	Preston, Scott 1954 The Clans. In Navajo Historical Selections, by Robert Young and William Morgan, pp. 23-27. Navajo Historical Series 3. Phoenix, AZ: U.S. Department of the Interior, Bureau of Indian Affairs, Indian School Print Shop.	F, K
	Reichard, Gladys M. 1928 Social Life of the Navajo Indians. Columbia Contributions to Anthropology, Vol. 7. New York: Columbia	K

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	University Press. 1977 Navaho Medicine Man: Sandpaintings and Legends of Miguelito. Reprinted from 1939. New York: Dover, (orig. J.J. Augustin, New York).	F
Roberts, Alexa, Richard Begay, and Klara Kelley	1995 Bits'lis Ninéézii, The River of Never-Ending Life, Glen Canyon Environmental Studies Navajo Cultural Resources report. Window Rock, AZ: Navajo Nation Historic Preservation Department.	F, K
Schaefer, Stacy B., and Peter T. Furst	1996 People of the Peyote: Huichol Indian History, Religion, and Survival. Albuquerque: University of New Mexico Press.	F
Silver, Shirley, and Wick R. Miller	1997 American Indian Languages: Cultural and Social Contexts. Tucson: University of Arizona Press.	L
Stokes, M.A., and T.L. Smiley	1964 Tree-Ring Dates from the Navajo Land Claim: II. The Western Sector. Tree Ring Bulletin 26:13-27.	AR
Tyler, S. Lyman, and H. Darrell Taylor	1958 The Report of Fray Alonso de Posada in Relation to Quivira and Teguayo. New Mexico Historical Review 32(4):285-314.	H
Vannette, Walter M.	1988 Navajo Religious Use of the 1934 Reservation Area. Expert Witness report. Phoenix: Brown and Bain, P.A., and Window Rock, AZ: Navajo Nation Department of Justice.	G
Ward, Albert E.	1980 Navajo Graves: An Archaeological Reflection of Ethnographic Reality. Ethnohistorical Report Series 2. Albuquerque: Center for Anthropological Studies.	A
Wheelwright, Mary C.	1946 Wind Chant and Feather Chant. Bulletin 4. Santa Fe: Museum of Navajo Ceremonial Art.	F
Wyman, Leland C.	1952 The Sandpaintings of the Kayenta Navaho: An Analysis of the Louisa Wade Wetherill Collection. Anthropology 7. Albuquerque: University of New Mexico Publications. 1970 Blessingway. Tucson: University of Arizona Press.	F, K
Young, Robert W.	1983 Apachean Languages. In Handbook of North American Indians, Volume 10: Southwest, ed. by Alfonso	L

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	Ortiz, pp. 393-400. Washington, D.C.: Smithsonian Institution.	
<i>WACA</i>	Brugge, David M. 1964 Vizcarra's Navajo Campaign of 1823. <i>Arizona and the West</i> 6(3):223-244.	H
	Campbell, Lyle 1997 <i>American Indian Languages: The Historical Linguistics of Native America</i> . New York: Oxford University Press.	L
	Comfort, Mary Apolline 1980 <i>Rainbow to Yesterday: The John and Louisa Wetherill Story</i> . New York: Vantage Press.	K
	Correll, J. Lee 1979 <i>Through White Men's Eyes</i> (Vol. 1 of 6 vols.) Window Rock, AZ: Navajo Nation Museum.	H
	Coues, Elliott 1900 <i>On the Trail of a Spanish Pioneer, the Diary and Itinerary of Francisco Garces</i> . Vol. II. Francis P. Harper.	H
	Espinosa, J. Manuel 1934 <i>The Legend of Sierra Azul</i> . <i>New Mexico Historical Review</i> 9(2):113-154.	H
	Fishler, Stanley A. 1953 <i>In the Beginning: A Navaho Creation</i> . University of Utah Anthropological Paper 13. Salt Lake City: University of Utah Press.	K
	Forrestal, Peter P., trans. 1954 <i>Benavides' Memorial of 1630</i> . Washington, D.C.: Academy of American Franciscan History	H
	Franciscan Fathers 1910 <i>An Ethnologic Dictionary of the Navajo Language</i> . St. Michaels, AZ: Franciscan Fathers.	K
	Frisbie, Charlotte J. 1987 <i>Navajo Medicine Bundles or Jish: Acquisition, Transmission, and Disposition in the Past and Present</i> . Albuquerque: University of New Mexico Press.	A
	Goddard, Pliny Earle 1933 <i>Navajo Texts</i> . New York: American Museum of Natural History.	K
	Goodwin, Grenville 1942 <i>The Social Organization of the Western Apache</i> . Chicago, IL: University of Chicago Press.	H
	Haile, Berard	K

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	1981	The Upward Moving and Emergence Way: The Gishin Biye' Version. Lincoln and London: University of Nebraska Press.	
Hale, Kenneth, and David Harris	1979	Historical Linguistics and Archeology. In Handbook of North American Indians, Volume 9: Southwest, ed. by Alfonso Ortiz, pp. 170-179. Washington, D.C.: Smithsonian Institution.	L
Hammond, Goerge P., and Agapito Rey, trans. and ed.	1927	Expedition into New Mexico by Antonio de Espejo, 1582-1583, as Revealed in the Journal of Diego Perea de Luxan, a Member of the Party. Los Angeles: The Quivira Society.	H
Hill, W. W.	1938	The Agriculture and Hunting Methods of the Navaho Indians. Yale University Publications in Anthropology 18. New Haven, CT: Yale University Press.	A
Hodge, Frederick W., George P. Hammond, and Agapito Rey	1945	Fray Alonso de Benavides' Revised Memorial of 1634. Albuquerque: University of New Mexico Press.	H
Jett, Stephen, and Virginia Spencer	1981	Navajo Architecture: Forms, History, Distributions. Tucson: University of Arizona Press.	A
Kari, James	1996	Names as Signs: The Distribution of 'Stream' and 'Mountain' in Alaskan Athabaskan Languages. In Athabaskan Language Studies: Essays in Honor of Robert W. Young, ed. by Eloise Jelinek, Sally Midgette, Keren Rice, and Leslie Saxon, pp. 443-475. Albuquerque: University of New Mexico Press.	L
Kelley, Klara	1993	The Complexity of Navajo Origins. Appendix B in Across the Colorado Plateau: Anthropological Studies for the Transwestern Pipeline Expansion Project, Navajo Country -- Diné Bikéyah, Volume VIII, by Joseph C. Winter, Karen Ritts-Benally, and Orit Tamir. Office of Contract Archeology. Albuquerque: University of New Mexico.	K
Kelley, Klara B., and Harris Francis	1998	Navajo (Diné) Ethnography. Chapter 23 in Ethnohistorical Interpretation and Archaeological Data Recovery along Navajo Route 9101, Jeddito Road, Navajo County, Arizona, prepared by David C. Eck, pp. 681-716. Zuni Cultural Resources Enterprises, Report No. ZCRE-013-96.	K
	2000	Pearlshell Buffalo People. Paper presented at Sixth Occasional Anasazi Symposium, Farmington, NM, Oct. 25-28, 2000. (To appear in a proceedings volume.)	F
Klah, Hosteen			K

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	1942 Navajo Creation Myth. Recorded by Mary C. Wheelwright. Santa Fe: Museum of Navajo Ceremonial Art.	
	Kluckhohn, Clyde, W.W. Hill, and Lucy Wales Kluckhohn 1971 Navaho Material Culture. Cambridge, MA: The Belknap Press of Harvard University Press.	A
	Matthews, Washington 1994/1897 Navajo Legends. Salt Lake City: University of Utah Press.	K
	Mitchell, Frank 1978 Navajo Blessingway Singer: The Autobiography of Frank Mitchell, 1881-1967, ed. by Charlotte J. Frisbie and David P. McAllester. Tucson: University of Arizona Press.	K
	Navajo Nation n.d. Proposed Findings of Fact in Behalf of the Navajo Tribe of Indians in Area of the Overall Navajo Claim (Docket 229) before the Indian Claims Commission. Prepared by Norman M. Littell, Attorney at Law, Washington, DC.	A, AR, H
	Nichols, Johanna 1997 Modeling Ancient Population Structures and Movement in Linguistics. Annual Review of Anthropology 26:359-384.	L
	O'Bryan, Aileen 1956 The Diné: Origin Myths of the Navaho Indians. Bureau of American Ethnology Bulletin 163. Washington, D.C.: Government Printing Office.	K
	Parsons, Elsie Clews, ed. 1936 Hopi Journal of Alexander M. Stephen, Part II. Anthropology 23. New York: Columbia University Contributions.	H
	Preston, Scott 1954 The Clans. In Navajo Historical Selections, by Robert Young and William Morgan, pp. 23-27. Navajo Historical Series 3. Phoenix, AZ: U.S. Department of the Interior, Bureau of Indian Affairs, Indian School Print Shop.	K
	recent (~1995-2001) CRM literature for surrounding region.	AR
	Reichard, Gladys M. 1928 Social Life of the Navajo Indians. Columbia Contributions to Anthropology, Vol. 7. New York: Columbia University Press.	K
	Roberts, Alexa, Richard Begay, and Klara Kelley	K

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	Silver, Shirley, and Wick R. Miller 1997	<i>American Indian Languages: Cultural and Social Contexts</i> . Tucson: University of Arizona Press.	L
	Stokes, M.A., and T.L. Smiley 1964	Tree-Ring Dates from the Navajo Land Claim: II. The Western Sector. <i>Tree Ring Bulletin</i> 26:13-27.	AR
	Tyler, S. Lyman, and H. Darrell Taylor 1958	The Report of Fray Alonso de Posada in Relation to Quivira and Teguayo. <i>New Mexico Historical Review</i> 32(4):285-314.	H
	Ward, Albert E. 1980	<i>Navajo Graves: An Archaeological Reflection of Ethnographic Reality</i> . Ethnohistorical Report Series 2. Albuquerque: Center for Anthropological Studies.	A
	Wyman, Leland C. 1970	<i>Blessingway</i> . Tucson: University of Arizona Press.	K
	Young, Robert W. 1983	Apachean Languages. In <i>Handbook of North American Indians, Volume 10: Southwest</i> , ed. by Alfonso Ortiz, pp. 393-400. Washington, D.C.: Smithsonian Institution.	L
Hopi			
<i>SUCR</i> <i>WACA</i> <i>WUPA</i>	Ellis, Florence Hawley 1974	<i>The Hopi: Their History and Use of Lands</i> . Indian Claims Commission Docket 229. New York: Garland Publishing. (Wupatki specifically)	A
Zuni			
<i>SUCR</i> <i>WACA</i> <i>WUPA</i>	Ferguson, T. J. and E. Richard Hart 1985	<i>A Zuni Atlas</i> . Norman, OK: University of Oklahoma Press.	A
Pai		<i>Also see Stewart's and Driver's maps (associated with military notes?)</i>	AR, B
<i>SUCR</i>	Colton, Harold S. 1939	Prehistoric Culture Units and Their Relationships in Northern Arizona. <i>Museum of Northern Arizona Bulletin</i> 17. Flagstaff.	AR, B

Table 2.8. Literature review needs determined from 2001 Document Review of Cultural Affiliation.

(A – anthropological; AR – archaeological; B – biological; F – folkloric; G – geographical; H – historic; K – kinship; L – linguistic; OT – oral tradition; OE – other expert; O – other)

	Dobyens, Henry F. 1974 Hualapai Indians, I: Prehistoric Indian Occupation Within the Eastern Area of the Yuman Complex: A Study in Applied Archaeology, 3 vols. (American Indian Ethnohistory: Indians of the Southwest) New York: Garland.	AR, B
	Euler, Robert C. 1958 Walapai Culture History. (Unpublished Ph.D. Dissertation in Anthropology, University of New Mexico, Albuquerque.)	AR, B
	Gladwin, Winifred and Harold S. Gladwin 1930 The Western Range of the Red-on-Buff Culture. Gila Pueblo, Medallion Paper 5. Globe, AZ.	AR, B
	Johnson, Alfred E. 1965 The Development of the Western Pueblo Culture. (Unpublished Ph.D. Dissertation in Anthropology, University of Arizona, Tucson.)	AR, B
	Lange, Charles H. 1979 Relations of the Southwest with the Plains and Great Basin. In Handbook of North American Indians – Southwest, Vol. 9. Alfonso Ortiz, ed. Pp. 201-205. Washington, D.C.: Smithsonian Institution.	AR, B
	Linford, Laurance D. 1979 Archaeological Investigations in West-central Arizona: The Cyprus-Bagdad Project. With revisions by David A. Phillip, Jr. and R.G. Erven. (Archaeological Series 136) Tucson: University of Arizona, Arizona State Museum, Cultural Resources Management Series.	AR, B
	Plog, Fred 1979 Prehistory: Western Anasazi. In Handbook of North American Indians, Volume 9: Southwest, ed. by Alfonso Ortiz, pp. 108-130. Washington, D.C.: Smithsonian Institution.	AR, B
	Reed, Erik K. 1948 The Western Pueblo Archaeological Complex. El Palacio 55(1):9-15. 1950 Eastern-central Arizona Archaeology in Relation to the Western Pueblos. Southwestern Journal of Anthropology 6(2):120-138.	AR, B
	Schroeder, Albert H. 1957 The Hakataya Cultural Tradition. American Antiquity 23(2):176-178. 1960 The Hohokam, Sinagua and Hakataya. Society for American Archaeology, Archives of Archaeology 5. Madison, WI.	AR, B
	Schwartz, Douglas W.	AR, B

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	1956	The Havasupai, 600 A.D. – 1955 A.D.: A Short Culture History. Plateau 28(4):77-85.	
<i>WACA</i>	Colton, Harold S. 1939	Prehistoric Culture Units and Their Relationships in Northern Arizona. Museum of Northern Arizona Bulletin 17. Flagstaff.	AR, B, H
	Dobyns, Henry F. 1974	Hualapai Indians, I: Prehistoric Indian Occupation Within the Eastern Area of the Yuman Complex: A Study in Applied Archaeology, 3 vols. (American Indian Ethnohistory: Indians of the Southwest) New York: Garland.	AR, B, H
	Euler, Robert C. 1958	Walapai Culture History. (Unpublished Ph.D. Dissertation in Anthropology, University of New Mexico, Albuquerque.)	AR, B, H
	Gladwin, Winifred and Harold S. Gladwin 1930	The Western Range of the Red-on-Buff Culture. Gila Pueblo, Medallion Paper 5. Globe, AZ.	AR, B, H
	Johnson, Alfred E. 1965	The Development of the Western Pueblo Culture. (Unpublished Ph.D. Dissertation in Anthropology, University of Arizona, Tucson.)	AR, B, H
	Lange, Charles H. 1979	Relations of the Southwest with the Plains and Great Basin. In Handbook of North American Indians – Southwest, Vol. 9. Alfonso Ortiz, ed. Pp. 201-205. Washington, D.C.: Smithsonian Institution.	AR, B, H
	Linford, Laurance D. 1979	Archaeological Investigations in West-central Arizona: The Cyprus-Bagdad Project. With revisions by David A. Phillip, Jr. and R.G. Erven. (Archaeological Series 136) Tucson: University of Arizona, Arizona State Museum, Cultural Resources Management Series.	AR, B, H
	Ortiz, Alfonso, ed. 1983	Handbook of North American Indians: Southwest. Volume 10. Washington, D.C.: Smithsonian Institution.	AR, B, H
	Plog, Fred 1979	Prehistory: Western Anasazi. In Handbook of North American Indians, Volume 9: Southwest, ed. by Alfonso Ortiz, pp. 108-130. Washington, D.C.: Smithsonian Institution.	AR, B, H
	Reed, Erik K.		AR, B, H

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	<p>1948 The Western Pueblo Archaeological Complex. <i>El Palacio</i> 55(1):9-15.</p> <p>1950 Eastern-central Arizona Archaeology in Relation to the Western Pueblos. <i>Southwestern Journal of Anthropology</i> 6(2):120-138.</p>	
	<p>Schroeder, Albert H.</p> <p>1957 The Hakataya Cultural Tradition. <i>American Antiquity</i> 23(2):176-178.</p> <p>1960 The Hohokam, Sinagua and Hakataya. <i>Society for American Archaeology, Archives of Archaeology</i> 5. Madison, WI.</p>	AR, B, H
	<p>Schwartz, Douglas W.</p> <p>1956 The Havasupai, 600 A.D. – 1955 A.D.: A Short Culture History. <i>Plateau</i> 28(4):77-85.</p>	AR, B, H
<i>WUPA</i>	<p>Colton, Harold S.</p> <p>1939 Prehistoric Culture Units and Their Relationships in Northern Arizona. <i>Museum of Northern Arizona Bulletin</i> 17. Flagstaff.</p>	AR, B, H
	<p>Dobyns, Henry F.</p> <p>1974 Hualapai Indians, I: Prehistoric Indian Occupation Within the Eastern Area of the Yuman Complex: A Study in Applied Archaeology, 3 vols. (<i>American Indian Ethnohistory: Indians of the Southwest</i>) New York: Garland.</p>	AR, B, H
	<p>Euler, Robert C.</p> <p>1958 Walapai Culture History. (Unpublished Ph.D. Dissertation in Anthropology, University of New Mexico, Albuquerque.)</p>	AR, B, H
	<p>Gladwin, Winifred and Harold S. Gladwin</p> <p>1930 The Western Range of the Red-on-Buff Culture. <i>Gila Pueblo, Medallion Paper</i> 5. Globe, AZ.</p>	AR, B, H
	<p>Johnson, Alfred E.</p> <p>1965 The Development of the Western Pueblo Culture. (Unpublished Ph.D. Dissertation in Anthropology, University of Arizona, Tucson.)</p>	AR, B, H
	<p>Lange, Charles H.</p> <p>1979 Relations of the Southwest with the Plains and Great Basin. In <i>Handbook of North American Indians – Southwest</i>, Vol. 9. Alfonso Ortiz, ed. Pp. 201-205. Washington, D.C.: Smithsonian Institution.</p>	AR, B, H
	<p>Linford, Laurance D.</p> <p>1979 Archaeological Investigations in West-central Arizona: The Cyprus-Bagdad Project. With revisions by David A. Phillip, Jr. and R.G. Erven. (<i>Archaeological Series</i> 136) Tucson: University of Arizona, Arizona State Museum, Cultural Resources Management Series.</p>	AR, B, H

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	Plog, Fred 1979 Prehistory: Western Anasazi. In Handbook of North American Indians, Volume 9: Southwest, ed. by Alfonso Ortiz, pp. 108-130. Washington, D.C.: Smithsonian Institution.	AR, B, H
	Reed, Erik K. 1948 The Western Pueblo Archaeological Complex. El Palacio 55(1):9-15. 1950 Eastern-central Arizona Archaeology in Relation to the Western Pueblos. Southwestern Journal of Anthropology 6(2):120-138.	AR, B, H
	Schroeder, Albert H. 1957 The Hakataya Cultural Tradition. American Antiquity 23(2):176-178. 1960 The Hohokam, Sinagua and Hakataya. Society for American Archaeology, Archives of Archaeology 5. Madison, WI.	AR, B, H
	Schwartz, Douglas W. 1956 The Havasupai, 600 A.D. – 1955 A.D.: A Short Culture History. Plateau 28(4):77-85.	AR, B, H
Paiute		
<i>SUCR</i>	Dobyns, Henry F. 1974 Hualapai Indians, I: Prehistoric Indian Occupation Within the Eastern Area of the Yuman Complex: A Study in Applied Archaeology, 3 vols. (American Indian Ethnohistory: Indians of the Southwest) New York: Garland.	G, H, OT
	Euler, Robert C. 1958 Walapai Culture History. (Unpublished Ph.D. Dissertation in Anthropology, University of New Mexico, Albuquerque.)	G, H, OT
	Zedeño, M. Nieves and Richard W. Stoffle 1996 Hohokam, Salado, and Sinagua Consultation Meeting: Summary – Final Report. Tucson: Bureau of Applied Research in Anthropology/University of Arizona.	AR
<i>WACA</i>	Dobyns, Henry F. 1974 Hualapai Indians, I: Prehistoric Indian Occupation Within the Eastern Area of the Yuman Complex: A Study in Applied Archaeology, 3 vols. (American Indian Ethnohistory: Indians of the Southwest) New York: Garland.	F

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	Zedeño, M. Nieves and Richard W. Stoffle 1996 Hohokam, Salado, and Sinagua Consultation Meeting: Summary – Final Report. Tucson: Bureau of Applied Research in Anthropology/University of Arizona.	AR
<i>WUPA</i>	Colton, Harold S. 1939 Prehistoric Culture Units and Their Relationships in Northern Arizona. Museum of Northern Arizona Bulletin 17. Flagstaff.	OE
	Dobyns, Henry F. 1974 Hualapai Indians, I: Prehistoric Indian Occupation Within the Eastern Area of the Yuman Complex: A Study in Applied Archaeology, 3 vols. (American Indian Ethnohistory: Indians of the Southwest) New York: Garland.	AR, G, H, OT, OE
	Euler, Robert C. 1958 Walapai Culture History. (Unpublished Ph.D. Dissertation in Anthropology, University of New Mexico, Albuquerque.)	AR, G, H, OT, OE
	Gladwin, Winifred and Harold S. Gladwin 1930 The Western Range of the Red-on-Buff Culture. Gila Pueblo, Medallion Paper 5. Globe, AZ.	OE
	Johnson, Alfred E. 1965 The Development of the Western Pueblo Culture. (Unpublished Ph.D. Dissertation in Anthropology, University of Arizona, Tucson.)	OE
	Lange, Charles H. 1979 Relations of the Southwest with the Plains and Great Basin. In Handbook of North American Indians – Southwest, Vol. 9. Alfonso Ortiz, ed. Pp. 201-205. Washington, D.C.: Smithsonian Institution.	OE
	Linford, Laurance D. 1979 Archaeological Investigations in West-central Arizona: The Cyprus-Bagdad Project. With revisions by David A. Phillip, Jr. and R.G. Erven. (Archaeological Series 136) Tucson: University of Arizona, Arizona State Museum, Cultural Resources Management Series.	OE
	Reed, Erik K. 1948 The Western Pueblo Archaeological Complex. El Palacio 55(1):9-15. 1950 Eastern-central Arizona Archaeology in Relation to the Western Pueblos. Southwestern Journal of	OE

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	Schwartz, Douglas W. 1956 The Havasupai, 600 A.D. – 1955 A.D.: A Short Culture History. <i>Plateau</i> 28(4):77-85.	OE
	Zedeño, M. Nieves and Richard W. Stoffle 1996 Hohokam, Salado, and Sinagua Consultation Meeting: Summary – Final Report. Tucson: Bureau of Applied Research in Anthropology/University of Arizona.	AR

CHAPTER THREE

SUNSET CRATER VOLCANO NATIONAL MONUMENT

One of the 500-600 volcanic cones of the San Francisco Peaks volcanic field, Sunset Crater Volcano spread lava, ash, and cinders over 800 square miles of northern Arizona in the 11th and 12th centuries (Houk 1995). On May 26, 1930, former President Herbert Hoover created Sunset Crater National Monument with Presidential Proclamation No. 1911 (46 Stat. 3023) to protect the geologic features within the 3,040 acres constituting the park (Figure 3.1). Former President George Bush authorized a name change to Sunset Crater Volcano National Monument on November 16, 1990 as part of the Smith River National Recreation Act (P.L. 101-612; 104 Stat. 3222). Predominant features of the park include Sunset Crater, the Bonito Lava Flow, the Cinder Hills, Lenox Crater, hornitos, squeezeups, lava tubes, and an ice cave (National Park Service - SUCR 2001).



Figure 3.1. Sunset Crater Volcano National Monument (NPS 2003).

Not long after the park was established, Dr. Harold Colton, founder of the Museum of Northern Arizona (MNA), identified a connection between Sunset Crater and the many pithouse dwellings found within the vicinity of the park. Many of the 41 pithouses dating between A.D. 650-1065 were burned and full of cinders from the primary eruption of Sunset Crater Volcano. The Sinagua farmers who lived in the area apparently had adequate warning of the impending eruption and moved to safe locations since no human remains have been found that would suggest otherwise. Archeological research and tree-ring analysis indicated that the people who built the pithouses had not only survived but witnessed the birth and primary eruption of Sunset Crater Volcano around A.D. 1064. Colton's interpretation of

events was that the farmers found the deep cinder and ash closer to Sunset Crater made farming impossible, but further north where the ash was less, the cinders functioned as a moisture-retaining mulch that made the new lands arable (National Park Service - SUCR 2001).

Our field visits to Sunset Crater included the Lava Flow Trail, the Cinder Hills Overlook, O’Leary Peak, and the Visitor’s Center. Site discussions were held at all but the Cinder Hills location where we conducted landscape discussions. Tribal representatives were particularly interested in the ice cave and hornito along the Lava Flow Trail, the Bonito Flow, and Sunset Crater. In this chapter, we paraphrase primary resource use data from those discussions by site location. All responses from each group’s participants are compiled by question with each paragraph reflecting each individual’s responses. The check-box tables within the responses are to the immediate right of the questions to which they pertain, and summarize the responses that follow. Yes/no and condition responses are listed once if a consensus occurred otherwise, the various responses are presented. A summary of the representatives’ responses and an ethnographic commentary concludes the chapter.

Lava Flow Trail

Located between Sunset Crater Volcano and Lenox Crater, the Lava Flow Nature Trail is a self-guided, one-mile loop that runs to the base of Sunset Crater. It encompasses a second, paved trail that makes a quarter mile loop at the trailhead. There are 14 numbered posts along the trail that mark special features or describe the landscape. Of particular interest to the tribal consultants at this location are Sunset Crater, a hornito, and an ice cave. While the four participating ethnic groups visited the site, only the Pai and Southern Paiute consultants were able to interview at the site as park visitors during the Zuni and Apache field trips were too numerous for private consultations.

The Zuni consultants asked for and received access to the ice cave where they spent approximately 30 minutes. After they emerged, they granted the UofA team’s request to enter the cave. Team members noted other offerings that had been left by previous tribal visitors, which they presumed to be Hopi. A couple of the Apache consultants were unable to go off the shorter paved trail, so their companions made a partial visit of the unpaved trail that included the ice cave and hornito.

Pai

What is the Indian name for this place?

Please describe this area.

Ba'wanwa, Wi'hagnbajga, meaning ‘snowy mountains;’ the San Francisco Peaks

The lava rocks, the mountains, all are special and equal.

The plants are coming back after the eruption. There is evidence of water, because there are aspen trees growing. There is lots of sage. There are red berries here called wax currant. The lava rocks are interesting, so are the mounds of explosions, fissures, tunnels and tubes. The lava was like a river, it flushed everything out. The

ice cave, the changes in scenery, the hawk that flew over (a blessing). The vegetation looks very healthy.

This is a place for water, animals, plants, knowledge, and power. We had names for every area.

Would Indian people have used this place?

Yes

If yes, why or for what purpose?

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
	✓	✓	✓	✓	✓

They gathered rocks for sweatlodges, they collected firewood; this was a ceremonial and vision quest site. This site is too sacred to create permanent settlements.

Gathering piñon, berries, pitch. The Yavapai people planted by the stars, and were known as stargazers. There are no particular areas to look at stars. Here there were prayer songs and sacrificial activities before and after the eruption. There was a 4-day preparation done before ceremony and hunting.

Trading - there was lots of trading, farming, gathering plants, collecting salt, camping but we had habitations there and stayed for some time. We moved around seasonally; it wasn't our pattern to stay somewhere.

Is this place part of a group of connected places?

Yes

What kinds of places is it connected to?

This place is connected to Walnut Canyon, and to the Hualapai, Yavapai and Hopi people.

All the mountains and springs and villages in northern Arizona.

How is this place connected to the other places?

Through trade with the Hualapai and Hopi. Through origin stories. In ancient times, animals talked. There had to have been ceremonies because of the volcanoes. People knew the volcano was coming because of an origin story about a fly.

Is this place an important source for Water?

Yes

The snow is needed for different ceremonies.

The aspen proves that there is water. Water flows down from the crater, snow sinks into the ground. There is underground water, too, just like there are air tunnels at Wupatki.

Springs.

Is this place an important source for Plants?

Yes

All of them. The saltbush, the cliffrose, pines, etc. The cedar wards off evil. *Ahwee*, berries used for sweat lodges.

Sage, piñons, wood, cedar, berries.

Many plants.

Is this place an important source for Animals?

Yes

Is this place important for Evidence of Previous Use?

Deer, rabbits, coyotes, eagles, hawks were all used for ceremonies.

Eagles, hawks, Grandfather Bear, raccoons, coyotes, foxes. The places where Grandfather Bear lives have power.

Yes

There is some isolated evidence here and there.

The place where the lava rock went up and formed a circle barrier looks like Yavapai wikkiups. There is no roof.

Wupatki and Walnut Canyon.

Is this place important for Geological Features?

Yes

The mountains, the crater, the ice cave, the lava rocks, these are our elders. The cinders as well.

There must have been food storage in the caves, because they were cold. The lava rocks were used in sweats, and for medicine. They would warm up beds for aches and pains, and they would warm up houses.

Mountains, caves, minerals, salt mines at the Little Colorado River, hematite areas on the rim of the Grand Canyon.

WATER

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

We used the water and the snow to drink. It was used for tanning hides, making baskets. Warriors use snow, and put it under their armpits. They would walk barefoot in snow to endure pain. Snow was used right after marriage to purify the couple. Both the man and the woman would wash themselves naked in the snow.

They carried water from here to Wupatki. They used it conservatively.

Prayers. Springs are sacred in many ways; they are a life-giving force. Some individuals still use the springs in the San Francisco Peaks but not so that it's common knowledge. Specific springs would be used for medicine, like hot springs. Before you can use the water from a spring, you have to say prayers and use it in a proper manner.

How would you evaluate the condition of the water?

Good

Is there anything affecting the condition of the water?

Yes

If yes, what is affecting the condition of the water?

There is no security; there should be more indigenous people on site. The parking lots make an impact, but not too much

It was probably destroyed by people, maybe Indian people deliberately so new settlers wouldn't know about it. The NPS should leave it alone, and should keep people from throwing their cigarettes on the ground.

PLANTS

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓	✓	✓

Sage and cedar. Some you use daily. If there wasn't much of a resource, they would go elsewhere to conserve what was here.

Sage, cedar were used in every season but winter. Pitch was used in sweats, it was also eaten for colds. It worked like mentholatum. Cedar was drunk for colds, and both were used for cleansing. The century plant was used for shields, ropes, and made into a cake for travelling.

Mescal was a staple. We went to Petrified Forest for wood. Some plants were processed for later use.

How would you evaluate the condition of these plants?

Good

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

They are in good condition, except for the larger trees.

They are blooming now, but they are also dry and vulnerable. People who throw their cigarettes and being dangerous.

ANIMALS

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓	✓	✓	✓		

The deer needs a deer dance for hide and antlers. Hunting depends on the ceremonies that are going on. There are certain times than people don't hunt, like when the animals are mating. There are certain ways to kill the animals.

The blood of the bear was used for power. It was used to cure sickness and before hunting. My brother has used bear blood for power.

We still hunt and fish in the Bill Williams area.

How would you evaluate the condition of the animals?

Good

Is there anything affecting the condition of the animals?

Fair

If yes, what is affecting the condition of the animals?

Yes

All the cars

People-encroaching.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

lava forms, ice cave, round lava "wikkiup"

Would Indian people have used this site and/or artifact?

Yes

When would Indian people have used this site and/or artifact?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓	✓			✓	✓

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
	✓	✓	✓	✓		✓

The lava structure was used as a living space during the warm summer months. The Yavapai went through here on trade routes and to get food through hunting. The ice cave was probably used for storing food in the summertime.

Today, we hold powwows in August. Different tribes are involved. It's part of a meeting. We have memorial cries.

How would you evaluate the condition of this site/artifact?

Good

Is there anything affecting the condition of this site/artifact?

Yes

If yes, what is affecting the condition of this site/artifact?

Earthquakes and volcanoes. Someday, the San Francisco Peaks will erupt again.

GEOLOGIC FEATURES

lava rocks

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓	✓	✓	✓

Communicate with spiritual beings	Territorial marker	Other
✓	✓	✓

Sweats, and communicating with spiritual beings through prayer.

There is astronomy knowledge here, the rocks and volcanos have power, the animals and plants have more power because they are in a sacred place. You could gain knowledge through tribal exchange used mostly by the Hopi and Cohonina

Going to a sweat is like going to church. It's like going back into

How would you evaluate the condition of the geologic features?

Good

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

People going off the established trails.

The people have no respect for the park. The Park Service should put up signs to control people. It is ok to pick up rocks, but not to destroy them.

How would you evaluate the OVERALL condition of this place?

Good to Excellent

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

The traffic; it is not too congested, maybe some tours.

People who visit.

What would be your recommendation for protecting this place?

They should have 1-2 people on the trail markers available to talk to tourists about indigenous cultures and their relation to the land. This would educate tourists. They need to close the park at night and have someone to watch the place.

The bathrooms should be taken care of, and ash trays are needed for cigarettes

What would you recommend for protecting the Water?

What would you recommend for protecting the Plants?

Keep cigarettes out, and put up signs about the respect that is needed in this place.

What would you recommend for protecting the Animals?

Animals are smart, they don't come around here. They can protect themselves. People should not feed deer.

What would you recommend for protecting the Evidence of Traditional Use?

The Park Service should inform visitors of uses of this place by the Yavapai.

What would you recommend for protecting the Geological Features?

It's ok the way it is. There should be patrolling rangers who are sociable and approachable. Maybe volunteer retirees would want to be rangers. Also, they should put up signs about respecting the rocks. I saw one person banging lava rocks on each other, then

Do you think Indian people would want access to this place? If yes, why?

throwing them.

Yes

For prayer, for vision quests, for gathering plants and feathers. We already have enough places to hunt.

This place and San Francisco Peaks; we would want access. People would want ceremonies on top of Sunset Crater. They would want to make observations. The Pai people and other Indian people should also patrol as rangers.

For ceremonial purposes, harvesting and collecting plants, maybe minerals, for hunting, and for teaching tribal people our history and traditional ways.

Are there any special conditions that must be met for use? If yes, what are these?

Yes

The Park should develop agreements with tribes that want access. Give them permission to go where they want, like for vision quests.

There should be free access to Indian people. On top of the Peak, there should be a one-time ceremony. Later, elders should be allowed access if the elders think it's appropriate to continue to be at the peak.

For ceremonial purposes, it needs to be kept confidential, and we need private access to special areas. For harvesting, it should be away from public areas and we need to build fires for demonstrations of how to prepare the plants. Same for teaching. We may need to camp overnight for some of these activities.

Are there any traditional management practices that would improve the condition of this place? If yes, what are they?

Yes

There should be revegetation projects and projects to bring back the wildlife. It would be hard to do because nobody has done it in so long.

There should be controlled burn. The Park Service isn't doing so well in this sense. The trees from the burns should be given to Indian people. No disease has taken over these plants, which is good. Maybe the lava is keeping the trees healthy.

Burning, pruning or thinning, prepare piñon and banana yucca.

Other Comments

Hwa:l bay is p. pine; it means 'people of the pines', the Hualapai. A public day for cultural demonstrations such as cooking and making things would be good.

Southern Paiute

What is the Indian name for this place?

Kaiv Pa'kectis, mountain with hole or water bowl on top

Please describe this area.

Not too many things lived around here, because it is too rocky.

Would Indian people have used this place?

Yes

If yes, why or for what purpose?

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
	✓	✓			

We get basket materials, all kinds of medicines, like herbs. We came here just to visit these places, just to see them. We like the area.

Is this place part of a group of connected places?

Yes

What kinds of places is it connected to?

It is connected to Wupatki.

How is this place connected to the other places?

They are close to each other. The people back then were sacred of the volcanoes. After it cooled off, they probably came back to look at it.

Is this place an important source for Water?

Yes

This is the source of water for Wupatki.

Is this place an important source for Plants?

Yes

Herbs, medicines

Is this place an important source for Animals?

Yes

Squirrels were hunted for food, trout was in the lake.

Is this place important for Evidence of Previous Use?

Yes

Paiute baskets and bodies. A farmer was found in the caves.

Is this place important for Geological Features?

Yes

The volcanoes and the ice caves. They are very interesting. Maybe people used to eat the ice.

Melting snow

WATER

Would Indian people have used the water here?

Yes

When would Indian people have used the water?

<i>Daily</i>	<i>Seasonally</i>	<i>Annually</i>	<i>Calendrically</i>	<i>Pre-historically</i>	<i>Historically</i>	<i>Today</i>
		✓				

If yes, why or for what purpose?

<i>Food, drink</i>	<i>Medicine</i>	<i>Ceremony</i>	<i>Other</i>
✓			

The snowmelt flows to lower areas, all the way to the Little Colorado River. It went through Deadman's Wash to the Little Colorado. In 1993, it flooded. There is a lake up closer to the base of the San Francisco Peaks where some of the water comes from.

How would you evaluate the condition of the water?

Good

Is there anything affecting the condition of the water?

No

If yes, what is affecting the condition of the water?

PLANTS

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other
✓	✓		✓	

They collected the wood, medicine and food plants.

How would you evaluate the condition of these plants?

Good

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

The location; those plants close to the volcano are in good shape. Those that grow in lower elevation are in bad shape. We get wood from this area. The rocks do not have enough soil, and there is a problem with the rain.

ANIMALS

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓						

Used the squirrels and mule deer. They were fat in the grass was greener.

How would you evaluate the condition of the animals?

Fair

Is there anything affecting the condition of the animals?

Yes

If yes, what is affecting the condition of the animals?

It's too dry.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

Yes

When would Indian people have used this site and/or artifact?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
						✓

According to Bill Beaver, a trading post owner who regularly works with them, Paiute bodies and baskets have been found here.

How would you evaluate the condition of this site/artifact?

Is there anything affecting the condition of this site/artifact?

If yes, what is affecting the condition of this site/artifact?

We have not yet talked about the bodies. We only recently heard about them.

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
				✓		✓

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓			

Communicate with spiritual beings	Territorial marker	Other
✓		✓

There are songs in the caves.

How would you evaluate the condition of the geologic features?

Fair

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

There is too much erosion here, the soil is gone, there is hardly anything left in the area. The tourists do not cause erosion. There are songs in the caves, but they are now closed.

How would you evaluate the OVERALL condition of this place?

Fair

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

The white park rangers.

What would be your recommendation for protecting this place?

Maybe they should close the park. Everything would change then. The animals would come back. Indian people would not come back to live here because they do not like it anymore. Maybe they

What would you recommend for protecting the Water?

would graze their livestock here.

It's ok

What would you recommend for protecting the Plants?

They need rain.

What would you recommend for protecting the Animals?

They need rain.

What would you recommend for protecting the Evidence of Traditional Use?

They should be somehow protected.

What would you recommend for protecting the Geological Features?

It should be open to Indian use.

Do you think Indian people would want access to this place?

Yes

If yes, why?

They should be given a permit to camp and have fires.

Are there any special conditions that must be met for use?

If yes, what are these?

Are there any traditional management practices that would improve the condition of this place?

If yes, what are they?

Other Comments

O'Leary Peak

Unlike Sunset Crater, which is a cinder cone volcano, O'Leary Peak is a lava dome volcano, a rounded mountain formed from repeated, piled-up lava flows. The views from the top are breath-taking and here is the only way to look down into Sunset Crater Volcano. The trailhead is near a U. S. Forest Service campground found west of the visitor center and permission must be obtained for access. The Zuni representatives felt it was important to visit O'Leary Peak and permission was obtained from the Forest Service through a Park Service representative. This was the only group to visit and interview on O'Leary Peak.

Zuni

What is the Indian name for this place?

Kwa ba chuwa llona. This is the name for the San Fransico Peaks and the surrounding area. I don't know if there is a specific name for the Sunset Crater area.

There is a name for volcanoes and sharp volcano rocks.

Like a neighbor to San Francisco Peaks and related to the point of pilgrimage.

Please describe this area.

The San Francisco Peaks and Sunset Crater stand out from the other cinder cones in the area because they are oxidized.

Same and similar to the ice caves near Bandera Crater, same with lava flows like El Malpais, same cinder cones as that area. Like the ice cave on the east side near El Malpais. These western ice caves are mentioned in Zuni songs but not visited until today. The ice cave near Bandera Crater, the large one that is in private hands, is visited twice a year, at the summer and the winter solstice. This area is also similar in the plants it has, aspen, sumac, and other plants. This place may be used to collect for a season. Three shrubs [here] are collected for making prayer sticks.

The ice caves. The San Francisco Peaks are the same as Mount Taylor in Grants, New Mexico. They have the same slope, same size, same snow on top. The scenery is beautiful.

Views, valley, plants, air, crater.

Yes

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
✓	✓	✓	✓	✓	✓

Ceremonies in places like the ice caves. People would live in the surrounding area but near the Sunset Crater. Food and herbs would be gathered around here. Zunis make pilgrimages to the ice cave and make a corn meal offering.

Migration, the migrations songs have the ice caves, Sunset Crater and other places. They knew about the ice caves. The ice in the cave has healing powers. The ice in the cave is like spring water which is pure and needed for medicine. Use lava rocks like basalt for grinding utensils. Sharp lava used for scrapping flesh off of hides and for softening the hides. Cinder is used to line the floors of ovens because it retains heat.

Living was a long time ago.

The San Francisco Peaks are a place for power. Our people would go around there and ask for blessings. We would go now, but it's too steep to climb. The crater has power. It was saving the people back then.

Gathered plants for food and medicine. Maybe watched stars in earlier days. Other: gathered soil and cinders. Today, used for driveways and as bases in ovens (16" deep). Also used in fields to not get stuck. This is a point for pilgrimage.

*Would Indian people have used this place?
If yes, why or for what purpose?*

Yes

The ice cave at Sunset crater is connected to the ice cave in the east in Bandera New Mexico. The Zuni name for the ice cave at Sunset crater is *Sun hakal'ekwaula*. The ice cave in the east in Bandera, New Mexico is called *Dawe kwe' hakal'ekwaula* in Zuni and means the ice caves in the east. The ice caves hae a lot of significance to the Zuni people Religious importance.

*Is this place part of a group of connected places?
What kinds of places is it connected to?*

How is this place connected to the other places?

Connected to the ice caves at El Malpais. Spiritual beings that brought the Zuni from the Grand Canyon want the people to be safe. So the spiritual beings guided the Zuni people to the Middle Place where they would be safe. Zuni is in between the two volcanoes, Mount Taylor and San Francisco Peaks. Zuni is connected to everything around it. We leave offerings in the ice caves so that eruptions won't happen again. The power of cold and heat is the same. So, offerings can be made to the cold to pray that the lava, eruptions, heat would not come back. The volcanoes and ice caves are connected.

Zuni and the El Malpais area.

El Malpais.

They are both ice caves.

The Sunset Crater ice cave has religious significance to the west direction, while Bandera ice cave has significance to the east direction.

Spirits and power connect these places of hot and cold.

Through the ice caves. El Malpais has ice caves.

Connected underground, like a root. So they're one; not two separate places.

Is this place an important source for Water?

Yes

The ice cave is a form of water. The streams and rivers are the umbilical cord to the birthplace of the Zuni. From the Zuni river to the Little Colorado River to the Colorado River to the Pacific Ocean.

Water ways are very important to the Zuni and the ice cave is a source of water.

Ice cave is comparable to a spring. Pure water, spring water for healing. Make medicine from this water.

Kenteleton or room of ice, is the ice cave.

I don't know; there is no water now. Maybe the Little Colorado River and the ice cave.

Is this place an important source for Plants?

Yes

There are some important plants in the area but Zuni might not travel this far to gather them. But if they do come this far for it they would be significant. In order to determine this we need an inventory of plants to give a good answer.

Sumac, aspen, and shrub (possibly mountain mahogany) and plant with sweet berries. Source of food and prayer sticks.

Sage, everyday plants.

Bush that is related to saltbush, has sweet berries, called 'first bushes that bloom' (possibly sumac).

Not today. I don't know about the past.

Is this place an important

Yes

source for Animals?

All animals, especially birds, deer, antelope, rabbit, elk are a source of food and medicine and are important.

Rabbit, squirrel, birds, but maybe too rough for hooved animals on the lava.

Blue jays, bluebirds, spiritual animals.

Is this place important for Evidence of Previous Use?

Yes

I see a little bit of evidence and can't make a judgement at this point and would need an inventory of sites in the Sunset crater area.

Just natural land.

Probably, a long time ago.

Maybe in the ice cave, in the smooth areas.

Is this place important for Geological Features?

Yes

Ice caves.

Paint, azurite in volcanic areas. Chrysocolla has that turquoise light color. Other turquoise is darker.

Cinders

Cinders, the ice cave, the crater, the alkaline in the lava.

Ice Cave.

WATER

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓		✓	✓	✓	✓

The ice caves in the east near bandera crater are visited twice a year. This ice cave it is very rare. This is the first visit in a very long time, maybe not since the migrations.

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

As a storage area.

Planting.

After it formed after the Sunset crater eruption Indian people knew about the ice caves.

The ice caves would be used in religious ceremonies and to quench the thirst from pilgrimage.

Spring water is pure used for medicine.

Medicine and healing.

They would go into the ice cave to ask for blessings.

Used whenever available.

How would you evaluate the condition of the water?

Good

*Is there anything affecting the condition of the water?
If yes, what is affecting the condition of the water?*

Yes

"He can't really say what the condition of the ice cave is because he hasn't been to this one before and there are probably years when there is more ice.

The park service has got control over the ice cave by putting bars over it and keeping the traffic low, and that is fine as long as Native Americans continue to have access to the cave. It looks good with the barrier, but even so I found trash deep with in the cave [the consultant brought out an old can of Budwiser]. The trash was beyond the ice puddle, maybe left there before the barrier was constructed [c. 1972]. The barrier is good. There is a sheet of ice like a mirror where the can was found. I don't think the elements are affecting the cave and the ice.

As long as the caretakers watch what's going on with the visitors; potentially the visitors could affect the condition.

Sumac, aspen, green bush possibly mountain mahogany or skunkbush sumac, spruce, and pine.

PLANTS

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓	✓	✓	✓	✓	✓

If traveling to the ice cave, we used some of these plants bi-annually, only what is needed would be collected to make the prayer feathers and make offerings.

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓	✓	✓

Depends on the types of plants there were then.

Used in religious ceremonies.

Ceremony and making things (prayer sticks).

Also used in religion.

Don't use many of the plants here at Sunset Crater that much.

Elders recognize plants from the old days. We don't recognize plants that were used long ago.

Food used seasonally. Medicine as needed. Ceremonies sometimes. Making things such as prayer sticks

How would you evaluate the condition of these plants?

Fair to good

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

The drought is affecting the plants, you can tell in the trees and the beetles are getting into them. They are not producing sap and the beetles are killing the trees all over the southwest

ANIMALS

Would Indian people have used the animals at this place?

When would Indian people have used the animals?

If yes, why or for what purpose?

How would you evaluate the condition of the animals?

Is there anything affecting the condition of the animals?

If yes, what is affecting the condition of the animals?

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Aspen needs more moisture though. Leaves look small. Other plants look ok. Drought.

Drought.

They are just now growing, not ready to collect.

Deer, blue jay, some birds, antelope, deer, rabbit

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

All the animals, when needed.

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓	✓	✓	✓		✓

Food, ceremony, clothing, prayer.

When people are able to hunt has to be in sync with government regulations. Glands from the legs of deer or antelope are used on ones son who they want to be a good runner. Bones are used for tools. Antlers are used for carving and for fetishes.

Sacred birds, like the blue jay, feathers used for prayer and ceremony. Antlers from deer are used by dancers.

Deer and elk for food.

Medicine from bluebird skin, antlers, fur.

For ceremonies, skins were used, feathers for prayer sticks. It doesn't matter what kachina or initiation ceremony. The elders say that the fly is there to tell you something.

Good

Yes

Wild animals are supernatural beings and have supernatural powers. They are the relatives of the Zuni and are brothers and sisters to the Zuni. Animals can take care of themselves and are smarter then humans.

Don't think so. Antelope looked good. Rabbit looked good. And saw a number of birds. But then again maybe human encroachment. Antelope skirts on the fences are good for the antelope.

They are spiritual animals, they know springs better than we do. They can go days without water. Hunters affect them. I don't mind if there's an annual trophy hunt for elk. There are too many elk near Zuni. Zuni grow corn and wheat, and the elk eat all of it. Even though they're spiritual animals, they have to reduce the population.

Hopi prayer stick found at entrance to ice cave.

Would Indian people have used this site and/or artifact?

When would Indian people have used this site and/or artifact?

If yes, why or for what purpose?

How would you evaluate the condition of this site/artifact?

Is there anything affecting the condition of this site/artifact?

If yes, what is affecting the condition of this site/artifact?

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

When would Indian people have used the geologic features?

If yes, why or for what purpose?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
				✓	✓	✓

When needed.

Hopi prayer sticks in the ice cave, and smooth places.

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
				✓		

We don't bother what others leave.

Good

Ice cave, yellow and blue/green pigments, crystals near volcanic activity.

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓	✓		✓	✓	✓

As needed.

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓		✓	✓

Communicate with spiritual beings	Territorial marker	Other
✓		✓

Zuni pilgrimage to the Grand Canyon for special red hematite to make red pigment and a speckled hematite to make a glittering pigment.

To make offerings for good rains.

Cinders are used for driveways, fields, and ovens. Yellow, red, and blue sands are used for paint and ceremonies.

The San Francisco Peaks are the only significant territorial marker in the area.

Offerings ask for rain, crops, health of the people. Not just for Zuni but all people in the area.

How would you evaluate the condition of the geologic features?

Ceremonies are held in the ice cave and blowhole. We teach other Indians by words.

Excellent to good

Is there anything affecting the condition of the geologic features?

No

If yes, what is affecting the condition of the geologic features?

Lava and cinder are holding up good

How would you evaluate the OVERALL condition of this place?

Good

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

There is too much traffic in the area.

People impact it and are always an effect; people that go beyond boundaries and that litter leave trash behind. This is a sacred area to tribes. It should be mentioned to the people that visit. This place is a place of prayer, meditation, and protection. So the area should be treated with respect. Visitors need to be educated about this.

What would be your recommendation for protecting this place?

Marking the trails better, were people won't be leaving and taking off the trails. Put signs on the trail to tell people to stay on the trails. Keep people way from the entrance of the ice cave. And reroute the trail altogether.

Include in the brochures and in the literature that this is a sacred area. It should be treated with respect. This is the native view. Consider this area like a church to the tribes, so respect [it as you would] any other religion. Be respectful and quiet.

Use caution with access.

What would you recommend for protecting the Water?

Ice, in the ice cave. Keep people away from the entrance and reroute the trail altogether.

Barrier helps, other leaders should come and visit and pray.

What would you recommend for protecting the Plants?

We were taught not to interfere with mother nature. Plants and animals have survived all these years without help from us.

Allow us access in July and August to inventory the plants; then we can make recommendations for access and gathering.

What would you recommend for protecting the Animals?

Plants and animals have survived all these years without help from us, but we give offerings to animals. When we take an animal we treat it with respect like a family member when we bring into house.

What would you recommend for protecting the Evidence of Traditional

Leave alone.

Use?

What would you recommend for protecting the Geological Features?

Keep people away from the entrance of the cave and reroute the trail altogether.

Use care with access; don't allow public in ice cave.

Do you think Indian people would want access to this place?

Yes

If yes, why?

To make offerings with proper arrangements with the park. This was demonstrated today as Zuni came onto the monument and where given access to the ice cave in order to make their offerings.

Prayer offerings, collection of plants for prayer sticks. Make spiritual and physical connections. TCP area of the San Francisco Peaks area with different sand (mineral pigment collection) Things are building up every time we come to places.

To bring our children to teach our culture and traditions.

Are there any special conditions that must be met for use?

Yes

If yes, what are these?

Leave it the way they say it. Let them do their ceremonies

NPS is changing policy, it's getting easier for tribes to collect on Park land. The park service begins to understand that we don't take the whole plant, just what we need.

We need to know more of parks and see if there are places where we need to bring our children to teach our culture and traditions.

Are there any traditional management practices that would improve the condition of this place?

Yes

If yes, what are they?

Collecting trims the plant down a little and it would help the plant.

Our different societies need to collect plants, minerals, soil, and cinders, and make pilgrimages to the ice cave.

Other Comments

Maybe the NPS could use not just Hopi names on the signs.

Keep an eye on everything that's going on with the public, the visitors. We want to have a say in what visitors know, including interpretations, and maybe a cultural day.

Visitor Center

Just inside the south entrance passed the park gate, visitors to Sunset Crater find the Visitor Center, which offers information about earthquakes, volcanism, and Native American history with the area. The facility includes an interpretive film, various exhibits, a seismograph station, and a bookstore. Several picnic tables located east of the building

provide opportunities for interviews as well as meals. While this location was not ideal for the purposes of this study, it did allow us to continue our research with fewer interruptions from park visitors.

Southern Paiute

What is the Indian name for this place?

Please describe this area.

The volcanic mountains are very impressive, there are many in the area. The lava flows and the cool air seepage from the underground, how after all the lave flows, the big pine trees are still growing through the lava pits. I didn't see any animal life; that is very unusual.

Lava rocks. There was once a volcano here.

The lava rocks, the greyness of the ground. The fineness of the ash, the dried fallen trees, the trees that grow in strange directions. Some look like they are dying, but they are still alive.

Would Indian people have used this place?

If yes, why or for what purpose?

Yes

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
✓	✓	✓	✓	✓	

Before the eruption. Because of the lava flows it's hard to say if they used it for ceremonies, power, or star gazing. For example, songs need a cave and it's hard to tell if there were any before the lava flow.

It has deer, squirrels, birds and quail.

They would have come by looking for vegetation.

Is this place part of a group of connected places?

What kinds of places is it connected to?

Yes

The whole area around Wupatki is connected to the volcano.

The San Francisco Peaks.

They are all connected – Walnut Canyon, Wupatki, here.

How is this place connected to the other places?

Since there is a lot of vegetation, people could harvest different kinds of foods.

They are close together.

People passing through the area looking for vegetation. Also, people came from all over for ceremonial purposes; the lava rocks were for sweats, and were sacred for purification. People wouldn't come here while the volcano was erupting, but would come afterward.

Is this place an important source for Water?

Yes

The snowmelt would make good water [before the eruption].

Water is closer here than to Wupatki.

Is this place an important source for Plants?

Didn't see any.

Yes

Pines, squawbush berries, yucca.

This place is close to plants; there are a lot of plants to eat.

Squawbush [sumac] was for cold drinks. Older people would make this; my grandmother did.

There are plants here, but not as many as yesterday.

Is this place an important source for Animals?

Yes

Rabbits, deer, antelope.

Deer, elk, squirrels, quail.

This is a good climate for both deer and antelope. There are squirrels and birds here. Hunting would have been a reason to make a journey here.

Is this place important for Evidence of Previous Use?

Yes

Hopi Pueblos.

I didn't see any. If they had been here, they would have left a mark.

Is this place important for Geological Features?

Yes

The landscape and what it holds, volcanic mountains, cool air seepage.

Lava fields, logs.

The lava rocks are amazing in shape. Some are weird. There are sharp rocks; people would have to be careful.

WATER

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓		

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

Farming.

To wash clothing.

Ceremonies were mostly for summertime.

Medicine for sore throats and colds. Ceremonies, baptizing ceremonies, sprinkling water on the people's heads. You have to go a long way to get some medicine and supplies.

How would you evaluate the condition of the water?

Poor

Is there anything affecting the condition of the water?

Yes

If yes, what is affecting the condition of the water.

The drought.

PLANTS

Fuzzy plant here

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

When they needed it.

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓	✓	

Food for use in wintertime, they could dry it. In summer, they could use it fresh. Medicine, ceremony. It was used according to dreams they had. If they had bad dreams, they would burn and pray with the plants. Making things; yucca and sumac were harvested in March and October.

They would make baskets and cradles. Healing people come here for plants.

Maybe during the warm seasons it was used.

How would you evaluate the condition of these plants?

Fair to Good

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

They are kind of dry. There is a drought, and lack of use causes it to deteriorate. People need to harvest them so they come out stronger next year.

Nobody abuses them.

The drought.

ANIMALS

Deer

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓	✓	✓	✓		✓

For bedding.

Sewing.

Hides, furs for robes. Bones were made into flutes for ceremonies. We wouldn't use deer during the mating season. We put away dried deer meat for the winter.

Medicine for headaches. Horns and teeth were tools.

Season to hunt deer was October, November. The clothing was made from hide.

How would you evaluate the condition of the animals?

Poor
Good

Is there anything affecting the condition of the animals?

Yes

If yes, what is affecting the condition of the animals?

The drought, as well as lack of use and care.
The drought; there is no growth and no food.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

Yes

When would Indian people have used this site and/or artifact?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓					

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓	✓	✓	✓	✓		✓

Dances and games

In the winter, they may have moved. They would have left, people would come to see it. They would know about it but they would want to see it.

How would you evaluate the condition of this site/artifact?

Is there anything affecting the condition of this site/artifact?

If yes, what is affecting the condition of this site/artifact?

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓		✓	✓	✓	✓

As needed.

When passing through, or ceremonially.

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓		✓	✓

Communicate with spiritual beings	Territorial marker	Other
✓		✓

How would you evaluate the condition of the geologic features?

Is there anything affecting the condition of the geologic features?

If yes, what is affecting the condition of the geologic features?

How would you evaluate the OVERALL condition of this place?

Is there anything affecting the OVERALL condition of this place?

If yes, what is affecting the OVERALL condition of this place?

What would be your recommendation for protecting this place?

What would you recommend for protecting the Water?

What would you recommend for protecting the Plants?

What would you recommend for protecting the Animals?

What would you recommend for protecting the Evidence of Traditional Use?

What would you recommend for protecting the Geological Features?

The ice cave for storage, the rocks for buildings and sweats.
Landmarks, grinding stones from lava rocks, volcanic mountains for visions.

They would make fires on the top of the mountains to teach others about the volcano.

There was probably a reason to use these particular features, they wouldn't just be just used in passing.

Fair
Good

Yes

Earthquakes and movements underground. We've been having them recently, and they are affecting them.

It's well-protected.

The trail boundaries need to be improved. The trail up Sunset Crater was damaging it; people need to stay on the trail.

Fair
Good
Fair

Yes

The drought; it needs water bad. Also, air pollution is affecting it.

People being here.

There isn't much you can do about weather, you can't control that.

The amount of people doesn't affect this place.

Fix up the restrooms, otherwise they are doing a good job.

Nothing. It comes when it wants to.

I don't know. It takes plants years to make it here, but they can be damaged with just a few steps; there is heavy traffic here.

Nothing, they have their own laws for protecting them, like hunting seasons.

No

Just keep people on the sidewalks and trails.

Fences need to be put up to keep people off the lava beds. Rocks are crushed when people walk on them.

Do you think Indian people would want access to this place? If yes, why?

Yes

So they can know how other people lived in earlier days. They can investigate plants, compare them to our own back home. They can harvest plants, like sumac for baskets and other things. They can use cedar for medicine, and cedar branches for warding off evil.

To see things, to see the volcano

Probably San Juan would want access. I overheard that they would want to come here, and would want people to cut some bushes.

Are there any special conditions that must be met for use? If yes, what are these?

Yes

The government would have to open the place up for use. Leave it the way it is.

The San Juans would want to be contacted, they need this area. The San Francisco Peaks have meaning to all tribes.

Are there any traditional management practices that would improve the condition of this place?

Yes

Cutting and burning. That's what brings plants back to life.

Leave it the way it is.

Thin out the bushes.

If yes, what are they?

Other Comments

Western Apache

What is the Indian name for this place?

The name probably means "explosion."

Dzil'cho, San Francisco Peaks

Ko' ha godi'i' hi'i' ka'a' which means 'the burnt place.'

Please describe this area.

The Crater and all that. It's the first time I've seen it. I have never seen it before.

The mountain [San Francisco Peaks], Mormon Lake. Some people used to live around there. Prescott area also. The older people have been in this part. Also the July 4th rodeo grounds close to town. A Native rodeo – Pima, Hopi, Navajos, Apache, whoever – natives. We like to come to the celebration. Come from all around and carry out.

The fire, the burnt area and the fire is a reminder of, so to say, the salvation of our people. And what it pertains to, and I won't go into all the details, but there needs to be known that good and evil, so to say, had a battle here. And good won, because what had happened was that evil had, so to say, taken control of us men and so good came in and in the battle he won us back to what we are today.

*Would Indian people have used this place?
If yes, why or for what purpose?*

So evil then burnt himself up and that's why it's a reminder of that; this place is a place where who we are today because good won. This is a holy place, the peaks are a holy place too.

Yes

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
✓	✓	✓	✓	✓	✓

These are sacred mountains around here especially the San Francisco Peaks. People would do piñon gathering. Years ago Flagstaff had a ceremonial dance in town park. They would camp under the pine trees with no tables. They had a park and the rodeo grounds. This was in the west end of Flagstaff up the hill from the observatory.

Gathering medicine herbs.

They sometimes traveled to and from the place in one day. They would camp to gather.

Stories about them in the past. Coming to gather here and in the mountains. Plants for medicinal and also food.

Pilgrimages and then there's medicinal plants growing here. Right there in front [of the visitor center], there's two of them [Apache plume and rabbitbrush]. And of course being that, even though, so to say, places connected with things that happened [here], that was evil but then at the same time good won overall so things that are still in here are still good things that you can use, so you can come back and use them.

In the old days, I know that sometimes they would come in groups but they would be a big, so to say, a big blown out ceremony, there'd be a huge group of people .. [more recently] it would be more a pilgrimage than anything, one or two, maybe four people type thing. All I know for sure is that my dad used to come up here and pray. There could have ceremonies before then; maybe they did something special.

We didn't hunt here. We hunted more this way [east southeast]. In fact, that big ridge that comes off the peaks on this side over here, it's called Deer Ridge in our language.

People would have lived here. This is where, so to say, scientific mind versus my cultural mind, sometimes they conflict but it's the, what makes a difference is the faith in what is being told. I think my great uncle, I think he expressed it probably the best way that I can use and that is, and he was a very devout Christian, and he was raised by his grandfather who was a big time holy person, a very powerful holy person; he was raised by him, and he told him all these stories about the creation and of the different things, about the flood stories and he would do a story that took us here, and he said, "I remember, I asked my grandpa .. and I started schools and these other things and I heard about us coming from Siberia and Alaska and all these things..." and I guess, he didn't say it, but I imagine some doubts about the stories. So he said, "I asked my grandpa, I

asked him you know, grandpa, are these things, these stories you tell me, are they really yes? Or are they just stories to tell?" And he said in a tone, "They're Yes. They're real; that's who we are and that makes us with all the connections to not only the earth but the person that made us."

And so it's a real faith that is like, it makes it whether it's Yes or not. I mean I, it's based on faith, whichever way you gonna walk. So he testified in a number of cases for us about sacred sites, even though he was a very devout Christian, but he still .. there was that real, that relief in those things, so you know, I know having had geology classes, I know that gas bubbles erupt and are circular in these fields over here, and I remember back when I was a little boy when I first, as far as I can remember, when I first came up here with my dad, and I remember we walked ... that's why I was asking you about the ice cave. The ice cave I remember was this way, south from where we are, and that's where we made the pilgrimage, and we were on the overlook and here were these, science says that it's the gas bubbles that formed and they're always round craters there, but what my dad told me was, "You see, this is where those people that evil had taken control of, this is where they used to live. And evil used live within that camp (he called it a camp) ... and when he burnt himself up, these are those remains of the wikiups over there." So in my own life I have to lay the facts together you know, I'm like my grandfather and my dad, ... sometimes science and culture don't match.

Is this place part of a group of connected places?

Yes

What kinds of places is it connected to?

San Francisco Peaks, Winslow area

Yes, but is specific to groups of people. Can't answer unless you think about these people.

All the Apache places in the area bounded by Snowflake, Ash Fork, and the Pinal Mountains.

How is this place connected to the other places?

I want to talk about place names, plants, herbs, all around the San Francisco Peaks, where we traveled. It is hard because we don't know all the herbs in our language in this high elevation around the San Francisco Peaks. There are herbs for healing, visions, birth, for sick people. There are not only herbs, but also sacred trees, sacred springs areas, ceremonial places.

It wasn't just the volcano; I have heard that during this time the sky was falling in the north. Today, there is a crater near the Winslow area. This is the same as I have heard.

Rodeos were important ... people visiting one another annually. In the present day, the University is here and some of our children go to school here. We are farther down south but know the names of other areas and areas up here according to the elders and our cousins. It's Camp Verde.

In the sense of holy places, yes, because the race that, or the thing that happened between good and evil centered all the way

around the peaks. It's connected to this and what happened at Grand Canyon is connected to this too. [Good and evil here] did battle but it involved Grand Canyon, it was one of the results during the battle and the geographic center of the race, so to say, would be the peaks.

Is this place an important source for Water?

Yes
 Did not see any.
 Ice cave, springs on the mountain tops.
 Springs.
 Did not see any.

Is this place an important source for Plants?

Yes
 Herbs, acorns, piñons, banana yucca, spinach, walnut.
 Pine trees.
 Medicine plants.

Is this place an important source for Animals?

Yes
 They would be a source for animals because of the pine tree.
 They would provide food for animals.

Is this place important for Evidence of Previous Use?

Yes
 Corn rock in the lava area. It shows people lived here.
 Gas bubble 'wikiups' and corn kernel rocks.

Is this place important for Geological Features?

Yes
 Ice cave, volcano.
 Sunset Crater
 Ice cave

WATER

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

Periodically

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	

Use and importance goes way back before white people came. Also used the springs on the mountain up on top (it is gone now). Apache traveled to get medicinal plants here because water piped down. Drinking the water the plants have used. Apaches people are using the water everyday here. Our people and students here in Flagstaff but using the water have dried up the springs on the mountain. Water was also for the animals but gone now so don't

know where they go now. People used the springs up top wherever they would go.

All springs are important so what springs were here were important just as much as the springs that come out the peaks on the sides there, especially in the Inner Basin. That was a very, those springs in that area according to my mother who lived to be 92 years old, used to say that in her knowledge ... she grew up with her grandmother who lived to be like a hundred something, and the Inner Basin area used to be pools of water, of course, now we've pumped all the water out and there's no pools up there. Most springs have around them medicine growing, the way the water kinda clear and running a little bit ...

South of Flagstaff there at Kachina Springs, those are still good. Those were a camp area for our people.

How would you evaluate the condition of the water?

Poor

Is there anything affecting the condition of the water?

Yes

If yes, what is affecting the condition of the water?

Populations of the people drinking the water is taking all the water away. Piping water away to the desert areas. Water has its own songs and we have songs about the water. Water songs about the trees and pine trees.

Drought and pumping.

PLANTS

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓	✓		✓	✓	✓

Periodically

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓	✓	✓

Use and importance goes way back before white people came.

Making wikkiups snake-proof.

Piñon ripens around winter. Maybe Mormon tea for food, drink. Medicine plants such as cedar bush; boil it and strain it when you are sick or have a cold. I would heal my Anglo husband with the medicine; had a bitter taste. My children are not learning about this. Acorns collected in July and August; we dry them, grind them then separate them to make acorn soup. Agaves roasted in pit; throw them in and cover it with wet penny sacks; put rocks and ashes over them. Cook them for four days. Mescalero Apache did this. Sour berries, orange in color; we pick them and use them for juice; grind, strain and clean them and mix with water; maybe add sugar.

We went to the Peaks to gather herbs 2-3 years ago. We would use plants, herbs and trees. You have to have respect. Early people know how to teach. We would use them for a reason. For medicine.

People have to know, you can't just dig around for plants.

There is one bush; you would use the leaves for smoke. A long time ago, they would make cigarettes. We use medicine smoke for smelling. You would grind up the plant and throw it around the base of the wikkiup. It is ground with water and something from a snake, like a snake rattle. They touch it on their head and they die. This gets rid of snakes. Acorns and piñon nuts are collected in places 4-5 miles away. Other plants were banana yucca, spinach, walnut. Banana yucca is in July or August. We would spend 2-3 days at the piñon and acorn camps. Piñon was difficult to gather. They would make a pit for their homes for 2-3 days. They would get sap from trees. There was a lot of food.

Pine trees are cooling. And also any plants given a chance and they have water. They give off oxygen. Very important. We breathe and live by that. Very important. Variety of pine trees. Piñon trees for food and some other pine, Sugar Pine, the bark is sweet. Useful things to the tribe. Can't be specific about it. [Respectfully asked not be asked about plant specifics.]

All the real high, potent, sacred medicine that was used to heal come from that area, the pools of the Inner Basin. ... use to say that you couldn't go pick them, you couldn't go pick them unless you purified yourself and prayed, and then you could find [what you needed]. In doing herbs studies with our old people, I found out that ... real potent medicine has a ... sometimes comes in pairs and they both resemble each other but one of them's poisonous. That's why only the people that really knew about the medicine, prayed about it and sometimes the holy people, when they treated somebody that was sick they would be revealed unto them through revelation what kind of medicine was supposed to be used and that's what they would prescribe and they got it themselves, the patient didn't. They knew, they were led to which one it is. They come in pairs, or sometimes they come in fours.

After the event that took place here, after the battle or duel took place, it probably would have just been a periodic thing ... come in, do your thing, get your plants, and move on to another place. Because although evil lost, there's still the, not so much presence, spirit is too cliché, but there's still that hovering of evil in this area. Even though he burnt himself up, so to say, destroyed himself, he still lurks.

One of the medicines that we'd use is the osha root and you find them up at this altitude. The piñon plant used to be a real staple. One of the use areas is around Walnut. There's a grass seed, and I think it's call a dropseed that these meadows used to have in this part of the country, and they would harvest that in the fall. My mom said they used shake and shake and shake to fill the basket. They kinda used it like pemmican like the Dakota people do. They'd use mix the piñon, the dropseed, and jerky together and make bars, and that was a staple. Or walnuts, too. It would be a very high energy food. We use the fat of deer. One of the most important ceremonial plants is

How would you evaluate the condition of these plants?

- Poor
- Fair
- Good

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

I don't know about here. Maybe not enough rain. Like cottonwood trees need rain. Maybe they do get more rain. It snows every winter. Its higher elevation then where she lives.

They are a little bit dry.

At the moment I say they are ok. They look green to me. Plants here look to be taken care of well. But water is being taken away. Water gone from the area.

Drought and bark beetle. Medicine plants included. One of the good things the Park Service does is keep out all the animals except for the natural animals like the elk and the deer and so forth; that's part of, that's their world too. But I mean keeping out the cattle and the horses and everything. That's a positive thing. When the moisture comes back, I'm sure there are some plants that are growing right now but I'm sure not as abundant as they would be if we'd a nice wet winter or more spring rains.

ANIMALS

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓		✓	✓			

In the old days, they would hunt whenever but nowadays only with a permit [licenses]. Even Indians have to have licenses to hunt. They would hunt rabbit and packrats. Packrats, they would skin it, boil it and eat it. But today, no one does it. Maybe because of pollution in the air or animal diseases. Packrat's home is in cactus. They would poke the hole with a stick until it runs out and then hit it. Quails were hunted. A lot of Indian people don't eat fish particularly the elders. Deer is only hunted during deer season. The hide is use for the Sunrise Dance. The dance is for when girls turn of age and have their period. You have to plan one year in advance for it. Parents plan it. They keep them out for a week. The dance is three days long. The first day is a regular dance. The second day the girls dance with the crown dancers. The third day they bless her with cattail pollen which is sifted until fine and mixed with corn and water. This is when she lays on the deer skin and gifts are given. It takes a lot of money to do this. The girl wears a buckskin out fit. Beef jerky is also made from deer. Her mother would hang it out on

*How would you evaluate the condition of the animals?
Is there anything affecting the condition of the animals?
If yes, what is affecting the condition of the animals?*

clothes lines. Maybe she cooked it before or she just hung it out there. Buckskin was also used for clothing.

How can animals live up here if they are interrupted all year long?

Yes

We didn't see any animals to comment on but they are being affected by the tourist and all the activity. All the people. Maybe they come out at night after it is quiet. For example, elk, deer and bears.

People in the park and the skiing resort. If something is put up all year long it is bad for the animals. Where would they move too? I really don't know what would help. We are just invading everywhere.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

When would Indian people have used this site and/or artifact?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
				✓	✓	✓

Periodically

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓				✓		

Use and importance goes way back before white people came.

Whenever anyone was traveling through here, it would be a stop for them. It would have been a good shelter.

Wikiups for living, pre-historically; ceremonies, historically and today. It just reinforces my dad's story that we were once here and it just satisfies my mind that those circles over there were really our village.

Use would have been before the battle. There's a period of time also that when you translate it with what we call them, that we would say "the old people a long time ago." They would have been the ones, and that would be the people that lived along the canyon at Walnut. There's a ceremonial, the coming-out ceremony for the young girls; she has to build a big wikiup, it's a ceremonial. And then today, it's a smaller version but when they build a sweat house, it's not really a house where they sweat; it's built the same way like the wikiups were built.

How would you evaluate the condition of this site/artifact?

Good

Is there anything affecting the condition of this site/artifact?

Yes

If yes, what is affecting the condition of this site/artifact?

Visitors picking at it a little at a time. Taking pieces of it.

I think right now the way the restricted travel through the park is one way to control wear and tear; I mean nature going to do it's own thing but we surely don't have to help speed it up.

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
				✓	✓	✓

Periodically

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
	✓	✓	✓

Communicate with spiritual beings	Territorial marker	Other
✓		✓

Maybe they came here to pray.

How would you evaluate the condition of the geologic features?

Good

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

The younger generations will come up here too. Maybe the grandchildren will be coming up here.

Weather; don't know if there's been any vandalism.

How would you evaluate the OVERALL condition of this place?

Fair to good

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

Just the tourist activities.

In the past we stayed in the cold but if it rained or stormed, they would build a fire in the wikiup. Fire only in morning and evening to make food. In time, we got houses and stoves and got used to warmth. More houses and stove pipes and the heat goes up and drives the clouds and rain away. Rain and mountains used to be in balance. But so many houses spreading. People used to move around where they used to be.

Just the drought. It looks pretty good. From what I saw today, and ... we've been here before, in the last few years we've been coming back more. For a long time I would go back up here; I did it a few times before but when I was younger, like I said I was about

What would be your recommendation for protecting this place?

15, it was almost a yearly pilgrimage in here. So from what I've seen, it seems to be pretty well controlled and I know that those cement paths are for convenience sake, I don't begrudge somebody like myself today being able to cruise around on those things. Some people would say, 'aw, you should leave those things in a natural state, and cinder paths and all that kind of stuff, but we've got to face reality sometimes too. We can't be such that we don't bend a little bit. I mean trees as strong as they are, bend in the wind.

I don't know what to say. They are sacred. It is better not to have camp grounds, no tourists.

I need to present before a committee of tribal advisors before I comment. I will coordinate for that.

From what I see, from where we're at here, I wouldn't say it was a popular destination 'cause cars kinda slowly drift in and out of here, it's not like there was a line coming in. And I think if they keep visitation something of that spirit, I think it would be wise. The more people come in ... some of the things they've done to now are some good things. I'm sure people would still like to climb to the top of the cinder peak. One of the few times when they were still doing that, people were carrying cardboard boxes up there, then sliding down the cinder hills. I know other cinder hills around here are used by hang gliders, so keep some of those things out. But it seems to be pretty well managed right now and the number of visitors...of course, today is Tuesday. I don't know how it is on weekends but they seem to have things under control.

What would you recommend for protecting the Water?

I don't know. The way things are going, we may never see water around here.

What would you recommend for protecting the Plants?

Probably an inventory of some real, so to say, potent plants ought to be undertaken to see in fact what we have here and that would be a cooperative effort on all the people that have ties to here. And then that way, we have kind of a sense of what's here and also be able to, if they begin to start disappearing, then maybe we should start doing something about it. Then we could make recommendations.

What would you recommend for protecting the Animals?

What would you recommend for protecting the Evidence of Traditional Use?

One of the things is the less said about it, you know. It's along the same sense that when we, well to give you a good example, Keith Basso. When he did his book called *Wisdom Sits in Places*, his informants went out and they showed him a lot of things and he just, with his help and their recommendations, they stayed away from all things that are very sacred. Their attitude was that if they let this out, then people that really don't need to go there, they don't know what it really is for, or disrupt all the different harmony so to say, that is gotten out of place. And then the other problem is that with this day and age, with all different sects, like the new age crystal people, they would flock to places like that and desecrate them so and I feel kind of the same way like with these wikiup things, and where the corn

What would you recommend for protecting the Geological Features?

Do you think Indian people would want access to this place? If yes, why?

kernel impressions... and, well, the ice cave is a good example too, that, you know, the less said about it ...

Yes

Because it is sacred. Maybe not here but close by. There's a resort in Sedona in Boynton Canyon which has a trail that gets locked. But the last day of February they get a medicine man and go to pray there. Maybe something like that could happen here especially with the ones who know about the place. This monument could also become a place to teach the younger generations.

Looking for medicinal plants. We would not deplete it. We have our own ethics. Most observe very carefully.

They should be able to see the rings because that's really something that ties them to this place and then as I said the ice caves, and [some of those places that public doesn't see].

Are there any special conditions that must be met for use? If yes, what are these?

Yes

They have rules. Have to have permits and things.

That would probably have to be an intergroup agreement between those people because I don't know how the Navajos would feel, whether they want to ... They may name the plants and stuff but they won't name you the uses but at least you'll know those are the kind of plants that they use. We have a real problem; they're decommissioning the power plant in Fossil Creek and one of the, and we're talking about springs here again, and one of the real sacred areas ... the whole place is a sacred area and right now there's access that can get you pretty close to where the spring is. There's a road that goes through there and in the decommission process they want to do away completely with the road that goes to the spring. Now what we're saying is that we should still keep that road, and I'll use myself as an example, there's no way I can walk to the springs and it's a long way up there. And I don't ride a horse anymore, I use too. So that's kind of out of the question so we said that road really needs to be back in there so we can get our elders and the older people... I've got a great aunt that's 90 and uses a walker. So I think that somehow it should be accessible to our elders; the young people can hike in there. That's why I say I can really understand the cement slabs going around, it's pretty good that somebody like myself or anybody...at least we get some kind of a view...but in these places concerning our people something should be available so they can get to it.

Are there any traditional management practices that would improve the condition of this place?

Yes

If yes, what are they?

They [the animals] probably live way up high in the mountains.

Sometimes noxious plants come and take over and knock out the native grasses and the animals move. So no matter what you say it may not do any good. Should not bring in plants from overseas. This may help some.

I wouldn't mind seeing a blessing ceremony, so to say, for the place. I'm sure it could be something like an ecumenical thing for different groups. Speaking for us, I think it would be very minimal that we would probably designate, probably right around, I'm guessing but like say March or April and we would come in here again with all privacy due it, it would not be a public thing. Probably a one day thing, I don't know; (some of the elders might say four days) because the mountain spirits live up there (San Francisco peaks) and they ask them to come down and dance and so they may, it would be at night. So we'd need to be able to stay overnight.

Other Comments

If you offered prayers you must do it whole heartily. Do it sincerely. Observe all the rules. If you grew up in the forest you know it. But some people don't listen or respect it and that's why it is throwing us off. Maybe this brings a good thing. The supreme who is above us knows. We just have what little is left. Us groups who are minorities. How can we go up against the people? You have to live it to know. To be in the forest everywhere. Our people respected the plants. If they took a branch but we would turn around and apologize. Same with the plants and animals. We have cattle and ranches on the reservation. The ranchers save one area and keep cattle in another area. This lets the land come back. Here it is year round grazing. Not allowed to build back up on its own. Prayers do help but it is within yourself. Up to you and the consequences are yours. You rely on integrity and spirituality. Always be truthful and have integrity. Your own within you. Don't do something that you know is going to go wrong.

A lot of these things, even among ourselves, are not, so to say, everybody knows and because of that there are a lot of things that are said or done, or like I said pilgrimages only the few that still remember and know and respect it still do these things. They need to know because they don't know these things and they don't do these things anymore, that a lot of bad things are happening. We need, so to say, to go back to our roots like this place here. We need to tell them again so it can still be a living thing. And there's always that caution that we have among our own people, that's why we're having these problems, also we (and the others who deal with the NAGPRA issues), and we're trying to get back all the ceremonial things and funerary objects and everything, because the old people told us to bring them home, because the reason why we're having all these problems is because they're over there were they're not supposed to be. And so with that type of thing concerning things like the knowledgeable thing about this place is that, as I told this one guy you know, and I said "you know, I'm going to tell you some things that are very, very important and you gotta give it the utmost

respect, you can't print it, you can't play with it, so to say, by telling it, spreading it like it was just another story, it's got to be part of you, it's got to be part of your heart. So only if you're ready for it, then I'll tell ya." And that's what we're saying here too. When we tell this story of what happened here between good and evil, and why it happened and why we have to...because it's still today, it's a living part within our heart that sets a path for you to live the way you're supposed to. So that's what we were talking about, our conversation that yes we need to tell the story to our people so they understand and everything but at the same time we need to impart to them how serious it is; it is not something that you so to say, it's just as dangerous to tell it and let somebody not respect it, then you really got some problems because in our way of life it's uh anything you do that's not right, there's a consequences to pay and our belief is that whatever the consequences does not happen to you directly, what it does is it directs something that you love very much and they can become sick, they can lose their life, and if you haven't learned your lesson from that then it's the next one; then eventually it kills you; you're the last one, because you haven't learned from what you're doing. So it's very... and I guess why I'm telling you this is a lot of times researchers come to us and especially when we deal with these people in the museums about these artifacts that they always want more documentation, more documentation. And one of our elders I think said it the best, he said, "You know, you got you bible, it ends at Revelations, what we're telling you is Revelation. There's nothing anymore after that." So and also to help I hope that you can understand why I can't really share some of these sensitive issues; I have two young girls, one's a junior in high school and one's a seventh grader and they are gems of my eyes, and I don't want to make a mistake and they're going to suffer for it. I don't want that. So what I tell you is what I can tell you, otherwise... I... there's things that can happen to them. So I guess the crux of the conversation is that this place is a very holy place.

Summary and Ethnographic Commentary

The preceding data for the Pai, Southern Paiute, Zuni, and Western Apache groups is summarized to present a more concise report of each group's relationship with Sunset Crater. Although the Hopi Tribe and Navajo Nation were unable to participate in the study, they provided us with documents about traditional use of the Flagstaff area from which we have compiled summaries of their relationships with Sunset Crater.

Pai Summary

The area surrounding the Lava Flow Trail has traditional been referred to as *Ba'wanwa* and *Wi'hagnbajga* meaning "Snow Mountains" and used by the Pai people for a variety of purposes. Due to the sanctity of the site, permanent settlements would not have

been established. Instead, the place was used for such religious actions as vision quests or preparations for ceremonies and hunting. In former times, prayer, songs and sacrificial activities were performed before and after the volcanic eruption. Lava rocks would have been gathered for use in sweat lodges. Firewood, piñons, pitch, and berries were also collected from the region. The Pai believe that astronomical knowledge could have been obtained at Sunset Crater as well.

Sunset Crater National Monument does not exist in isolation from other places. To the Pai, Walnut Canyon holds the strongest connection to the monument. The trade routes between the Hualapai, Yavapai and the Hopi people also connect this place to others in the region. These connections were established through origin stories including one story involving a fly that informed the people of the coming volcanic eruption. The circular lava structure that resembles a Yavapai *wikkiup* is evidence of the long term interaction with Sunset Crater by Indian people. This natural form of housing would have been used during the summer months while on trading, hunting, plant gathering or power seeking expeditions.

Specific features within the monument that are held with cultural significance include the water and snow that accumulate in and around the crater as well as the streams that flow beneath the earth. Used on a daily or seasonal basis, water and snow were collected for food, drink, medicine and ceremony. Water was used also for tanning hides and making baskets. It was noted that it was also carried from Sunset Crater to Wupatki to be used conservatively. Traditionally, warriors would utilize snow. For example, they would walk barefoot through it to learn to endure pain. Snow was also employed to purify a newly wed couple by washing themselves naked.

The plants and animals found in the monument are considered to be more powerful than those in adjacent areas because of the sacredness of the site. As a result, all of the plants have importance including the saltbush, cliffrose, piñons, sage, century plants and cedar. These were made use of either on a daily or seasonally basis for food, medicine, ceremony, or for making useful implements. If a botanical resource became limited, the Pai people would travel elsewhere to ensure its preservation. The deer, coyotes, eagles, hawks, raccoons, foxes and bears were seasonally relied on for food, medicine, ceremony, clothing and tools. Each animal had specific ceremonies and prayers to obtain what was needed. For instance, a deer dance has to be performed before collecting hide and antlers. Similarly, there are certain times when people avoid hunting such as when animals are mating or when certain ceremonies are occurring.

To the Pai, the mountains, the crater, the ice cave, the lava rocks, and the cinders are regarded as “elders” with powerful abilities. These geological features were not only territorial makers but were sought throughout the year to seek knowledge and power, for ceremonies, to teach new generations valuable cultural traditions or to communicate with spiritual beings through prayer. In particular, the lava rocks were heated and used in sweatlodges, to warm houses or to heat the bed of someone experiencing aches and pains. Participating in a sweat lodge was described as going to church or returning to the “mother’s womb.” The Pai consultants also believe that the ice cave could have been used to store food during hot summer months.

Southern Paiute Summary

The Southern Paiute name for Sunset Crater is *Kaiv Pa'kectis* meaning "Mountain with hole or water bowl on top." This area has been used traditionally to collect basket making materials, medicinal herbs, and food plants. The Paiute also hunted and fished in this area and recognize a strong connection between Sunset Crater and Wupatki. Evidence of previous Indian use of the area included Paiute baskets and bodies such as that of a farmer found in one of the caves. Snow melt from the mountains and ice from the caves was used for subsistence and domestic purposes, but also had medicinal and spiritual uses. Significant geological features include the volcano and the ice cave. The consultants speculated that the Indian people who witnessed the volcanic eruption were frightened but returned to the area once the land had cooled. Both prehistorically and today, these features are visited seasonally for seeking knowledge and power, to communicate with spiritual beings, and to receive songs from the caves.

The elders agreed that Southern Paiute people would come to Sunset Crater for camping, hunting, plant gathering, seeking power and knowledge, and performing ceremonies. One elder felt that it was difficult to say conclusively whether these activities occurred before the eruption because the landscape was so changed afterward. As an example, he explained that, "songs need a cave and it's hard to tell if there were any before the lava flow."

Plants are of great cultural importance to Southern Paiute people. Southern Paiutes used a variety of plants found in the park including pines, three leaf sumac berries, and yucca. Different plants were harvested at certain times of the year. Yucca and sumac, which were used for baskets and cradles, were harvested in March and October. Plants that could be dried after harvest would be used during the winter for food. One elder said, "This place is close to plants; there are a lot of plants to eat. [Sumac] was for cold drinks. Older people would make this. There are plants here, but not as many as yesterday." Plants also are used for medicine and in ceremony and as one elder explained, "Healing people come here for plants." Also, the type of plant to be used would be determined by the dream the person had. If, for example, a person had a bad dream, he or she would burn and pray with the plants.

Animals are also culturally significant to Southern Paiute people. The elders who visited the park identified rabbits, deer, antelope, elk, squirrels, and quail. Their uses of these and other animals, which pre-date European contact, included food, medicine, ceremony, clothing and tools. The Paiute elders explained how many objects were made from animal hide, horns, teeth, and bone, including clothing such as robes, and various tools. Medicine was made from animal parts to cure such ailments as headaches or sickness believed to be related to a specific animal. The elders added that deer were not used during mating season, that they waited until afterward during October and November to hunt them. They dried much of the deer meat for later use.

Critical to all forms of life, water from a Southern Paiute perspective is essential to the distribution of power throughout the landscape. The Paiute people believe that the mountains call down the water in various forms and as it makes its way downslope either underground or as surface runoff, it transfers some of its power to resources along the way. Where the water resurfaces in springs and ice caves, more of its power is concentrated making use of these places spiritually dangerous for anyone other than specialists who know how to use those places properly. One elder added that just as water was a conduit for power across the landscape, the waterways were paths for spiritual people to follow to the source of the power.

The geologic features of Sunset Crater were used daily, seasonally, prehistorically, historically, and today in various ways. Because features such as the Crater, the ice cave, the lava flows, and cinders are products of powerful earth forces that acted to put the world back in balance, uses tend to be ceremonial. Other uses include seeking knowledge and power, teaching new generations, and communicating with spiritual beings. One elder suggested that the ice cave may have been used for storage, and the lava rocks may have been used as grinding stones or in the construction of buildings and sweat lodges. As one elder explained, “the lava rocks were for sweats, and were sacred for purification. People wouldn't come here while the volcano was erupting, but would come afterward.” The volcanic mountains are sources of great power and knowledge and, consequently, a primary choice among Southern Paiutes who need to seek visions, knowledge, or power. In some cases, specialists would build fires on the mountain tops to teach others about the volcano.

Zuni Summary

Although a specific name for Sunset Crater was not offered, the Zuni people refer to the San Francisco Peaks and the surrounding area as “*Kwa ba chuwa llona*.” The Zuni people also have names for volcanoes and sharp volcanic rocks but, given the sacred and powerful nature of these materials, they did not feel it appropriate to share that information at this time. As in the past, the Zuni people regularly visit the San Francisco Peaks to obtain spiritual power and to ask for blessings. Sunset Crater is believed to possess a similar capacity as it is positioned near a point of pilgrimage. Resources in the park that the Zuni identified as significant to the landscape include scenery, valleys, plants, air, and Sunset Crater. Traditionally, people would have settled or camped in the park's vicinity but not near the crater. They would have come to hunt, gather herbs, and collect soil, minerals, and volcanic rocks. Ceremonies would have occurred in special places such as in the ice cave to which Zuni people continue to make pilgrimages for offerings and other religious practices. They also engaged in star observation in the park.

Many of the features in Sunset Crater National Monument are culturally interconnected to other places within the region. Mount Taylor in Grants, New Mexico, for example, is similar in size, slope, persistence of snow, and cultural importance. The oxidizing rock at Sunset Crater and the San Francisco Peaks resembles the lava flows and cinder cones at El Malpais, New Mexico. These areas have parallel plant assemblages as well, such as aspen and sumac, which are gathered seasonally for making prayer sticks. The ice cave at

Sunset Crater, referred to as “*Sun hakal'ekwaula*,” is associated with similar caves found in the privately owned Bandera Crater, New Mexico and in the El Malpais area. According to the Zuni, these caves are not separate entities. Like a plant’s roots, they are connected through an underground series of channels, and are religiously significant to the Zuni people. The Sunset Crater ice cave is related to the west direction, while Bandera ice cave is related to the east. These ice caves are mentioned in Zuni songs and are visited twice a year, during the summer and the winter solstice. It is believed that the spiritual beings that brought the Zuni from the Grand Canyon wanted the people to live in a safe place. Therefore, the spiritual beings guided the people to the Zuni’s current home at Middle Place between the Mount Taylor and the San Francisco Peaks volcanoes. As a result, the Zuni Pueblo is connected to everything within the area including Sunset Crater. Offerings are still left in ice caves so that eruptions will not happen again reflecting their belief that the spirits and powers of cold and heat are one and the same. By leaving offerings and praying to cold forces, they show respect for the powerful forces of the earth and hope their prayers will dissuade future volcanic eruptions.

For the Zuni, the streams and rivers that run from the Zuni River to the Little Colorado River to the Colorado River and west to the Pacific Ocean create an “umbilical cord” that leads back to the birthplace of the Zuni. Beginning in prehistoric times and continuing into the modern era, the Zuni have relied on above or belowground waterways. This reliance has been on daily, seasonal or calendrical basis. The Zuni, for example, have visited the ice cave since its formation during the Sunset Crater eruption. The pure water found in the “*Kenteleton*” or “room of ice” is used for healing and in medicine, for food and drink including during pilgrimages, ceremonies, and when asking for blessings. The cave has been used as well for storage and is associated with planting crops.

Plants have been central in the lives of the Zuni people since prehistoric times. Tribal elders identified many important plants in the park that are still used today. Plants provide seasonal foods, medicine, ceremonial purposes, and are used to craft a variety of objects including prayer sticks. Some plants like sage are used daily while others are sought on a seasonal, annual, or calendrical basis. When preparing to travel to the ice cave, the Zuni people would gather certain plants bi-annually taking only what was needed to make prayer sticks and offerings. One tribal representative commented that the Zuni might not travel this far to gather plants that occur abundantly throughout the southwest unless a special plant was required.

The animals that live in the Sunset Crater area are culturally significant as well. Prehistorically, historically, and even today, these animals are sought daily or seasonally depending on the need. All animals, especially birds, rabbits, squirrels, deer, antelope, and elk are sources of food, clothing, tools, and medicine, as well as being important components of ceremony and prayer. In particular, various bones are made into tools. Fluids extracted from the leg glands of deer or antelope are believed to increase speed when running. Bluebird feathers, antlers, and fur have medicinal applications. Antlers are shaped into carving and fetishes or are used by ceremonial dancers. At the same time, animal hides, or feathers of sacred birds such as blue jays, are used by kachina impersonators or in initiation ceremonies. Some animals and even insects like flies, can visit people to convey important information.

Contemporary evidence of Native American use of Sunset Crater include Hopi prayer sticks found by the Zuni in the entrance to the ice cave as well as in the smooth areas within the cavern; they explained that they do not bother what others have left. In terms of older remains of Zuni occupation, they felt that the area was visited as needed from pre-historic to modern periods to conduct ceremonies and to obtain spiritual strength from powerful features such as the ice cave.

As with plants and animals, the unique geological features of Sunset Crater are essential to Zuni culture. From prehistoric times, items like pigments, alkaline in the lava, certain minerals or crystals found near volcanic activity have been gathered as necessary: daily, seasonally or annually, in the Sunset Crater area. Lava rocks such as basalt have been used as grinding utensils. Sharp lava stones were used for scraping flesh off and softening animal hides. Yellow, red, and blue sands are employed as paint and in ceremonies. Today, cinders may be used to line driveways or oven floors because of its heat retaining ability or laid in fields to prevent sinking into mud. In religious terms, the ice cave and Sunset Crater are referred to in Zuni migration songs. As stated above, it is believed that the cave ice is pure and has healing properties. Offerings are left not just for the Zuni but also for all the people in the area to ask for good health, rain, and productive crops. Other activities that these features are used for include communicating with spiritual beings to seek knowledge or power or to teach younger generations about the cultural significance of the place. This may be accomplished by performing ceremonies in the ice cave or in special geological places within the monument's boundaries. Finally, the San Francisco Peaks stand as a significant territorial marker between tribes.

Hopi Summary

Several documents including one from the Hopi Tribe (Mercer 1999) were reviewed for this section. The majority of the information concerns places, plants, and stories, however, we supplement that with other traditional use data in the landscape chapter and appendices. The following account documents the witnessing of the A.D. 1066 (approximately) Sunset Crater eruption by Hopi ancestors, illustrating a long-standing traditional connection with Sunset Crater.

The Hopi people call Sunset Crater *Palatsmo*, which, with the surrounding area, is prominent in Hopi clan history, ceremonial cycles, and Hopi religion. *Palatsmo* is the home of Kana-a Kachina (Nequatewa 1932 in Mercer 1999). This place continues to be part of the ceremonial cycles of some Hopi societies and traditions, and a shrine area for the Two-Horn Society and the Water Clans. Sunset Crater is important to all clans as part of their plant pilgrimage to the mountains, which is associated with the kachinas (Mercer 1999).

As part of their oral tradition, the Hopi people have a story about a *katsina* and the eruption. Wicked men from the village of Musanguuvi pretended to be *Ka'nas katsina* to take advantage of the *katsina's* wife when he was away. *Ka'nas katsina* became angry and wanted revenge; his relatives advised him as to how to scare the men who had wronged him (Maloki and Lomatuway'ma 1987:72):

Collect some snakeweed, from the pine get some bark; also gather the dry, soft needles, and the sap that runs from the wood. Then dig a hole on top of this mound to the east of us and place everything you collected into it. Lastly, take your flint and strike it until sparks fly. At some point, if you're lucky, you'll get a fire started and the material will burn. But mind our next instruction carefully. Don't drive the hole too deep into the ground. Just dig a little way, then let it be. North of that hill, by the way, resides a mighty wind, the whirlwind. Plead with him to come to you and fan your fire so that it turns into a great blaze.

The *katsina* followed his relatives' instructions, recruited the whirlwind's help, and caused the eruption of Sunset Crater. The people at Musangnuvi recognized this act as punishment for tormenting the *katsina*. After the eruption and the ensuing fires ended, years of drought and famine struck the land. Some people were forced to leave Hopiland to seek better conditions. They went in all directions, some to New Mexico near the Rio Grande, and some to other tribes including the Southern Paiutes. The game animals also disappeared and the people had to rely on cactus and other famine foods to survive. The men who tricked the *Ka'nas katsina*, instigating all that followed, died (Ferguson and Loma'omvaya 2004).

After the *Ka'nas katsina's* revenge, he began to empathize with the people of Musangnuvi. To end their suffering, he brought crops as gifts and sent a procession of *katsinas* to the village where they danced in the plaza. The *katsinas* advised the people to save small amounts of food in their store rooms so it would multiply, then returned home. The rains returned to Hopi and the people were able to go return to their former prosperity (Ferguson and Loma'omvaya 2004).

There are many Hopi traditional use plants growing within the boundaries of the Sunset Crater National Monument that continue to be used in traditional ways and for various purposes, however, the Hopi Tribe has indicated a need for a plant inventory before identifying specific species. The Hopi people have identified wild spinach as one among many food and medicine plants in the park (Mercer 1999). These plants usually are not cultivated but gathered opportunistically. One example of a cultivated traditional use plant is the indigenous Hopi blue corn, which also occurs in pink, white, and yellow varieties. This plant is the main ingredient of Hopi piki bread. It is mixed with *Chamisa* ash, which is four-wing saltbush (*Atriplex canescens*) stems and leaves, or the ash of spent vines and pods of beans, or juniper, then with water and fat. Traditionally, the fat source was sheep spine or squash seeds but today, the Hopi may use lard or vegetable oil (Kuhnlein 2000). While it is not our intent to preclude the Hopi people's need for a plant inventory, for the benefit of park management, we have included a traditional plant use list compiled from other sources in Appendix F.

Culturally significant geologic features and places within or adjacent to the park include lava rocks, the ice cave, or *Patusungki*, meaning Home of the Ice, O'Leary Peak, and Bonito Park. Lava rocks are used in ceremonies and the Sunset Crater area is the Hopi people's nearest source of lava rock. The ice cave continues to be an important ceremonial

place to where certain Hopi societies make pilgrimages and leave *pahos*, or prayer sticks. All of the Water Clans visit the ice cave for ceremonial purposes, and members of the Two-Horn Society collect ice from the cave for ceremonial use. O'Leary Peak is the eagle-collecting area of the Snow Clan, and Bonito Park is a traditional hunting area. As such, Bonito Park is a place of hunting rituals and songs. It is a plant-gathering area as well, but perhaps its greatest significance is as the ceremonial womb of the kachinas who live in the San Francisco Peaks and pass through Bonito Park on their annual journeys to the Hopi mesas (Mercer 1999).

Western Apache Summary

The Western Apache have interacted with *Ko' ha godi'i' hi'i' ka'a'*, 'the burnt place,' for centuries. As one elder described it, Sunset Crater serves to remind the people of how the forces of good can prevail over evil. The crater and lava flows are all that remain of a battle that saved the Apache people long ago:

The fire, the burnt area and the fire is a reminder of ... the salvation of our people. And what it pertains to, and I won't go into all the details, but it needs to be known that Good and Evil, so to say, had a battle here. And Good won, because what had happened was that Evil had ... taken control of us men and so Good came in, and in the battle he won us back to what we are today. So Evil then burnt himself up and that's why it's a reminder of that. This place [made us] who we are today because Good won. This is a holy place; the peaks are a holy place too (Apache consultant 2003).

Although Evil lingers in the area, when the forces of Good triumphed, they left behind positive things that the Apaches continue to come here to use. After this event, *Dzil'cho*, the San Francisco Peaks, and the surrounding landscape including Sunset Crater, Mormon Lake, and Prescott were inhabited by Apaches. As one elder explained it, this notion as well as other traditional understandings of Apache use of the area, often will conflict with scientific conceptions:

This is where ... scientific mind versus my cultural mind, sometimes they conflict but it's the ... what makes a difference is the faith in what is being told. I think my great uncle ... expressed it probably the best way that I can use ... and he said, "I remember, I asked my grandpa... And I started schools and these other things and I heard about us coming from Siberia and Alaska and all these things ... I asked my grandpa ... are these things, these stories you tell me, are they really yes? Or are they just stories to tell?" And he said in a tone, "They're Yes. They're real. That's who we are and that makes us with all the connections to not only the earth but the person that made us." And so it's a real faith that is like, it makes it whether it's Yes or not. ... So you know, I know having had geology classes, I know that gas bubbles erupt and are circular in these fields over here, and I remember back when I was a little boy when I first, as far as I can remember, when I first came up here with my dad, and I remember we walked ... science says that it's the gas bubbles that

formed and they're always round craters there, but what my dad told me was, "You see, this is where those people that Evil had taken control of, this is where they used to live. And Evil used to live within that camp. And when he burnt himself up, these are those remains of the wikiups over there." So in my own life I have to lay the facts together you know, I'm like my grandfather and my dad; sometimes science and culture don't match (Apache consultant 2003).

These sacred areas have been used for a variety of purposes including hunting, gathering food, camping, praying, and performing ceremonies. The Apache people have stories that tell of them making pilgrimages to Sunset Crater to gather medicinal and food plants such as Apache plume and rabbitbrush. One elder told of how the Apache people would hunt to the north of the monument on the large ridge coming off the San Francisco Peaks. In recent times, Native American rodeos and dances were held in the town's park on the west end of Flagstaff up the hill from the observatory.

Sunset Crater is culturally interconnected to other places in the region. The elders expressed that these connections can vary among tribal groups and each should be individually considered. For one Apache representative, the San Francisco Peaks, Camp Verde, and Winslow are culturally connected with Sunset Crater. Another elder stated that all the Apache traditional use areas bounded by Snowflake, Ash Fork, and the Pinal Mountains are related to the park as well. These connections have developed over many generations. During the battle of Good and Evil, a crater with cultural relevance similar to that of Sunset Crater was created near Winslow as a result of the "sky falling." The battle between Good and Evil also connects Sunset Crater to the formation of the Grand Canyon:

In the sense of holy places, yes, because the race that, or the thing that happened between Good and Evil centered all the way around the [San Francisco] peaks. It's connected to this [Sunset Crater] and what happened at the Grand Canyon is connected to this too. [Good and Evil] did battle but it involved the Grand Canyon; it was one of the results during the battle and the geographic center of the race ... would be the peaks (Apache consultant 2003).

Water contained in the ice cave or running in springs from the surrounding mountain tops continues to be used periodically for food, drink, medicine, and ceremony. Kachina Springs, just south of Flagstaff was traditionally an Apache camping ground for some of these activities. Apache people traveled to this area to gather special medicine plants that were nourished from these mountain springs. At the same time, they would drink the water that the plants have used because it contained unique properties. Today, Apache people continue to use the water in the area especially those that attend school in Flagstaff.

The centrality of plants in the lives of the Apache people extends back in time before European occupation and has persisted into the modern era. Seasonally, annually, calendrically, or periodically, plants have been gathered for food and drink items, medicine, ceremonies, and to make useful implements or structures. Herbs, acorns, piñons, Mormon

tea, banana yucca, wild spinach, walnuts, and various pine trees like sugar pines are just a few of the culturally significant plants used by the Apache people. Medicine plants such as cedar were boiled and strained for colds. In the winter months, acorns and piñons were collected in forests four to five miles from Sunset Crater. The Apache people would spend two to three days at these camps gathering and preparing the harvested plants. The acorns were dried, ground, and separated to make acorn soup. Tree sap and other food items would be gathered. In July and August, they focused their efforts on harvesting Banana yucca fruit. Orange-colored 'sour berries' were picked, cleaned, ground, stained, mixed with water and sugar to make a wild fruit juice. Other use plants include the osha root, piñon nuts, dropseed seeds, walnuts, Douglas fir, willows, and alders. Traditional plant gathering guidelines continue to be observed:

[Her grandmother] use to say that you couldn't go pick them unless you purified yourself and prayed, and then you could find [what you needed]. In doing herbs studies with our old people, real potent medicine sometimes comes in pairs and they both resemble each other but one of them's poisonous. That's why only the people that really knew about the medicine, prayed about it and sometimes the holy people, when they treated somebody that was sick they would be revealed unto them through revelation what kind of medicine was supposed to be used and that's what they would prescribe and they got it themselves, the patient didn't. They knew ... they were led to which one it is. They come in pairs, or sometimes they come in fours (Apache consultant 2003).

The animals that make their home in the vicinity of Sunset Crater are significant in Apache culture. Since prehistoric times through the historic period and into today, animals have been used daily or seasonally depending on the food, ceremonial or clothing requirement. The area around Sunset Crater is considered to be an excellent hunting ground because the pine forest provides food and shelter for wildlife. Rabbits, quails, and packrats were sought in the past. They continue to hunt deer and use the hide ceremonially in the Sunrise Dance, which is a three-day ceremony that honors young women when they come of age.

Since prehistory, specific geological features within the monument including the ice cave and crater have been visited by the Apache people. These landforms were places to conduct ceremonies and to pray to spiritual beings. Other activities included communicating with Indian people and teaching younger generations about the cultural significance of the place. These features also stand as territorial markers between tribes.

Navajo Summary

Several documents including one from the Navajo Nation (Begay and Begay 2003) were reviewed for this section. The majority of the information concerns places, plants, and stories, however, we supplement that with other traditional use data in the landscape chapter

and appendices. The following account documents several names for Sunset Crater and illustrates traditional ceremonial connections with Sunset Crater.

Several Navajo names have been documented for Sunset Crater. *Bitahotsi*, the Red-Place-On-Top Mountain, was recorded by Matthews in 1897. He identified it as the place where the Western Water Clans rested and convened a conference to release the Big Snake that was a guardian of the travelers. *Dzil Dilkoohí*, the Smooth Mountain, was recorded by Vannette and Feary in 1981. In modern usage, this name refers to cinder cones in general including but not exclusive to Sunset Crater (Begay and Begay 2003). Several researchers have recorded the name *Dzil Bilátah Litsooi* for Sunset Crater (Baars 1995; Van Valkenburgh 1941; Wilson and Dennison 1995), but *Dzil K'idzi'tsoi*, Yellow Top Mountain, is the contemporary Diné name for Sunset Crater (Begay and Begay 2003).

Van Valkenburgh (1941) documented Navajo ceremonial associations with Sunset Crater, and Goodman (1982) noted prehistoric Navajo inhabitation in the surrounding area. Vannette and Feary (1981) described Sunset Crater as a sacred place for prayers and offerings, for gathering plants, collecting water, and holding ceremonies. The crater is part of a larger cultural landscape of cinder cones, all of which appear in unspecified ceremonial stories. This landscape falls within the San Francisco Peaks volcanic field, consequently, connecting it to an extensive area of central Arizona. The cinder cones are significant in Navajo lifeways as the homes of Holy People who taught the Navajo people how to live before departing and becoming part of the natural landscape (Downer et al. 1988). These Holy People still live in the cinder cones today (Begay and Begay 2003).

Navajo stories identify two significant places within Sunset Crater Volcano National Monument: Sunset Crater and Bonito Park, which the Navajo call *Hootso*, or the Meadow. In the first account, the creation of the crater is described. The second story describes the religious significance of *Hootso* (Begay and Begay 2003).

This mountain, Dzil K'idz'itsoi was heated to boiling. It is said that the sun was responsible for this crater. The sun set fire to the mountain and to the land. It is said that at the time the land was small. From then on the land grew and became as large as it is today. But the sun is responsible for Sunset Crater. This happened after the Grand Canyon was gouged out of the ground. The creation of the Grand Canyon is another story. (NN)

You see, on the peaks of Dook'o'ostiid, there is where the Yé'ii Bicheii come from. The Yé'ii come here and stop here before they go to the Navajos... There is a place like this at Dibé Ntsaa, La Plata Mountains, also, it is said. There the holy people leaders meet at this nice flat area, meadow. These holy ones come from the [sacred] mountains, the gods. All the [sacred] mountains are said to have these types of meeting places. (NN)

In addition to the stories and ceremonies associated with Sunset Crater, there are many traditional use plants in the park that are of concern to the Navajo people. Several species identified with Sunset Crater are: horsemint or wild bergamot (*Monarda fistulosa*),

green gentian (*Frasera spp.*), scarlet penstemon (*Penstemon murrayanus*), wild currant (*Ribes spp.*), sunflower (*Helianthus spp.*), rock lichen, Prince's Plume (*Stanleya pinnata*), and locoweed (*Astragalus spp.*) (Begay and Begay 2003). These plants are used by the Navajo people as food, as medicine for people and livestock, for making a variety of useful items, and for ceremonies. While Begay and Begay (2003) provide an extensive list of traditional use plants, it is not an exclusive list. It does, however, establish traditional plant use by the Navajo people within the park. Additional plant use information is provided in Appendix H.

Ethnographic Commentary

Situated within a multi-cultural use area, Sunset Crater Volcano National Monument is important in many ways to the six ethnic groups of this study. Plants, geologic features, and places comprise the resources of greatest concern. All the participating tribal representatives, the Hopi Tribe (Mercer 1999), and the Navajo Nation (Begay and Begay 2003) stated a need to conduct a thorough plant inventory of the park before they could make specific plant management recommendations including access and use requests. They also emphasized uses of plants for food, medicine, and ceremony.

All six groups identified the ice cave, lava rocks, and cinders as culturally significant, however, the Zuni Tribe also identified yellow and blue/green pigments and crystals, and the Southern Paiute representatives include activities on top of volcanic mountains for vision-questing and communicating with other tribes. Sunset Crater, Bonito Park, the lava flow, and O'Leary Peak were identified by the six groups as having cultural significance. Although O'Leary Peak is not part of the park jurisdictionally, tribal representatives view it as part of the Sunset Crater area under study.

Implicit in the discussions and information in Mercer (1999) and Begay and Begay (2003) is the idea of Sunset Crater as a place of power, spirituality, and respect. Unlike Euro-American associations of death and destruction with volcanoes, the six ethnic groups recognize the volcanic activity of Sunset Crater as that of lessons and rebirth, remedial, and necessary for survival. The drastic changes in the land that Euro-Americans see as destructive are viewed by Indian people as indications of imbalance that the Creator is correcting. The presence of cinder cones, eruptions, and lava flows is seen as evidence that the mountains themselves are alive, and have the power to act. These places are treated consequently with great respect.

CHAPTER FOUR WALNUT CANYON NATIONAL MONUMENT

Walnut Canyon National Monument occupies approximately 3,600 acres immediately adjacent to Coconino National Forest and the city limits of Flagstaff, Arizona (Figure 4.1). The monument was established by Presidential Proclamation No. 1318 (39 Stat. 1761) on November 30, 1915, to preserve the prehistoric ruins of ancient cliff dwellings and to properly manage the cultural and natural resources of historic, social, and scientific interest. The monument was enlarged in 1938 (Presidential Proclamation No. 2300) and 1996 (P.L. 104-333), and altered in a land exchange with the Bureau of Land Management in 1965 (Public Land Order 1269).

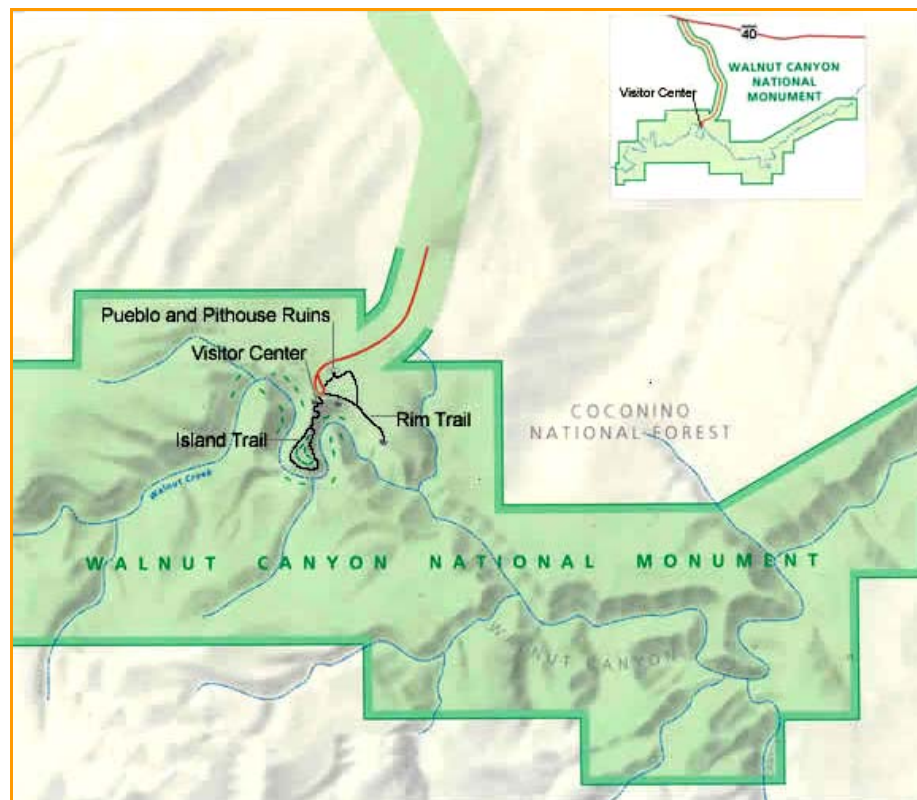


Figure 4.1. Walnut Canyon National Monument (NPS 2003)

Carved by Walnut Creek over 60 billion years, Walnut Canyon is lined with limestone ledges over sandstone walls. Although twenty miles long, a quarter of a mile wide, and 400 feet deep, only six miles of the canyon are protected within park boundaries. The canyon walls reveal origins of wind-scoured dunes of an ancient desert capped by limestone ledges that contain marine fossils from a later sea. The biodiversity of the canyon includes 69 species of mammals, 28 species of reptiles and amphibians, 121 species of birds, and 387 species of plants. The ecological communities include Upper Sonoran desert, mixed conifer forests, and riparian habitat dominated by Arizona walnut, New Mexico locust, box elder, aspen, cottonwood, and canyon grape (Brandt 1997; National Park Service - WACA 2001).

The history of human occupation of the area surrounding Walnut Canyon includes a farming culture from about A.D. 600 until 1400 that archaeologists call “Sinagua,” referring to the early Spanish of “Sierra Sinagua” or mountain range without water. Sinagua occupation of the limestone alcoves below the canyon rim began in the mid-1100s. The Walnut Canyon community thrived for about 150 years before declining suddenly in the 1200s. By the early 1300s, no one remained in Walnut Canyon cliff dwellings. Ancestors of the Yavapai and Havasupai visited the area for several hundred years. The Apache and Navajo people also began seasonal gathering and hunting in the area sometime in the 19th century (Brandt 1997; National Park Service - WACA 2001).

Native American interaction with Walnut Canyon continues into contemporary times. Our discussions with tribal representatives centered on the long term use of the area by historic and contemporary descendants. Most site discussions were held along the lower trail known as the Island Trail, while a few discussions occurred along the Rim Trail. In this chapter, we paraphrase primary resource use data from those discussions by site location. All responses from each group’s participants are compiled by question with each paragraph reflecting each individual’s responses. The check-box tables within the responses are to the immediate right of the questions to which they pertain, and summarize the responses that f. Yes/no and condition responses are listed once if a consensus occurred otherwise, the various responses are presented. A summary of the representatives’ responses and an ethnographic commentary concludes the chapter.

Island Trail

A steep loop trail of almost a mile, the Island Trail descends 185 feet into the canyon. It provides visitor access to 25 cliff dwelling rooms and views of many more dwellings on the opposite side of the canyon. The trail passes through piñon-juniper woodland, upper Sonoran desert, and mixed conifer forest habitats. This diversity provides beautiful views throughout the canyon. Several representatives were unable to make the descent so part of the UofA team escorted them to places along the rim trail where the canyon and dwellings could be observed while they discussed the site.

Pai

What is the Indian name for this place?

Please describe this area.

There is a name, but I don’t remember it.

This place is similar to sites near Supai. The ancient ones are called “juka.” This wasn’t just one group of people, there are 4-6 different styles of pottery. There is grey, brown, yellow, red and white. Why aren’t the people here now? Maybe their leader abused power. This has happened to other people before. The Supai people used obsidian for exchange. This place looks like more than 100 people lived here. There are rocks with a staff coming out of the top [across the canyon]. This is a hunter’s mark, a shrine. This means this area has good hunting grounds. The Hopi also make a shrine like

this, but they put feathers all around the rocks. The displays in the museum show a lot of yucca fiber. The Supai used yucca for shoes, clothes, rope, puches, belts, etc. There is a burial across the canyon behind the rocks. That is the Cohonina way of caring for the dead. Maybe there are burned human remains behind the rocks. These structures belong to the juka. They used this place to prepare for ceremony, kagina or kachina in Hopi. They probably went to the Crater or to the circle at Wupatki for the actual ceremony. Singers, flute players, hunters, shaman and children would be given the gift here. The Zuni, Hopi, Cohonina, and Yavapai interacted here. The other tribes were united against the Yavapai. This was probably a place for isolation. Otherwise, we would have seen more weapons and projectile points. People came here for ceremony, especially during the eruption. The shaman would go watch the eruption. There are 2-3 people from Hopi clans [who] come to Havasupai. People go through levels of initiation.

There is red pottery here. That is Pai pottery. This place has been called the Yavapai refrigerator, because it was used for storage. The rooms were nice and cool. The sandals at the visitor's center were made from yucca. There is yucca here.

Would Indian people have used this place?

Yes

If yes, why or for what purpose?

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
	✓	✓	✓	✓	✓

This was a joint-use area because every tribe came in to see the volcano. Maybe it was actually set up so people from all areas could come see the volcano. Burials, exchange, initiation, to watch the volcano, to prepare, to interact. This could have been a place of meditation for a few days. A journey towards the crater, a place to prepare for ceremonies at Wupatki. If children were here, they would have been involved in initiation. We have places in the canyon where people prepare themselves for vision quests - they are all isolated. When the Hopi Snow Clan sends people to Supai, they always prepare. They live in isolation before coming, and do not return overnight.

This was a permanent storage place. People gathered yucca here and visited. There was Yavapai burning here. We used to set fires to get elk. We had fire specialists.

Is this place part of a group of connected places?

Yes

What kinds of places is it connected to?

Places in Supai and at Hopi.
Verde Valley, San Franciscan Peaks

How is this place connected to the other places?

This was a joint-use, intertribal area. From time to time lots of different people passed through here, not just Hopi.

It was part of a trade trail.

Is this place an important source for Water?

Yes

Is this place an important source for Plants?

There used to be water here.

Yes

Yucca. The Supai used yucca for shoes, clothes, rope, puches, belts etc.

Tea, cedar, and yucca, banana and other.

Is this place an important source for Animals?

Yes

These were good hunting grounds, we can tell because of the presence of the shrine.

Elk, deer, rabbit, bear

Is this place important for Evidence of Previous Use?

Yes

The houses and the burials.

The structures, Kokopelli signs at the bottom, the hunting shrine, the burial, the pottery. Also, there are rocks that have pieces chipped out. These pieces were used as part of the mortar of the homes.

Is this place important for Geological Features?

Yes

The canyon caves were used for burials.

WATER

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

For bathing.

When passing through, they would use the water. Probably for medicine, for bathing, and for sweats. You couldn't possibly farm here.

How would you evaluate the condition of the water?

Poor

Is there anything affecting the condition of the water?

Yes

If yes, what is affecting the condition of the water?

The river is now gone because of the dam built by white people. Maybe animals could affect the river. Storms could fill it again.

PLANTS

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓			✓		

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other

✓	✓	✓	✓	
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Yucca. The Supai used yucca for shoes, clothes, rope, pouches, belts etc. Medicine men put paintings on the plants, like at springs. Shamans splatter paint or dye at plants to consecrate them. If they practiced black magic their possessions would be destroyed.

Yucca was for padding, banana yucca was food. Yucca was also used to build rope bridges that people could use to get across the canyon. Mormon tea and cedar are medicine for cleansing. Grass was bedding, century plants were cooked with grass to make cakes for travelers.

How would you evaluate the condition of these plants?

Excellent

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

They are in great shape, and I don't understand why. However, a fire could damage them.

ANIMALS

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓		✓			

There are rocks with a staff coming out of the top. This is a hunter's mark-a shrine. This means this are has good hunting grounds. The Hopi also make a shrine like this, but they put feathers all around the rocks.

Used as food when people were hungry. Food was shared with everyone. Bear blood was for ceremony and medicine.

How would you evaluate the condition of the animals?

Yes

Is there anything affecting the condition of the animals?

The health of the plants.

If yes, what is affecting the condition of the animals?

pottery

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

Yes

When would Indian people have used this site and/or artifact?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓		✓				✓

Probably lived in during the winter, because of the evidence of

fire.

For storage and cooking.

There is a mark down by the spring of a figure like Kokopelli playing the flute. Kamee was the flute player, he was different that Kokopelli. He has power. His music entices women, because music has lots of power. A power flute of Kamee was found in this area also, near San Francisco Peaks. Namee was the one that raised animals around Red Butte. The paintings and peckings were put there by medicine men. Shaman splatter paint of dye at plants to consecrate them. If they practiced black magic, all of their possessions would be destroyed. These structures are juka [ancient]. Kagina [kachina in Hopi]. This was a place for preparation for ceremony. People probably went to the crater or to the circle at Wupatki for ceremony. Singers, hunters, flute players, shaman and children would all be given gifts here. Zuni, Cohonina, Hopi, Zavapai all here. This wasn't a place for many people, or else we would have seen more weapons, projectile points. People came here for ceremonies, probably during times of eruption. The shaman would go see this. The Hopi snow clan is in Havasupai, in small numbers (2-3). People go through levels of spirituality and initiation. The wind is our ancestor. Music is a healer and enticer. There are many styles of music.

How would you evaluate the condition of this site/artifact?

Fair

Is there anything affecting the condition of this site/artifact?

Yes

If yes, what is affecting the condition of this site/artifact?

The pots are now broken into sherds.

GEOLOGIC FEATURES

caves

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓			✓		

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓	✓	✓	✓

Communicate with spiritual beings	Territorial marker	Other
✓		✓

Storage of food, cooking of food.

This is a place to come and teach people where the shamans or powerful people taught others. The canyon can take in songs, and return them later to someone. It can give the song to someone when they need it.

How would you evaluate the condition of the geologic features?

Good

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

People are peeing in there, and walking around in the caves.

How would you evaluate the OVERALL condition of this place?

Good

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

It is in good shape, but people are marking on the place.

The rangers are doing a pretty good job of protecting them.

What would be your recommendation for protecting this place?

Have a medicine man or spiritual native person come to this place and give an offering. Having native persons from different affiliated tribes be at the interpretation centers to teach visitors would be a good way to spread responsibility. A religious leader from one tribe could conduct the offerings. Have ceremonies or offerings while in this place. There should be a meeting for all affiliated tribes can talk and agree on things. A Park Service-sponsored meeting for all the tribes to figure out access and NAGPRA issues would be good.

The signs in the center should be corrected; there is too much focus on the Sinagua. The rangers should be more friendly.

What would you recommend for protecting the Water?

There is no water here.

What would you recommend for protecting the Plants?

There shouldn't be signs with information about plant uses. These signs make tourists want to take the plants to try out the uses. Take the signs down.

What would you recommend for protecting the Animals?

They're doing ok.

What would you recommend for protecting the Evidence of Traditional Use?

Keep people from urinating in the rooms.

What would you recommend for protecting the Geological Features?

Tell guests not to write on cave walls.

Do you think Indian people would want access to this place?

Yes

If yes, why?

We'd like to see the rooms on the other [North facing] walls of the canyon. We'd like notification of excavations, especially of burials. We want access to more dwellings that are closed off.

Are there any special conditions that must be met for use?

Yes

If yes, what are these?

There should be a statement in the center about all the affiliated tribes. Bring tribes together and share affiliation issues. They should not fight or dispute who is affiliated. All tribes that are affiliated are already being consulted. There should be access to the petroglyph below so people can make offerings. Usually, only special people were allowed to mark on walls. The mark could be from the Kamee Clan that was here.

The Pai people should be escorted to sites. They should have privacy with the sites if they request it.

Are there any traditional management practices that would improve the condition of this place?

Yes

If yes, what are they?

Stop people from carving the walls. This place is well-patrolled.

Other Comments

This is an attractive place in the winter. It is in isolation. And the winter is when you can talk about the legends of juka and may be a better time for giving ceremonies. The idea of talking about ancestors is ancient. Their ancestors talked about their ancestors. Winter time is not taboo for talking about ancestors. People wanted isolation to stay away from people who aren't supposed to be here. Supai have always been less vocal about their spirituality and culture. This place was open to tribes from all areas. There is a lot of awareness about sacred sites and places like this that existed like this for a stop off place. The Cohonina needs to go learn more from the Hopi, who have kept this knowledge. Roland's public appearance is part of the prophesy. The Supai have knowledge of volcanic eruptions in their stories and legends. One shaman who went up to the San Francisco Peaks when there was still volcanic activity. The wind and volcano gave him power. The Supai have affiliations in this area. The Yavapai were related to them. The Cohonina were closet to the Hopi. They need to take the "probably" out of relationships between Cohonina and Hopi. When the Snow Clan of the Hopi comes to visit the Havasupai, they come in and out in the same day.

The Park Service is way behind in interpretation. This is the Pai storage place, "the refrigerator of the Pai people." This is a location for gathering. There is food here, people can come get food to take home.

Southern Paiute

What is the Indian name for this place?

Please describe this area.

It's beautiful, the pines are spectacular. The caves are interesting, very roomy. They fit a lot of people. It's like a closed-in area, I doubt if anyone came around without a reason. There is a lot of climbing to be done.

Would Indian people have used this place?

If yes, why or for what purpose?

The place looks pretty, better than the other monuments. The ruins are impressive; I know some of the plants here, too.

The trees, the pine, cedar, and cliffrose. The plants come in a wide variety, cactus, yucca, all useful in foods.

Yes

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
✓	✓	✓	✓	✓	✓

There may also be good places in the rock for viewing stars. There could have been planting where the dirt is not sloped. There are a lot of edible things around. For ceremony, not power.

They farmed and hunted deer, wildlife and small game. They farmed squash, corn and gathered wild plants, fruit, piñons, walnuts and berries. These were another kind of people, they lived under the rocks. They were called *Winno Kwiuits* "the ancient ones."

Farming. The location was good, except in the winters. It was seasonal, used in the summer. The rooms could be storage bins all year round.

Is this place part of a group of connected places?

Yes

Don't Know

What kinds of places is it connected to?

Wupatki and Sunset Crater, also the Grand Canyon and the Verde Valley.

I don't know the reason, but the volcano when it was erupting was connected.

It's totally different than the others.

How is this place connected to the other places?

These places seem more modern than Wupatki, but they are probably connected. There is a place in Verde Valley that is probably connected. There is a similarity in the constructions, high up in the hillsides. There are graneries in the north wall of the Grand Canyon, this is probably similar.

This canyon and the volcano are close together.

Is this place an important source for Water?

Yes

There are tinajas above, and a creek below.

Rain water, canyon water, the stream

Walnut Creek is where they got water. There were indentations on the rocks that collected rainwater.

Is this place an important source for Plants?

Yes

Yuccas, tea, cedar trees, pine nuts, and other nuts.

The herbs would have been important, but they don't grow today because of the lack of rain.

There is a good variety of useful plants, including trees and shrubs. There is piñon for eating, and for making bows and

Is this place an important source for Animals?

firewood.

Yes

Antelope, deer, rabbits, squirrels, and chipmunks.

Deer, rabbits, squirrels, elk.

Probably deer and antelope, maybe elk.

Is this place important for Evidence of Previous Use?

Yes

The ruins and the artifacts.

They made use of the shapes of the cliff ledges.

Is this place important for Geological Features?

Yes

The overhangs would make good homes.

All of it. When it rains, everyone likes it and it is so green.

There is a variety of rocks for arrowheads. This mountain looks like the White Mountain Apache area.

WATER

Walnut Creek

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

Bathing, washing, irrigation.

Irrigation and for growing food. Water would be mixed with all kinds of medicines and herbs.

Farming and bathing.

How would you evaluate the condition of the water?

Poor to Fair

Is there anything affecting the condition of the water?

Yes

If yes, what is affecting the condition of the water?

The drought.

There used to be plenty of water, It rained a lot then. Everything is getting dry now. Pollution may be affecting it.

The drought and the dam that was built. The dam helped, it made water available.

PLANTS

The plants were for sometimes use, not everyday.

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓	✓				

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other

✓	✓	✓	✓	
---	---	---	---	--

Plants were dried for winter use. Dried plants made food, medicine and ceremonies. Cedars were for flutes, other plants were for arrows. Yucca made clothing and shoes.

The plants like sumac and *sui* make good baskets. The cliffrose was diapers for babies. Juniper trees were also for diapers. Mountain mahogany was used, dyes to dye the baskets red. To make the dye, they boiled the roots in water and they turned red. They used to have to pay for some plants. The medicine men would pray for them. Some plants you can just use, others you can't, others you would have to pay the medicine man for. You'd have to pay for strong medicines. They aren't growing now because there is a lack of rain. Some plants are for sickness. The plant called *moopuiaup* was for bows and arrows.

Yucca was used daily. Cactus and piñons, seasonally. Pine nuts can be stored for a while in the rooms.

How would you evaluate the condition of these plants?

- Fair
- Poor
- Fair
- Fair

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

The smaller trees are in poor shape. The trees are in good shape. The drought and wind affect the conditions. Also, there is a lack of traditional practices.

Lack of rain.

They are dry because of the drought. Water is so important, and drought can be stopped. But the population is growing too much. There is destruction on the reservations also. At Kaibab, the water is going away, so is the snow. People can't get away from the cities, and keep cutting things down. The population growth and all those buildings are causing the drought.

The smaller trees are in poor shape. The trees are in good shape. The drought and wind affect the conditions. Also, there is a lack of traditional practices.

ANIMALS

Would Indian people have used the animals at this place?

deer

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

If yes, why or for what purpose?

When they ran out of food.

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓	✓	✓			✓

Animals used daily or as needed.

To survive.

Deer heads and horns were for ceremonies. We didn't hunt deer in winter, because it was stinky. The bones made ceremonial flutes.

Antlers and bones were used for tools, and for medicine. Grandmother used to melt the hoof up and put it on the bow and then used it with horse hairs to make it fancy. We only hunt in the fall now.

Hunted in the fall.

Fair to Good

Yes

There is no grass, or green plants because of the lack of water.

The people and the environment. Deer were more abundant while people lived here.

How would you evaluate the condition of the animals?

Is there anything affecting the condition of the animals?

If yes, what is affecting the condition of the animals?

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

When would Indian people have used this site and/or artifact?

If yes, why or for what purpose?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓					

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓	✓	✓	✓	✓		✓

As a place for isolation and renewal.

They lived here, maybe camped. Probably one of the people that lived here was a medicine man. This is a place with a lot of power, because of its location and because of powerful medicines. This place is more powerful because of the peaks and volcanoes. When you need medicine, you don't have to go anywhere. The medicine man will give you a number of days to stay home. I don't know if it's good for healing. This place is different than Wupatki or Sunset Crater because the people here lived under rocks and people burned a lot of wood. You can tell because of the smoky walls.

How would you evaluate the condition of this site/artifact?

Is there anything affecting the condition of this site/artifact?

If yes, what is affecting the condition of this site/artifact?

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

When would Indian people have used the geologic features?

Fair to Good

Yes

People. They have touched the homes, which is vandalism.

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓	✓		✓	✓	

Whenever.

If yes, why or for what purpose?

<i>Seek knowledge, power</i>	<i>Communicate with other Indians</i>	<i>Ceremony</i>	<i>Teaching new generations</i>
✓	✓	✓	✓

<i>Communicate with spiritual beings</i>	<i>Territorial marker</i>	<i>Other</i>
✓		✓

As living quarters. During times of trade, this area was joint-use. Ceremony, to communicate with spiritual beings. Grinding food, building homes.

They would have used other places, and lived here to get away from the cold. People have lived here since the first people left. You'd probably have to be on top of the canyon to communicate with spirits, it would be easier.

How would you evaluate the condition of the geologic features?

Good
Fair
Good

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

People, rain and weather.

How would you evaluate the OVERALL condition of this place?

Fair
Fair
Good

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

The drought.
The Park Service is doing a good job, and the tourists are staying in line.

What would be your recommendation for protecting this place?

None, this place can hold its own.
Keep it as it is. I don't know if the management needs to change.
It is well-protected now.

What would you recommend for protecting the Water?

Keep an eye on things.
Yes, but I'm not sure what. There used to be more rain back then. There used to be songs and traditions to bring back the rain.
Bring water in.

What would you recommend for protecting the Plants?

There should be no plant gathering except for Indian people, because they know what should be done with plants.
The plants and animals were more abundant when people lived here.

What would you recommend for protecting the Animals?

This is covered by the Fish and Game Department and we're satisfied with what they do.

The plants and animals were more abundant when people lived here.

What would you recommend for protecting the Evidence of Traditional Use?

Leave it as it is.

They should close sections of the ruins walks for a while to keep the tourists out. They should protect the walls with the most ruins first, and rotate closed sections.

What would you recommend for protecting the Geological Features?

None; we want it to look authentic.

Do you think Indian people would want access to this place? If yes, why?

Yes

We'd probably just want it to look at, not to live in. We're too modern to live here.

The San Juan as well as other tribes would want to travel to see other places, to find out about other peoples and the area. The San Juans haven't been here before so they would want to see it.

To gather things not available at home.

Are there any special conditions that must be met for use? If yes, what are these?

Yes

Native Americans are humble and won't take too much. They should make gathering legal. Gathering is as sacred as other things.

Are there any traditional management practices that would improve the condition of this place?

Yes

If yes, what are they?

A little thinning here and there, but not too much.

The park ranger wouldn't let us. But if we could, we'd like to come do a ceremony.

Burning the underbrush.

Other Comments

This is a beautiful place, I wouldn't mind living here back then. It's peaceful, and would be nice to sit and visit and work crafts. This is a Puebloan place, Hopi and Zuni. The Hopi call us their brothers and sisters across the river, there are good social relations. Also, the Paiutes. We call the San Juan Paiutes the Navajo Paiutes. We have songs for Navajo Mountain, because it used to be Paiute Mountain.

The tribes should come do a ceremony, the animals shouldn't be fenced in.

I like this place, it is nice. There are a variety of homes here, which is good. It is well-maintained.

Rim Trail

Approximately three-quarters of a mile, the Rim Trail follows the canyon rim through ponderosa and piñon-juniper forests. There are two canyon overlooks, and a pithouse and pueblo that sit back from the canyon rim. Most of the crops were grown in this upland area where the terrain was favorable. A few tribal participants who were unable to descend the Island Trail explored the rim area before discussing the site.

Southern Paiute

What is the Indian name for this place?

Unknown. It's too far from my people to name.

Please describe this area.

The canyon and the place, the way it looks. The villages are built in sides, down under caves in the cliffs.

Would Indian people have used this place?

Yes

If yes, why or for what purpose?

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
✓		✓	✓	✓	

They hunted deer and squirrels; that is why they lived there. It was seasonal living, in hunting camps. They would have ceremonies here related to hunting and gathering. There are a lot of berries here.

Is this place part of a group of connected places?

Yes

What kinds of places is it connected to?

Yavapai to the south, Walpai to the west.

How is this place connected to the other places?

The people probably came from someplace to the south.

Is this place an important source for Water?

Yes

They had to have water to live here. There was probably a spring somewhere. They could go up to 12 miles for water. Those days they could go a long way for water.

Is this place an important source for Plants?

Yes

There is a kind of plant that people could chew on and it would keep them from getting thirsty, It is a small bush. I would also put a small stick in my mouth to keep from being thirsty. Also, pinenuts are good here for gathering.

Is this place an important source for Animals?

Yes

Deer, squirrels, bobcats, mountain lions.

Is this place important for Evidence of Previous Use?

Yes

The dwelling is interesting to me. It would be good for my grandchildren to see. My boy was here; he talks about it all the time.

Is this place important for Geological Features?

Yes
I like the canyons.

WATER

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓		✓	

Some of the canyon springs are special for ceremonies.

How would you evaluate the condition of the water?

Good

Is there anything affecting the condition of the water?

No

If yes, what is affecting the condition of the water?

PLANTS

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓				✓	✓

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓		

Good

How would you evaluate the condition of these plants?

No

Is there anything affecting the condition of these plants?

If yes, what is affecting the condition of the plants?

ANIMALS

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓		✓	✓			

There are good hawks. Their feathers are used for arrows and spears. They are also used for ceremonies. Medicine men used hawk feathers all the time.

Good

How would you evaluate the condition of the animals?

No

Is there anything affecting the condition of the animals?

If yes, what is affecting the condition of the animals?

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

Yes

When would Indian people have used this site and/or artifact?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓		✓		✓		

How would you evaluate the condition of this site/artifact?

Fair

Is there anything affecting the condition of this site/artifact?

Yes

If yes, what is affecting the condition of this site/artifact?

They are still in good shape, though it has been many years since they have been useful. There are some sites further down.

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓	✓	✓	✓

Communicate with spiritual beings	Territorial marker	Other
		✓

Ceremonial

Indian people would bring kids to this place to teach them about the old ways.

How would you evaluate the condition of the geologic features?

Excellent

Is there anything affecting the condition of the geologic features?

No

If yes, what is affecting the condition of the geologic features?

How would you evaluate the OVERALL condition of this place?

Good

Is there anything affecting the OVERALL condition of this place?

No

If yes, what is affecting the OVERALL condition of this place?

What would be your recommendation for protecting this place?

What would you recommend for protecting the Water?

What would you recommend for protecting the Plants?

What would you recommend for protecting the Animals?

What would you recommend for protecting the Evidence of Traditional Use?

What would you recommend for protecting the Geological Features?

Do you think Indian people would want access to this place? If yes, why?

Are there any special conditions that must be met for use?

If yes, what are these?

Are there any traditional management practices that would improve the condition of this place?

If yes, what are they?

Other Comments

It is pretty well-protected just the way it is. The Park Service should just keep on doing what they're doing.

Yes

Kaibab kids would come here. They can take a look and see what the old people did down here. They could learn how they lived here.

No

Zuni

What is the Indian name for this place?

Enodakwa, meaning "the ancient peoples sites."

"Sunhakwe Kyabachuyalane"

Same name it's always had.

We ate walnuts. Maybe it has a Spanish name.

A word meaning "ancient place."

Please describe this area.

The cliff dwellings are a lot different than the sites at Wupatki. They are like some of the sites in Zuni that were put there for protection from the Navajo, Apaches, and Utes that came into the area. Those tribes were the war-like tribes that came in and started taking over. The people who were at the ancient sites like Walnut

*Would Indian people have used this place?
If yes, why or for what purpose?*

Canyon where peaceful.

The Canyon itself. The trees around it. The Canyon goes all the way up to Lake Mary. The dam blocked the water that used to flow in this canyon. But the city of Flagstaff will never release even a little bit of water because Lake Mary is the water supply for the city of Flagstaff. In the past there would have been a lot of water flowing through here. There would probably have been fish.

However they named the place may just be an interpretation of what they're seeing.

Magnificent, interesting, a good feeling here, in the whole place.

Yes

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
✓	✓	✓	✓	✓	✓

Everywhere the ancient ones stopped they had ceremonies, and people who were healers would seek knowledge.

They would watch the stars to find their direction, they were not really into star watching for other reasons.

The place would have also been used for protection.

The ruins are very well blended into the landscape and cliffs. This was good protection, in the cliffs. At that time there would have been a lot of food here, piñon, berries, acorns. I saw a room that was big enough to have been a gathering room, so they would have their ceremonies here too.

Maybe for camping.

Could be for ceremony, power.

Gathering piñons.

Farming during migration days.

Gathering plants for food and medicine.

Watching stars to prepare for seasons and things associated with that.

People on the Middle Route used this place.

Yes

It is all connected from the Grand Canyon to Zuni.

Connected with present day Pueblos and Southwestern Peoples. We have our Emergence stoires. We came up from the Fourth Underworld, we emerged in the Grand Canyon, then we began our search for the Middle Place. We traveled all through this area. We would settle where there was water. We would stay for four days, maybe that meant 400 years at a time at that time. While living in a place, young spiritual people would leave to look for new places ahead of the group and then when they found a good place, the rest of the group would migrate. They would look for a good place, with water, with good food resources, with game for hunting, maybe a

*Is this place part of a group of connected places?
What kinds of places is it connected to?*

How is this place connected to the other places?

place to raise crops. And other archeological sites.

It could be, but I couldn't name the places.

To all Puebloan sites.

These places are connected because the ancestors stopped at these places on their migration to the center or middle place. They would stop a place for a while to live and gather food.

Connected to these places by migration. Our oral history connects with the archeology too. They left whole pots with corn and tools, and stones, grinding stones. Food would be left because they knew that maybe another group would come behind them and live here later.

At home, we're in a different tribe and have different name places than the ones used here. In our migration story, people came through here. I can't say who; maybe different tribes.

Spiritually. People are buried here, there are spirits here.

Is this place an important source for Water?

Yes

The springs in the canyon.

The water that used to flow through the canyon. Also possibly springs when there was more water and more rain.

The creek, underground water.

Down in canyons.

Is this place an important source for Plants?

Yes

6 or 7 types of plants. They have more plants at Walnut Canyon, than at Sunset Crater and Wupatki, such as sumac, mountain mahogany. These plants are still used by Zuni people today. Might be more types of plants in the canyon bottom as well.

Acorns, piñon, berries, farming plants like corn, beans, squash. Corn fields on top of mesas and cliffs, maybe some at the bottom too. Maybe not a good place to grow cotton.

Piñon, banana yucca, prickly pear.

Food and medicine.

Is this place an important source for Animals?

Yes

All the animals that are mentioned in the trail markers.

In early morning could see deer and hoof animals here. Maybe not elk. Haven't gotten here yet at that time. No elk bone evidence in archeology here. Deer, rabbit, turkey, probably a good area for turkey.

Rabbits, antelope (at Wupatki), elk.

Not many animals seen in this area.

Is this place important for Evidence of Previous Use?

Yes

Is this place important for Geological Features?

Ruins, the ancestors had a reason to stop at Walnut Canyon and live. There is more water here and more types of plants to collect.

Good population here. Rooms all over the canyons.

The walls.

Side walls of rocks We have them in Zuni.

Dwellings.

Yes

No

The alcoves in the canyon can be made into shelters. Difficult for outsiders to reach people who were living here.

Middle island important for them. Maybe important leaders and spiritual leaders were here in the middle. The high middle island and high place next to it for spirit leaders to have connections to spirit beings. There's a visible cairn on the cliff, may be a shrine, or covering a shrine.

Most of the canyons and points.

Maybe, don't know.

Springs

Yes

WATER

Would Indian people have used the water?

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓	✓	✓	✓	✓	✓

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

Cooking, washing, planting.

Baskets from yucca, an unnamed bush.

People in the past could use the springs when ever they wanted to or when they were available.

Haven't seen any springs yet, but it would have been hard for the people living here to get water from much further then the bottom of the canyon.

The water from springs is used especially when needed for healing. The spring water itself is clear and clean which is clearer than pond and is free from bacteria. So for healing spring water was used.

Could be medicine.

You have to have water to make medicine.

How would you evaluate the condition of the water?

Poor

Good

Is there anything affecting the condition of the water?

Yes

If yes, what is affecting the condition of the water?

The drought.

It's in a severe state. Dam of Lake Mary. They should release a little water once in a while. Water is always a big issue always a fight for water for native fish. Big political issue.

PLANTS

Would Indian people have used the plants at this place?

When would Indian people have used the plants?

If yes, why or for what purpose?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓	✓		✓	✓	✓

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓	✓	

Used some plants biannually.

Different plants are used different times of the year. Other types are used whenever they are needed.

Some plants are used as made into prayer sticks and are used in religion and ceremony.

Smooth sticks could be used for baskets.

When asked to do healings they need plants so ancestors can help with the healing. Some roots were also used for food.

Food like acorns, berries, piñon. Yucca for fabric, sandals, mats for beds, baskets and to sew garments. Plants for medicine and curing purposes. Piñon for food, fuel, pitch for sealant and repairs of broken pots and baskets. Pitch used medicinally too. Juniper for berries and leaves for tea. Burn juniper the ash for soaking blue corn in. Oak acorns roasted over hot coals. A lot of plants down in here.

Prickly pear pads are boiled and dried.

Blue spruce used for dances and ceremony.

Douglas fir for ceremony.

Lots of special bushes with Zuni names. We saw many plants on the trail.

How would you evaluate the condition of these plants?

Is there anything affecting the condition of these plants?

If yes, what is affecting the condition of the plants?

Good to excellent

Yes

The drought.

Look pretty good, except for some of the pines affected by the pine beetle. Pines need water to make sap to ward off the beetles. And drought. But this place is removed from people, terrain is steep so not so many people disturb. Human encroachment affects the area.

Some are ready and some are not.

The drought.

ANIMALS

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓		✓	✓	✓	✓

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓	✓	✓	✓		

Used antlers and such in ceremonies.

Deer, turkey, antelope, squirrels, rabbits, pack rats, porcupine, all food. Deer skin is ceremonial, sometimes the glands of the deer are taken and rubbed on the legs of children by the medicine man to make them active and good runners. Antlers are used to make fetish carvings. Antlers put in walls like hooks to hold pouches on the wall. Plenty of birds for feathers. Probably had turkeys for food and feathers and worn turkey blankets which are really warm. Persons of very high rank would have turkey blanket. Rabbit skins also warm, used for moccasins, blankets too.

Medicine maybe for different societies.

They hunted at the tops of the canyon. They would hunt away from the area that they live in, like people do today.

They skin them and make jerky.

Sinew and deer hooves used in ceremonies.

Skin for moccasins, hunting pouches for food, medicine bags, which may include a spiritual relationship with the animal, like the deer.

Tools for digging hard ground.

Good

Yes

Human encroachment affects the animals. Here at the park a lot of people are coming in and many animals may come out at night now instead. Animals are changing they are very adaptable and that's why they are still around.

Birds look fine. Hooved animals are fine. Wild animals, we can't control them or their condition. Animals are our ancestors, deer, antelope, elk, they are our ancestors in different lifeforms, even bugs and reptiles are our ancestors. Reptiles and lizards seem satisfied. Haven't seen deer or turkey. Encroachment is probably an effect from the city moving out this way.

There are no hunters in the park.

Yes

How would you evaluate the condition of the animals?

Is there anything affecting the condition of the animals?

If yes, what is affecting the condition of the animals?

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

When would Indian people have used this site and/or artifact?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓				✓	✓	✓

If yes, why or for what purpose?

<i>Living</i>	<i>Hunting</i>	<i>Gathering</i>	<i>Camping</i>	<i>Ceremony, Power</i>	<i>Trade</i>	<i>Other</i>
✓	✓	✓		✓		✓

Maybe for defense.

Zuni are coming to visit the sites, they may not live here but they still come here.

The site would have been used continuously over a certain time period.

Zuni don't use much of ruins here today. But if we come to them we make an offering of cornmeal. Maybe not in the park or places where it is accessible to non-Zuni. But still could come and make cornmeal offerings; same with Hopi.

The Park Service tore it down and remodeled the whole thing.

They would gather plants, not food.

They would have lots of ceremonies for a better life.

Fair to good

Yes

People impact; that is why the park service has shut down some of the rooms. Last time I was here they opened the room for us. The signs to keep people out are enough to protect these ruins. Hopi objects to having people go into the area of the ruins, but Zuni does not. Zuni does not have a written history so other people visiting these ruins and site is a way for people who are not Zuni to learn about Zuni history and culture.

They've done a lot of stabilizing on the trail. The inaccessible ones are in fair condition. Walls still standing. Pretty well protected from moisture by the overhanging cliffs. Probably just people on the trails. But the areas where people don't have access are in pretty good condition.

Some are good, those that are left. Some are half torn-down. The Park Service rebuilt them; not exactly the way that we want.

Good, if they keep stabilizing it. The weather affects it. As long as the people obey the signs, there will be no impacts from them.

The high places and high island in the middle.

Alcoves

Yes

*How would you evaluate the condition of this site/artifact?
Is there anything affecting the condition of this site/artifact?*

If yes, what is affecting the condition of this site/artifact?

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

When would Indian people have used the geologic features?

<i>Daily</i>	<i>Seasonally</i>	<i>Annually</i>	<i>Calendrically</i>	<i>Pre-historically</i>	<i>Historically</i>	<i>Today</i>
✓				✓	✓	✓

If yes, why or for what purpose?

<i>Seek knowledge, power</i>	<i>Communicate with other Indians</i>	<i>Ceremony</i>	<i>Teaching new generations</i>
✓	✓	✓	✓

<i>Communicate with spiritual beings</i>	<i>Territorial marker</i>	<i>Other</i>
✓	✓	✓

For shelter or homes.

Zuni still come to Walnut Canyon to visit. The people who lived at Walnut Canyon in the past were here for quite some time.

The natural overhangs or alcoves were used for homes. Instead of putting up 4 walls, they only had to put up one for a living area.

There would be a seeking of knowledge and the power to heal in this place.

There was a lot of sharing of knowledge how to build homes, grow crops and which plants to use for healing.

The high rock pile could be a shrine. Pueblo people like to put shrines in high places.

Teaching new generations maybe.

It would be a place where people would make plans to meet together, a landmark or a name place. They would meet to visit or trade.

You have to be pure and the place has to be taught to you. May have used these features to communicate with other Indians, and as territorial markers but I'm not sure.

How would you evaluate the condition of the geologic features?

Good

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

The people who visit the park. They are all right. Be a million years before they change. The Park Service, they are doing a good job with the canyon walls. The Park Service followed the trail as it was. Weather and drought, but if anything is wrong, it's just Mother Nature taking her course.

How would you evaluate the OVERALL condition of this place?

Good to excellent

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

The drought and the people who visit the park. There are markers to keep people out of certain areas but there are always a few who go off the trail and pick up artifacts. Those few are affecting the sites and the places.

They are doing the best to keep it in good condition. Keep the rooms stabilized. They have a good control of traffic through here, which is hard with shortage of funding. Keep people off the walls

<p><i>What would be your recommendation for protecting this place?</i></p>	<p>and from urinating in the rooms and on the walls.</p> <p>Still ongoing. The Park Service should protect it pretty well. I know it's pretty well-protected because trails are set up.</p> <p>Weather, Mother Nature - today, she's getting old. Our ancestors predicted the end of the world. We don't plan ahead but live day by day because we don't know what's tomorrow.</p> <p>Already have signs up and they recommended that last time. All the different ceremonies, and they want visitors to recognize this is an important place with shrines and for worship.</p> <p>It would be better to keep everything ongoing. The Park Service should keep up the good work.</p> <p>Keep the rangers monitoring and protecting from visitor impacts. Don't say no to anyone with connection to this place who wants to leave offerings or gather plants.</p>
<p><i>What would you recommend for protecting the Water?</i></p>	<p>Should be protected and the park service knows where the springs are and shouldn't inform the public of their whereabouts in order to protect them.</p> <p>Maybe release some water from Lake Mary.</p> <p>They can protect the water. If they find water, they can protect it. There are streams somewhere, we have to find them. There was water at Sunset Crater, a salt mine.</p>
<p><i>What would you recommend for protecting the Plants?</i></p>	<p>Preserve this place, the spring, the ice cave.</p> <p>He was taught not to interfere with nature. Let her take her course.</p> <p>Clear out some dead fuel wood.</p> <p>Leave the trail as it is, to protect plants.</p> <p>Don't say no to us for getting stuff from here, and others with connections to this place.</p>
<p><i>What would you recommend for protecting the Animals?</i></p>	<p>Park service is protecting the animals under law. The animals can take care of themselves.</p> <p>Not really.</p> <p>Wildlife can be protected. There's no hunting in Park Service areas.</p> <p>They're spiritual and don't need protection or management such as control and fencing.</p>
<p><i>What would you recommend for protecting the Evidence of Traditional Use?</i></p>	<p>They're ok and are already protected and have signs.</p> <p>Keep people off the walls.</p> <p>Tear walls down or leave it as it is.</p> <p>Keep the rangers monitoring and protecting from visitor impacts. Don't say no to anyone with connection to this place who wants to leave offerings or gather plants.</p>

What would you recommend for protecting the Geological Features?

Just the small loop has traffic. But there are many others in the area that will be around. It is the same with the ruins even though there is a lot of traffic on the loop there are many ruins and alcoves that are inaccessible to the general public.

Don't allow mining in here.

The canyon is ok. The walls are in good condition.

Do you think Indian people would want access to this place? If yes, why?

Yes

The tribes have been given permission by the parks to have access to plants and things they need for ceremonies.

Also they need to make connections with their ancestors who are still here.

To collect or make an offering, to visit, to make a pilgrimage.

To leave offerings, gather plants, and bring Zuni school kids to see this and privately teach them our culture.

Are there any special conditions that must be met for use? If yes, what are these?

Yes

The tribes have easy access to the parks and the parks have changed their practices so these conditions are being met.

Go through proper NPS channels to get access.

Keep tourists off the sites, protect the plants.

Keep tourists out of the area when a ceremony is going on.

Like no public for a one day event to teach children our culture. Privacy for leaving offerings and gathering plants.

Are there any traditional management practices that would improve the condition of this place?

Yes

Let mother nature take its course. Humans are not supposed to interfere. Zunis are still making offerings but are discrete about it in places where people won't notice. They make corn meal and turquoise offerings. Zunis always take their corn meal that already has small pieces of turquoise in it and where ever they stop and make an offering it is like a church. They are discrete about it and don't use things like prayer sticks or prayer bundles.

Not that I know of. Pray for a good rain.

We have certain ways with our own knowledge; we know when to keep people out of an area. People kept out 1-2 days for offerings.

Other Comments

Need to change the interpretation center. Need to not only include Zuni but all pueblo tribes, ancestral pueblo people. Not just the Hopi are the descendants of the people who lived in this area. Change the name to not only be Hopi but have Zuni names for sites and change the name of the agriculture and crops being grown in the garden at the park center. The crops grown here are pueblo corn and pueblo squash that all pueblo people grow. The Zuni names and uses for the plants were a recommendation made during the last consultation.

We want to still [be able to] change [things by] including other thoughts on the parks later on.

Nothing for now.

A lot of people are impacting this place so keep protecting it. The signs in English are good but people need to obey them and respect this place.

Summary and Ethnographic Commentary

The preceding data for the Pai, Southern Paiute, and Zuni groups is summarized to present a more concise report of each group's relationship with Sunset Crater. The Western Apache representatives were unable to participate at Walnut Canyon, however, their discussions at Sunset Crater documented their traditional relationship with all three parks. The documents about traditional use of the Flagstaff area provided to us by the Hopi Tribe and Navajo Nation were referenced for summaries of their relationships with Walnut Canyon.

Pai Summary

Walnut Canyon is known to the Pai representatives as being a place of the *juka*, or ancient people. One elder said that the Island Trail area is similar to sites near Supai. The representatives explained that the *juka* were not a single group of people because four to six different styles of pottery were found there that had gray, brown, yellow, red and white colors. They explained that the canyon has cultural connections to many places in Northern Arizona including Verde Valley, San Francisco Peaks, Supai, and Hopi because it was on part of a trade trail.

The *juka* used Walnut Canyon to prepare for ceremonies. The Pai elders also speculated that Walnut Canyon was established so people from all areas could come see the volcano. This area was used as well for burials, trade, initiations, and ceremonial preparations and interactions. One elder felt the canyon could have been a place of meditation prior to going to Sunset Crater or Wupatki, and that the water would have been used for medicine, bathing, and for sweats.

They probably went to the Crater or to the circle at Wupatki for the actual ceremony. Singers, flute players, hunters, shaman, and children would be

given the gift here. The Zuni, Hopi, Cohonina, and Yavapai interacted here. People came here for ceremony, especially during the eruption. The shaman would go watch the eruption.

If children were here, they would have been involved in initiation. We have places in the canyon where people prepare themselves for vision quests; they are all isolated [like this]. When the Hopi Snow Clan sends people to Supai, they always prepare. They live in isolation before coming, and do not return overnight.

The Pai people used many of the plants for a variety of purposes. Yucca was considered a staple plant and was used for food, shoes, clothes, padding, rope, pouches, and belts. Pai people constructed rope bridges out of yucca so they could cross the canyon. They gathered Mormon tea and cedar for medicines and cleansing. Grasses were used for bedding and century plants were cooked with grass for travel food. Medicine men using the plants for religious purposes would put paintings on the plants, especially at the springs.

Elk, deer, rabbits, and bears continue to be used by the Pai people. Animals were used for food, ceremony, and medicine. According to one elder, food was shared with everyone, and bear blood was used for medicine and ceremonies. A rock cairn with a long stick sticking out of its top was, according to one representative, a hunter's mark or shrine. It meant that the location was a prime hunting spot. The representatives noted that the Hopi people make similar shrines but put feathers around the rocks.

The Pai representatives identified the dwellings, religious signs and shrines, pottery, and burials as evidence of extensive previous use. One elder discussed the presence of a Kokopelli symbol in the canyon:

There is a mark down by the spring of a figure like Kokopelli playing the flute. Kamee was the flute player, he was different than Kokopelli; he has power. His music entices women, because music has lots of power. A power flute of Kamee was found in this area also [near San Francisco Peaks]. Kamee was the one that raised animals around Red Butte. The paintings and peckings were put there by medicine men. Shaman splatter paint or dye at plants to consecrate them. If they practiced black magic, all of their possessions would be destroyed. These structures are juka, kagina.

One elder explained the significance of the geology saying, "This is a place to come and teach people, where the shamans or powerful people taught others. The canyon can take in songs, and return them later to someone. It can give the song to someone when they need it."

Southern Paiute Summary

The Southern Paiute representatives identified Walnut Canyon as a place to collect plants, to farm, and to hunt. They suggested that some places in the park might have been excellent places for star gazing. They also believe that the canyon was a place for ceremony, although one person felt it was not a place of power. One consultant said that the people who lived in Walnut Canyon in the past were “another kind of people, they lived under the rocks. They were called *Winno Kwiuits* [the ancient ones].”

The places the Southern Paiute elders identified as connected to Walnut Canyon include Wupatki, Sunset Crater, the Grand Canyon, and the Verde Valley. One elder explained that the places in the canyon seem more modern than those at Wupatki, and that similar constructions can be found in the region high up in the hillsides such as the “granaries in the north wall of the Grand Canyon.” Another elder stated that Walnut Canyon is connected with the eruption at Sunset Crater although he did not know the reason for the connection. They agreed that the canyon is connected to Yavapai and Hualapai as well.

The Southern Paiute elders identified important use plants including yucca, Indian tea, cedar trees, and piñon, which is used for eating, making bows, and for firewood. The Paiute people farmed traditional squash and corn, and gathered wild plants, fruit, walnuts, and berries in the area. Some plants were dried for winter use as food and medicine, and for ceremonies. Cedars were used to make flutes, yucca was used to make clothing and shoes, three leaf sumac was used in basket making, diapers were made from juniper and cliffrose, and red dyes used in basket weaving were extracted from mountain mahogany; the dye was created by boiling the roots in the water.

One elder explained use of specific plants was determined by the amount of power a plant possessed, and not everyone could use those plants. According to this elder, “They used to have to pray for some plants. The medicine men would pray for them. Some plants you can just use, others you can't, others you would have to pay the medicine man for. You'd have to pay for strong medicines. They aren't growing now because there is a lack of rain.”

The animals identified by the Paiute representatives were used for food, ceremonies, and medicines. These included antelope, deer, rabbits, squirrels, chipmunks, elk, bobcats, mountain lions, and hawks, all of which are still used today. One elder said that deer heads and antlers were used in ceremonies, bones were used for ceremonial flutes, and antlers and bones were used to make tools. One elder's grandmother used to melt deer hooves to put on bows, which she then decorated with horse hairs.

There are good hawks. Their feathers are used for arrows and spears. They are also used for ceremonies. Medicine men used hawk feathers all the time.

The elders believe that in the past people collected rainwater in the indentations present in some of the rocks. Water was obtained as well from the canyon and Walnut Creek. One elder noted trincheras above the site, which meant that people practiced rain-fed terrace

farming near the trail some time in the past. Several elders said that spring water would be used in ceremonies, and to mix medicines and herbs.

The representatives believe that Paiute people lived on the cliff walls, although it may have been seasonal camping. Medicine men would have lived here because it is a place with a lot of power and it has many powerful medicines. Some of the place's power comes from the peaks and volcanoes. Hunting camps would have been along the rim, and hunting ceremonies would have been held there as well.

The elders said that the people who lived here did so to get away from the cold and during times of trade. The geology played an important role in ceremonies and seeking knowledge; it allowed Indian people to communicate with spiritual beings, which would have occurred on the canyon rims. The elders said that the canyon was still a good place to teach their children about the old ways.

Zuni Summary

Walnut Canyon is known to the Zuni people as “*Sunhakwe Kyabachuyalane*” or “*Enodakwa*” meaning “the ancient people's sites.” As one elder described it, this ancient place was first inhabited by Indian people long ago who sought protection in the canyon's walls.

The cliff dwellings are a lot different then the sites at Wupatki. They are like some of the sites in Zuni that were put there for protection from the Navajo, Apaches, and Utes that came into the area. Those tribes were the war-like tribes that came in and started taking over. The people who were at the ancient sites like Walnut Canyon where peaceful.

The canyon was important ceremonially because wherever “the ancient ones stopped, they had ceremonies and people who were healers would seek knowledge.” Other activities would have included seasonal camping, collecting food and medicine plants, hunting game, and, during migration times, farming. Star observation occurred as a way to mark the changing seasons, and to navigate throughout the region. In addition to the protective qualities of the canyon, the area provided a variety of food resources and places for religious activities: “the ruins are very well blended into the landscape/cliffs. This was good protection, in the cliffs. At that time there would have been a lot of food here [such as] piñon, berries, acorns. I saw a room that was big enough to have been a gathering room, so they would have their ceremonies here too.” Additionally, people traveling on the “Middle Route” would have visited the site.

Walnut Canyon is culturally associated with all the present day Pueblos and Southwestern Native American tribes. To the Zuni, the canyon is connected to all their traditional use sites from the Grand Canyon to the Zuni Pueblo. These connections were first established during the migrations from the Grand Canyon.

We have our Emergence stories. We came up from the Fourth Underworld, we emerged in the Grand Canyon, and then we began our search for the Middle Place. We traveled all through this area. We would settle where there was water. We would stay for four days, maybe that meant 400 years at a time at that time. While living in a place, young spiritual people would leave to look for new places ahead of the group and then when they found a good place, the rest of the group would migrate. They would look for a good place, with water, with good food resources, with game for hunting, maybe a place to raise crops.

Since migration times, the Zuni people have used the springs and underground water reserves in Walnut Canyon daily, seasonally, annually, calendrically, or as needed. These resources were vital for ceremonies, medicine, food, and drink. The canyon springs were particularly important to the early inhabitants given the difficulty in transporting water from outside the canyon. Medicinally, canyon spring water is preferred because “the water from springs is used especially when needed for healing. The spring water itself is clear and clean which is clearer than pond (water) and is free from bacteria. So for healing, spring water was used.”

The botanical resources in and around Walnut Canyon are highly valued by Zuni people. Plants continue to be used at different times in the year including seasonally, annually, biannually, daily, or as needed. According to one elder, Walnut Canyon’s plant composition is more diverse than Sunset Crater and Wupatki. These unique canyon plants provided food and medicine, were employed in ceremony and crafted into useful implements. Food plants included wild berries, roasted acorns, walnuts, banana yucca fruits, piñons, boiled and dried prickly pear pads and edible roots. The traditionally cultivated staples of corn, beans, and squash would have been grown on the cliff tops or in the fertile canyon floor. Plant materials commonly used in medicine and curing included piñon pitch, and juniper leaves and berries. It is believed that in some curing ceremonies, plants act as the medium by which healers can communicate with ancestor spirits whom can aid in the treatment. The smooth branches of shrubs such as sumac or mountain mahogany were used in basket making. Yucca fibers were woven or sewn into fabrics, sandals, bed mats, baskets and garments. Piñon wood was collected for fuel, and the pitch was used to seal baskets or to repair broken pots. Many plants in the area, including Douglas fir, continue to be used as prayer plumes in religious ceremonies.

All of the animals mentioned on the Walnut Canyon trail markers have cultural significance. Before the arrival of Europeans in the Americas, the fauna that lived on the mesa tops or in the valleys below, were sought on a seasonal, calendrically, or daily basis for food, medicine, ceremony, tools, or clothing. Traditional food items such as deer, turkey, antelope, squirrels, rabbits, elk, pack rats, and porcupines were often skinned and made into jerky. The Zuni people also have spiritual relationships with many of these animals. Antlers, sinew, deer hooves and skin are still utilized in ceremonies. Antlers are carved into fetishes, and mounted on house walls as hooks. Medicine men would have rubbed the glands from deer legs on children to make them “active and good runners.” Turkey feathers were made

into warm blankets worn by persons of high social status. Animal hides were made into blankets, moccasins, hunting pouches, or medicine bags.

The cliff dwellings stand as the strongest evidence for Zuni use of the area that began in prehistory and has persisted into the modern era. Many architectural features including the stone walls resemble those at the Zuni Pueblo. Traditionally, these dwellings would have been used as protective residences, for hunting, plant gathering, and to perform power seeking ceremonies. Although no one has lived at the site for some time now, the Zuni continue to come to make cornmeal offerings to Walnut Canyon's past residents.

Geological features with cultural importance for the Zuni people include the natural rock overhangs or alcoves. According to one elder, these landforms not only provided protection from outsiders but also allowed the ancient inhabitants to construct only one wall for living spaces instead of four. One elder speculated that Walnut Canyon's topography created a "Middle Island" for socially important people to conduct religious activities, saying that it was possible that "important leaders and spiritual leaders were here in the middle. The high Middle Island and high place next to it [allowed the] spirit leaders to have connections to spirit beings."

The canyon also served as a territorial marker between tribes where people would come to trade and share information about house construction, farming practices, or medicine plants. For the site to be used to teach younger generations about the cultural significance of the place, the elders explained that they would "have to be pure [so] the place has to be taught to [them]." The uninhabited canyons, high peaks, and rock piles are other important features of Walnut Canyon. Certain rock piles in the monument may be shrines that were erected in high places; some may still be used today.

Hopi Summary

The Hopi name for the area translates as "bat water" but the actual Hopi word has not been recorded. The area figures prominently into the migratory history of various Hopi clans and has a number of archaeological sites that figure prominently into Hopi history of migration (Mercer 1999). Some sites contained artifacts that are still used in Hopi ceremony today. The following excerpt documents the migration story of the Bird Clans through Walnut Canyon (Waters 1963:54-55).

The people of the parrot clan began their migration in the warm country far to the south. There were very few of them. An old man and woman, fearful that their clan would die out, wandered into the jungle to seek a power that would make them fertile people who would multiply enough to carry on their migrations.

Soon they met a stranger, who took them to his home, where a beautiful woman welcomed them. 'I have heard your prayers for the power of fertility,' she told them. 'So I sent my messenger to bring you here. Now I will give you this blessing.'

She led the old couple to a large nest in the corner, containing many eggs of beautiful colors. 'Kneel down and put your right hand on these eggs,' she told the woman first then the man. 'Pray now for the blessing you want.'

The old couple did so. After a time they felt the movement of life within the egg.

'Good!' said the beautiful woman. 'Now you may take your hands off the eggs, knowing that they are parrot eggs and that you are now Kyáshwungwa, Parrot Clan people. You will be fruitful and multiply, you will have the power of fertility. In time to come other clans and people will ask you for the power of increase. You must never deny them this power, for you are Yumuteaota, Mother People. Remember me and what I say, for I am the one who takes care of all the bird people.'

The old couple returned happily to their people, and they took up their long migration, multiplying as they went.

They went northward through Pusivi (Big Cave) near Nogales, turned west and came to the Pacific. Going eastward toward the Atlantic, they stopped at Kyashva (Parrot Spring) in Grand Canyon, and at Sawyava (Bat Cave) in Walnut Canyon, which had been settled by the Chosnyam (Blue Jay people). After turning northwest, they passed several small ruins on the flat prairies (in Nebraska or Iowa of today), and followed up the east side of the Great Divide through Canada toward the Back Door. They then came down the west side, stopping at several places: Túwi'I (Terrace) near the pueblo of Santo Domingo, which still today reveres parrots; Wénima; Pavi'ovi (Water on High Place) and Chosóvi (Blue Bird Hill), both near Tonto ruins; Walnut Canyon and Wupatki (Tall House) near Flagstaff; and finally Shongopovi and Oraibi.

According to Ferguson and Loma'omvaya (2004), several Hopi clans such as the Bear Clan, the Bearstrap Clan, the Bluebird Clan, and the Greasy Eye Socket Clan once occupied Walnut Canyon or *Söönapi*. These clans migrated to the Hopi area from the southwest and they were known to heal through magic. Some Hopi people knew members of these clans as "magicians."

Walnut Canyon is also a place where the Antelope Society, *Tsöötöpt*, was well known. Many of the clans that lived in Walnut Canyon migrated to the Hopi mesas via Canyon Diablo. Walnut Canyon is still a very important part of the Hopi cultural landscape today. As part of the continued use of the *Söönapi*, the Hopi still frequent a shrine to leave offerings (Ferguson and Loma'omvaya 2004).

Navajo Summary

Of the documents reviewed for this section, one from the Navajo Nation (Begay and Begay 2003) provides the majority of the information, and concerns plants and minerals. We supplement that with other traditional use data in the landscape chapter and appendices. The Navajo name for Walnut Canyon has been documented as *Kits'il* (Linford 2000) and *Tsé*

Nahat'oodí (Begay and Begay 2003). The latter has been translated as Oak Creek Canyon by Vannette and Feary (1981) and the Navajo Nation (1963), however, Begay and Begay (2003) believe it may pertain to both places.

Walnut Canyon contains many ceremonial and medicinal plants, and is a favorite collecting site for the Navajo people. The wildlife, including birds, has important roles in many Navajo traditions, however, details of specific species were not found. Culturally important plant species include cliffrose, Virginia creeper, sumac, juniper mistletoe, rabbitbrush, wild currant, various cacti, chokecherry, yucca, rock sage, oak, and mountain mahogany.

Of the three parks, Walnut Canyon is the only area identified by the Navajo people as having a traditional use mineral. A white clay occurs in the canyon that the Navajo people use as paint for ceremonial dancers, ceremonial equipment, and offerings. It is also mixed with wolfberry and other berries for eating (Begay and Begay 2003).

Ethnographic Commentary

As another significant site in an extensive multi-cultural use area, Walnut Canyon National Monument is important in many ways to the six ethnic groups of this study. Plants are the primary resource of concern, however, wildlife, minerals, the ruins, and other signs of previous use are important as well. Traditional uses of the site centered on ceremonial activities, but including star observation, spiritual experiences and teachings, plant gathering, hunting, and farming.

While the groups did not express the need to conduct a thorough plant inventory of the park, as they did at Sunset Crater, the vast difference and extensive number of use plants in Walnut Canyon suggest that the afore mentioned inventory would include all three parks. Specific plant management recommendations including access and use requests could be made for Walnut Canyon following such an inventory. Plant uses for food, medicinal, and ceremonial purposes were emphasized.

All six groups identified plants and the ruins as culturally significant, however, the Pai groups also identified a Kokopelli sign and hunter's shrine, and the Navajo people use a white clay found in the canyon (Begay and Begay 2003). Implicit in the discussions and information in Mercer (1999) and Begay and Begay (2003) is the idea of Walnut Canyon as a place of medicine, ceremony, and spirituality. Much of the canyon is unavailable to visitors, however, the tribal representatives believe that access to other areas is critical to traditional use, teaching, and interaction with land and resources. Not only are resources more available away from the Island and Rim trails, but these areas provide the privacy needed for traditional activities.

CHAPTER FIVE WUPATKI NATIONAL MONUMENT

Comprising approximately 35,422 acres adjacent to the Coconino National Forest, the Navajo Indian Reservation, and private lands, Wupatki National Monument was established as a two piece area in 1924 by Presidential Proclamation No. 1721 (43 Stat. 1977); the intent was to preserve prehistoric pueblo ruins (Figure 5.1). It was enlarged in 1937 (Presidential Proclamation No. 2243), reduced in 1941 (Presidential Proclamation No. 2454), then enlarged again in 1961 (Public Law 87-134) to preserve additional archeological resources. The boundaries were revised again in 1996 by the Omnibus Parks and Public Lands Management Act (Public Law 104-33) (Colton 1946; National Park Service - WUPA 2001).

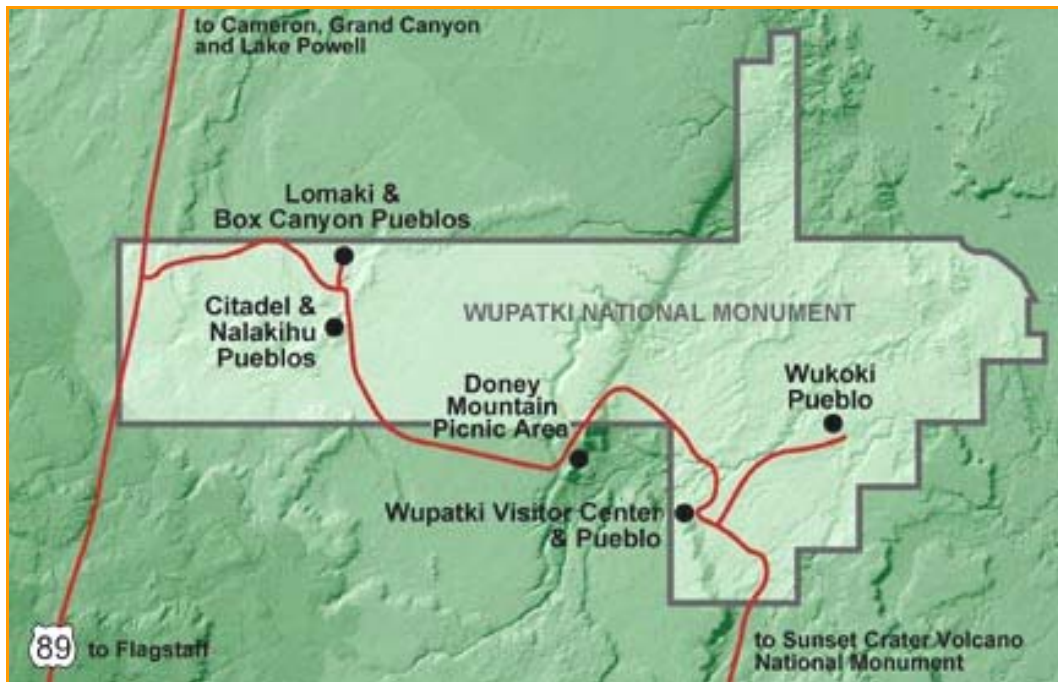


Figure 5.1. Wupatki National Monument (NPS 2003)

Wupatki has been characterized as a multi-cultural frontier where many prehistoric cultures interacted. This is not surprising when one considers the strategic location of Wupatki on or near several natural travel corridors such as the Little Colorado River, Deadman Wash, and several mountain passes to the south and east. Wupatki, consequently, became a center for trade, ceremonial activity, and other cultural interactions (Colton 1946; National Park Service - WUPA 2001).

The archaeological landscape of the monument includes residential sites, ceremonial ballcourts, lithic quarries, agricultural fields, shrines, rock art, and other features. The original focus of the the monument was the protection of eight large pueblos having standing architecture: Wupatki, Wukoki, Citadel, Nalakihi, Lomaki, Crack-in-Rock Pueblo, and the

two Box Canyon pueblos. While some sites predate the eruption of Sunset Crater (approximately A.D. 1065), most sites date from A.D. 1100 to 1275. The wide variety of site types indicates a diverse area of residential, agricultural, and ceremonial uses. Separate from the sites, isolated artifacts date human use of the area as early as 9500-9000 B.C. Evidence of Puebloan occupation has been documented sometime after A.D. 1000 but is limited to a couple of small sites. As with Walnut Canyon, the period of intense building and occupation in the Wupatki area lasted for about 120 to 150 years, the population beginning to decline after A.D. 1220. Although the area was essentially abandoned by the mid-13th century, it continued to be used periodically by Hopi travelers, ancestral Havasupai hunters, and others. Sometime in the 1800s, Navajo people began to graze their herds in the area using the Wupatki Basin as a seasonal residence (Colton 1946; National Park Service - WUPA 2001).

Our discussions with tribal representatives centered on their long term interaction with Wupatki National Monument and the surrounding region. While site discussions were held at various locations within the park, the discussions focused on Wupatki and Wukoki as a paired site, on the Citadel, and on Lomaki. We conducted most of the landscape discussions in Wupatki as well given the openness and diversity of the park. In this chapter, we paraphrase primary resource use data from those discussions by site location. All responses from each group's participants are compiled by question with each paragraph reflecting each individual's responses. The check-box tables within the responses are to the immediate right of the questions to which they pertain, and summarize the responses that follow. Yes/no and condition responses are listed once if a consensus occurred otherwise, the various responses are presented. A summary of the representatives' responses and an ethnographic commentary concludes the chapter.

Citadel

An 800-year-old pueblo, the Citadel is thought to have been occupied by prehistoric Anasazi and Sinagua people. It is built on a small volcanic remnant north of what is assumed to be a sink. The walls of the Citadel follow the outline of the volcanic butte and may have been two stories high (<http://www.nps.gov/wupa/>). The unusual diversity of pottery sherds on the northeast flank of the butte, the deep sink on the south flank, and incredibly strong winds characterize this site as unique among those most commonly seen in the park.

Zuni

What is the Indian name for this place?

Later on they named the places that were on the migration route. *Inode kwe*, Zuni for "ancient people," they migrated here before anyone else.

Please describe this area.

The ruins are high up and you can see miles around the area in the path. They look for the highest center so they can see directions for miles. This is natural. So commonly, people lived down below and up here. Overall lookout to see anybody coming here. Especially for defense.

Would Indian people have used this place?
If yes, why or for what purpose?

Yes					
Living	Hunting	Gathering food	Camping	Ceremony	Other
✓	✓	✓	✓	✓	✓

It was occupied a long time ago-deer, antelope, other animals they could find.

Planting below the hill is a good place to corn and other plants.

Used for defense, could see all around.

In the low area plant food in broad areas. Plant seeds for food, that lower spot [box canyon and hole near the Citadel] and here are connected by proximity. Could be related or connected to Wupatki and Lomaki Ruins.

Is this place part of a group of connected places?

Yes

What kinds of places is it connected to?

It is connected to other ancestral sites in the Arizona, New Mexico, Utah, Colorado area.

Some are together, some are different areas. Some are related as neighbors in those days. Don't know if they had clans in those days. They're connected to other nearby ruins as neighbors.

How is this place connected to the other places?

It has a similar style to other sites when they started at the Grand Canyon area, Extends up to Utah and the sites became more like this on the migration. It takes practice to make these better. As the migration progressed the buildings became better built.

Don't know.

Is this place an important source for Water?

Yes

The runoff from the rain; ancestors used to wander and there could also be other springs.

No more running water. Maybe water in past at time of occupation.

Is this place an important source for Plants?

Yes

Plants that were used in the past. Need more time to recognize them but not now. There are more plants in mid-summer, if more monsoon rain; mormon tea.

Is this place an important source for Animals?

Yes

Birds, such as flakers, blue birds, where ever the water is.

No water.

Is this place important for Evidence of Previous Use?

Yes

All the sites were important.

Citadel Ruins.

Usually sites are on top of hills and mountains so you could see

Is this place important for Geological Features?

for miles around.

No water.

Yes

The elevation of the site. A safe place to live especially from enemies. The canyon behind the ruins towards the San Francisco Peaks could have been the reason why they picked the location that the Citadel sits on. At one time there could have been water and more vegetation at the bottom of it.

It's a high place to see all around.

WATER

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	

Run off water from the mountain next to the Citadel.

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	

They would have used the water as much as they could have.

It is likely that it rained more and more frequently than compared to now. It rains in spring and summer a lot. There are a lot of stories from the elders about this.

How would you evaluate the condition of the water?

Poor

Is there anything affecting the condition of the water?

Yes

If yes, what is affecting the condition of the water?

The drought.

PLANTS

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

Indian people use plants when needed and necessary, in the past and in present.

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other
✓	✓			

Used them whenever they wanted to.

If the right plants are in the area, they could be used today.

Mormon tea, used for stomach, constipation, laxative, digestive aid. Come out in hot area, not cool area. It works all different ways.

How would you evaluate the condition of these plants?

Fair to good

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

The drought.

ANIMALS

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓				✓	✓	✓

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓	✓	✓			✓

Birds, flakers and bluebirds

Today, cow, sheep, horses. In the past deer, elk, antelope.

Used for clothing in costumes.

Still use feathers today.

Skins used in ceremonial dress.

How would you evaluate the condition of the animals?

Poor

Is there anything affecting the condition of the animals?

Yes

If yes, what is affecting the condition of the animals?

The drought and people scaring the birds away.

None are visible; drought. If there was more water there would be more animals.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

Ruins

When would Indian people have used this site and/or artifact?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓		✓		✓	✓	✓

Gathering food is a maybe he is not sure if they would have used the area to gather food more likely they would have planted something.

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓	✓	✓	✓	✓		✓

Never heard of ancestors using a site like this seasonally, rather it would have been for periods of use before they moved on.

Today the Zuni use the site not to live but to visit.

In the past people may have camped in there when they were trading.

There is a possibility they could have used the site for ceremonies, like ceremonies for good hunting.

There was probably a Kiva in the center of the citadel ruin and the living apartments encircled it around the other rim of the citadel.

How would you evaluate the condition of this site/artifact?
 Is there anything affecting the condition of this site/artifact?
 If yes, what is affecting the condition of this site/artifact?

Citadel is special due to its higher elevation, to see all around.
 May have grown crops.

Poor
 Yes

The weather mostly the humans are not a really a problem because they only come for a short time.

Don't think there is anything affecting the condition of the place.

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

When would Indian people have used this site and/or artifact?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	

Whenever needed.

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓	✓	✓	✓

Communicate with spiritual beings	Territorial marker	Other
✓	✓	✓

Canyon

Deer trap. Chase the deer. Some other places are like that too.

Could have been used for ceremonies. Could have also been used as a territorial marker. Could have also been for communicating with spiritual beings.

For all we know there are stories that ancestors had, that they use to trap animals in the canyon in order to kill them easier.

High spot for living, to see around and look out. Maybe chase deer down into the sink. Use broad flat areas to grow crops. May have used the flat low area if had water for crops.

How would you evaluate the condition of the geologic features?
 Is there anything affecting the condition of the geologic features?
 If yes, what is affecting the condition of the geologic features?

Fair
 No

How would you evaluate the OVERALL condition of this place?

Poor
 Good

Is there anything affecting the OVERALL condition of this

Yes

place?

If yes, what is affecting the OVERALL condition of this place?

What would be your recommendation for protecting this place?

Weather, the drought. These ruins do not look like Wupatki as far as condition.

Whatever they can do to protect it.

Hard to make recommendations.

Park service needs to monitor sites from falling apart and protect from vandalism.

Hopefully it will be protected.

Keep site clean. Manage it that way and don't damage the walls. Protect the trails too.

What would you recommend for protecting the Water?

If there was water it should be protected.

What would you recommend for protecting the Plants?

They're alright.

There are lots of plants to protect.

What would you recommend for protecting the Animals?

Animals are spiritual beings and they can protect themselves.

What would you recommend for protecting the Evidence of Traditional Use?

Stabilize the ruins further. Can't do much at the site. Monitor the site more.

What would you recommend for protecting the Geological Features?

Do you think Indian people would want access to this place?

Yes

If yes, why?

To visit ancestral sites.

Maybe if there are changes. Visit the Peaks and have better idea of what we do in field work. We all have different ideas of what to work with and how to work with.

Are there any special conditions that must be met for use?

Yes

If yes, what are these?

To be able to visit ancestral sites and have free access.

Maybe to look for plants, what we don't have in Zuni like Mormon tea, white flower bush, hackberry, salt berry, gather not everything but what we can use.

Are there any traditional management practices that would improve the condition of this place?

Yes

If yes, what are they?

Just by words but not doing things. In prayers we pray for more growth and animals can live in all the world. To be useful.

Other Comments

Site needs to be monitored and stabilized from falling down. It is a good site to see and I don't want to keep people from coming.

Seeing places like this is how people learn about native peoples like the Zuni today.

Monitoring would help protect it best.

At this time all is clean. But don't know what it looked like before. Recommend that it stay the same.

Doney Mountain

A panoramic view of the San Francisco Peaks, a myriad cinder cones, the Painted Desert, and Wupatki National Monument draw visitors to Doney Mountain. Named for Ben Doney, a gold prospector, the site includes interpretive signs for two prehistoric ruins with signs explaining their role in the local community and their relationship to prehistoric farming. A picnic area provided shaded opportunities for site discussions.

Pai

What is the Indian name for this place?
Please describe this area.

Jukanwa is "ancient dwellings" and *Gh-tsoo-o* is the ballcourt.

The ruins. Some of the pottery here looked like Pai pottery. The ballcourts; we used to play games that were like hockey with a ball. At the ballcourt, there was also a meeting area. The people who lived here had to be tall to sit in the seats. The sandals were made of yucca, like ours. Wupatki was probably a trading place, it is in a central location. This place is between the Verde Valley and Hopi. Coconino is a Hopi word to describe Pai people. At Wukoki, you could feel the power. Something came out and touched me. There is more power there than at the main ruins. It was built strong.

Would Indian people have used this place?
If yes, why or for what purpose?

Yes

Living	Hunting	Gathering food	Camping	Ceremony	Other
✓	✓	✓	✓		✓

Living at the main Wupatki, not Wukoki. At Wupatki, there was living, competing in games, and council meetings. At Wukoki, there is no evidence of cooking. It must have been a stopping place. This place was a part of trade trails.

The Circle Dance was *matvjuudua*, and it could have been held here. There is a central staff with the enemy's head in the center of the ring. There could be such a dance here. They could watch stars anywhere, it's the type of person that watches stars. This place was a shelter along an intertribal trade route to Hopi. You can almost see the Hopi Second Mesa from here. The trade would go back behind us to the San Francisco Peaks. People would come here for competition, to trade, to hold ceremonies. People came for blessings

from the wind home, it was like a vortex. There were intertribal or intratribal relations like Hopi and Cohonina. They could also go to the Little Colorado River and then go downstream to Cameron, *Kwasakeeva*, or to the Big Colorado and the Grand Canyon, *Wiktata*. If you come from the north you can go through Williams and get obsidian. You have to send a runner to announce the ball games. For trading, they would use deer meat, hides, red paint, which was called *gwaada* or *suuta* in Hopi. This place was also for defense. Some of the structures were used by archers defending and looking out. The people here could collect bird feathers.

Is this place part of a group of connected places?

Yes

What kinds of places is it connected to?

Yavapai and Hopi areas.

Hopi and the San Francisco Peaks.

How is this place connected to the other places?

This land is Yavapai traditional all the way to the Colorado River. Long ago, the Hopis lived with the Yavapais. The San Francisco Peaks are sacred to the Yavapai, it is in our origin story.

Is this place an important source for Water?

Yes

The spring.

The Little Colorado is over there, and there are plenty of springs near the mountains, so the water source at this place is not too important. This place is dry.

Is this place an important source for Plants?

Yes

Mormon tea, red berries, cedar, cliffrose.

Used in medicine.

Is this place an important source for Animals?

Yes

Deer, elk, bear. Bear was our grandfather, so we didn't hunt bear.

Deer. The animals here are the same as elsewhere in terms of power. They are not here because of all the automobiles and NPS buildings. This is changing the balance of the spirituality of this place.

Is this place important for Evidence of Previous Use?

Yes

The ballpark is where they played games. We have a name for that game in our language. The council area is circular.

There are powerful ruins here. The structures were a place to rest.

Is this place important for Geological Features?

Yes

WATER

Would Indian people have used the water?

When would Indian people have used the water?

If yes, why or for what purpose?

The blowhole used to be round as well.

The blowhole is a power point, an area to gather medicine or power for their spirituality. *Sma'buuga* is a place to gather power. *Geegaga* is a place to gather strength. Young shaman would come here and get power. Older shaman would come from their homes using their mental ability to pray.

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
		✓				

Food, drink	Medicine	Ceremony	Other
✓			✓

For planting.

There used to be a lot of water here.

They would need water any time. Today, the Little Colorado is not pure. In 1979, the United Nuclear Fuels was mining uranium at Rio Puerco, and leaked heavy metals. The spring in the park is clean.

How would you evaluate the condition of the water?

Good

Is there anything affecting the condition of the water?

Yes

No

If yes, what is affecting the condition of the water?

There must have been more water flowing, because there was supposed to be farming. There has been encroachment here. The Hopis have been protected because of their location. Maybe people had visions that new people were coming.

PLANTS

Would Indian people have used the plants at this place?

When would Indian people have used the plants?

If yes, why or for what purpose?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓	✓				

Food	Medicine	Ceremony	Making things	Other
✓		✓		

Plants were used in blessings and prayers. They were used for burials, like the Hopis do. The piñons were collected in the fall.

Good

Fair

How would you evaluate the condition of these plants?

Yes

Is there anything affecting the condition of these plants?

If yes, what is affecting the condition of the plants?

They are good compared to the plants down near Sedona. The ground is better because it is volcanic. The wind, if it's too heavy, can kill plants. The wind is getting worse and worse each year.

The transplanted plants near the NPS buildings are doing well, but the rest are suffering. There is too much wind, and a lack of rain. Both of these problems derive from a lack of Indian ceremonies for rain. There is a lack of respect. The tourists may have respect, but the NPS has them too close to some sacred places. They should restrict access. When it is easy for people to get in, the people with less spiritual commitment can get in. None of the people here made offerings.

ANIMALS

Would Indian people have used the animals at this place?

When would Indian people have used the animals?

If yes, why or for what purpose?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					
Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓		✓	✓	✓		✓

Only used after prayer.

Yavapai girls wore buckskin dresses. They had buckskin shoes, and leather burden baskets. You would have to pray and prepare four days before hunting.

Deer. The animals here are the same as elsewhere in terms of power.

Fair

How would you evaluate the condition of the animals?

Is there anything affecting the condition of the animals?

If yes, what is affecting the condition of the animals?

Yes

People. The white people are moving in and moving the animals out. The earthquakes in California are making Californians move here, they are destroying the vegetation.

They are not here because of all the automobiles and NPS buildings. This is changing the balance of the spirituality of this place.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

When would Indian people have used this site and/or artifact?

If yes, why or for what purpose?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
		✓				
Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
	✓	✓	✓	✓		✓

The ballcourt was used for games.

How would you evaluate the condition of this site/artifact?
Is there anything affecting the condition of this site/artifact?

The game that was played here was not exactly like the one in Mexico. There was no killing. This game was like hockey in a way.

People can go in and out of these places as long as they do so respectfully. There should be some announcement that they are going into a sacred area, and if their spirituality is not in turn then it is wrong to come in.

Excellent

Fair

Yes

The wind.

They are well-kept, but there are too many stabilization areas. These techniques are not the same as the ancient methods. There is too much modern stabilizing. This impacts the original structures. The Park Service has good intentions in protecting the place. The grill and fence over the wind home [blowhole] is encroaching, but it is a safety thing. Long ago, children were not to go to places like these. It is dangerous because children do not know it is there.

If yes, what is affecting the condition of this site/artifact?

The blowhole.

Home of the wind [blowhole].

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
				✓		

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓		✓	

Communicate with spiritual beings	Territorial marker	Other
✓		✓

For health, for refreshment, for cooling and heating. The round boulders with the rounded holes in them were good places to make game sticks that were used for the ballcourt games. The sticks brought the power from Wukoki to help in the games.

Runners from Hopi and the Verde Valley refreshed themselves while en route. This would be a good place to do it.

The wind can give you a song just like water can. The wind has a story spirit.

I can hear water down in the hole. He pointed to the spring near ruins and said it flows below where the hole is. Wind in the hole is strong and pure. A powerful place.

How would you evaluate the condition of the geologic features?

Excellent

Is there anything affecting the

Yes

condition of the geologic features?

If yes, what is affecting the condition of the geologic features?

How would you evaluate the OVERALL condition of this place?

Is there anything affecting the OVERALL condition of this place?

If yes, what is affecting the OVERALL condition of this place?

What would be your recommendation for protecting this place?

What would you recommend for protecting the Water?

What would you recommend for protecting the Plants?

What would you recommend for protecting the Animals?

What would you recommend for protecting the Evidence of Traditional Use?

What would you recommend for protecting the Geological Features?

Do you think Indian people would want access to this place?
We

People throw sand into it. This may be part of a volcano system, connecting with aquifers. There is an underground network.

Grill over the blow hole encroaches over blow hole. Though, the National Park Service is trying to protect blow hole

Good to Excellent

Yes

The wind is destructive. Also, different people have different levels of respect.

There are a few places with cigarette butts and some scratches in the stone. We have rules about respecting the sites. Don't make love and go to site the next day. People don't make offerings and prayers. This is important to the park. Animals are staying away from these areas. Balance is being disturbed in the parks.

People should be guarding the first stop more [on the main Wupatki trail], and really emphasize the sacredness of the place.

There should be more security, and programs that explain the sacredness of the area. This program should be produced by all the culturally affiliated tribes. There should be real Indians that put together the interpretive program.

The Park Service is doing well considering the small amounts of water that are here.

Try to keep pollution out of the area.

It is well-protected. People need to keep from throwing rocks inside the ballcourt. It is ok to pretend to be the people from the past while in the ballcourt; there were kids and adults in the ballcourt pretending to play sports.

Yes

They shouldn't have to pay to get in. There should be special ceremonies that are opened to people that belong. The ceremonial areas should be kept private from everyone else.

People should be able to come here to pray, make offerings to old spirits, and to bring tribes together through an annual gathering of tribes to share. There is a need to involve youth.

*Are there any special conditions that must be met for use?
If yes, what are these?*

Yes

People shouldn't have to pay to come in and do ceremonies. Why should we have to pay to come to our home? They should allow Indian schoolchildren to come and learn about their culture.

The Park Service needs to waive the fees, give Indian people full access. The youth should go with the elders to the sites and designate another place away from here for camping and ceremony. That would be a place for the tribes to come together. They could use the traditional foods that thrive here. The tribes are hungry for this to happen, they should keep it traditional and not political.

Are there any traditional management practices that would improve the condition of this place?

Yes

If yes, what are they?

As long as they continue to protect the area and not pull down trees.

Praying for rain. This is the main thing that the youth should come and see so that they would have a spiritual foundation. This was the whole purpose of the spiritual sites. The prophesies say that things are going to get worse. People need to honor sacred sites on a global level. Understanding will come back in the children.

Other Comments

There are connections between the Pai people and the Hopi. There are generational relationships. The Yavapai are the Cohonino and the Hohokam. The Havasupai people are still very rich in their culture, they know more about the blowholes and other things. This place is connected to Sunset Crater.

Children used to respect site. Children couldn't go to sites unless they were a young shaman. It isn't dangerous for white children because they don't know. They are ignorant and ok. People can visit these places as long as they're not drunk or disrespecting it. People need to know they are going to a sacred area. All types of spirits are coming in, even lying; cheating, bad spirits are coming to these places.

Southern Paiute

What is the Indian name for this place?

Nuvaharka, the San Francisco Peaks area.

Please describe this area.

The place where the people used to live in the ruins. The games and the ball courts.

It's scary because it's a volcanic area. It may blow up. The landscaping doesn't look too well; it's dry during the winter and spring.

The way they built the structure; it was next to a large rock. The blowhole also.

Would Indian people have used this place?
If yes, why or for what purpose?

The old houses, and the ruins are interesting. The plants and wildlife, like the antelope, deer and rabbits are special.

Yes

Living	Hunting	Gathering food	Camping	Ceremony	Other
✓	✓	✓			✓

Playing hand games, foot races, and stick games. The sticks have numbers and colors. There possibly was farming here.

As a trading place. This place is not too far from San Juan. When people crossed Lee's Ferry, where the water was low, they would go through San Juan to Wupatki. Going to the Grand Canyon, there was another crossing. It was open, a source for red paint. The water was low there, too. Then to Kanab Creek.

I have heard in stories from my parents. Hopi stories also. The whole area was sacred because of the volcanoes.

If there was water. No comment on ceremony, power. They would run livestock, like horses and cows, through here. They would farm if there was water. They would hunt animals like deer and antelope. They would gather pine nuts, *isu*, *suvi* or squaw bush. There are so many plants you can't name them all.

Is this place part of a group of connected places?
What kinds of places is it connected to?

Yes

Wukoki

The games here are like the ones in the Yucatan Peninsula.

It was connected to everything.

Places to the north.

How is this place connected to the other places?

Wukoki was a lookout for the people at Wupatki.

It is similar in rock formations and buildings.

I know from stories that the whole area was connected. This is a sacred area. Not just one spot is sacred; you have to do special ceremonies to move between different spots.

Hunting and gathering was done here, like in the Grand Canyon. Hunters for deer would come down from the north.

Is this place an important source for Water?

Yes

Spring.

The spring. That's probably why they settled here.

The spring by Wupatki.

The spring by Wupatki Ruins could be connected to the San Francisco Peaks.

Is this place an important source for Plants?

Yes

Is this place an important source for Animals?

Places to farm; the rains flowed for water.
 Used for medicine, curing and making things.
 No specific animal; they all were important. The sumac bush is called *e-es*. It makes punch, smells sweet, and is good for basketry.
 The piñon nuts.

Yes

Antelope, rabbits, squirrels, deer, mountain sheep.
 With plants, were cooked and roasted underground for food.

The lizard.

Deer, antelope, small game rabbits, wild turkey.

Is this place important for Evidence of Previous Use?

Yes

The structures.

The buildings themselves. The artifacts also, like the grinding stones. The “dents in the rock.”

The ruins.

Is this place important for Geological Features?

Yes

The blowhole at Wupatki.

Don't know. Maybe they are far out in isolated areas.

The spring by Wupatki, that is why people lived there. It used to have water.

The springs could be connected to the San Francisco Peaks, the home of the wind.

Spring

Picjcuu, the spring

WATER

Would Indian people have used the water?

Yes

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓		

If yes, why or for what purpose?

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

To water plants.

To give to their animals.

There used to be a river or stream here. There was growth along rivers and springs. Plants live by the water.

Medicine includes dance.

People must have made a pilgrimage to visit the spring. They would make an offering to the water, but not to the people at Wupatki.

They used the spring for daily water use. There are probably

How would you evaluate the condition of the water?

Good
Poor
Good

Is there anything affecting the condition of the water?

Yes

If yes, what is affecting the condition of the water?

Lack of care.
Lack of snow, and underground low water levels.

It's isolated, but people affect it by contaminating it. Native Americans are more sensitive to the uses of water. You can't be stingy with it.

The lava rocks could influence the condition of the water.

e-es, or sumac

PLANTS

Would Indian people have used the plants at this place?

Yes

When would Indian people have used the plants?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓	✓		✓	✓	

If yes, why or for what purpose?

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓	✓	

Spring was the best time to get wood. The *e-es* was good for basketry.

Grandma used the red berries.

Juniper seeds were for diabetes. The juniper branches warded off evil. Indian tea was used, sage helped the stomach. Something was used for the eyes. For clothing, cliff rose bark made shirts. Yucca rope could go around the waist.

Indian tea was used in the spring and fall, but not in the winter.

How would you evaluate the condition of these plants?

Good
Fair
Good

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

Nobody knows now, but I think it's the drought.

A long time ago, when the white man brought livestock, he took all the grass and plants away. We used to burn during the winter months. Now it looks dried out and not too well.

They are dry because of the drought.

ANIMALS

antelope
wild turkeys

Would Indian people have used the animals at this place?

Yes

When would Indian people have used the animals?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓					

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓		✓	✓		✓

It could be used for sewing.

It's the wrong time to talk about medicine. Clothing includes shoes. Tools include rope.

Clothing includes shoes. Tools include needles and punches for buckskin. Also whistles.

October and November are best time to hunt antelope. There was probably also deer in this area.

The rabbits are ok. Wild turkeys have always been here.

How would you evaluate the condition of the animals?

Good

Poor

Good

Poor

Is there anything affecting the condition of the animals?

Yes

If yes, what is affecting the condition of the animals?

They're pretty protected now.

There is no food, everything is drying up.

There is a drought, and lack of food for them. Also, people go feeding them and looking for them.

The prairie dogs are not coming out of their holes. Something is wrong, but I don't know what.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

Yes

When would Indian people have used this site and/or artifact?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓	✓		✓		

Four to five times a year.

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓	✓			✓		✓

For dances.

Guarded storehouses at Lomaki.

As a battlefield.

Wupatki was more of a place for living. Lomaki was for fasting and praying. It could have been a stop along a trail or a destination in itself.

The people who made these ruins were dark in color, and wore rings in their noses. They killed some Southern Paiutes along the Little Colorado River. The Paiute people recruited Hualapai and Havasupai to come and attack this village. There was only one dark person left to go tell his people to come fight. He was wounded and probably died somewhere. The Pais and Paiutes went home after that. They probably had a round dance together. We don't know why the dark people attacked the Paiutes. They were passing through along the regular trail past Willow Springs. This is a story that is told a lot by my grandmothers.

How would you evaluate the condition of this site/artifact?
Is there anything affecting the condition of this site/artifact?

Poor
Poor
Good

Yes

They are almost gone because they are too old.

The upkeep is not very good, they need more repairs. The visitors are trampling all over the buildings.

Weather, the seasons, the visitors.

If yes, what is affecting the condition of this site/artifact?

Blowhole, *hurrokanni*

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓			✓		

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓		✓	✓

Communicate with spiritual beings	Territorial marker	Other
✓		✓

Maybe for thawing things out with the wind.

I saw more of these down at the Arizona Strip. I can't say much about it.

This is a special area. There is one more hole near the road out of the park. It had a fence around it, which is not good. The NPS is putting a fence around the other; that is not right. One thinks it is ok for the one near Wupatki to be fancy [but the other one] disagrees. Don't put a fence around any hole. The wind comes to people to talk, and this is a place where people would go to talk to the wind. They could learn a song about it, and you could go over there alone. It's probably scary to go there alone. The wind talks to you. Before you go you have to prepare yourself in some secret way. The Park Service would have to close the area off for however long it takes.

How would you evaluate the condition of the geologic features?

Both men and women can talk to the wind. There are other locations where the wind lives.

Fair

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

How would you evaluate the OVERALL condition of this place?

Fair
Good
Fair

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

The hot weather.
It's surviving, the cedar trees look pretty good. There is a lack of rain.

People who don't read the signs.

There is a lack of rain, more rain would help the situation because of the drought.

What would be your recommendation for protecting this place?

Maintain it.

Let only a certain number of people in each month.

Clean up the picnic stop, add chairs and unlock the restrooms. Have more information available about the land, so tourists care about what they're doing. The information in the visitor's center was good, but there should be information on the San Juan Paiute. The people who lived here may have become Southern Paiutes.

Access to the hole should be limited. It isn't an air conditioner. They should limit access to the park. The people that come here don't know how to take care of it.

What would you recommend for protecting the Water?

Have somebody watching the spring.

If, it's still running, maybe put in a pipe for it to flow through.

Not really, it is well-run.

What would you recommend for protecting the Plants?

They need rain.

The plants depend on the water, the rain and monsoons.

Not really, it is well-run.

What would you recommend for protecting the Animals?

It's ok right now.

They are doing all right. Maybe have hunting restrictions.

Not really, it is well-run.

What would you recommend for protecting the Evidence of Traditional Use?

It's ok right now.
Put up wire fencing to keep people off of it. Have people look from the outside, or completely rebuild it.

Not really, it is well-run.

What would you recommend for protecting the Geological Features?

It's ok right now.

Not really, it is well-run.

The hole should have a banner around it so tourists can't get too close. It could make them sick.

Do you think Indian people would want access to this place? If yes, why?

Yes

For the same reason that people in the past did, for plants, animals, water for ceremonies, and for dances.

We're into the history of the different areas where we have lived. We want to know about things that happened close to our homes.

Are there any special conditions that must be met for use? If yes, what are these?

Yes

Remodel the buildings. Make them more complete.

Both white people and Indian people should have the same restrictions when they visit.

Are there any traditional management practices that would improve the condition of this place?

Yes

If yes, what are they?

What they used to do, water and harvest plants.

Burning, though that depends on the type of grass growing. The drought makes burning difficult.

The place needs water to make things grow, older people need to pray to bring in rain. The people who make the rain are gone. The wind just may have a song to make it rain.

Other Comments

The Snow Clan at Hopi still goes to Supai to gether water for the ceremony back at Hopi. The Snow Clan brings water to the kivas. Manakaja, X's father's father's father was the last chief before the U.S. government took over. The Snow Clan called on him for rain and snow. Perhaps they came here to do the snow ceremonies, but maybe they also did in for snow on the Hopi Mesas.

This is a nice place to visit, to spend a vacation.

Just clean up the view area.

Zuni

What is the Indian name for this place?

Place is part of the Zuni migration but not sure of name.

It means ancient place.

Please describe this area.

The ruins, rocks are still there. It's good the park service is taking care of it and keeping it up. There is a lot of impact, but people are learning to stay on the trail. Conditions have improved.

It's almost the same as our homeland, the vegetation, the cinder. During travels, they got to know how to survive in areas like this.

This is one of the migration areas for Zuni, out of the Grand Canyon

It is the St. Francisco Peaks area. There is a Zuni name for this area. The Ancestors migrated through this area when they first migrated. There is also a canyon near Highway 89 and also nearby, about 20 miles is a river. There is also a little town 20 miles north of Flagstaff. The Zuni River joins with the other river and it connects to Zuni Heaven. Then it connects west, the Little Colorado River, then connects to the Colorado River and the Grand Canyon. The hills of cinder cone remind of what is underneath. Some sites of the migration are hard to say because they are covered up. Grandparents talked to us to give us an understanding of the migrations. These names, Wupatki and Wukoki are not Zuni names.

Would Indian people have used this place?

If yes, why or for what purpose?

Yes

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
✓	✓	✓	✓	✓	✓

Hunting deer, antelope, rabbits.

Gathering food, crops, corn or whatever they could plant in areas where water was easy to get. It depended on rain back then. The Wupatki area had farming.

Stars were used to to tell what season and time of year it was. Also used for religious reasons.

Wupatki are is part of how the Migriation story is told in Zuni

For games. Out in the open, not the ballcourt, those are from Mexico. There are always ceremonies for planting and harvesting different plants, celebrations at harvest, summer with spring and winter with fall ceremonial dances. They still do.

Gathering medicinal plants, pigments along the Little Colorado River. The Zuni used to make pilgrimages years ago to this place. The last one was in the 1920's. The Anglos started buying up land; it is now difficult to cross to this.

Living for the family; could be that people moved on after living in a place.

Is this place part of a group of connected places?

What kinds of places is it connected to?

Yes

To all the ancestral places of the Zuni. They are all connected

It is connected to Zuni and other sites in Arizona, Utah, New Mexico all the way to Bandelier, and Colorado. Places in the four states that are all part of the Zuni migration story.

Zuni, the Grand Canyon, the Little Colorado River.

How is this place connected to the other places?

It is part of the migration story.
 It has the same types of areas. It has kivas, plazas, they are of the same style and it has to be connected.
 A Zuni woman was talking to a Native American woman from South Dakota and they have similarities to the Zuni tribes and their practices.
 Migration story. We came from the Grand Canyon, looking for the Middle Place. These places were built during that time. Where the people would be safe from destruction of tornadoes and such. Zuni is the middle place between El Malpais and Sunset Crater

Is this place an important source for Water?

The Zuni make pilgrimages. The Grand Canyon is the beginning of the migration. There are places along the Little Colorado River that are in the migration.
 Yes
 The springs, but I'm not sure where they are.
 The rain as well.
 Water is the most important resource. It connects us back to the pilgrimages to the Grand Canyon. When they were migrating, they needed springs; they would look for cottonwood.

Is this place an important source for Plants?

That place at the ruin [Wukoki] that looks like water comes down over it.
 Yes
 I recognize some of the plants here but I'm not sure what they are used for, but ancestors would know.
 It looks promising for crops. They had to make food before traveling. So they would grow food there for four years, then travel. Everything in Zuni is in fours.
 Apache plume, Colorado beeweed
 Saltberries on bush, to eat. Yucca, two kinds, slim leaves, and wide leaves. White flower bush (Apache plume) and also a little green plant by the road. Also a small purple flowers used at Zuni like pepper with meat, kept in containers. Dried and crushed.

Is this place an important source for Animals?

Yes
 Deer, rabbits, antelope, rams closer to the Grand Canyon area.
 Open pits with sticks over it to trap. Nothing was wasted; it was worn, eaten, made into tools.
 Deer, antelope, rabbits.

Is this place important for Evidence of Previous Use?

Yes
 Ruins where previously used.
 From the Grand Canyon, three large groups came, each with scouting parties. They would build in promising places and those

Is this place important for Geological Features?

following would stop there.

The buildings, the architecture.

Yes

Mountains like the San Fransico Peaks, Doney Mountain and all the other mountains in the area.

A lot of travel back and forth between scouts and the larger groups. They would use caves as caches for food before Sunset Crater blew.

To Native Americans, the whole landscape is important. When building a house, they would protect against the elements, in a defensive position.

Place prayer feathers on hills, high places, prayer feathers in directions. Maybe pray once a month over a year.

Springs

Little Colorado River

Yes

WATER

Would Indian people have used the water?

When would Indian people have used the water?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓		✓	✓	✓	

If yes, why or for what purpose?

At all times; when needed.

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

Calendrically means every four years. Water is a connection. Rivers are like umbilical chords. The Zuni River goes to the Little Colorado, which goes to the Colorado, which goes to the ocean. We follow riverways on our pilgrimages to the Grand Canyon.

They would use it whenever they ran out of water.

Springs are sacred, would be used for medicine water, from deep within Mother Earth. More important than ponds, which can become stagnant.

Water also used for cooking, cleaning. Possibly used for irrigating. Watering horses, livestock.

How would you evaluate the condition of the water?

Is there anything affecting the condition of the water?

If yes, what is affecting the condition of the water?

Fair

Yes

Have not seen the springs so I can't tell.

The water isn't running anymore. There's no water around; if there is some in the aquifer down below, maybe we can drill. The people should know about water resources.

PLANTS

Would Indian people have used the plants at this place?

When would Indian people have used the plants?

If yes, why or for what purpose?

Saltberry bush; yucca; white flower bush; a little green plant (possibly mountain mahogany or sumac); little purple flowers, also willow sticks grow where water runs. Also used for prayer feathers.

Plants in general.

Apache plume, other flowers

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

When needed.

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓	✓	

As far as when: it all depends on what they want to use them for.

Plants for curing, cuts, and medicine.

All depends on what was growing back then.

The purple flowers are used as medicine, and the white flowers for ceremonies. We use Indian tea for stomach aches. There's a lime green shrub (sumac or mahogany) with gray bark that we use for prayer sticks. There aren't many at Zuni. We don't reuse them.

Down in the deltas is Colorado beeweed, a food plant.

All kinds of flowers are used for healing, different kinds for different healing.

Colorado beeweed is used in pottery pigments in sandy areas.

Monsoons bring the flowers out in days.

Saltberries are used to eat, used for stomach ache. Juice like pepto bismol. If a person is not sweating in the heat, crush the berries and rub in hands and on forehead to make them sweat. Hackberries (?), bright green with yellow stem used for annual prayer feathers, prayers and offerings. Yucca plants used for ceremonial dancers bundles about the size of a [baseball] bat. Yucca strings, as a headband with two knots, one on each side for Medicine Society, all men use, not ladies. Stem used for food in the past. White flower bush for ceremonial doings. Used to make a different kind of prayer bundle, just the plant bundled for the War Society. Other societies use too, other purposes. Leaders of medicine society carry this plant bundle and carry a small bow. Purple flowers: used for spicing food. Dry plant first and then crush for food.

How would you evaluate the condition of these plants?

- Fair
- Good
- Poor
- Good

Is there anything affecting the condition of these plants?

Yes

If yes, what is affecting the condition of the plants?

The drought, lack of water.
 Some plants look good while others are being effects by the drought.
 The drought, but it's like that everywhere.
 They are dying off, the yucca is even drying out. Affected by the 20-year drought. These are probably the same conditions as in the past when people in Wupatki had to leave. Junipers are being attacked by beetles. Pine, piñon, juniper can ward off the drought.
 Depends, even if some plants dry out they can still be useful depending on what you want to use it for.

ANIMALS

Would Indian people have used the animals at this place?

deer, antelope, elk, ram, rabbit

When would Indian people have used the animals?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

If yes, why or for what purpose?

Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓	✓	✓	✓		✓

Animals could be used for medicine.
 Antlers for ceremonies.
 When needed for food.
 Historically, before game laws were imposed by white man.
 Elders always used to say that the best meat is wild meat. It's pure, has no chemicals or residue, it grazes on grasses.
 With the Hopi.
 Sinew of deer or antelope used for strong cord.

How would you evaluate the condition of the animals?

Good

Is there anything affecting the condition of the animals?

Yes

If yes, what is affecting the condition of the animals?

Don't think anything is affecting the animals. The animals can take care of themselves.
 The modern way of hunting instead of traps, bows and arrows.
 In field school, we used to see a lot of deer and antelope. Most probably moved up higher where there was food and water. We saw a rabbit, which looked healthy.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

Ruins

When would Indian people have used this site and/or artifact?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	

All the time, normal life. Almost like a rental, [successive occupation by different migrating groups].
 They where the living quarters for the ancestors.

If yes, why or for what purpose?

Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓	✓	✓		✓		✓

Farming.
 The plazas were used for entertainment.
 The site was on the migration route.
 We don't seek power; we ask spirits for help healing. Those who know the way wouldn't seek power for himself; that would anger the spirits. The healing ceremonies are private. The social ceremonies, such as for farming, planting, and harvesting, are for everybody.
 Wukoki was for living, habitation, defense.
 Wukoki plaza and Wupatki circle were used for ceremony, power. The big flat area at Wukoki was used for ceremonial dances.
 Both Wukoki and Wupatki had general use.
 There were games, amphitheatres, living quarters.
 Living here at that time.

How would you evaluate the condition of this site/artifact?
 Is there anything affecting the condition of this site/artifact?
 If yes, what is affecting the condition of this site/artifact?

Fair to good
 Yes
 The ruins are affected by the weather and heat, good thing it has been stabilized.
 Visitor impact. I saw a lot of places where they'd put their hands on the rocks; it's shiny, smooth, from the oil or grease or sunscreen. It's good that the Park Service is taking care of these things, restoring them. It gives us a "book" to tell our history, which is not written.
 The restoration work is kind of funky looking. There should be a balance between natural look and stabilization. They may need to use cement, which would block out circulation and spirits. Cement could be appropriate if necessary, it depends on what you need to do.

GEOLOGIC FEATURES

Would Indian people have visited or used the geologic features?

Ice caves.
 Hills in the area.
 The mountains and San Francisco Peaks.
 The location itself.

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	

Annually, or depending on if they were living directly nearby.

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
✓	✓	✓	

<i>Communicate with spiritual beings</i>	<i>Territorial marker</i>	<i>Other</i>
✓		✓

Could use the mountains anytime they wanted or needed to.

There are Zuni names for the mountains like the San Francisco peaks. Something like “*Son ha kapach le hon yallana.*”

They are mentioned in the migration songs, the ice caves at Sunset Crater and at Bandelier and Wupatki. There are other areas for meditation, asking help from the spirits. The spirits would inform the individual, it might be a cave or a hill or a valley; shrines would be left. We found four during the highway project. Two were destroyed for the highway; consultation was after the fact. Shrines are markers to let people know what happened, and to thank the spirits. Big and small shrines hold the same power; size doesn't matter. Help from the spirits would be used for education, like to teach people where to go and get the same type of help.

The blowhole would be used to seek knowledge, power.

The place is good for living because it is out of the elements, it has a view for defensive purposes, it has springs for water, and because houses blend in with the environment here.

Bow priests and rain priests have different ways of communicating. Directions are very important in communication; north, west, south, east.

How would you evaluate the condition of the geologic features?

Excellent
Fair
Good

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

Developments.
The Park Service is taking good care of it.

How would you evaluate the OVERALL condition of this place?

Fair to good

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

The weather.
There is people impact but its ok.
Tourists.
The Park Service is taking good care of it. Visitation is affecting the condition.

Almost the same as before, I think. Can't really compare yet.
This is my first visit.

What would be your recommendation for protecting this place?

Keep on maintaining park as they are now.
 Park Service is doing a good job. The tourists are getting educated about cultures and their histories.
 Keep trails more defined. This will prevent people from getting off the path. There should be more policing of the area; volunteers in the summertime should direct people.
 Everything should be protected by the caretakers, NPS. Let tourist have a better understanding of protection and responsibility. Think it is pretty good so far.

What would you recommend for protecting the Water?

Haven't seen the water sources but assumes the park should keep doing what they are doing.
 Protect it and give us access to it for ceremonial use. All springs everywhere are sacred.

What would you recommend for protecting the Plants?

They are alright as long as people aren't walking on them.
 No pesticides or things to help them grow. Let mother nature pick her own spots for plants. We need access to the bush for prayer sticks. We need reconnaissance of all plants here that we use so we can tell what needs care, harvest, and access to. We need two or three different places for collecting.
 Now nothing, but maybe more later.

What would you recommend for protecting the Animals?

Like he already stated: the animals can protect and take care of themselves. Whatever else the park can do, he is all for it.
 No recommendations but regarding the eagles, we keep them for life, we don't sacrifice them like the Hopi. We have 23 or more in the aviary at Zuni.
 In the Zuni way, all animals are natural beings. You can't control them. You can't domesticate a wild animal, it is forbidden. Deer, birds and our ancestors who have gone to another world. You can't abuse them.

What would you recommend for protecting the Evidence of Traditional Use?

We used to catch rabbits as kids.
 They should be protected from whomever, like hunters.
 Ruins are good the way they are.
 I wouldn't recommend using metal plates or bars for support; more traditional reconstruction, a mortar of natural materials is okay, but gray cement would take away from integrity.
 Protect the ruins. Ok for now. Signs are of concern; need to include information about Indians and Zunis.

What would you recommend for protecting the Geological Features?

However they can protect it.
 Meditation places and ice caves need located and identified before recommendations can be made. The blowhole, like the springs, are sacred, breathe from the earth. It needs offerings like the ice caves. We need to do this very privately, quietly, not for public display.
 Don't bother the areas. Only let special uses go into protected areas.

Do you think Indian people would want access to this place? If yes, why?

Yes

Zuni want to come to the park to visit ancestral sites and do other site seeing.

We would like private access every four years to the blowhole and ice cave for ceremonies. Would like private access for gathering certain plants.

If they need access, I'm sure we can work something out with the Park Service. We could use this place and all the monuments. The Zunis have shrines all over the place, some are forgotten. Cultural Resource people like X, Y, and Z can identify.

The plants mentioned are needed, maybe different types of willow, yucca etc.; depends on what is used yearly in ceremony.

Are there any special conditions that must be met for use? If yes, what are these?

Yes

Need to have free admissions for Zuni and access to all places.

Restrict public access for the ceremonies, and allow gathering away from public view.

Just let them in. Zuni people are very respectful to the landscape. They would do what they need to do.

Ceremonial people go in and go out different ways. And they use juniper branch to erase footprints. Sometimes we might need assistance from land managers for transportation.

Are there any traditional management practices that would improve the condition of this place? If yes, what are they?

Yes

Gather seeds from plants that might be destroyed by burning, for reseeded after burning.

Just be smart about fire. Look at trees and see if they are starving for water, or if they could survive a controlled burn. Is there is enough sap in the trees? If not, don't do a burn. When the land gets burdened with overgrowth, it needs a controlled burn.

Everybody has same ideas. No hunting. Keep sheep away from some areas and don't let them stay in one place.

Other Comments

There is a lot of people impact in the park but it doesn't bother me. Just the weather is affecting the sites and could destroy them. Park service is working really hard to protect the sites that are sacred to the Zuni people.

The park service needs to make the interpretations right in the interpretation centers. Example is the video at Sunset Crater that only the Hopi are the descendants of those that saw the Sunset Crater eruptions.

Park should contact Zuni people and whatever other tribes it concerns not just the Hopi and Navajo information that is in the park. Have some displays about the Zuni people.

Can't say if the interpretation center has improved or not.

Zuni call the Hualapai the *Coh'ni*.

Zuni are the brothers of the Hualapai. When these people where created the Hualapai went there and stayed there while the Zuni and others went east in search of the middle place, which is present day Zuni. On the migration some people went south and others north while others went east to the middle place. Those that went to the south are the people of the everlasting sun, which means the summer time. Those that went south took the parrot with them. Those that went to the center took the crow. The elders talk about the link between the Zuni, Hualapai and the Hopi and know more about it.

We need to set the record straight. Park Service is only mentioning Hopis. The Rio Grande tribes need recognized; ancestral pueblos should mean all pueblo tribes. They need to write down an accurate account that tribes review, then that needs to be what all NPS employees tell visitors. They need the tribal view, maybe set up times for the tribes to share their stories directly with the visitors.

It is good that people like you are interested in letting the tribes having a say in the parks. In years past, the parks would do interpretations with archaeologists from the East. Now, they are involving Native peoples. There is definitely a change.

It's my first time in the area. Hard to say what it was like before. Everything seems ok for now. The NPS seems to be doing ok, for the community in general. There are people like us Zuni priests who do know more of the plants but it is confidential. The hills are also parts of the migration of the Zuni people.

Lomaki

A small pueblo structure poised on the rim of a shallow canyon, Lomaki affords a view of the San Francisco Peaks, rolling hills, and many cinder cones. Built in the late 1100s, Lomaki, meaning “beautiful house” in Hopi, is constructed of limestone and sandstone. It had at least nine rooms, many originally two stories in height. The tribal representatives found the site geologically interesting with the undercut ledges, vertical walls, and periodic bottlenecks as the canyon narrowed to its headcut.

Zuni

What is the Indian name for this place?

Please describe this area.

Something to do with the canyon; names usually describe what you're looking at.

The narrow canyon is important; these have places to store food and water. The relation to the Citadel is possibly for protection, warning, and signalling.

The location of the pueblos; they are not in open, flat areas. They were built for protection; they were hard to get to.

Would Indian people have used this place?

Yes

If yes, why or for what purpose?

<i>Living</i>	<i>Hunting</i>	<i>Gathering food</i>	<i>Camping</i>	<i>Ceremony</i>	<i>Other</i>
✓	✓	✓	✓		✓

Farming. The Citadel may have been where they went for ceremonies and watching stars.

Camping; this was not a permanent place to live.

For protection.

They were still looking for a permanent place to live. This place had water, so they used it for a while. It's strange that people lived on tops of hills and mesas.

Is this place part of a group of connected places?

Yes

What kinds of places is it connected to?

Villages, and places of the ancestors to Zuni, Hopi, and Pueblo tribes.

Places along migration route.

How is this place connected to the other places?

Zuni, Hopi, and Pueblo tribes are all the same people. Havasupai are brothers and sisters to Zuni, probably Hualapai. Don't know about Yavapai.

During the migration, people were traveling and looking for Zuni, the Middle Place. This was one place with crops. The story says that they were at each place for four days. That could be four years, four hundred years.

Is this place an important source for Water?

Yes

Springs and seeps through canyon walls.

The box canyon wash. There were probably springs also, but with the drought, they probably dried up.

Is this place an important source for Plants?

Yes

Probably farmed here.

Locoweed

Is this place an important source for Animals?

Yes

Probably hunted antelope, deer, and rabbits.

Just one rabbit seen, and coyotes heard.

Is this place important for Evidence of Previous Use?

Yes

It doesn't look like they built over other structures.

The structures, the masonry work. They needed to have an understanding of the weight needed to support two stories and wall bases.

Is this place important for Geological Features?

Yes

WATER

Would Indian people have used the water?

When would Indian people have used the water?

If yes, why or for what purpose?

Good views, canyon, runoff on cinder slopes for farming, and warmth from cinder rock to start plants early.

The box canyon.

Springs

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓				✓	✓	✓

Food, drink	Medicine	Ceremony	Other
✓	✓	✓	✓

Farming

Any spring water is used for purification, and teas for medicinal use.

I collect water throughout my travels, any chance I get.

The water was used for healing and kachina ceremonies.

If you knew where the spring was, you could come back for it after rain or snowmelt.

Fair

Yes

It probably tasted pretty good before because the limestone filtered it; not like the Little Colorado River, which is muddy. It's probably not as pure now, has pollutants from snow and rain.

Flowers, seeds

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	✓

Food	Medicine	Ceremony	Making things	Other
✓	✓	✓	✓	

Some plants were prepared for winter use, gathered in the summer for winter use. Sumac or mahogany used for prayer sticks, others used in religion. Indian ricegrass, after the seeds drop, was used to sweep metates clean. Some grasses were used for weaving. If there was willow in the canyon, in the wet areas, it would have been used for baskets. Yucca was used for weaving sandals and baskets, its root was used for soap. You cut it in half and swirl it in water. Medicine plant knowledge is held only by healing societies so I can't say anything about it.

Flowers and seeds include locoweed, Indian rice, or any little seeds.

Locoweed is not for human consumption. The seeds are used in prayer bundles: they stimulate everything that grows. You plant the prayer bundle, and the spirits help things grow.

How would you evaluate the condition of the water?

Is there anything affecting the condition of the water?

If yes, what is affecting the condition of the water?

PLANTS

Would Indian people have used the plants at this place?

When would Indian people have used the plants?

If yes, why or for what purpose?

How would you evaluate the condition of these plants?

Is there anything affecting the condition of these plants?

If yes, what is affecting the condition of the plants?

Fair to good

Yes

They're starving for water but still cover the landscape; it's not down to bare earth.

Last year there was a drought. It may not be like that this year.

ANIMALS

Would Indian people have used the animals at this place?

When would Indian people have used the animals?

If yes, why or for what purpose?

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
	✓			✓	✓	✓
Food	Medicine	Ceremony	Clothing	Tools	Trade	Other
✓	✓	✓	✓	✓		✓

Rabbit skins for blankets, buckskins for storage bags, and pouches for food for traveling.

Buckskins for clothing and moccasins.

The hair of the animals is used for smoking. It is burned for medicinal use. When we kill an animal, it is not just for fun. We use everything.

How would you evaluate the condition of the animals?

Is there anything affecting the condition of the animals?

If yes, what is affecting the condition of the animals?

Good

Yes

We haven't seen many but they're probably healthy. They are supernatural beings that can take care of themselves. The drought is probably driving them into the uplands where there's water.

The antelope crossing has dramatically improved their condition. It would be nice to see an antelope. Runoff would also help the plants and animals out.

EVIDENCE OF PREVIOUS OCCUPATION OR USE

Would Indian people have used this site and/or artifact?

When would Indian people have used this site and/or artifact?

If yes, why or for what purpose?

The structures.

Yes

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
				✓		
Living	Hunting	Gathering	Camping	Ceremony, Power	Trade	Other
✓						

At other areas, there were kivas. I don't see a place here for medicine men to be together. The Citadel looked like there may have been a kiva; it could have been used for spiritual matters. The leaders with knowledge would use it.

How would you evaluate the condition of this site/artifact?

Good

Is there anything affecting the condition of this site/artifact?

Yes

If yes, what is affecting the condition of this site/artifact?

The Park Service is taking good care of it.

GEOLOGIC FEATURES

Box Canyon

Would Indian people have visited or used the geologic features?

Yes

When would Indian people have used the geologic features?

Daily	Seasonally	Annually	Calendrically	Pre-historically	Historically	Today
✓	✓			✓	✓	

If yes, why or for what purpose?

Seek knowledge, power	Communicate with other Indians	Ceremony	Teaching new generations
	✓		✓

Communicate with spiritual beings	Territorial marker	Other
✓		✓

Cinder and rocks used for metates and grinding tools, and farming on the bottoms. The canyon was used for gardening, storage, and probably had springs.

For collecting water. Water goes underground, but comes up in springs and seeps.

The views provided communication; they would pick spots with a good connection to the spiritual, the supernatural. They would use all these features to teach their children how to take care of the landscape.

Seasonally, with rains and runoff from the peaks.

How would you evaluate the condition of the geologic features?

Good

Is there anything affecting the condition of the geologic features?

Yes

If yes, what is affecting the condition of the geologic features?

There's no mining or anything.

The weather; the canyon is sandstone. Weather is natural; it can't be controlled.

How would you evaluate the OVERALL condition of this place?

Good

Is there anything affecting the OVERALL condition of this place?

Yes

If yes, what is affecting the OVERALL condition of this place?

The visitors.

The Park Service is improving the place. We don't have a written history. This place is like the history of our people. If tourists come, and they want to see our history, they can't if the walls are fallen.

What would be your recommendation for protecting this place?

Better control of the visitors, maybe have personnel or volunteers to oversee their behavior. We don't want kids climbing on the walls; we saw that at Wupatki.

Have more information to let people know not to disturb the sites.

What would you recommend for protecting the Water?

Let nature take its course.

If it's here, it's here. We can't control nature. If it's here now, it will eventually disappear. They can't bring in water, it would destroy the integrity of the site.

What would you recommend for protecting the Plants?

Let nature take its course even though they are being affected by the drought and are vulnerable to disease and fire.

Let Mother Nature take its course. We get plants where we can find them.

What would you recommend for protecting the Animals?

They take care of themselves.

The animals are fairly well-protected in the park. We don't kill an animal just for fun.

What would you recommend for protecting the Evidence of Traditional Use?

It's open to the public. There is no way to protect it more. I'd rather have people come look at them, than close the place off. It's our history.

What would you recommend for protecting the Geological Features?

They're okay as they are now.

I don't think so. It's surviving on its own. Any changes may be negative.

Do you think Indian people would want access to this place? If yes, why?

Yes

They make pilgrimages to different places, stops along the way at places in the prayers; like to Grand Canyon for minerals for paints, and materials for prayer sticks.

Plant gathering, and visiting springs.

Are there any special conditions that must be met for use? If yes, what are these?

Yes

Land status is problematic; we can't access all areas for pilgrimages. We need access to medicine plants in the monuments, and paint sources.

If we collect a lot of plants, we must leave an offering or the plants will disappear. We need to have a ceremony when we come collect.

There is a good understanding between the Park Service and the tribes. They now let us in to gather. It was harder before.

Are there any traditional practices that would improve the condition of this place? If yes, what are they?

Yes

Access to the medicine plants so we can harvest them for care.

Just let Mother Nature take its course; we are taught not to interfere.

Other Comments

Make interpretations straight of how land was used, why people lived here; not like that girl's [at Wupatki Visitor Center] talk this morning; using fibers for cloth and diapers. There aren't any plants here that we use that way.

Summary and Ethnographic Commentary

The preceding data for the Pai, Southern Paiute, and Zuni groups is summarized to present a more concise report of each group's relationship with Sunset Crater. The Western Apache representatives were unable to participate at Walnut Canyon, however, their discussions at Sunset Crater documented their traditional relationship with all three parks. The documents about traditional use of the Flagstaff area provided to us by the Hopi Tribe and Navajo Nation were referenced for summaries of their relationships with Wupatki.

Pai Summary

A Pai elder referred to Doney Mountain as *jukanwa*, meaning ancient dwellings. The Pai people believe that their ancestors used this area as a result of evidence in the form of Pai pottery. The Pai representatives believe that people lived at Wupatki and not Wukoki because, "At Wupatki, there was living, competing in games, and council meetings. At Wukoki, there is no evidence of cooking. It must have been a stopping place. This place was a part of trade trails." Another Pai elder believes that this was a site of a ceremony.

The Circle Dance was 'matyjuudua,' and it could have been held here. There is a central staff with the enemy's head in the center of the ring. There could be such a dance here ... People would come here for competition, to trade, to hold ceremonies. People came for blessings from the wind home [blowhole] ... The people here could collect bird feathers.

Wupatki and Wukoki are connected to many places in northern Arizona. The elders identified connections to Yavapai and Hopi territories, and to the San Francisco Peaks. One elder explained, "This land is Yavapai traditional all the way to the Colorado River. Long ago, the Hopis lived with the Yavapais. The San Francisco Peaks are sacred to the Yavapai, it is in our origin story."

The Pai representatives identified plants including Mormon tea, cedar, and cliffrose. Some of the plants are used as medicine and food, in blessings and prayers, and for burials. Detailed plant information can be found in Appendix C.

The Pai participants identified deer, elk, and bear as important animals in the area. According to one elder, "Bear was our grandfather, so we didn't hunt bear." Another representative stated, "The animals here are the same as elsewhere in terms of power. They are not here because of all the automobiles and National Park Service buildings. This is changing the balance of the spirituality of this place." The representatives identified use of animals after prayers, for clothing made from buckskins, and other purposes. The materials included dresses, shoes, and burden baskets.

The elders included the ball court and ruins at Wupatki and Wukoki in their discussions of evidence of traditional use. The ball court or *Gh-tsoo-o* was identified as a place of games, trading, and meetings. The ruins, particularly at Wukoki, were identified as places of power.

We used to play games that were like hockey with a ball. At the ball court, there was also a meeting area. Wupatki was probably a trading place; it is in a central location. This place is between the Verde Valley and Hopi. Coconino is a Hopi word to describe Pai people.

At Wukoki, you could feel the power. Something came out and touched me. There is more power there than at the main ruins. It was built strong.

Geologic features of cultural importance include the blowhole, and the round boulders with holes drilled through them at Wukoki. One representative explained connections between the two as deriving power from Wukoki for use at Wupatki.

It is a power point ... an area to gather medicine or power for their spirituality. Sma'buuga is a place to gather power, and Geegaga is a place to gather strength. Young shaman would come here and get power. Older shaman would come from their homes using their mental ability to pray.

The wind can give you a song just like water can. The wind has a story spirit. Wind in the hole is strong and pure ... a powerful place.

One elder believed that geologic features were used for health, refreshment, cooling and heating. Speaking about the blowhole, one elder stated, “Runners from Hopi and the Verde Valley refreshed themselves while en route. This would be a good place to do it.” Another elder also said, “The round boulders with the rounded holes in them would be good places to make game sticks that were used for the ball court games. The sticks brought the power from Wukoki to help in the games.”

Southern Paiute Summary

Southern Paiute people refer to this area as *Nuvaharka*, a term that is applied to the entire San Francisco Peaks region. The elders noted many special characteristics about the Wupatki and Wukoki sites. In addition to living and playing games at Wupatki, the Paiute representatives believe that it was a trading place. The elders explained that the two places are sacred as a result of connections to many other places.

This place is not too far from San Juan. When people crossed Lee's Ferry [where the water was low], they would go through San Juan to Wupatki. Going to the Grand Canyon, there was another crossing. It was open, a source for red paint. The water was low there, too.

I know from stories that the whole area was connected. This is a sacred area. Not just one spot is sacred; you have to do special ceremonies to move between different spots.

I have heard in stories from my parents. Hopi stories also. The whole area was sacred because of the volcanoes.

The presence of the spring intrigued the elders and they recognized that it would have been a significant feature in the past when the water had better flow. The elders explained that people would have made pilgrimages to visit the spring and make offerings to the water, and that the spring connected Wupatki with the San Francisco Peaks. Paiute people also would have used the water in certain medicines.

The representatives identified a variety of plants used as medicine, food, and making things like baskets. One elder explained that juniper seeds were for diabetes, juniper branches are used to ward off evil, and sage would be used for stomach ailments. Another representative said that the sumac bush has berries from which they make a drink, and its stems are good for basketry. Piñon nuts provided a staple food source, rope was made from yucca, and cliffrose bark was used in making shirts.

Southern Paiute elders identified rabbits, wild turkeys, antelope, and deer as some of the animals that were hunted. These animals provided food and manufacturing materials including hides and bones. Tools were crafted out of bones including needles and punches for sewing buckskin for shoes and other forms of clothing.

The elders believe that the structures and the artifacts at Wupatki and Wukoki provided shelter and lookout vantages. One elder believed that Wupatki was used as a residential area and other sites such as Wukoki were used for ceremony. Another elder told a story about the people who constructed the ruins at Wupatki.

The people who made these ruins were dark in color, and wore rings in their noses. They killed some Southern Paiutes along the Little Colorado River. The Paiute people recruited Hualapai and Havasupai to come and attack this village. There was only one dark person left to go tell his people to come fight. He was wounded and probably died somewhere. The Pais and Paiutes went home after that. They probably had a round dance together. We don't know why the dark people attacked the Paiutes. They were passing through along the regular trail past Willow Springs. This is a story that is told a lot by my grandmothers.

The elders found similarities between the blowhole at Wupatki and those found on the Arizona Strip. They called this area *hurrikanni*, house of the wind. They said that it was a special area where people would come and talk to the wind and the wind would talk to people.

This is a special area. There is one more hole near the road out of the park. It had a fence around it, which is not good. The NPS is putting a fence around the other, that is not right. The wind comes to people to talk, and this is a place where people would go to talk to the wind. They could learn a song about it, and you could go over there alone. It's probably scary to go there alone. The wind talks to you. Before you go you have to prepare yourself in some secret way. The Park Service would have to close the area off for however long it takes. Both men and women can talk to the wind.

Zuni Summary

The Zuni participants viewed Wupatki and Wukoki as one site, and the Citadel and Lomaki as another site. In both cases, one provides support for activities at the other. The following summary deals first with Wupatki and Wukoki, then with the Citadel and Lomaki.

The Zuni word for Wupatki National Monument translates as “ancient place.” As traditional stories convey, the area is one of many migration sites established by Zuni ancestors or passed through after their emergence from the Grand Canyon. The Zuni elders described how crops were nurtured in areas with adequate rainfall, and that medicinal plants and wild foods were gathered. Deer, antelope, and rabbits were hunted, and games were played in open areas. The stars were observed in special places to foretell the changing of seasons, and ceremonies similar to those conducted today were performed that celebrate the summer and winter solstice, or coincide with planting and harvesting. The area is associated as well with pilgrimages to the Little Colorado River to collect pigments.

Wupatki National Monument is culturally connected with all Zuni ancestral sites in Arizona, Utah, New Mexico, and Colorado. Many of these places are united by their common architecture, which includes kivas and plazas, and are mentioned in the Zuni migration stories including Zuni Pueblo, Bandelier National Monument, the Grand Canyon, the Little Colorado River, the San Francisco Peaks, various ruins, and rivers. The Zuni River, for example, is a key element in the Zuni cultural landscape. The Zuni elders described their migration story as it has been passed down over the many generations.

We came from the Grand Canyon, looking for the Middle Place. These places were built during that time, so the people would be safe from destruction, tornadoes and such. Zuni is the Middle Place between El Malpais and Sunset Crater.

The Zuni River joins with the other river and it connects to Zuni Heaven. Then it connects west, to the Little Colorado River, it then connects to the Colorado River and the Grand Canyon.

Water has long been valued by the Zuni people for food, drink, medicine, ceremony, cleaning, irrigating crops, and watering livestock. As one elder explained, “Springs are sacred. They would be used for medicine water [because they flow] from deep within Mother

Earth. They are more important than ponds, which can become stagnant.” According to one elder, water was the most important resource because “It connects us back to the pilgrimages to the Grand Canyon. When they were migrating, they needed springs, so they would look for cottonwoods.” Rivers continue to play an important role in pilgrimages, which usually occur every four years. “Water is a connection. Rivers are like umbilical chords. The Zuni River goes to the Little Colorado, which goes to the Colorado, which goes to the ocean. We follow riverways on our pilgrimages to the Grand Canyon.”

There are plants in Wupatki National Monument that the Zuni people have gathered as needed for food, drink, ceremony, medicine, or to craft useful implements. The Zuni people also found the landscape suitable for agriculture as described by one elder, “It looks promising for crops. They had to make food before traveling. So they would grow food there for four years, then travel. Everything in Zuni is in fours.”

Although certain plants may not have uses today, one elder commented that the ancestors would have known how to utilize them all. Some specific plants of interest included saltberries, which were eaten or used to cure stomach aches, “Just like pepto bismol. If a person is not sweating in the heat, crush the berries and rub them on their hands and on their forehead to make them sweat.” Yucca plants, distinguished by having slim or wide leaves, were ceremonially and as a food source. Today, dancers continue to carry yucca bundles, and yucca strings are made into headbands, which are worn only by Medicine Society men. Apache plume is used by religious societies in ceremonies. The War Society, for example, collects this plant for prayer bundles, and leaders of the Medicine Society will carry bundles of it along with other ritual objects in dances. Willow branches were cut for prayer feathers, and the purple flowers of Colorado beeweed were dried, crushed, and stored to season meat or used to make pottery pigments. Other plants are used in healing, and as medicine including Indian tea for stomach aches.

Zunis have a traditional conservation ethic in regards to killing and using wildlife. “Nothing was wasted - it was worn, eaten, or made into tools.” When needed for food, animals were hunted on a daily or seasonal basis, however, in historical times, this has changed in response to game laws. Nonetheless, fresh meat is still preferred: “Elders always used to say that the best meat is wild meat. It's pure, has no chemicals or residue, because it grazes on grasses.” Traditionally, open pits covered with a layer of sticks were constructed to capture deer, rabbits, antelope, elk, and rams. These animals also played significant roles in healing and ceremony. Antlers continue to be use for religious purposes.

Many features in Wupatki National Monument indicate previous Zuni use of the area. As they moved across the land, the ancestors would build in promising places; occupying the site for a number of years. Once the first group moved on, often after a four-year period, a successive party would move in to inhabit the site. Both Wukoki and Wupatki were used as protected living quarters, and the plazas would have served as amphitheaters for games, ceremonial dances and entertaining performances. After leaving the site as a residence, people would return on a seasonal basis for hunting, wild plant gathering, farming, and to conduct power-renewing ceremonies. One elder distinguished between the kinds of spiritual activities that would have taken place at Wupatki.

We don't seek power. We ask spirits for help in healing. Those who know the way wouldn't seek power for himself; that would anger the spirits. The healing ceremonies are private. The social ceremonies, such as for farming, planting, and harvesting, are for everybody.

All the geological features in the monument have cultural significance for the Zuni people who have names for each mountain in the region including Doney Mountain and the San Francisco Peaks. These landforms as well as ice caves in Wupatki, Sunset Crater and Bandelier National Monument are mentioned in Zuni migration songs. During the migrations, the people traveled back and forth throughout the area and used caves as food caches. The blowhole was an important power seeking spot, and would remain so today if it were not so accessible to the general public. The Zuni people continue to pray and meditate here, asking spiritual beings for assistance in their daily lives. The knowledge received from spirits is used and shared by individuals for religious education purposes. In places where the spirits are of great help, shrines are constructed as indicators of what had occurred as well as to thank the spirits for their guidance. According to one elder, the size and shape of a shrine does not matter as each holds the same power. In other high places, once a month or annually, prayer feathers are deposited as offerings to the sacred directions north, west, south, and east. These directions are very important in the ceremonial activities of each religious fraternity.

According to the Zuni elders, there is a possible relation between the Citadel and Lomaki. In the Zuni language, the Citadel and the neighboring ruins are referred to as “*Inode kwe*” meaning the “ancient people.” These first inhabitants were attracted to the site for the view. From such a high point, the people could see for miles in any direction and provide a protective watch over the communities living on the valley floor. Activities associated with the site include hunting deer and antelope, gathering food and medicine plants, and farming corn and other crops while ceremonies were performed at special places. One elder said the vistas allowed people to communicate with spiritual beings, “They would pick spots with a good connection to the spiritual, the supernatural. They would use all these features to teach their children how to take care of the landscape.”

One elder speculated that the Citadel was used for protection, and as a place to give warnings to the people living in the area in case something was about to happen. Another elder noted that Lomaki is not in an open flat area so it must have been “...built for protection; they were hard to get to.” The Zuni participants noted as well that, “The structures...the masonry work...they needed to have an understanding of the weight needed to support two stories and wall bases.” The elders believe that the Citadel was where people went to perform ceremonies and to watch the stars, that it was not a permanent place to live, and that people camped here for a period of time but later moved on.

During the migration, people were traveling and looking for Zuni [the Middle Place]. This was one place with crops. The story says that they were at each place for four days. That could be four years, [or] four hundred years.

At other areas, there were kivas. I don't see a place here for medicine men to be together. The Citadel looked like there may have been a kiva...it could have been used for spiritual matters. The leaders with knowledge would use it.

The ruins of the Citadel are culturally connected to Zuni ancestral sites in Arizona, New Mexico, Utah, and Colorado. After their creation in the Grand Canyon, the Zuni ancestors moved across the land that now comprises these four states establishing settlements. According to one elder, as the migration progressed, so too did the architecture which soon developed into the enduring structures that remain today.

Although a perennial source of water is no longer present at the Citadel, the Zuni elders speculated that in prehistoric times there was more water in the region noting many stories about rain from the elders. The Zuni ancestors would have collected runoff from the mountain peaks and would have used the water for irrigating crops, food, drink, medicine, and ceremony. One of the Zuni elders said that any spring water is used for purification and teas for medicinal use and that water is used in healing and kachina ceremonies.

As in the past, Zuni people would seek various plants growing in the vicinity of the Citadel, particularly for food and medicine including Mormon tea to treat constipation. One Zuni elder discussed the various uses of plants found at the sites.

Some plants were prepared for winter use, gathered in the summer for winter use. Sumac (or mahogany) used for prayer sticks, others were used in religion. Indian ricegrass, after the seeds drop, was used to sweep metates clean. Some grasses were used for weaving. If there was willow in the canyon, in the wet areas, it would have been used for baskets. Yucca was used for weaving sandals and baskets; its root was used for soap. You cut it in half and swirl it in water. Medicine plant knowledge is held only by healing societies so I can't say anything about it. Flowers and seeds include locoweed, Indian rice, or any little seeds. Locoweed is not for human consumption. The seeds are used in prayer bundles; they stimulate everything that grows. You plant the prayer bundle, and the spirits help things grow.

Animals used by the Zuni people included deer, elk, and antelope; these provided food, medicine, and clothing. One elder explained, "The hair of the animals is used for smoking. It is burned for medicinal use. When we kill an animal, it is not just for fun. We use everything." Rabbit skins were used to make blankets, and storage bags like pouches for food and traveling were made from buckskin. Hides were used for ceremonial dress, and prayers were made to certain animals. Many birds including flakers and bluebirds were valued for their feathers, which were used in ceremonies.

The Zuni elders speculated about the Citadel Sink adjacent to the ruins. They thought this deep basin might have been used as a deer trap, and that there may have been water in the bottom, allowing cultivation of some sort. The adjoining valleys and rock outcroppings provided places for ceremonies to seek spiritual knowledge and power, meetings to converse with other Indians, and culturally significant areas to teach younger generations valuable

traditions. Today, the Zuni people continue to make pilgrimages to the Citadel ruins to offer prayers.

Hopi Summary

Several documents including one from the Hopi Tribe (Mercer 1999) were reviewed for this section. The majority of the information concerns stories, geologic features, and plants, however, we supplement that with other traditional use data in the landscape chapter and appendices.

The name Wupatki is derived from the Hopi word *Wupahkikuh*, which refers to not only the monument, but also to a village within the monument's boundaries. The area figures prominently in the migratory histories of eighteen clans. One example is Waters' (1963:67-71) account of the migration story of the *Katsina* Clan.

Upon their Emergence a number of clans, headed by the Bear Clan, and including the Coyote and Parrot Clans, chose to go south. They were accompanied by a number of Kachina people. These Kachina people did not come to the Fourth World like the rest of the people. In fact, they were not people. They were spirits sent to give help and guidance to the clans, taking the forms of ordinary people and being commonly regarded as the Kachina Clan.

Having reached the southern páso and left their signatures, the clans returned north until they reached the red-earth place where the Kachina people instructed them to settle and build. From a small village it grew into a large city, a great cultural and religious center, the mysterious Red City of the South."

The time came, however, when evil entered the Red City and the clans found they were under attack by the Spider Clan. "Day after day the people resisted the Spider Clan's attack. The walls were strong, the gates stout. But still they were driven out of the third section of the great city. Then they were driven out of the second section where all their surplus food was stored. Finally they made their last stand in the ceremonial section, across one corner of which ran a small river. And now a terrible thing happened. The Spider Clan began to cut off the river to deprive the defenders of water.

A meeting was called and it was decided that tunnels would be dug underneath the river through which all clans could escape. The Bear Clan would leave first, then followed by the Corn Clan, and the Parrot Clan; leaving the Coyote Clan to go last. The Kachina Clan would stay behind to defend the city while the others escaped. They told the other clans before they left, "We are spirit people, and we will not be seen again by you or your people. But you must remember us by wearing our masks and our costumes at the proper ceremonial times. Those who do so must be only those persons who have acquired the knowledge and the wisdom we have taught you. And these

persons of flesh and blood will bear our names and be known as the Kachina Clan.

After making their escape, the clans resumed their migrations. The Kachina Clan reached the pásos of the directions and made many settlements before arriving at Oraibi. These settlements include Soycheopu (Cliff Along Cedar Ridge); the ruins now south of Meuvatukovi (Snow Cap Mountain); and Wupatki. The real kachinas, as we know are spirits from other planets and stars, but the high mountain to which messages are directed to them is San Francisco Mountain, southwest of Oraibi, near Flagstaff.

The Hopi name for Wukoki means ‘Big House’ or ‘many dwellings in one village.’ Hopi advisors have stated that Wupatki was a place where people congregated for special events such as the Snake Dance, which was performed in the ball court. The Bear Clan was the first to live at Wupakti while Wukoki figures prominently in the Walpi Snake Clan’s migration story (Mercer 1999). Mercer also documents Wukoki as the last residence of the Rattlesnake Society, and Hopi advisors have stated recently that the Rattlesnake Clan was the last ruling clan to occupy Wupatki (Ferguson and Loma’omvaya 2004:24).

Based on Hopi traditionally history, anthropologists think that the Tsuutsu’t (Rattlesnake Society) originated at Toko’navi, rear the San Juan River, and that migrants took the Snake Dance to Wupatki or Wukoki, and later both to the Hopi villages and Acoma. Hopi traditions about Wupatki and Wokoki suggest the people who lived there were part of an interaction sphere that extended to the Keresan Pueblos in New Mexico.

There are two other prominent Hopi religious associations with Wupatki, *Lanlkont* (the Basket Ceremony) and *Maraw* (women’s societies). The Basket Ceremony is associated with events that happened at Wupatki, and the *Maraw* ceremony was performed in *Palatwapi*, “the Red Land of the South.” The Hopi stopped performing this ceremony when they migrated to northern Arizona, but reactivated it at Wupatki following a gambling dispute. People who came from Walnut Canyon often traveled to Wupatki to play a game called *Totolospí* (Ferguson and Loma’omvaya 2004:25).

Here men and woman had a competition. Because the men could not grow any crops and it would not rain, the men were focused on gambling, nanavö’ya, betting on each others kilts and belts. The chief’s wife created a bet, suumokwa, between the women and the men- they built a long building and on one side the women grew many crops of corn, squash, beans, and melons, so they won the competition with the men. The women left Wupatki and migrated to the Hopi Mesa via Maatövi, where they settled. This belongs to the Bear Clan. From here they went to Songoopavi. This is why the Maraw paint their thighs and dance in the mornings with crops, distributing these to the men.

Tribes such as the Chemehuevi and Mojave conducted raids on the Hopi living at Wupatki and Wukoki. The raids caused the Hopi to protect themselves and fortify the site.

The Hopi interpret the holes in the walls at Crack-in-the-Rock pueblo as defensive features that allowed the inhabitants to view all routes into the village. The structures at Box Canyon and Lomaki were also viewed as defensive buildings (Ferguson and Loma'omvaya 2004).

The blowhole at Wupatki is seen as an important feature in the Hopi cultural landscape. Like the blowhole found at the Bonito lava flow, this geological feature is linked to *Yaapontsa*, the 'Wind God;' it is called *Huukyangwuy Kii'at*, which translates to 'Wind's Home.' The Hopi associate the blowhole at Wupatki with the breath of *Aaloosaka*, whose *hikwsi* (breath) is always cold (Ferguson and Loma'omvaya 2004).

There is a prominent trail through the park that is currently used for ceremonial purposes, and a number of villages within the monument that the Hopi people consider important as part of the Hopi historical landscape. The area has a number of other sites that figure prominently into Hopi ceremony including clan shrines and eagle collection sites (Mercer 1999).

There are a number of traditional use plants that grow within the boundaries of the Wupatki National Monument that are still important to and used by Hopi people today. These plants are not usually cultivated in specific areas, but are gathered opportunistically when the user is in the proper area to collect these plants. Wild tobacco continues to be gathered for ceremonial use, and Mormon tea for medicinal use. Although the Hopi Tribe notes a specific species of grass in Wupatki that is important for basket making, they do not identify it. They do note that it is highly prized for its long, straight form and rarely found outside the park due to livestock grazing (Mercer 1999). In prehistory, the Hopi people used the area for agricultural practices but not in the historic period. Alluvial silt and run-off provided one means for small farm plots, and terraces have been recorded as well (Mercer 1999).

Navajo Summary

Of the documents reviewed for this section, one from the Navajo Nation (Begay and Begay 2003) provides the majority of the information, and concerns plants, places, and activities. We supplement that with other traditional use data in the landscape chapter and appendices.

The Wupatki National Monument and the Navajo people differ from the other parks and groups in that there are historic records and archaeological remains of Navajo families' occupation. They are the most recent Native American people to live there, and as a result, their social memory of the area is available directly from people who have lived there. The area is called *Anaaszi Bi'na'hasdzo*, which connects the area to the history of the Anasaazi people who were there in the ancient past (Begay and Begay 2003).

There are a number of traditional use plants that grow within the boundaries of the Wupatki National Monument. These plants are still important to Navajo people today, as they are used in multiple aspects of their lives. Some of the plants identified by Navajo people are scarlet globemallow, piñon, sumac, milkweed, spurge, Russian thistle, snakeweed,

Apache plume, blackbrush, silver or sand sagebrush, datura, scarlet penstemon, greasewood, mountain tobacco, one-seed juniper, walnut, cholla, rabbitbrush, ironwood, ricegrass, ponderosa pine, Mormon tea, blue grama, yucca, oak, Prince's plume, double-bladder pod, seepweed, buckwheat, and wild rye (Begay and Begay 2003).

There are many important places within the monument and on adjacent lands. These places are significant as living reminders of the past. A number of the places are significant as places to communicate with supernatural beings; these are powerful places that require respect. Doney Mountain is known as a place for catching eagles, and Black Point is mentioned in the Western Water Clans' migrations. Other significant places are the Citadel Sink, Spring of the Anaasazi, Peshlakai Springs, Round House, House on a Rock, House of Sherds, Heiser Spring, White Mesa, the blow hole, Wupatki Spring, Hole in the Rock, House Under a Ledge, Black Falls Crossing, and Black Rock Hill. The Little Colorado River and an offering place along Arrowhead Tank Road are two closely connected places outside the boundaries of Wupatki (Begay and Begay 2003).

Ceremonial activities at Wupatki include the Enemyway, the Blessingway, the Windway, and the Lightningway, or '*Anaa'jí, Hózhǎ́ǎ́jí, Nilch'íjí, and Na'at'oyee*. All of these events require many people and many natural resources, which would have been gathered in Wupatki and the surrounding area. The Navajo people view this information as indicative of a strong, traditional relationship with the land (Begay and Begay 2003).

Ethnographic Commentary

Of the three parks, Wupatki seems to have been most heavily used by all the tribes in this multi-cultural use area, and continues to be extremely important in many ways to the six ethnic groups of this study. Plants and ceremonial places are the primary resources of concern, however, wildlife, springs, ruins, and other signs of previous use are important as well. Traditional uses of the site centered on plant gathering and ceremonial activities, including spiritual experiences and teachings, hunting, and farming.

While the groups did not express the need to conduct a thorough plant inventory of the park, as they did at Sunset Crater, the extensive number of use plants in Wupatki suggest that the afore mentioned inventory would include all three parks. Specific plant management recommendations including access and use requests could be made for Wupatki following such an inventory. The tribes, Mercer (1999), and Begay and Begay (2003) emphasized plant uses for food, medicinal, and ceremonial purposes.

Particularly interesting findings at Wupatki are the possible relationships between the Citadel and Lomaki, and between Wupatki and Wukoki. The Citadel and Wukoki are believed to have been used more for spiritual and ceremonial purposes, and for preparation and performance. The vantage point of the Citadel suggests a lookout for people at Lomaki and other nearby settlements. It could have served also as a communication site to other people on similarly situated high points.

CHAPTER SIX CULTURAL LANDSCAPES

Sunset Crater Volcano, Walnut Canyon, and Wupatki National Monuments are significant components of a broader, multi-cultural landscape. In the following sections, we provide narrative and graphic data collected in the field. Lacking contemporary data for the Hopi Tribe and Navajo Nation, we have included previously documented maps that illustrate their relationships with the landscape. The chapter concludes with a regional landscape description that illustrates the widespread connectivity of the three parks with the six ethnic groups of this study.

The Pai Landscape

The Pai consultants represented the Yavapai-Apache Tribe, the Havasupai Tribe, and the Hualapai Tribe. The latter group was unable to schedule field visits, however, traditional use information was provided that includes detailed plant use data. Differences in responses below reflect differences between the Pai groups. The responses are compiled and summarized in the field data map and ethnographic commentary that follow.

What is the name of this place in English?

Wupatki
Lomaki
Sunset Crater

What is the Indian name for this place?

Wiithluuwa, the sink; *wiivasuwa*, Gray Mountain

Were there Indian villages in relation to this area?

Probably
Yes

If yes, which villages and where were they located?

All villages were connected because there was a trade route.
Moenkopi

If yes, what Indian people occupied those villages?

Sinagua, Hohokam, Cohonina,
Moka (Hopi), Juka (Cohonina - Supai ancestors)
Hualapais, Havasupais, Yavapais, Hopis.
Hopi, Southern Paiute.

How is village #1 connected?

This is part of Yavapai territory; we also lived in caves that are related to this place.

Moenkopi - there was a Pai clan there.
All the villages were connected through trade.

Were there other Indian people who lived there?

Yes

If yes, who?

Yavapai, Hopi, Supai and Hualapais.
Some Paiutes who came through the area long ago. Zuni as well. There was a lot of trade here. Even the Zuni used to come to trade peaches in this area. Supai people had the most contact with the Zuni and Hopi. Pilgrimages of the San Juan would come to Havasupai for

If yes, were the area villages connected with villages elsewhere?

If yes, who occupied those villages?

How is other village #1 connected?

Do you know what the Indian people did when they were in this area?

ceremonies. The Mojave would come to Supai and share bird songs.

They didn't live here, but they hunted here. The Navajos and Apaches, who were newcomers from China and Russia. They learned from the Pais and Hopi and stole their resources.

Yes

Hopi, Yavapai, Hualapai, Supai.

There were certain clans in certain areas.

Yavapai, Hopi, Havasupai, Hualapai.

They [Hopi, Yavapai, Supai, Hualapai] left homes like these and lookout points in the Verde Valley. They were connected through trade of salt, blankets, turquoise, dead wood and red dirt from near the salt mine on the way to Payson from Camp Verde on Salt Mine Road. There are lots of different styles of pottery here.

Some of the Zuni came and traded for things like buckskins. Also, we traded apricots, and pine sap for pitch.

Through systems of trails.

Yes

<i>Farming</i>	<i>Gathering plants</i>	<i>Gambling</i>	<i>Ceremonies</i>	<i>Political meetings</i>	<i>Hunting</i>	<i>Looking at skyline/stars</i>	<i>Other</i>
✓	✓	✓	✓	✓	✓	✓	✓

Trade.

Gambling, with rocks and sticks.

Ceremonies including dances.

Political meetings at the round court at Wupatki.

Stars tell when to plant, when it's a new month. Our January is in September, we had astronomers. The first Yavapai man was named *Skadigaamcha*; he left and now sits to the left of Mars. *Skadigaamcha* will come back for us when the world ends. The Old Lady Keeper of the Pearls is the first lady. Our calendar has 13 moons and 13 months, we did everything by the stars.

Farming of corn, squash, cantelope.

Gambling at the ballcourt. These places were like hotels, this was an intertribal area. There are catchments here that our ancestors the Cohonina made. The dams are called *hatfugo*. There are also places here to catch drinking water by placing a deer hide in a hook and hole to catch water. The *hatfugo* is also a place to attract animals and water crops.

Ceremonies were not at Lomaki on a large scale, but there were ceremonies at the main ballcourt. This may have been a certain clan, they used this for food. We weren't enemies with the Pueblos then. There were ceremonies at the Citadel.

Political meetings at some structures.

Star gazing at the high points. We used mountain range and the

stars like a compass. The dance hall was important. We knew when the seasons were changing, by the alignment of the sun and stars.

Hunted deer, antelope, elk, rabbits, collected feathers for ceremony and dance, collected minerals and vegetation. We would follow paths, using landmarks as road markers.

Trade and interaction with the Hopi. People would stop here on their journey west toward the canyon or towards Hopi. They were on the way to somewhere else. People would have things to exchange: paint, baskets, corn, meat, etc. People would start staying in places when they were older. When they left, they would break up their belongings. In the old days the Hopi Snow Clan may be on the way to Supai or stay at Wupatki. They made wind breaks. They would have used trails. The people that built the ruins would have likely have stayed there while. The snow clan gets the water for the kivas. The Hopis came down for harvest or the Supai would go to Hopi. My father's father's father, chief Manakaja, was the last chief of the Havasupai before tribal councils began. This is not a full-time occupation place. It's a layover area. During the trip they needed to have something to trade for water. There is no large-scale ceremony there, like there are at the ballcourts.

The Yavapai are known as astronomers. They used stars on trails to know where they were going.

Hunted deer and bear.

There must have been farming.

Gathered sage, piñons, wood, cedar, berries.

Trading, collecting salt. A long time ago the people from the west brought shells to trade; others came from the south, the east, and the north. We traded red paint that the other people wanted.

Do you know of Indian trails that were connected with this area?

Yes

If yes, can you tell me something about those trails?

Yes

Where did the trails go?

From here to the Hopi reservation, and another trail through Walnut Canyon that follows Oak Creek to the Verde Valley. Another trail at Pollaki at Boyden Canyon that goes up to Flagstaff.

To the Hopi mesas, to the San Francisco Peaks, and to the canyons. There are trails in the Grand Canyon and along the Plateau. Those went from Seligman and Williams along south of the peaks through Sunset Crater, Wupatki and to the mesas.

There are several trails, like one from the outer areas to Sedona, and from Sedona to Laughlin Mountain. Those trails can probably still be seen from the air. Each trail has songs and prayers. Between Winslow and Clarkdale there is a hawk carved on top of a mountain.

To Sunset Crater where all the main trading occurred. There was an east-west trade route from the Rio Grande to the coast. Our migration trail from the San Francisco Peaks to Peach Springs. Trails to creeks and springs in the Flagstaff area. To Wupatki and to

Why did people travel these trails?

Walnut Canyon. To the Little Colorado River and to the Grand Canyon; there are a lot of ancestral sites along the Little Colorado into the Grand Canyon. To the Pai band that lived in Moenkopi along Moenkopi Wash.

Hopi runners would travel these trails to let the Yavapai know they were coming down for salt.

They would go for various resources, medicine, food, and ceremonies. They would go to the peaks for firewood, vision quests, sweat lodges, prayers to the peaks, and to get minerals. There are Paiute trails: they would come over from Kaibab over the narrowest part of the canyon, maybe marble canyon. Then they'd come down the path. During powwows they would come on horseback. There was an all-range trail. *Gdivivar* means all the ranges eastward and westward and northward around the San Francisco Peaks. Red Butte is on the trail to the San Francisco Peaks, to Gray Mountain. There is a trail from Supai to Peach Springs. The Hualapai have changed the land claims.

For trading, as pilgrimages, to gather from the ocean. Some trades were used for sacred purposes or trade purposes. The songs and prayers associated with these trails were sacred. There was a traveling prayer used before leaving home for trade purposes.

For trading. The first man created in the San Francisco Peaks came to Peach Springs to find a wife. The creeks and springs are used for ceremonial purposes.

Were these trails somehow special to Indian people?

Yes, they were for trade; plants, dead wood, and hunting.

Yes, they were sacred.

Yes, as part of our creation stories and maintaining our traditional practices. To get red paint and other ceremonial resources. To harvest, collect, and bake what was collected.

Do you know of any songs associated with this area?

Yes

If yes, can you tell me something about these songs?

Yes

Are these traveling songs?

Yes. There are songs for near Laughlin on the Colorado River. Songs for traveling on pilgrimages. They would sing on the trails.

Yes, migration songs.

Are these ceremony songs?

There are prayer songs for hunting, planting, everything that was a direct interaction with some resource or the land itself.

Only certain people, like medicine men, knew certain songs. Songs were sung in the sweats.

Yes, people came from the south to see the sacred mountain. They would sing on the way.

Yes, salt songs, which are sort of like genesis. They are older than the bird songs. Medicinal songs.

Are these songs for other purposes?

There are stories that cover all our territories, the mountains of mother earth, the volcanoes, springs, water and many others.

Do you know of any ceremonies that were conducted at or near this area?

The songs were for everything. There were songs about the volcano. The lava rocks are called “wiidonwa,” the lava cinders (black and red) are called “wiigthwiila.” The Supai elders are the medicine rocks. The sweat dance leaders can sing at any hunt. All Supai people can know round dance songs. At the circle in Wupatki they would have group ceremonies: circle dance, harvest songs, game songs.

Yes, bird songs, everyday songs, songs for games, about water and mountains. All of our songs are very spiritual. There are songs associated with Sunset Crater, Wupatki, Walnut Canyon, and San Francisco Peaks.

If yes, can you tell me something about these ceremonies?

Don't Know

Yes

Yes

Yes

Yes

No, it is sacred knowledge.

Ceremony #1 - held where?

St. George, Kanab Creek

Monetzuma's Well

When did ceremony #1 take place and why was it conducted?

If there was a ceremony, it would be the Crown Dance. In this dance, the crowns on top of the head represented the stars, clouds, everything was up in the sky. The Apaches learned the Crown Dance from us.

The Supai went to the St. George Ghost Dance. The Supai round dance has part of a ghost dance in it. The Supai used to be ghost warriors. There are nine circle dance songs around the rim of the Grand Canyon. The songs are Kaibab, San Juan, Navajo, Hopi, Supai, Yavapai, Chua, Zuni, Hualapai. The Hualapai are closer to the Western Tribes with the salt song. Supai was closer to Hopi. The only information on Yahoyah is in the kivas. I am planning to go to Hopi to get the songs.

There is medicine in the well, but only certain people know it. It is sacred. There are ceremonies at the well for 2-week-old babies.

It is sacred knowledge. Some ceremonies are for healing purposes, for understanding, for spiritual things, to bring things back in balance. Some are connected with the salt songs. When the people sing songs, they have the power to sing because they were chosen by the spirits who gave them the songs. All the high mountains have a powerful spirit in them that watches over the rest of the land. A person can go up there to attain power from the mountain.

Ceremony #2 - held where?

Snow Clan

Oak Creek

When did ceremony #2 take place and why was it conducted?

The Snow Clan of the Hopi prays for moisture. They have to have a certain resource to make it work: they need water from Supai. It is a sacred site and the Supai and Hopi need it.

Is this area at or near your creation place or from where your people migrated?

If the Creation place, where is that?

We were created there. The Crown Dance, which happened at a particular time, represented healing, the stars, moon, and balance. After the Crown Dance, the crowns were buried. They were made of wood. The Apaches took it over, and took away the symbolism. The Yavapai children will bring it back.

Yes

Sedona.

The petrified forest is in the origin story. A log in the forest was used by the first woman. She was in the San Francisco Peaks and she was lonely so she made people out of clay. Yahoyah lived at Hopi, and did songs at Havasupai. The Creator told him to take his songs to the Snow Clan.

If migrated here, where did they travel from?

Montezuma's Well. People used to live underground, but the animals did something wrong and caused a flood. The Yavapai believe that they were created at the Well but the Hualapais believe that all Yumans came down from a sacred mountain near Laughlin. Montezuma's Well is used for babies' blessing ceremonies and for healing. Sedona is a powerful place, it has medicine for healing.

The Supai must have travelled through here from the petrified forest along the Little Colorado. I can't say too much about the location because it is the wrong time of the year. *Mattwiidta* is a place in the canyon near Peach Springs. This is the site of the separation of all the tribes. It used to be a metropolis of all tribes. After the split, the Supai came to the plateau. The Supai go back archaeologically over 2000 years.

As part of the origin story, Grandma, the Old Lady Keeper of the Pearls, walked from the San Francisco Peaks to Sedona.

Do you know if there are other places in this region connected to this area?

If yes, what and where are those places?

Place #1 - Name?

Yes

San Francisco Peaks

Widamuchapawea, Old Lady Keeper of the Pearls, landed there in the log. Kachina dances come out of the San Francisco Peaks; the Supais taught them to the Hopi. This was the territory of the Yavapai, we intermarried with the Hopi.

Meteor Crater, *Matmalii*

The San Francisco Peaks.

Hematite areas along the rim of the Grand Canyon.

Place #1 - Where?

People went there to get power from the meteor or get some of the meteor. The Supai people used minerals for many things, like

	<p>hunting. The Hopi would go to Meteor Crater. We would visit and have ceremonies with the Paiute. The Supai went to the Kanab Creek Ghost Dance.</p> <p>As part of the origin story, Grandma, Old Lady Keeper of the Pearls, walked from the San Francisco Peaks to Sedona.</p>
<i>Do you recall or have you heard about historic events here?</i>	Yes
<i>Can you tell me something about those events?</i>	Yes
<i>Event #1 - when and where?</i>	<p>Didn't happen here, but happened to the Pai people. The story of the Pai Pai.</p> <p>Sunset Crater eruption.</p>
<i>What happened during Event #1?</i>	<p>They left the Yavapai before the Spaniards come. Today, they are like Pai people, but live in Mexico.</p> <p>People still come here in historic times.</p> <p>The fight between the Yavapai and Hualapai. It started with the children fighting because they weren't disciplined. Then young adults fought, and then it spread. Then the Hualapai and Yavapai were separate people.</p>
<i>Event #2 - when and where?</i>	<p>Yahoya's journey.</p> <p>The long drought.</p>
<i>What happened during Event #2?</i>	<p>I would need to make a pilgrimage to Hopi for some more information.</p> <p>Many people starved, died. It happened everywhere. M's dad told how the people had to go to the caves along the Colorado River but even that dried up. Rock writing at White Creek [north of Ashfork?] depicts the story of when people went through the long drought.</p>
<i>Is there any connection between this area and nearby mtns?</i>	Yes
<i>Mountain #1 - name?</i>	<p>San Francisco Peaks</p> <p>Red Butte, <i>Wiigdwiisa</i></p> <p>The San Francisco Peaks</p> <p>Bill Williams Mountain</p>
<i>How is Mountain #1 connected?</i>	<p>Chief Manakaja marked the territory of the Supai. He had foot races around the buttes, and soon he became like a whirlwind. <i>Jungval</i> is the horny toad. This was before the big flood. In Canyon Mine north of Red Butte, the creators did a round dance.</p> <p>There are special ways that the places are connected with the mountains. There are underground water and tunnels.</p> <p>One of our elder women who died recently was told by her grandparents that Bill Williams was bigger than San Francisco Peaks at one time. She wasn't sure if earthquakes or volcanic eruptions changed that but we believe it might have been around the time of the Sunset Crater eruption.</p>

<i>Mountain #2 – name?</i>	San Francisco Peaks, Hopi Mesas San Francisco Peaks
<i>How is Mountain #2 connected?</i>	We call them <i>Wihakineacha</i> . <i>Wi</i> is mountain and the rest is snow. All the mountains are connected to each other. Prayers go from one mountain to the next. When a person goes to a mountain to get a song or power from the mountain, he is also getting some from the other mountains.
<i>Mountain #3 – name?</i>	Sugarloaf Mountain Sunset Crater
<i>How is Mountain #3 connected?</i>	Sugarloaf, the Supai would maybe pass by it on a pilgrimage. Maybe on the way to the ocean. Not the whole tribe, but individuals. The Supai go to the ocean, “ <i>hanthiilta</i> ,” to make floods and bring them to Supai. Sunset Crater through prayers that go from one mountain to another.
<i>Is there a connection between this area and sections of the Little and/or Big Colorado River?</i>	Yes
<i>If yes, what section (English name, Indian name)?</i>	Little Colorado River Both Near the mouth of the Colorado River.
<i>How is section #1 connected?</i>	This river was the boundary of our territory. Both rivers were healing rivers, shaman would go there. There are trails in the Grand Canyon and along the plateau. There was a northern route and a southern route. Underground aquifers connect all places. Salt mines, trade routes.
<i>If yes, what section (English name, Indian name)?</i>	Little Colorado
<i>How is section #2 connected?</i>	Yahoyah made three springs for the Hopi to use. They are Bright Angel Creek, Blue Springs near the Little Colorado River, and Havasupai. All tribes go to Salt Springs. The river was a trade route.
<i>If yes, what section (English name, Indian name)?</i>	Little Colorado
<i>How is section #3 connected?</i>	The petrified forest is in the origin story. A log in the forest was used by the first woman. The Supai must have travelled through here from the petrified forest along the river.
<i>Is this area connected to any places or events we’ve not talked about?</i>	No Yes Yes
<i>If yes, what are these places and/or events and how are they connected?</i>	Yes

<i>Connection #1 - place or event</i>	<p>The Atlantic Ocean Sedona Buffalo story, which connects us with San Francisco Mountains and Grand Canyon.</p>
<i>How is place or event #1 connected?</i>	<p>People would go there to get things for the ceremonies like sweats.</p> <p>Kokopelli leaves flowers on rocks. He plants flowers. He has planted them here, and in Sedona. He has been through both places, and has connected them both with the flowers.</p> <p>About people going east. Family left to get away from father. They turned themselves into buffalo and went east to the San Francisco Mountains, then beyond. There is rock writing in the Grand Canyon that tells about this.</p>
<i>Connection #2 - place or event</i>	<p>Sunset Crater Ram story or wolf story, which connects us with San Francisco Mountains and Ash Fork.</p>
<i>How is place or event #2 connected?</i>	<p>The eruption of the crater is in our stories. Many of the stories have died with the people, but the Supais and Yavapais still have them.</p> <p>At the time when women had vaginas with teeth, the bighorn sheep men were going back and forth between Ashfork and San Francisco Peaks. One time a ram was escorting Wolf's daughter and some women and the bighorn men wanted to have intercourse with them. They put their horns in them to ground down the teeth.</p>
<i>Additional comments?</i>	<p>It is very different here, with the fence and the lava rocks. The homes here at Lomaki are different than the others at Wupatki. They probably came from different groups. There are lots of different types of pottery here. The Yavapai people have been in mourning for over 100 years, because we were taken to San Carlos and massacred. We are now coming out of mourning because of casino money. We can preserve our culture again. Teachers are teaching children the culture. The Supai and Hualapai are supporting us in this.</p> <p>Our ancestors developed check dams, called <i>hatuuvgo</i>, "where you block the water." On rocks we made water catchments for drinking rainwater. You can use buckskins of two different sizes, put them in the depressions, collect water by putting buckskins in there. When there was no water, people were always moving and would find some. Also, they had cactus or fruits to chew on. Or chew on trees or barks when they were in season. People knew where springs and water catchments were, they could go days without water. Most people didn't want to associate with the Yavapai because they were violent. We use water monitoring at Supai to find out if it is going to deplete. The Hopi have a trail named after the Havasupai. There are some Pai people down south, the Pai Pai in Mexico. In the 1970's, the tribe had to choose what they were going to be called, Cohonina or Havasupai. Havasupai represents the springs, falls, and blue-green water. But, here at the parks, the tribe should be recognized as</p>

Cohonina.

This place is a stop on the journey from Yavapai to Hopi. Both tribes knew this area well. The Sun is the Yavapai's father. The Navajo and Apache just came here about 600 years ago. They may have been one group one day but got in a fight and split. They came from Russia, Tibet and China down through Alaska and Canada, to Oklahoma, Texas, New Mexico and then Arizona. They went all over, wherever they wanted and stole. The Apaches were short, and attracted to Yavapai women and they stole them.

The Pai Cultural Landscape Map

The mapped details of the Pai cultural landscape reflect the documented territories of the Havasupai, Hualapai, and Yavapai (Figure 6.1). The extreme southern details reflect Yavapai use areas for which previous documentation has not been found.

Ethnographic Summary

The Pai cultural landscape expands to many locations outside of the traditional territories of central and western Arizona. Their landscape reaches far across the Southwest by extending into New Mexico, Nevada, California, Southern Arizona and northern Mexico. Havasupai, Hualapai, and Yavapai consultants maintain that Wupatki, Sunset Crater and Walnut Canyon are part of a cultural landscape comprised of prehistoric, historic, and contemporary patterns of trade, resource procurement, and ceremonialism. These patterns reflect the resiliency of interaction and interconnectedness among cultural traditions in northern Arizona. Concurring with archaeological research, Pai consultants identified connections between the three monuments and Sinagua, Coconino and Hohokam village sites. Pai consultants asserted that connections between Hopi, Pai, Southern Paiute, Zuni, and Mojave villages are continuations of the prehistoric connections of trade, ceremonialism, and resource procurement.

According to the Pai consultants, the Flagstaff area was a central location for intertribal trade that reached from Mexico to the Four Corners region and to Zuni. All of the people in the region recognized it as having a spiritual and geologic significance that necessitated a multi-cultural use area that precluded a single territorial claim. Frequent trading seems to have been a way of managing multi-cultural use that could have otherwise produced conflict. The Pai consultants said most Havasupai trading activities involved members of Hopi and Zuni villages. Yavapai people also traded with the Hopi, traveling through the Flagstaff area to reach the Hopi mesas. Through these activities, Pai and Pueblo groups exchanged minerals such as salt, paints, and turquoise, and natural resources of native and cultivated foods, firewood, and crafted items. The trading parties would create temporary shelters or borrow available structures during these events.

The various trails through the Pai landscape connected to the Pai people to the Hopi and Southern Paiute. Trails ran from Sedona to Laughlin Mountain, from Supai, Peach

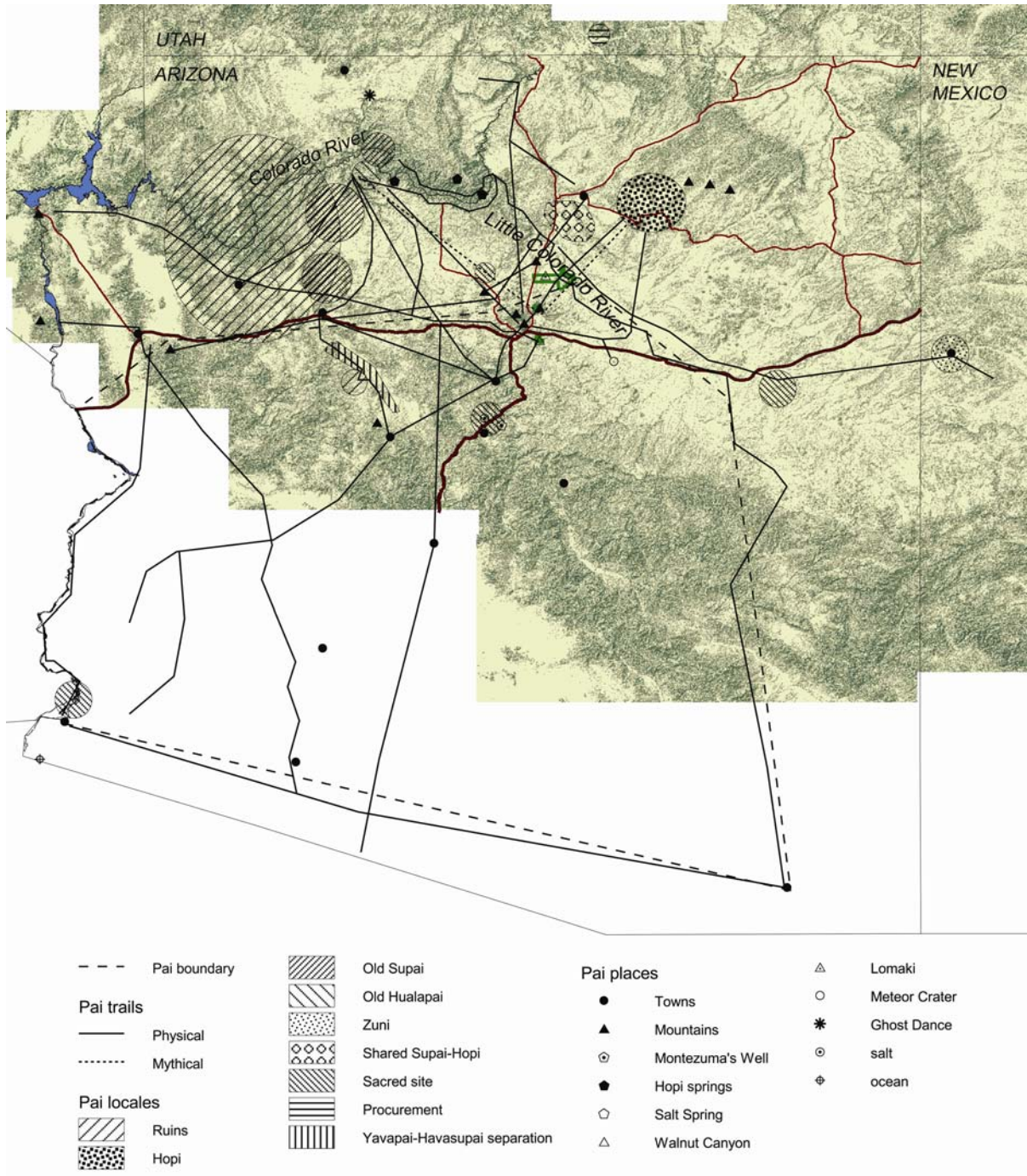


Figure 6.1. Cultural landscape field data from the Havasupai, Hualapai, and Yavapai tribes.

Springs, and Prescott to the San Francisco Peaks, along the rims and plateaus of the Grand Canyon, and into the Grand Canyon itself. Trails also ran from Seligman and Williams to south of the San Francisco Peaks before swinging northeast to Sunset Crater, Wupatki, and to the Hopi mesas. The Pai consultants also identified trails used by the Southern Paiute to travel from Kaibab over the narrowest part of the canyon and into Pai territory, and used by the Hopi to travel to Yavapai through Oak Creek Canyon and Verde Valley.

Trails from the south lead up toward the sacred mountain area. The Montezuma's well, Camp Verde area along the Verde River is a place where the Yavapai would allocate salt. This route on up to Walnut Canyon area and over the Little Colorado area was on the trail to Hopi. Another trail in the other direction went past the Prescott area then following a southwest direction down to the Yuma area and then on to the ocean. Also along the Colorado River near Yuma there are big boulders in the design of a snake in the dirt as well a human runner. The Yavapai used to be runners and run all the way down to Yuma area. It would take them 5 days.

The Pai people used the trails for many purposes. Some trails were trade routes, others were used to go to the San Francisco Peaks for firewood, vision quests, sweat lodges, prayers, mineral collecting, and for hunting. Other trails were for pilgrimages, or to gather resources from the ocean, or seek places where one could acquire knowledge and power. One Pai elder told of traveling to Meteor Crater to obtain power and to collect pieces of the meteor. All such journeys, however, required a traveling prayer before departure.

The songs and prayers associated with the trails are sacred because the trails are connected to creations and other stories. One elder explained part of the creation story in which Grandma, "Old Lady Keeper of the Pearls," walked from the San Francisco Peaks to Sedona. Another elder told of the story trail of *Yahoya* that passes through Sunset Crater as one travels between the Hopi mesas and Supai. A third elder said that Hopi runners would travel the trails to inform the Yavapai that they were coming to Yavapai territory for salt; the people would stop at Sunset Crater during these journeys. The Mojave would come to Supai and share Bird songs that were sung in conjunction with Southern Paiute Salt songs during the Cry Ceremony.

Songs have both ceremonial and non-ceremonial roles in the Pai cultural landscape. The Pai have songs about an area near Laughlin, Nevada along the Colorado River. One elder explained that, "There are songs near Laughlin on the Colorado River ... songs for traveling on pilgrimages. They would sing on the trails. There are prayer songs for hunting, planting, everything that was a direct interaction with some resource or the land itself. Only certain people, like medicine men, knew certain songs." The people had songs for traveling to view the sacred mountain, and songs for when the men held sweats. Another elder said they have songs the volcano and ceremonies held at Wupatki:

There were songs about the volcano. The lava rocks are called wiidonwa, the lava cinders (black and red) are called wiigthwiila. The Supai elders are the medicine rocks. The sweat dance leaders can sing at any hunt. All Supai people can know round dance songs. At the circle in Wupatki they would have group ceremonies, circle dance, harvest songs, game songs.

The area encompassing the three monuments is one rich in ceremonial activities and characteristics. These activities connect the associated cultural groups with the landscape, and to prehistoric peoples and events. The eruption of Sunset Crater is probably the most

significant cultural event in the prehistoric Southwest as it resonates in longheld beliefs and ceremonies. The effects of the eruption included attracting people from great distances including the Southern Paiute, Pais, Zuni, Western Apache, Navajo, and Hopi people. The Pai consultants believe that during the period of eruptions, the Wupatki and Walnut Canyon structures were used to accommodate various groups of pilgrims and ceremonial practitioners. Pai consultants felt that these ceremonial interactions upheld various intertribal relationships, physically grounding them in a shared ceremonial landscape.

Although Sunset Crater is now dormant, the cinder cone retains a ceremonial significance that centers intertribal activities in a vast ceremonial landscape. One consultant explained that the Hopi Snow Clan, which is responsible for creating precipitation, interacts with the Havasupai as part of its ceremonial obligation. A Pai elder added, “The eruption of the crater is in our stories. Many of the stories have died with the people, but the Supais and Yavapais still have them.”

Several historic events have shape the Pai cultural landscape; the Pai consultants discussed three of these events. In the first account, the region of the Hualapai reservation has many ruins and was the site of many villages. The second event involves the Yavapai creation story of when the Yavapai emerged from Montezuma’s Well. The third event was when the Yavapai and the Hualapai separated. One elder explained that, “North of Prescott and Granite Mountain, but south of Seligman on an old dirt road, is the site of more ruins. In one place near the ruins, the Pai children got in a fight and the Yavapai and Hualapai separated.”

In addition to the San Francisco Peaks, Sunset Crater, and Granite Mountain, other mountains including Red Butte (*Wiigdwiiisa*), the Hopi Mesas, and Sugarloaf Mountain contribute to our understanding of the Pai cultural landscape. Mountains are places of power and knowledge, places for ceremonial practices, landmarks, and important features that bring traditional stories and songs to life. The Pai elders discussed the connections among all the mountains as special, sacred, spiritual, and physical, the latter including underground water, tunnels, and line-of-site in which they “...stand on tip-toe to see and talk to each other.” Sugarloaf Mountain was part of a trail the Supai would travel on their way to the Pacific Ocean, and Red Butte was a territorial marker:

The Supai would maybe pass by it on a pilgrimage...maybe on the way to the ocean...not the whole tribe, but individuals. The Supai would go to the ocean (hanthiilta) to make floods and bring them to Supai.

Chief Manakaja marked the territory of the Supai. He had foot races around the buttes, and soon he became like a whirlwind. This was before the big flood. In Canyon Mine north of Red Butte, the creators did a round dance.

The Colorado River and Little Colorado River are defining components of the Pai landscape. The underground aquifers of the Little Colorado River, for example, connect it to all places found in the Pai cultural landscape. The Little Colorado River was recognized as a boundary between Pai and Hopi territories, however, both the Colorado and Little Colorado

were known also as “healing rivers” upon which the shamans relied. Northern and southern routes provided access to the rivers and the Grand Canyon for trade, ceremonies, and collecting plants and minerals.

The Southern Paiute Landscape

The Southern Paiute consultants represented the Kaibab Paiute Tribe and the San Juan Southern Paiute Tribe. Differences in responses below reflect differences between Southern Paiute bands. The responses are compiled and summarized in the field data map and ethnographic commentary that follow.

<i>What is the name of this place in English?</i>	Lomaki Sunset Crater Wupatki
<i>What is the alternate name of this place in English?</i>	Flagstaff area
<i>What is the Indian name for this place?</i>	Mokitan Nuva hatded, “snow sitting” We never had a name for this volcano. Nuva Harva, the San Francisco Peaks
<i>Were there Indian villages in relation to this area?</i>	Yes Don't Know No
<i>If yes, which villages and where were they located?</i>	There were all the ruins, this must have been a populated area. This place was used by families with lots of people. This was a hunting area, with temporary plant gathering. It was like that after and while the volcano was erupting. Before the eruption, there were villages. After the eruption, people only travelled through here. They tried to bypass the area until things settled down.
<i>If yes, what Indian people occupied those villages?</i>	Probably some kind of Pueblo people. Pueblo people. Some kind of dark-skinned, cannibalistic people. Nobody occupied villages related to this, but people did gather here. Other people but not Sinagua, Anasazi, Cocopai, Hohokam.

	<p>They were different people all together. The beginning people, they were dark in complexion. They could have been Southern Paiute.</p>
	<p>Puebloan Villages like Hopi.</p>
	<p>The black people called <i>muweenakats</i>. They used to be cannibals.</p>
<p><i>If yes, how were they connected?</i></p>	
<p><i>Village #1</i></p>	<p>Paiute villages near Navajo Mountain</p>
<p><i>How is village #1 connected?</i></p>	<p>A long time ago, the Paiutes travelled along this country. They gathered herbs, went hunting and got medicine. They would come from Navajo Mountain. They used to come from far away.</p>
<p><i>Were there other Indian people who lived there?</i></p>	<p>No</p>
	<p>Yes</p>
	<p>Yes</p>
	<p>No</p>
	<p>Yes</p>
	<p>No</p>
	<p>Yes</p>
	<p>Yes</p>
<p><i>If yes, who?</i></p>	<p>People just came through to trade and visit.</p>
	<p>Other native people.</p>
	<p>Maybe Zuni.</p>
	<p>Puebloan people, Hopi or Zuni. By the look of the structures, they're probably Puebloan. Although they could be Paiute.</p>
	<p>People came through, but did not live. Different bands went through here.</p>
	<p>The Hualapai had villages down the river, which were close.</p>
	<p>The Hualapai would come through here to hunt or to travel to Camp Verde.</p>
<p><i>If yes, were the area villages connected with villages elsewhere?</i></p>	<p>Yes</p>
	<p>Yes</p>
	<p>No</p>
	<p>Yes</p>
	<p>Yes</p>
	<p>Don't Know</p>

If yes, who occupied those villages?

Yes

Yes

Paiute people, connected through trade.

There is one area in Kaibab that was never uncovered. That is a big site. So, if these large sites exist at Kaibab, Paiutes could have been in Wupatki as well.

Wupatki is close to the Paiute area, they could have used it. It's closer than the other ruins. I don't want to call them Anasazi, Pueblos or Paiutes.

Pueblos would come to Kaibab and trade. During this time, we would hold ceremonies along the Colorado River. This is the only place that they could get together.

Southern Paiute people, the San Juan.

If yes, how were these villages connected?

Other Village #1

San Juan.

An unexcavated site at Kaibab.

Navajo Mountain.

How is other village #1 connected?

They are all connected. They look similar but aren't the same. There are different styles of buildings. There are different styles of pottery also.

The San Juan came around here hunting and gathering plants for days and weeks. They gathered piñon, blue grama, and made arrows from shrubs. They also used medicinal shrubs for vomiting.

Structure and architecture. Maybe the people were the same, too. It's hard to tell because the Kaibab site is not excavated.

People carried water to Wupatki, though there could have been a stream nearby. All the sites in Wupatki were related to each other, except for Wukoki. It's by itself, away from the others.

Intermarriage with the Pueblos and Hualapais and Havasupais and Navajos. They always married Navajos.

People came to hunt and gather.

Other Village #2

Willow Springs

How is other village #2 connected?

Do you know what the Indian people did when they were in this area?

Yes

Farming	Gathering plants	Gambling	Ceremonies	Political meetings	Hunting	Looking at skyline/stars	Other
✓	✓	✓	✓	✓	✓	✓	✓

Trade, horse racing.

They must have tried to plant (farm) by trying out different areas. For ceremonies they used the open areas and ballcourts. Political meetings were at round area, looks like a council meeting area, because everything in council meetings are done in a circle.

Gathering: berries, weeds, etc. Other: they used this area for medicine

Traders would spend the night here. There was no farming because there was too much gravel and cinders.

Banana yucca, piñons, cedar for diabetes, sagebrush for medicine. Ceremonies; the eruptions make this place spiritually stronger. Different tribes hunted and gathered in different ways. At Wupatki, pottery was found that looks Paiute. Different tribes came together. Hunted antelope, deer, elk, rabbits, snakes, prairie dogs

Gathered wood, piñons.

Could be ceremonies.

Looking at stars.

Hunted deer, elk, antelope.

There are places for small farms, they would need to catch rainwater.

There are certain times when plants come out; they have ceremonies and dances when they harvest.

They had some ceremonies related to games, gathering, and dances, like the round dance.

Hunted deer, rabbits, squirrels, bobcats, cougars, and porcupines; they are good but too fat.

Do you know of Indian trails that were connected with this area?

Yes

Yes

Yes

Yes

Don't Know

Yes

Yes

If yes, can you tell me something about those trails?

Yes

Where did the trails go?

One trail went from our village through Lee's Ferry to Kaibito Plateau to Moenkopi and Tuba City areas. One went to here and San Francisco Peaks, to Hualapai, to the Colorado River crossing with a big cave and red paint, and then back to the village.

There is a trail that goes to the Little Colorado River.

To Hopi. The Paiutes don't use anything.

The Circle Trail. People went on this trail through Lee's Ferry to Moenkopi. They used the San Francisco Peaks as landmarks. They'd go in a circle to Supai, and trade with Hualapai. They would get red paint to share with Hualapai.

There would probably be trails to places like the Grand Canyon, or the salt mines of the Colorado River.

Same as trails now. Across the Colorado River at Lee's Ferry. There is a place near Cedar Ridge where the Navajo used to cross; they can swim it. A Navajo told me about the place.

They went anywhere; there was no law that said which tribes could run the trails.

Why did people travel these trails?

For trade, to gather plants, for hunting and ceremonies.

For water, or as a journey trail, or for places to stay.

Trade, kidnappings at times; other tribes kidnapped Southern Paiute children.

Spiritual growth, or for salt. Paiute people traveled here, like the San Juan. They came down for their herbs or basket materials. Maybe to trade.

For Paiutes to get across the Colorado River at various places.

Were these trails somehow special to Indian people?

Yes. They were always followed in a certain way, usually in the summer time.

Yes, it got them to where they were going.

It was a permanent, stable trail that everyone travelled.

Yes, they are special. The trails go somewhere.

They were the only places to cross the Colorado.

Some are, mostly the ones that are only one way out. The best ways, not the hard ones.

Do you know of any songs associated with this area?

Yes

No

No

Yes

	Don't Know
	No
	Yes
	Yes
<i>If yes, can you tell me something about these songs?</i>	Yes
	Yes
<i>Are these traveling songs?</i>	Yes, when someone traveled alone he would sing. Groups of two or three would talk to each other.
	They sang songs to make them travel faster. They were good walkers, not fat then.
<i>Are these ceremony songs?</i>	Yes, you have to ask for salt and sing to the Gods, so it will be good. You sing to where you are going and arrive safely. There are two or three different songs like that. Where, why, and places along the way are all sung.
	They left offerings along the trail for a safe journey.
<i>Are these songs for other purposes?</i>	These songs were about Navajo Mountain when it was Paiute Mountain but nothing overly special.
	They are round dance songs about hunting. They are about the animals and are used while hunting.
	There are songs about Navajo Mountain, but not here. There are also songs from the west, around Parker. Most of the songs and ceremonies are from west of the Colorado. There is a branch of Paiutes from around Palm Springs who lost a song. The Kaibab helped them by singing it back in Palm Springs.
<i>Do you know of any ceremonies that were conducted at or near this area?</i>	Yes
	Yes
	Don't Know
	No
	Don't Know
	Yes
	Yes
<i>If yes, can you tell me something about these ceremonies?</i>	Yes
	Yes
	No
	Yes

Ceremony #1 - held where?

Yes
 Wherever.
 The Bear Dance, around Wupatki.
 The volcano.
 The home of the wind.

When did ceremony #1 take place and why was it conducted?

Summertime, they were recreational dances.
 In the spring, like April, the Bear Dance takes place in honor of the bear who comes out of hibernation.

Sure, there were, but none I know of. Other tribes hold this place to be sacred, even San Juan is close. The Paiute could have had ceremonies here. The Hopi and Zuni consider this place sacred.

They have to have a song for the volcano. This would be a place where young men would come to get songs and dreams. Ice caves would have songs for Indian people, too.

You could get songs from there, and bring rain.

Is this area at or near your creation place or from where your people migrated?

No
 Yes
 Yes
 Yes
 Yes
 Yes
 No
 Yes

If the Creation place, where is that?

Off toward Navajo Mountain, not around here.
 The west side of the Colorado River. Coyote came from the ocean carrying a bag. He opened it and all the Pai people came out. The Southern Paiutes were dropped off.

The ocean, the Pacific.
 The creation place is near Page, near Navajo Mountain.

If migrated here, where did they travel from?

This place was a stop on the way, people came from all directions. They came here to summer or winter homes, looking for medicines.

The Kaibab area.
 Maybe people traveled here a long time ago.
 Not really migrated as much as traveled to and through. They

	<p>came to get things like willows, both in the San Francisco Peaks or Sunset Crater area.</p>
	<p>San Juan came to this area down from Navajo Mountain after creation.</p>
<p><i>Do you know if there are other places in this region connected to this area?</i></p>	<p>Yes Don't Know Don't Know</p>
	<p>Yes Yes</p>
	<p>No Don't Know</p>
<p><i>If yes, what and where are those places?</i></p>	<p>The Colorado River. Migration, trade route.</p>
<p><i>Place #1 - Name?</i></p>	<p>This place is connected to places in traditional lands, where hunting, gathering plants and trading took place.</p>
<p><i>Do you recall or have you heard about historic events here?</i></p>	<p>Yes Don't Know</p>
	<p>No No</p>
	<p>Don't Know Yes</p>
	<p>Yes Yes</p>
<p><i>Can you tell me something about those events?</i> <i>Event #1 - when and where?</i></p>	<p>Yes Between Colorado River and Flagstaff. I have heard of massacres further north, but not here.</p>
	<p>The Grand Canyon, not with the volcano. In the late 1980's or early 1990's, the San Juan Paiutes were invited to go down there to play games and to sing. They were saying they were really friends with the Paiutes. Then older people went to dance at Willow Springs and at Heaton Springs.</p>
<p><i>What happened during Event #1?</i></p>	<p>In the early 1900's, there would be cattle drives through the area. There was a war with the Navajos. Grandfather told me that. That war may have been in this area on this side of the Colorado</p>

<p><i>Event #2 - when and where?</i></p>	<p>River.</p> <p>Also, the war with the dark-skinned people happened here.</p>
<p><i>Is there any connection between this area and nearby mtns?</i></p>	<p>Yes</p>
<p><i>If yes, what mountains and how are they connected?</i></p>	<p>Yes</p>
<p><i>Mountain #1: name</i></p>	<p>San Francisco Peaks (<i>Nuvakadid</i>)</p>
	<p>San Francisco Peaks</p>
	<p>San Francisco Peaks (<i>Nuvahara</i>)</p>
	<p>All</p>
	<p>San Francisco Peaks (<i>Nuva harra</i>)</p>
	<p>San Francisco Peaks</p>
	<p>San Francisco Peaks</p>
<p><i>How is Mountain #1 connected?</i></p>	<p>“Snow sitting on mountain.” These mountains were landmarks for trailing cattle to Flagstaff.</p>
	<p>People knew to go to the mountains. There had to be a reason to live here, maybe envy brought more people here.</p>
	<p>It is the closest mountains to this place.</p>
	<p>All mountains around here are connected, but those are not the ones in our traditional territory.</p>
	<p>It is similar in shape and landscape, but I don't know of any spiritual connections.</p>
	<p>The whole area connects it, people know how to take care of it. Power connects the area. All places are the same in power. Caves are no different than other places.</p>
	<p>They are connected through water. Water flows in different ways from one place to another.</p>
<p><i>Mountain #2: name</i></p>	<p>Sunset Crater</p>
<p><i>How is Mountain #2 connected?</i></p>	<p>It is a landmark used in trading.</p>
<p><i>Is there a connection between this area and sections of the Little and/or Big Colorado River?</i></p>	<p>Yes</p>
	<p>Lee's Ferry</p>
	<p>Big Colorado</p>
<p><i>If yes, what section (English name, Indian name)?</i></p>	<p>Little Colorado</p>

How is section #1 connected?

Meopeweave?

Big Colorado

Both rivers [in their entirety]

All of the river.

Little Colorado

It was a Jesuit crossing. It was used for trade, gathering plants, hunting and in ceremonies.

There are trails to the Colorado. The river is also a boundary.

A close source of water.

Connected, but not in our traditional territory.

There are areas of the Colorado, near Mount Trumble, that also have volcanic rocks such as these.

The San Juans may know more. The people that had to go through here to get to the river had to go through major tasks for the spiritual and salt mines.

Water from here flows down to the Colorado. So if it snows here or rains here, the Colorado River gets the water.

It is only 10 miles downstream. People here walked down to the river to visit. They would also take things with them to trade along the river. Like antelope.

If yes, what section (English name, Indian name)?

Big cave, red paint

Little Colorado

Colorado

Little Colorado

How is section #2 connected?

It is almost across from the Hualapai reservation. They also use the paint, it is war paint. The paint was also used for medicine for protection at places like this.

There is salt there.

There is water and salt. There are places along the Colorado where people could have found salt.

The Little Colorado heals the bones and body, because it is warm.

If yes, what section (English name, Indian name)?

Big Colorado

How is section #3 connected?

There was/is food storage at the bottom of the river. This area is sacred to other tribes.

Is this area connected to any places or events we've not talked about?

- No
- Don't Know
- Yes
- No
- Yes
- Don't Know

Connection #1 - place or event

- Marriage
- Paiute Mountain

How is place or event #1 connected?

In the past, women were married here in the ruins. They would go to a place like the round area of the ruins.

Everything is connected.

I don't know if it's connected to here, but it probably is. The Paiute maintain that the San Juan Paiute are connected to here and Kaibab. The name changing of Paiute Mountain to Navajo Mountain is significant. The older people use to talk about Paiute Mountain and the name change.

Additional comments?

This place looks similar. It belonged to a tribe way before us, though they are not related. Wupatki could have been farmed in normal weather.

It's good to see preservation of things the way they are. The Park Service is doing well.

It seems like there is hardly any life here.

The scenery is beautiful, yet dry because of the drought. The drought is just as bad at Kaibab as far as lack of water. Wupatki could have been more farmable in normal weather.

I like the park but the hike up Lenox Crater was difficult.

Some elders say it used to rain a lot in the old days. There were no airplanes, no pollution, no smog, more Paiute rainmakers in those days. They passed away. This place should stay the way it is, but there needs to be more rain.

The Southern Paiute Cultural Landscape Map

The mapped field data for the Southern Paiute groups has the least detail and may be misleading with regard to the relationship of the San Juan Southern Paiute Tribe with the Flagstaff area monuments. Other participants mentioned the importance of the area to the San Juans and urged further interaction with and consideration of that group.

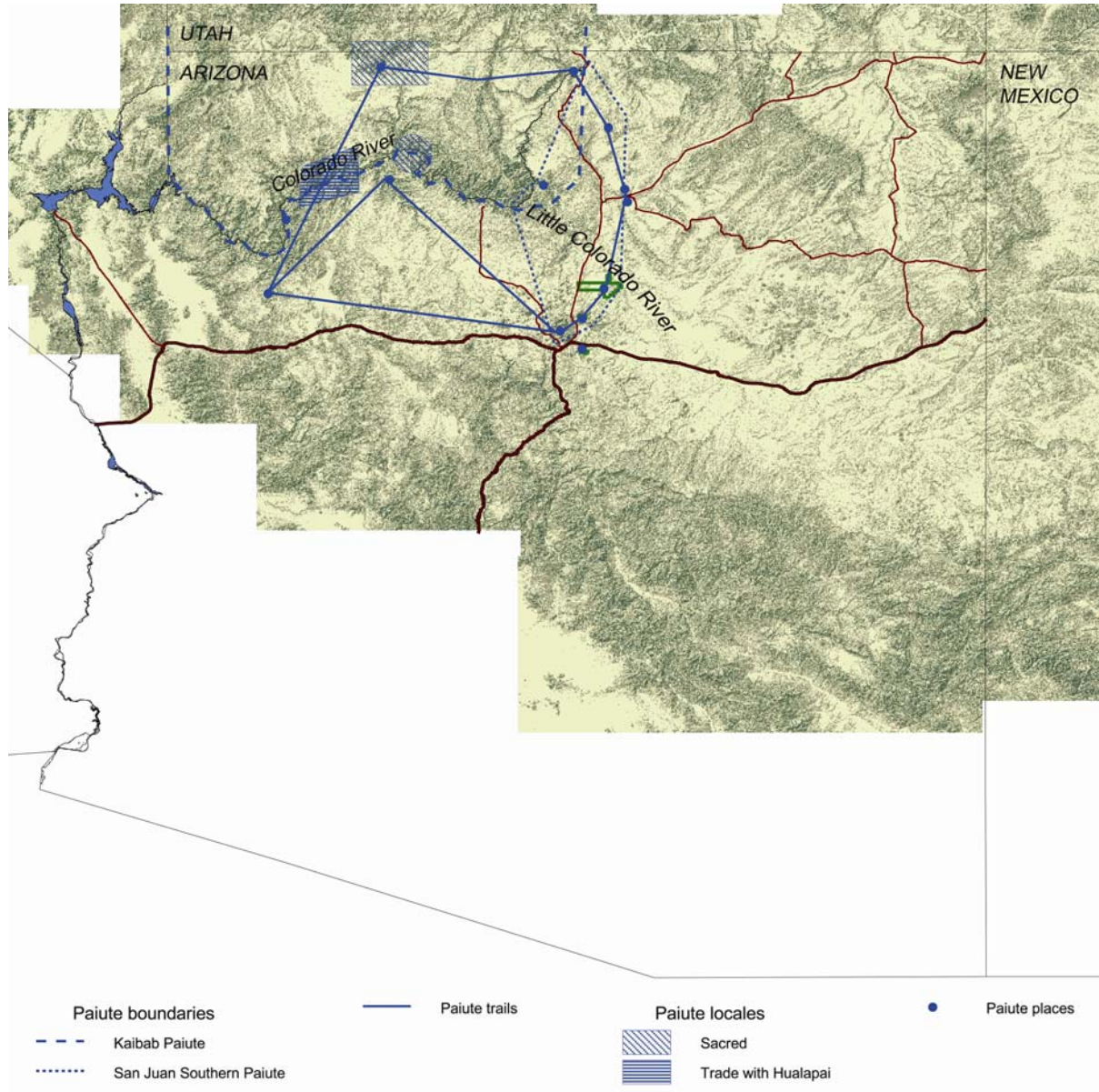


Figure 6.2. Cultural landscape field data from the Kaibab Paiute and San Juan Southern Paiute tribes.

Ethnographic Summary

The traditional territory of the Kaibab Southern Paiute Tribe extended from southern Utah to the Grand Canyon and the Kanab Creek, and contained many villages. It extended east across the Colorado River to the San Juan Southern Paiute territory, which was east of the confluence with the Little Colorado River. Opposite the Paiute territory on the Colorado River are the Hualapai and Havasupai. An important aspect of this multi-cultural landscape is the connection between the Colorado River and Little Colorado River, and its role in the Southern Paiute cultural landscape. One of the elders talked about the Granite Park area in the Grand Canyon near modern day Hualapai reservation. He said the Paiutes from Shivwits would cross the river in Granite Park for travel or to trade with Hualapai.

Northern Arizona, specifically from the Arizona strip through the Grand Canyon to the Flagstaff area is part of a Southern Paiute cultural landscape of traditional villages, trade routes, resource use sites, and sacred places. Elders from Kaibab stated that the San Juan band probably has closer connections to the area of the three Flagstaff monuments and to the region of the Little Colorado River confluence with the Colorado River as it is part of the San Juan Southern Paiutes' traditional territory. They would have used the Flagstaff area primarily for gathering natural resources and trading with other tribes.

The Paiutes maintain that the Sunset Crater-Wupatki-Walnut Canyon area is one of spiritual, subsistence, and geographic importance not only for Southern Paiutes, but also for Hopi, Zuni, and Pai tribes. Paiutes in prehistoric and historic times have used this area to hunt and gather resources for food and medicine, and to travel for trade purposes. Some of the elders believe that the presence of the ruins in the area indicates it was populated prior to the eruption, that people hunted, gathered plants, and had villages. They also believe that after the eruption, people only traveled through the area. Other elders believe that people did not have permanent settlements at Wupatki. They believe that it was either part of a trading center or a place of ceremony. The elders discussed archaeological evidence that directly links Southern Paiute people to Wupatki including similar pottery and a large, uncovered archaeology site on the Kaibab Reservation that connects the Kaibab Paiutes to Wupatki.

Southern Paiutes living near Paiute Mountain (known today as Navajo Mountain) frequently traveled through this area in the past. One elder said, "A long time ago, the Paiutes traveled along this country. They gathered herbs, went hunting and got medicine. They would come from Navajo Mountain. They used to come from far away. The San Juan would visit this area and stay for extended periods of time for plant gathering and hunting."

The Southern Paiutes used much of the established trail system used by other tribes in the region. They would travel the Grand Canyon for plant and mineral resources, and go to an area near the confluence of the Little Colorado and Colorado Rivers to gather salt. They also used part of the trail system through Wupatki to visit the Hopi area. As one elder described it, "One trail went from our village through Lee's Ferry to Kaibito Plateau to Moenkopi and Tuba City areas. One went to here [Sunset Crater] and San Francisco Peaks, to Hualapai, to the Colorado River Crossing with a big cave and red paint, and then back to the village." The red paint was a resource they often shared with the Hualapai.

Songs are vital components of the Southern Paiute cultural landscape. They connect people to places, guide them in their travels, and are sung to call on the rain. When a person traveled alone, he or she would sing to make the journey faster and to ensure a safe arrival to their destination. One elder said, “there are two to three different songs like that. Where, why, and places along the way are all sung.”

The Southern Paiute people have songs about different areas and each one has a different purpose. They have songs about Navajo Mountain when it was called Paiute Mountain, and round dance songs about animals that were sung while hunting. One elder told of songs and ceremonies that came from west of the Colorado River. He said, “There are also songs from the west [Parker]. Most of the songs and ceremonies are from west of the Colorado. There is a branch of Paiutes from around Palm Springs who lost a song. The Kaibab helped them by singing it back in Palm Springs.”

The Paiute elders acknowledged that there are many places in the area of the three monuments where people would go to learn songs. The San Juan Southern Paiutes would visit the blowhole at Wupatki (*hurrikanni*, home of the wind) to learn songs that would bring the rain. The volcano and ice caves are also important places where Southern Paiute men can acquire songs. One elder explained that, “They have to have a song for the volcano. This would be a place where young men would come to get songs and dreams. Ice caves would have songs for Indian people, too.”

The elders talked about different types of ceremonies and dances that were conducted in the Flagstaff area. In the spring, around April, people would hold a Bear Dance to honor the bear coming out of hibernation. During the summer months, recreational dances were held. Marriage ceremonies were held at Wupatki and in the past, women were married in the round area of the ruins.

Historic events discussed by the Southern Paiute consultants connect the Flagstaff region and the three parks to Southern Paiute history. According to one elder, “This place is connected to places in traditional lands, where hunting, gathering plants, and trading took place.” Another elder said that in the past there was a war with the Navajos, and war might have occurred in the area near the three monuments. Another elder told how in the early 1900s, ranchers would drive their cattle through this area.

The Southern Paiute elders emphasized that everything is connected. One elder said, “The whole area connects it, people know how to take care of it. Power connects the area. All places are the same in power. The caves are no different than other places.” Another consultant added, “They are connected through water. Water flows in different ways from one place to another.”

The Hopi Landscape

Although the Hopi Tribe was unable to participate in this study, their relationship to the study area can be presented graphically. Four maps show expanding areas of use from residential to agricultural, resource acquisition, and ritual activities (Figure 6.3) (Page and Page 1982; Zedeño 1997). The latter area corresponds to the Hopi territorial boundary of 1700-1864 (Page and Page 1982), which connected eight shrines and landmarks. Hopi traditional territory extended west of Nuvatukya’ovi, the San Francisco Mountains (Malotki and Lomatuway’ma 1987), north to the Colorado River, east to Black Mesa, and south to Rio Puerco and Chevlon Creek. As will be seen in the Navajo and Regional landscape maps, the residential area was situated within the only portion of the Hopi traditional territory that did not overlap with other tribes’ territories.

The Zuni Landscape

The Zuni consultants were cultural and religious specialists. Differences in responses below reflect differences between the kinds of knowledge held by their respective specialties. The responses are compiled and summarized in the field data map and ethnographic commentary that follow.

<i>What is the name of this place in English?</i>	
<i>What is the Indian name for this place?</i>	It's our migration route, not for whole landscape. <i>Sun hakuse</i> <i>Sunhakwin</i> , “where the sun goes down,” <i>Kiap'hachuya</i>
<i>Were there Indian villages in relation to this area?</i>	Yes
<i>If yes, which villages and where were they located?</i>	Elden Pueblo, Walnut Canyon, Wupatki
<i>If yes, what Indian people occupied those village?</i>	Inotegua Zuni Zuni Ancestors
<i>Village #1</i>	Inotegua Elden Pueblo
<i>How is village #1 connected?</i>	This is one of the areas they, the ancestors, moved through on the way to the middle place where Zuni is.
<i>Village #2</i>	Walnut Canyon
<i>How is village #2 connected?</i>	This is one of the areas they, the ancestors, moved through on the way to the middle place where Zuni is.

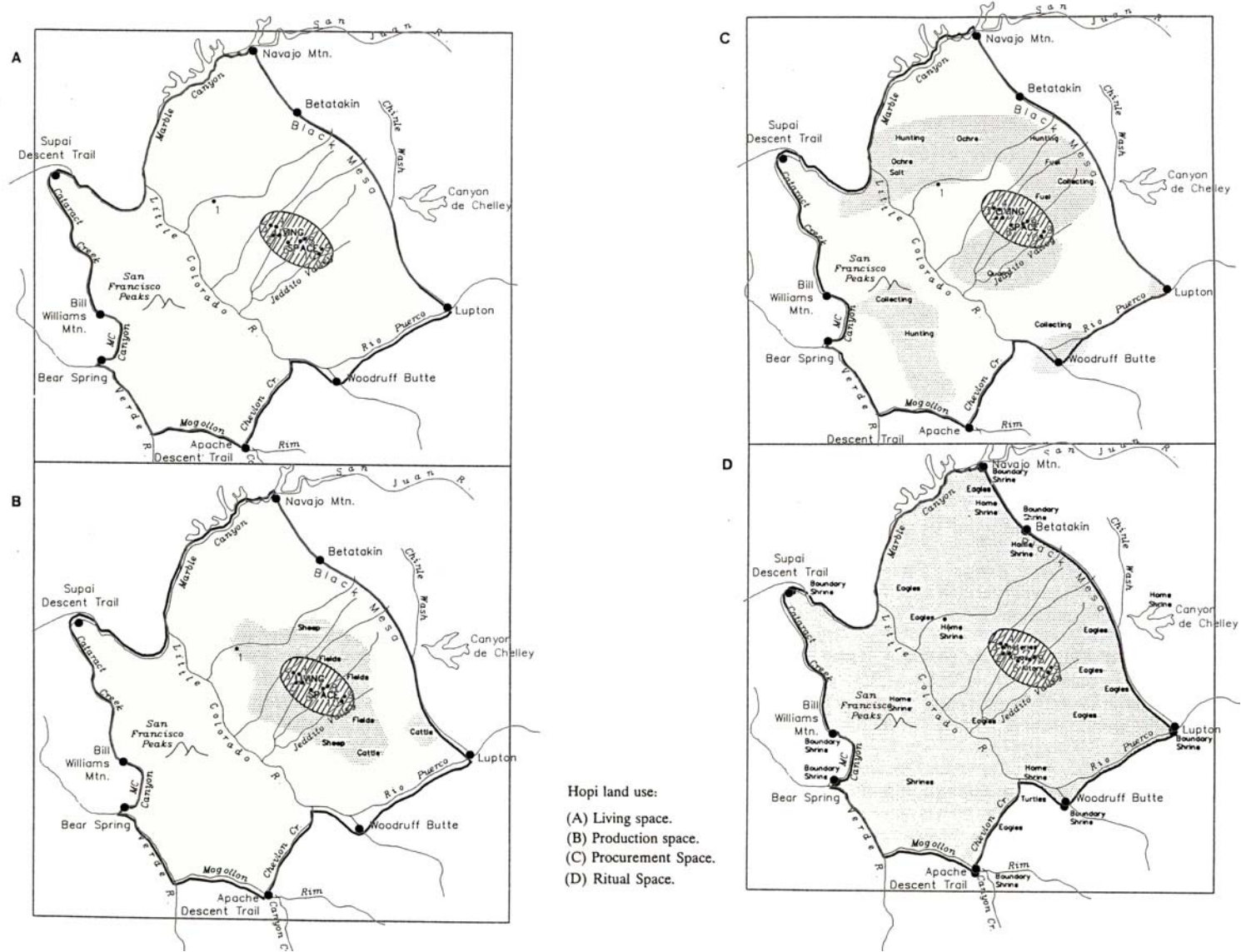


Figure 6.3. Hopi cultural landscapes adapted from Zedeño (1997).

Village #3

How is village #3 connected?

Were there other Indian people who lived there?

If yes, who?

If yes, were the area villages connected with villages elsewhere?

If yes, who occupied those villages?

How is other village #1 connected?

Do you know what the Indian people did when they were in this area?

Do you know of Indian trails that were connected with this area?

Where did the trails go?

Why did people travel these trails?

Wupatki

This is one of the areas they, the ancestors, moved through on the way to the middle place where Zuni is.

Yes

Hualapai, Havasupai, Hopi, Pueblos; they're all relatives.

Hopi

Hopi. The Park Service today uses present-day Hopi names like Cocopai in interpretation.

Yes

Zuni and Hopi

The ancestors of the Zuni.

Hopi are strongly connected to Zuni. Hualapai is like a "subdivision" of Zuni. They do not have the same housing style.

This whole territory is Zuni. This whole area is aboriginal Zuni land, connected via the migration in search of the Middle Place. Migration went from Mogollon Rim to Eagle Peak, Socorro New Mexico, to Mount Taylor to the San Francisco Peaks and the Grand Canyon. All the places are mentioned and used in the prayers that Zuni has.

Yes

Yes

I can't really say what activities were going on.

<i>Farming</i>	<i>Gathering plants</i>	<i>Gambling</i>	<i>Ceremonies</i>	<i>Political meetings</i>	<i>Hunting</i>	<i>Looking at skyline/stars</i>	<i>Other</i>
✓	✓	✓	✓	✓	✓	✓	✓

Gambling.

Games.

For political meetings; maybe they had someone who was the leader. The high priest is the leader of all the Zuni.

Yes

Zuni-Hopi trail from Tuba City to Zuni.

Zuni-Laguna-Acoma Trail.

From Zuni to Hopi.

From Zuni to the other New Mexico Pueblos.

The San Francisco Parks, Grand Canyon, to Hopi.

Trading plants, things we made.

Visiting.

Gathering plants, minerals, soils.

<p><i>Were these trails somehow special to Indian people?</i></p>	<p>For trade, communication, for ceremony. To Hopi to trade and communicate. In the 1920's, the Zunis made a pilgrimage to the San Francisco Peaks every four years to collect minerals, to collect herbs, to make offerings. And to the Grand Canyon to make a pilgrimage to the origin place.</p> <p>Yes, for maintaining traditional relationships. Yes</p> <p>All trails are special. They connect people, they connect them to share waterways and special places.</p>
<p><i>Do you know of any songs associated with this area?</i></p>	<p>Yes</p>
<p><i>If yes, can you tell me something about these songs?</i></p>	<p>Yes</p>
<p><i>Are these traveling songs?</i></p>	<p>Yes</p>
<p><i>Are these ceremony songs?</i></p>	<p>Rain dance songs. People who are smart enough will make a song about a place like this. A Zuni man who died a few months ago made a migration song about the Hualapai.</p> <p>Yes</p>
<p><i>Are these songs for other purposes?</i></p>	<p>Meeting Songs There are a lot of songs, especially with the medicine fraternities. Religious songs. Shalako ceremony, and all of these place names are mentioned in their prayers.</p>
<p><i>Do you know of any ceremonies that were conducted at or near this area?</i></p>	<p>Yes Yes No</p>
<p><i>If yes, can you tell me something about these ceremonies?</i></p>	<p>No Yes No</p>
<p><i>Ceremony #1 - held where?</i></p>	<p>There could have been a long time ago.</p>
<p><i>Is this area at or near your creation place or from where your people migrated?</i></p>	<p>Yes</p>
<p><i>If the Creation place, where is that?</i></p>	<p>Grand Canyon. Ribbon Falls, in the Grand Canyon. Grand Canyon.</p>
<p><i>If migrated here, where did they travel from?</i></p>	<p>There are no known stories about Wupatki in the migration story. Elders would tell stories about places, but we were too young to listen. I didn't know I would use these stories today. Stories were passed down through generations.</p> <p>The people were created in the Grand Canyon and headed south. At the bottom of the canyon, there is lots of water, and sites, over 500 sites. The Hualapai were the people who stayed at the bottom of the</p>

canyon. They were originally the same as the Zuni.

From the Grand Canyon. This whole area is aboriginal Zuni land, connected via the migration in search of the Middle Place. Migration went from Mogollon Rim to Eagle Peak, Socorro New Mexico, to Mt. Taylor to the San Francisco Peaks and the Grand Canyon. All the places are mentioned and used in the prayers that Zuni has. The Zuni legend says that they had lived there for four days, which was like 400 years. Then, others would be sent to find a good place until they found the Middle Place. If conditions were good, they would stay in the place for a while, for years, until they moved on. All the settlements in Wupatki are connected to this.

Do you know if there are other places in this region connected to this area?

Yes

If yes, what and where are those places?

Everything in the Zuni landscape.

Walnut Canyon.

The area around Twin Arrows and around Winslow and Holbrook. They gathered herbs to find the Middle Place.

Place #1 - Name?

Kumanchan

Walnut Canyon

Place #1 - Where?

The people, when migrating, would travel in groups. They would stay in places for four days, which may mean four years, 400 years, etc. Then they would leave. The young would travel, but the old and weak would stay in the place.

They made plenty of stops on the way to the Middle Place. In the Arizona area, "*Jumanchan*" is the place where the people split. They had to choose an egg. Elders tell the story about the parrot and the crow.

Around Winslow and Holbrook.

Place #2 - Name?

Bandelier area, New Mexico Pueblos, "Land of Everlasting Sun," San Francisco Peaks.

Area around Twin Arrows.

Place #2 - Where?

After the split, the people who went east went to the Bandelier area. The area is now sacred to all New Mexico Pueblos. This group joined Zuni and brought the medicine society. The people who went south are still down there, in the "Land of Everlasting Sun." The others went straight to the middle place, where they live now.

There are sites all along the migration route. During the time they traveled, the ground moved like Jello, it was unstable. To migrate, they people looked at the points of the San Francisco Peaks.

In the Grand Canyon, there are small fingers painted. They are left from the small people.

Do you recall or have you heard about historic events here?

No

Yes

No

<i>Can you tell me something about those events?</i>	Yes No
<i>Event #1 - when and where?</i>	The fair in Flagstaff.
<i>What happened during Event #1?</i>	Every year, there was a fair in Flagstaff, where the Zuni would come to dance. The elders would teach the children about the place.
<i>Is there any connection between this area and nearby mtns?</i>	Yes
<i>If yes, what mountains and how are they connected?</i>	All in the area are connected by “roots.” Yes San Francisco Peaks
<i>Mountain #1 – name?</i>	San Francisco Peaks
<i>How is Mountain #1 connected?</i>	All mountains; their names are in prayers. Sacred to the Zuni people. It is an area of importance, an area known in the migrations.
<i>Is there a connection between this area and sections of the Little and/or Big Colorado River?</i>	Yes
<i>If yes, what section (English name, Indian name)?</i>	All of it. Little Colorado. The whole rivers.
<i>How is section #1 connected?</i>	The Zuni River goes to the Little Colorado and the Colorado. Zuni Heaven is there. It's also the migration route. The Little Colorado runs to Zuni heaven. The path to heaven is the same path as the migrations. It goes back to the Grand Canyon. All the waterways are connected to the oceans and the oceans around the world, like an umbilical cord.
<i>Is this area connected to any places or events we've not talked about?</i>	Don't Know Yes
<i>If yes, what are these places and/or events and how are they connected?</i>	
<i>Connection #1 - place or event</i>	Colorado River
<i>How is place or event #1 connected?</i>	Emersion [emergence], the migration and the river. They are all connected to the emersion [emergence] place.
<i>Additional comments?</i>	All the places we visited are very significant. Regarding migration, where people stopped and built homes are all sacred places. No matter if they passed on, the people who couldn't travel stayed in the homes. Their spirits are there in all the sights. All sites are sacred to us.

The Zuni Cultural Landscape Map

The field data from the Zuni representatives shows the Flagstaff area monuments as quite central to the migration history of the tribe (Figure 6.4). The details correspond closely with the data collected by Ferguson and Hart (1985). When details of their mapping of Zuni history and activities are overlaid, the close correspondence is further defined (Figure 6.5).

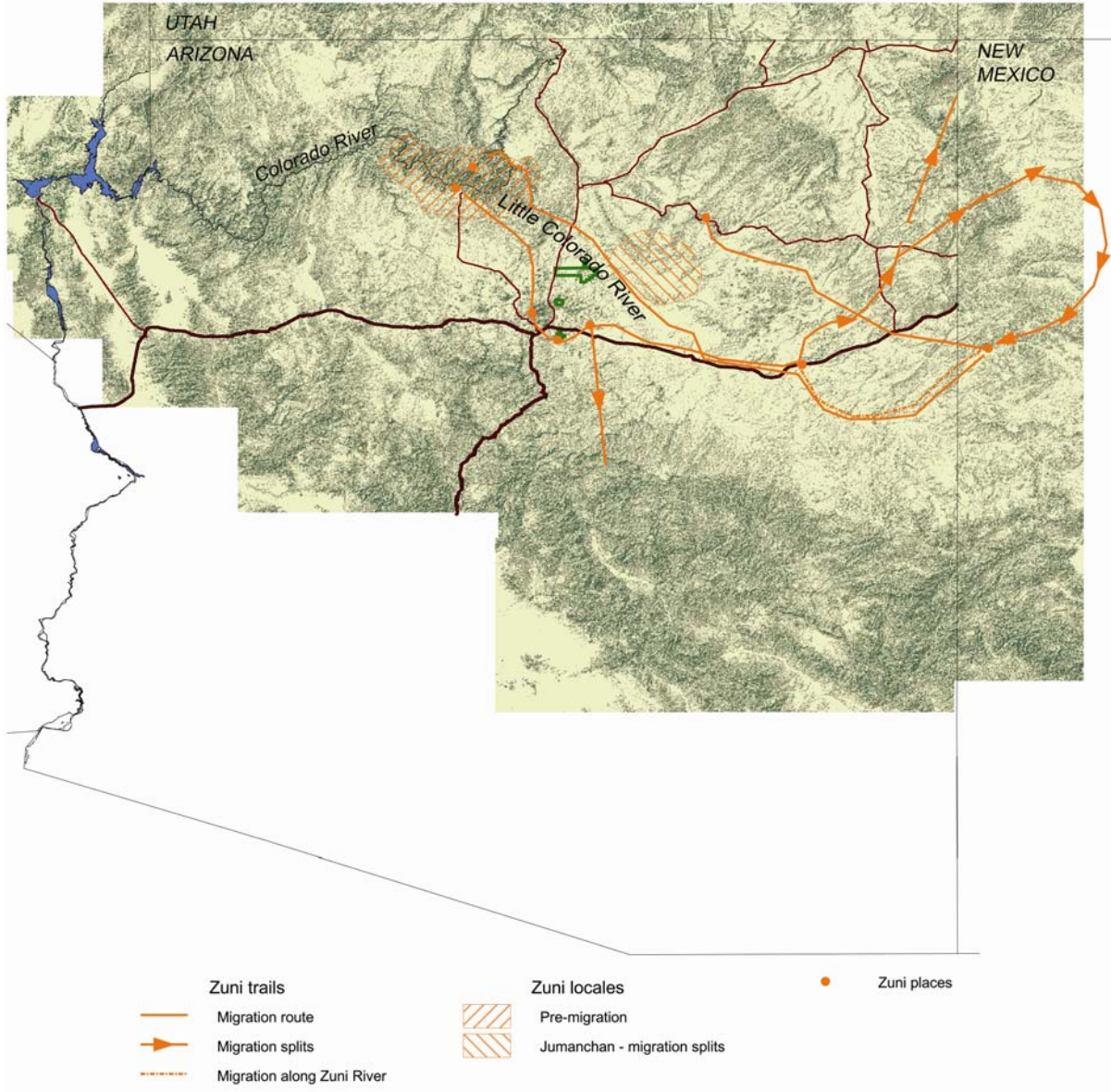


Figure 6.4. Cultural landscape field data from the Zuni tribe.

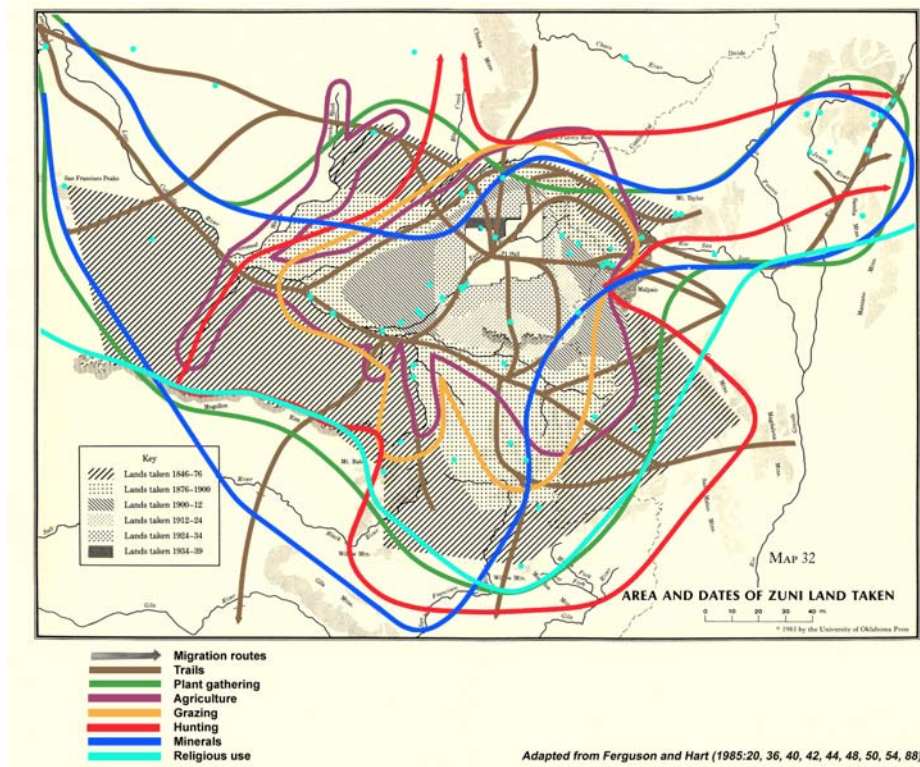


Figure 6.5. Zuni cultural landscape data based on Ferguson and Hart (1985).

Ethnographic Summary

The Zuni cultural landscape stretches well beyond the boundaries of the study area. Their ancestors migrated through the Flagstaff area when they left the Grand Canyon, following nearby canyons and rivers including the Little Colorado River and Zuni River all of which connect to Zuni Heaven. The cinder cones remind the Zuni people of what is below ground including some migration sites that are covered up today. As one elder described, the land now encompassing New Mexico, Arizona, Utah and Colorado is culturally united:

This whole area is aboriginal Zuni land, connected via the Migration in search of the Middle Place. The Migration went from the Mongolian Rim to Eagle Peak, Socorro, New Mexico, to Mount Taylor to the San Francisco Peaks and the Grand Canyon. All these places are mentioned or used in the prayers that Zuni has. The Zuni legend says that they had lived there for four days, which was like 400 years. Then, others would be sent to find a good place until they found the Middle Place. If conditions were good, they would stay in the place for a while, for years, until they moved on. All the settlements in Wupatki are connected to this.

This region has several Zuni names including *Sun hakuse*, *Kiap'hachuya*, and *Sunhakwin* meaning “where the sun goes down.” As the Zuni ancestors migrated over these large expanses, they established settlements where they farmed, gathered wild plants, hunted,

played games, performed ceremonies, held political meetings with other tribes, and observed the changes in the skyline and stars. According to the Zuni elders, the villages of Elden Pueblo, Walnut Canyon, and Wupatki are just a few of the numerous interrelated traditional sites in the region. Each of these settlements, were places that the ancestors founded on their journey to the Middle Place, what is today the Zuni Pueblo. At that time, there were other Indian people living in the area with whom the Zuni interacted including the ancestors of the Hualapai, Havasupai, Hopi, and New Mexico Pueblos. The Zuni people consider these groups to be relatives describing a longstanding relationship with the Hopi people and identifying the Hualapai people as a “subdivision” of Zuni society.

All the places and settlements along the migration trails were connected through an elaborate system of physical and mythical trails, trade, intertribal relations, hunting, gathering, and ceremonies. The trails connected Zuni with places as far away as Laguna and Acoma Pueblos, and Tuba City. Other trails led to ceremonial places and sacred sites. In the 1920s, the Zunis were still making pilgrimages to the San Francisco Peaks along these trails, leaving offerings to spiritual beings, and collecting the necessary herbs and minerals that would be needed when they arrived. Pilgrimages to the Grand Canyon also followed the ancestral trails so that the Zuni people could properly visit their origin place.

Zuni culture and life is supported by many songs. Some are religious and sung only by the medicine fraternities while others, such as prayer-songs, are associated with special places, or performed in ceremonies like the rain dance. Individuals may arrange a song for a special purpose as in the case of a Zuni man who recently composed a migration song about the Hualapai before he passed away. Zuni people also have songs for traveling and for tribal gatherings, and there are many songs are tied to place in the parks and the surrounding area.

Other culturally significant places for the Zuni include Twin Arrows, Winslow, Holbrook, and *Kumanchan*, or Walnut Canyon. The former originated during the Zuni Migration and was occupied for a long period of time before the people separated:

The people, when migrating, would travel in groups. They would stay in places for four days, which may mean 4 years, 400 years, etc. They would leave. The young would travel, but the old and weak would stay in the place.

They made plenty of stops on the way to the Middle Place. In the Arizona area, “Jumanchan” is the place where the people split. They had to choose an egg. Elders tell the story about the parrot and the crow.

After the split, the people who went east went to the Bandelier area. The area is now sacred to all New Mexico Pueblos. This group joined Zuni and brought the Medicine Society. The people who went south are still down there, in the “Land of Everlasting Sun.” The others went straight to the Middle Place, where they live now.

Physical features of the landscape that have important roles in Zuni culture include all the mountains, which are physically connected by underground “roots.” The mountains are

culturally centralized in prayers and accounts of the Zuni Migration. Like the San Francisco Peaks, these sacred landforms were used to navigate during the Migration. Waterways are culturally significant as well, particularly the Colorado River, Little Colorado River, and Zuni River. As one elder explained, “All the waterways are connected to the oceans and the oceans around the world, like an umbilical cord.” As cultural significant phenomena, the Colorado River, Little Colorado River, and Zuni River carry the Zuni people to heaven because they flow to the emersion [emergence] place in the Grand Canyon.

The Zuni River goes to the Little Colorado and the Colorado. Zuni Heaven is there. It's also (on) the migration route.

The Little Colorado runs to Zuni heaven. The path to heaven is the same path as the migrations. It goes back to the Grand Canyon.

In recent times, the Zuni elders taught the children about the importance of their cultural landscape during the annual Indian fairs in Flagstaff. The Zuni also performed dances to help the elders tell traditional stories to the children. One elder described some of the motivation behind the esteem that the Zuni people hold for their traditional use sites in the region:

Where people stopped and built homes are all sacred places. No matter if they passed on, the people who couldn't travel stayed in the homes. Their spirits are there in all the sites. All sites are sacred to us.

The Navajo Landscape

Although the Navajo Nation was unable to participate in this study, their relationship to the study area can be presented graphically. Based on the *Handbook of North American Indians, Volume 10*, three maps show the expansion of settlement areas from the 1600s to the 1800s (Brugge 1983). The Pueblo Revolt of 1680 marked the beginning of Navajo displacement from northwest New Mexico. In response to Spanish manipulations of tribal relationships, the Navajo eventually sought refuge in northern Arizona particularly with the Hopi people. Unable to return to their New Mexico homelands, the Navajo eventually expanded dramatically to the west. Their relationship with the Flagstaff area monuments, consequently, is strictly historic (Figure 6.6) (Brugge 1983).

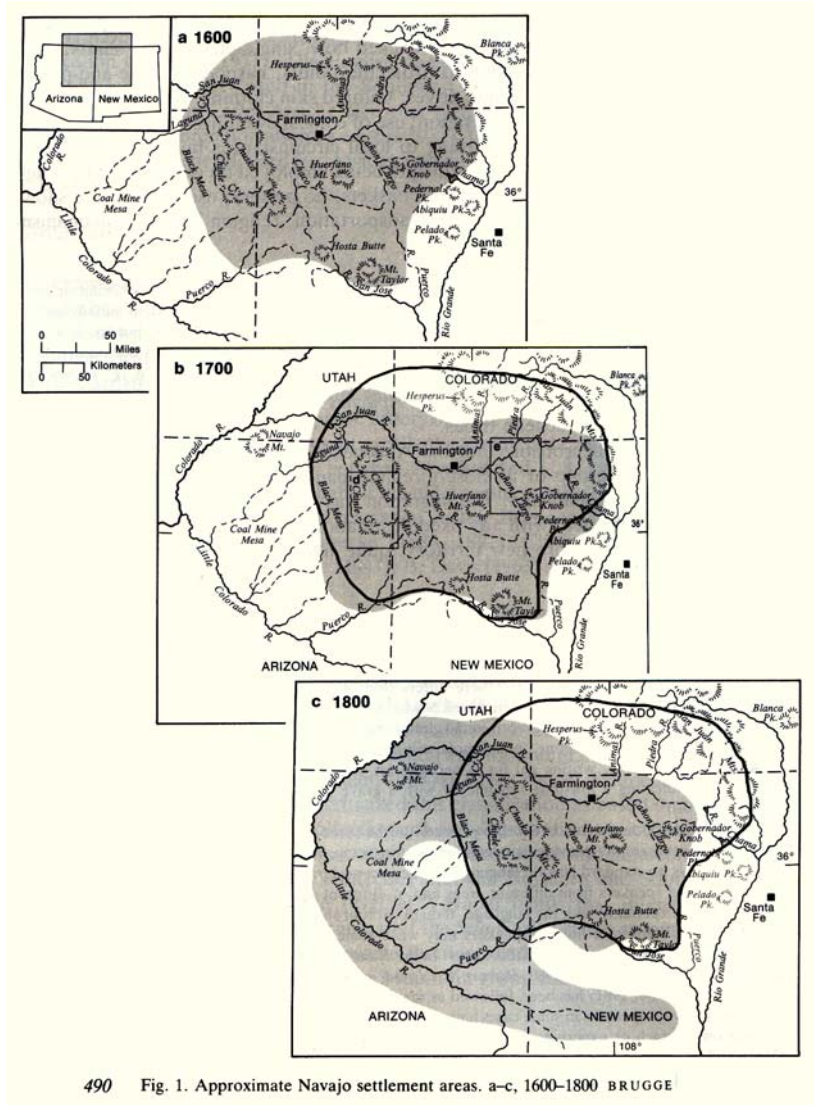


Figure 6.6. Cultural landscape data for the Navajo Nation based on Brugge (1983).

The Western Apache Landscape

The Western Apache consultants represented the San Carlos Apache Tribe, the Tonto Apache Tribe, the White Mountain Apache Tribe, and the Camp Verde Apache Tribe. Differences in responses below reflect differences between these Apache groups. The responses are compiled and summarized in the field data map and ethnographic commentary that follow.

What is the name of this place in English?

Sunset Crater

Sunset Crater

It's the homeland of the old people that lived long ago. They

What is the Indian name for this place?

were at all three places [SUCR, WACA, WUPA].

Dzil'cho, San Francisco Peaks

Inde il ke da' biike yah

Were there Indian villages in relation to this area?

Yes

If yes, which villages and where were they located?

Eighty years ago about. Apache villages were here. Fragments of people are found on jobs such as when they build highways or sometimes on summer getaways. I came out here to the old rodeo grounds when I got married. They would be right around in here somewhere. On Mormon Lake I heard some people talk about them. Apache men from San Carlos worked on the highway. Our relatives did roam these places, we just don't know exactly where. Apache people worked at the university too.

All Apaches. The whole *yú ané*, my mother's clan, villages are connected to these villages.

One of the worst things that Goodwin did to us was, of course, he called us Tonto Apaches, but our original name is *Dilzehe'ée*, that's what we call ourselves. But he called us Tontos. And the worst thing he did was he put in a Mason-Dixon line, and according to his work there's a Northern Tonto and a Southern Tonto. There was no such thing as a Northern and Southern, you know, we were all one people, *Dilzehe'ée*, so as far as use, the primary users of this place would have been my clan, the *yú ané*, but that doesn't mean that the other clans didn't come. And we do that today, I mean, today, Payson is a mecca of acorn trees and has always been, you know; we harvest the Emory Oak for food, everybody, all Apaches, whether it be from White Mountain, San Carlos, and our people all converge into Payson; it's one big acorn picking session.

If yes, what Indian people occupied those village?

There possibly were villages near here because it were a sacred place. The closest here are Navajo, Hopi, and Yavapai-Apache but I don't know if they were here.

Something along the lines of Sinagua or Anasazi but we don't differentiate them that way.

Village #1

The *yú ané* villages.

How is village #1 connected?

Relations.

Were there other Indian people who lived there?

Yes

If yes, who?

Navajo. Hopis. I wish I listened more to my father-in-law. He used to talk about this area a lot. The big mountain. They would call it something meaning "ice peak." Another old man who spoke about an old plant, a certain kind of plant that grows down there that I did not know the name of it. He told us to go to a certain area and see if it is still there. To see if there was plenty of it. But he is gone today. He was in his 90s. He was clear-headed. He was sound-minded. I wished I listened to my father-in-law. He died just last December. He was born in 1906.

If yes, were the area villages connected with villages elsewhere?

Yes

If yes, who occupied those villages?

If the Apache did live up here, I think they would have been connected. My father hasn't told me the stories. My parents were set up in a traditional matter.

If yes, how were these villages connected?

By people and relatives.

*Other Village #1
How is other village #1 connected?*

I don't want to tell the wrong thing. It would be me just guessing.

Connected to San Carlos but also Tonto Apache, the Camp Verde. Also Prescott and down. Some people talked about Jerome. Holbrook. Window Rock. It's a large area. Somewhere around Hopi one of the mesas. The Apaches were there. They were camping. Up into Gallup, Albuquerque, Santa Fe, at Fort Union.

Resource use, relations, pilgrimages, religious activities.

Do you know what the Indian people did when they were in this

Yes

<i>Farming</i>	<i>Gathering plants</i>	<i>Gambling</i>	<i>Ceremonies</i>	<i>Political meetings</i>	<i>Hunting</i>	<i>Looking at skyline/stars</i>	<i>Other</i>
✓	✓	✓	✓	✓	✓		✓

Plant crops and corn in yards back in those days. Working, building a highway. Some just lived in Mormon Lake area.

There's a piñon belt on the way to Wupatki, and piñon picking at Walnut Canyon. Farming, probably, but they probably had a very short growing season. See, one of the practices that people did in the old days was they would plant in the spring and then the people that couldn't go on travel that much, the elders, more or less stayed with the plants and tended them. And those that were able to continue to move around were the ones that went food gathering. And they made a circle ... Verde Valley for acorn picking, then down toward the Payson country; we even went all the way down into the hot country for the saguaro fruit there. We pick them like that, the way the O'odham do, then we dry them. The way they'd do in the old days was you had to pray and everything before you picked it. They dried most of it but now the fresh stuff, they made kool-aid out of it, mix water in it, strain it and drink the juice. And then the dried stuff, that's got a high sugar content; we mixed it with water and ground mesquite for gruel.

Do you know of Indian trails that were connected with this area?

No

Yes

Yes

If yes, can you tell me something about those trails?

No

Yes

Where did the trails go?

Trails up on top of the mountain.

There's a trail that comes around the east side of Mount Elden

	<p>that came through this country. There was a trail that came up through Schultz Pass and came across this country and then went to the backside of the Peaks.</p>
<p><i>Why did people travel these trails?</i></p>	<p>They would have been used, just like anything today, a road, going from point A to point B. There was good piñon picking on the backside of the Peaks. Of course the north side of the Peaks too, there was a specific tobacco picking area. I think that a lot of these trails, besides going from point A to point B, specific trails that provided good camping places. I think the trails were such that they always went through areas that had the resources that they needed. They knew just about how far a day was so they'd usually camp near a spring so to say, a creek, so the trail meandered down through.</p>
<p><i>Were these trails somehow special to Indian people?</i></p>	<p>The trails are important.</p>
<p><i>Do you know of any songs associated with this area?</i></p>	<p>No Yes Yes</p>
<p><i>If yes, can you tell me something about these songs?</i></p>	<p>Yes</p>
<p><i>Are these songs for other purposes?</i></p>	<p>I have heard songs but I don't know if they are about this place. Some of the men may know about that.</p> <p>There are songs for the mountain. Use the old Indian name, same as the Navajos, way before our time. There are songs for the pine trees, songs for water, songs for the spring water, songs for the rain water, songs for the clouds, songs for the sky, songs for the ants, songs for the medicinal plants. Everything has songs. If you are there you hear the songs and you can be taught sometimes by the sacred plants. That's the only way. We can't do without. That's that only way you can find it. Like you said, look at the pine trees all different trees, different names for trees. There are people that know the different names for all the plants. Sometimes they all look alike. Sometimes there is one that is poisonous and the other is good. I won't trust myself in showing you that because I might give you a poison one. I do not know.</p> <p>There's always songs with any kind of a trail. There's songs about this mountain, songs about the place.</p>
<p><i>Do you know of any ceremonies that were conducted at or near this area?</i></p>	<p>Yes</p>
<p><i>If yes, can you tell me something about these ceremonies?</i></p>	<p>Yes No Yes</p>
<p><i>Ceremony #1 - held where?</i></p>	<p>Middle Verde</p>
<p><i>When did ceremony #1 take place and why was it</i></p>	<p>Healing. It was conducted last weekend [May 31st]. They camped for a</p>

<i>conducted?</i>	<p>week in the Verde River for the Sunrise Dance, which is the coming-of-age ceremony for girls.</p> <p>Ceremonies are only private. Everywhere they were. But they didn't let you know. Only the family would know.</p> <p>There are places that you can, that even today, you do certain things. Like for instance you get different plants, greens, which like Douglas fir is [at particular places]. Time, and year, and resources they needed [all dictate the place for a specific ceremony]. There still are specific places where there's that are done for healing, things that are done for thanksgiving but I won't [pinpoint them].</p>
<i>Ceremony #2 - held where?</i>	Flagstaff
<i>When did ceremony #2 take place and why was it conducted?</i>	<p>Thanksgiving.</p> <p>In the 1950s. It was powwow of all different tribes from everywhere. They came to the park to dance.</p>
<i>Is this area at or near your creation place or from where your people migrated?</i>	<p>Don't know</p> <p>Yes</p> <p>No</p>
<i>If the Creation place, where is that?</i>	According to the Tonto, yes. But truthfully I say 'no' but I can't talk about that.
<i>If migrated here, where did they travel from?</i>	No. I am aware of it. But I can't talk because it might be in accordance with your history.
<i>Do you know if there are other places in this region connected to this area?</i>	<p>Don't Know</p> <p>Yes</p>
<i>If yes, what and where are those places?</i>	<p>I will leave that up to the people from the Tonto Nation out of respect for them.</p> <p>It's all part of the whole complex in this area, there's no real separation in the sense that distance-only specific, so in a way what happened here ... the battle between good and evil is part of the creation story because that's why we are who we are today. But yet as the crow flies from Flagstaff to the place where we had our emergence from the underworld ... and also along with our creation story, the flood takes place, and the reason, one of the reasons this is very sacred to us is not only do the spirits live here, but it's the only mountain that didn't wash away in the flood. And to me, it represents stability.</p>
<i>Do you recall or have you heard about historic events here?</i>	<p>No</p> <p>No</p> <p>Yes</p>
<i>Can you tell me something about those events?</i>	Yes
<i>Event #1 - when and where?</i>	Battle between Good and Evil.
<i>What happened during Event #1?</i>	Probably the most important thing is that because the Good overcame the Evil, we are who we are today; if Evil had won, who

	knows what we'd be today (the battle), the flood story, our emergence; ---- was saying this morning that ... look to the holy place and the literal translation ... "where the snow sits"; we call it [sounds like <i>cho ki choa</i>] ... "the big mountain."
<i>Event #2 - when and where?</i>	Flood story
<i>What happened during Event #2?</i>	
<i>Event #3 - when and where?</i>	Emergence
<i>What happened during Event #3?</i>	
<i>Is there any connection between this area and nearby mtns?</i>	Yes No Yes
<i>If yes, what mountains and how are they connected?</i>	Yes
<i>Mountain #1: name</i>	Snowbowl, San Francisco Peaks Mormon Mountain
<i>How is Mountain #1 connected?</i>	It is sacred. They have a ski resort up there. They wanted to put lights on the slopes so people could ski at night. ----- said no because the mountain needed to rest. As a result the lights were not added. Mountain spirits.
<i>Mountain #2: name</i>	Bill Williams
<i>How is Mountain #2 connected?</i>	Mountain spirits
<i>Mountain #3: name</i>	Grand Canyon
<i>How is Mountain #3 connected?</i>	The Grand Canyon was created by Good; it's also a place to get white clay that's used in a ceremony, and the red hematite.
<i>Is there a connection between this area and sections of the Little and/or Big Colorado River?</i>	Don't know Yes
<i>If yes, what section (English name, Indian name)?</i>	There is a name for Colorado River but I can't remember it. The Red River, <i>túlché'e</i> , Colorado River.
<i>How is section #1 connected?</i>	
<i>If yes, what section (English name, Indian name)?</i>	Little Colorado River
<i>How is section #2 connected?</i>	The Little Colorado River was the main river they had to cross when they went to Hopi and trade.
<i>If yes, what section (English name, Indian name)?</i>	
<i>How is section #3 connected?</i>	

Is this area connected to any places or events we've not talked about?

Don't Know

Yes

Yes

If yes, what are these places and/or events and how are they connected?

Yes

Connection #1 - place or event

How is place or event #1 connected?

Connected to the large area. Our roaming places. Remember the rodeo ground story referred to into the site interview.

I think each and every place, they're all intertwined as I said before. I mentioned Mormon Mountain, and also there's Mormon Lake and the country east of it, my clan's old country, so to say, and there's a place there where the turquoise is a real special stone for ... on the men's side. The women are the coral stone, the white coral, is the women's color. There's a place there where there's a spring that these turquoise rocks, so to say, came floating out. That's the name of the place, where the blue stones float up. But I'm not going to tell you where. And those are used for ceremonial reasons. Garland Prairie is a real resource area for the dropseed.

Connection #2 - place or event

How is place or event #2 connected?

Wupatki. Red Mountain. The trail out of Flagstaff, there were two of them ... to the tobacco field. Bill Williams. A lot of things in that country. Cedar Hill and those were the Cedar Hill people that lived in this country. Fossil Creek. Clear Creek. Apache Maid. Stoneman Lake. Forest Lakes. The salt and Porcupine Mountain; now these are all important sites, probably won't tell you why. Garland Prairie. Two mountains near Winslow are important. Travis Trail and Chavez Pass. The general area where the whirlwind, *Sepapuni*, is. Trail from Pumpkin Center, or what we call White Sands. Canyon Creek and Oak Creek.

Additional comments?

I might say something wrong. I have been learning this last year traveling with the cultural department and archaeology. I have been revising the Apache dictionary to get it published. ----- commented that the White Mountain Apache have their own dictionary. When they talk, the accent is different than San Carlos Apache. [That's why] we have separate dictionaries. She lives alone and is just trying to keep busy.

Probably already made the comment. The way the forest service or archaeological project that I have already made a comment about.

One of the main trails that came up out of the Verde Valley came out like this into Flagstaff. What's interesting about that trail is that's the same trail the Navajos used to come and visit us. And then that trail skirted around Oak Creek but then there were trails that went down into here. And Peter Pilles come up with some rock art and he asked me about it, and you know in 1868 when the Navajos were rounded up, some of them went into Oak Creek and lived with

us. In 1875 when they did away with our reservation and sent us to San Carlos, some of us hid out, that's why in Oak Creek there's a place called Indian Gardens and we were there farming. But those petroglyphs, the rock art, in there depict also the Navajo *opi*, the twin story, which ours is similar but we don't have twins, and so he asked me about them. And I said yeah, those guys, especially the Tuba City area, the trail went through here and crossed up in here ... and these guys in Gray Mountain came into here ... and one of the last Navajos by the last name of Bear, when I was a kid, was still living [there].

We just got a story recently that collaborates the story my great grandmother told how they used to spend the night, I mean, they spent the days in here, then crossed at night into Second Mesa to avoid the Navajos in the light. This is an old trail that goes back to the Archaic and connects all the way to the west coast, comes from up the Hopi Mesas, up all the way to the Four Corners to Bluff; it connects to those Chaco roads up in the Four Corners into Utah, comes down here to Wupatki, through, when they relocated from Wupatki down to the Little Colorado through Chavez Pass, through here, then down the ... Coyote Trail, off the Rim, through Camp Verde, over the mountain and then down through Date Creek at Walnut Canyon, the other Walnut on Date Creek, and then down into Hohokam country and on to the Gulf of California. And then it split up and there was a macaw and shell route from the south up to the Four Corners to get plant medicines, and salt and turquoise and hematite going the other way. That's how the macaws came up to Chaco Canyon from the west coast of Sonora. And then shell from the Gulf coast. This was a real nexus for, all through here, Wupatki, Chavez Pass, then down through the Verde, Montezuma's Castle, and then that big ruin Fitz Maurice on Walnut and Date Creek near Prescott. And Wupatki; when they settled in Wupatki in the 12th century, after the eruptions, ... Real interesting paper by Dave Wilcox archaeologist ... wrote 'Wupatki: The Chaco Commercial Nexus' about all this kind of stuff, how Wupatki was a real distribution center for stuff in the south, things going north ... That same trade was going on before the eruptions but then they built Wupatki out here and it became a commercial center and then that route shifted to go through Wupatki.

The Western Apache Cultural Landscape Map

The Western Apache field data reveals an extensive use area within which the Flagstaff area monuments are centrally located. The tribal representatives expressed considerable knowledge of the terrain, its personalities, and its resources reflecting an intimate contemporary relationship.

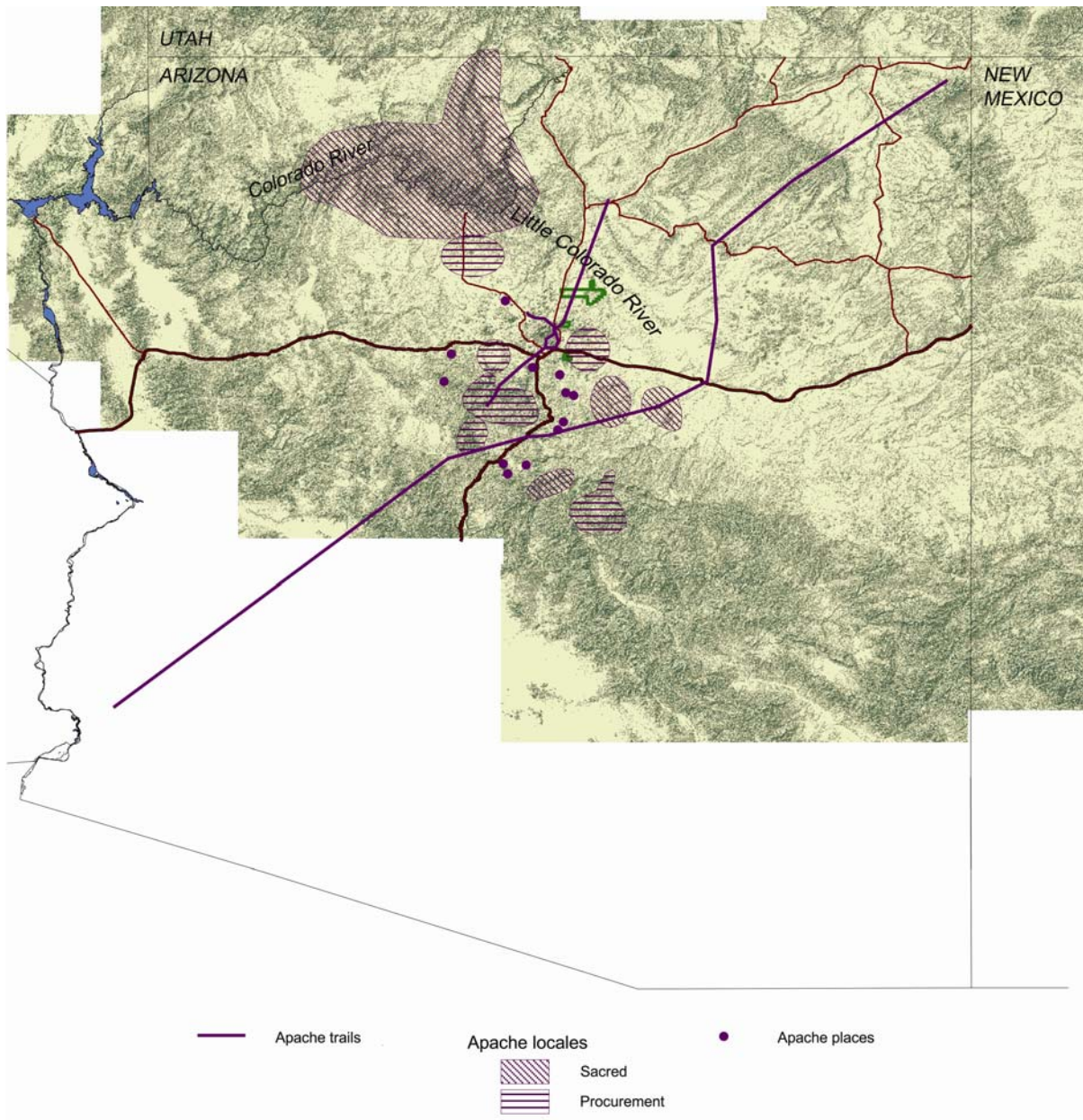


Figure 6.7. Cultural landscape field data from the Western Apache tribes.

Ethnographic Summary

The Western Apache cultural landscape encompasses areas that reach well beyond the present day reservation borders, expanding across the Four Corners region and southward into the lower Sonoran desert. The Western Apache people traveled great distances for

ceremonies, trading, hunting, and plant gathering, which resulted in significant interactions with and impacts on neighboring tribes.

Relationships with other villages, physical and mythical trails, stories, songs, ceremonies, pilgrimages, legends, mountains, and rivers contribute to the fabric of the Apache cultural landscape. The volcanic area encompassing the three national monuments holds critical significance for the Western Apache people as this is where the battle between Good and Evil occurred. The world was shifting out of balance prior to the eruptions of Sunset Crater, and it was during that geologically unstable period that Good and Evil battled for the people. The hornitos represent the houses or wikipus of Evil and are reminders to the Apaches of the struggle that Good won so that the Apache people could become who they are today. Pilgrimages to Sunset Crater and ice caves in the region help them in their own struggle to stay in balance for themselves, their families, and communities.

Apache elders identified many Indian villages having connections to Sunset Crater, Walnut Canyon and Wupatki. The three monuments had ties with villages in San Carlos, Tonto Apache, and Camp Verde areas as well as with Jerome, Holbrook, Window Rock, the Hopi Mesas, and northern New Mexico. One elder explained that eighty years ago there were Apache villages located at Sunset Crater and that, consequently, all Apaches are connected to this area. One elder stated that the villages of her mother's clan, the *yú ané*, were connected to the villages found near and around Sunset Crater. Apache people were connected to this area through family. The elders believe that the Navajo, Hopi, and Yavapai Apache people had villages near Sunset Crater because it was such a sacred place.

The trails used by the Western Apache spread from present-day reservation areas northwest, north, then northeast. Springs and mountains provided landmarks, healing places, and places to seek knowledge and power from the spirits. Areas with turquoise, acorns, tobacco, and piñons were prized, however, plants and animals were used throughout the Apache landscape. Many gathering areas were within the volcanic fields of Sunset Crater and the San Francisco Peaks. Predominant trails in this area include a trail to the top of Sunset Crater, trails around the east side of Mount Elden that pass through the Sunset Crater, Walnut Canyon and Wupatki areas, and a trail through Scholtz Pass to the backside of the San Francisco Peaks. Trails connecting the Flagstaff area to other places in Arizona include those to tobacco fields, the Bill Williams Mountains, Fossil Creek, Clear Creek, Apache Maid, Stoneman Lake, and Forest Lakes. Other trails connected Pumpkin Center (White Sands) with Oak Canyon and Oak Creek. Regarding the importance of the interconnectedness of the area, another elder stated that,

It's all part of the whole complex in this area, there's no real separation in the sense that distance ... so in a way what happened here ... the battle between Good and Evil is part of the creation story because that's why we are who we are today. ...one of the reasons this is very sacred to us is not only do the spirits live here, but it's the only mountain that didn't wash away in the flood. And to me, it represents stability.

The Apache are known as people of the mountains and mountains are central to their religion and way of life. The elders identified five essential mountains in their cultural landscape: the San Francisco Peaks, Mormon Mountain, Bill Williams Mountain, Salt Mountain, and Porcupine Mountain. The Grand Canyon is connected with these places because each one has spirits that live there and interact with each other. The Grand Canyon is another reminder of the battle between Good and Evil because Good made it after he defeated Evil. It is a source of white ceremonial clay and red hematite. The Colorado River or *túlché'e* meaning Red River, and the Little Colorado River were part of this geologic network as important corridors for trade and ceremonial purposes.

Songs are associated with many different aspects of Apache culture and life. The Apache have songs for everything found in nature including the mountains, pine trees, different types of water, clouds, sky, trails, and plants. One elder explained that, "If you are there and you hear the songs, you can be taught sometimes by the sacred plants. That's the only way. We can't do with out. That's that only way you can find it."

One elder said that even today there are places for ceremonies and places to gather resources needed for ceremonies that will be held somewhere else. He explained, "For instance, you get different plants, greens, which like Douglas fir is at particular places. The time, and year, and resources needed dictate the place for a specific ceremony. There still are specific places where there's things that are done for healing, things that are done for thanksgiving but I won't [pinpoint them]."

Regional Landscape

Sunset Crater Volcano National Monument, Walnut Canyon National Monument, and Wupatki National Monument geographically occupy the eastern San Francisco Peaks volcanic field. The results of this study confirm that culturally the three parks are central to the traditions and lifeways of the six ethnic groups of this study, including migration and origin stories. Temporally, these parks embody layered cultural landscapes that begin with the Pai groups, and progress (approximately and/or concurrently) through the Zuni Tribe, the Hopi Tribe, and the Southern Paiute tribes to the Western Apache tribes and the Navajo Nation (Figure 6.8).

Contemporary interpretive emphasis on Hopi and Navajo relationships with the parks, consequently, reflects only a portion of a much more complex multi-cultural landscape that continues to sustain all six ethnic groups physically and spiritually, and remains necessary to the passing on of their identity and culture to the younger generations. The reality of this partial cultural depiction is brought to light when the layered landscapes from this study are considered in the context of the traditional territories of the six ethnic groups (Figure 6.9).

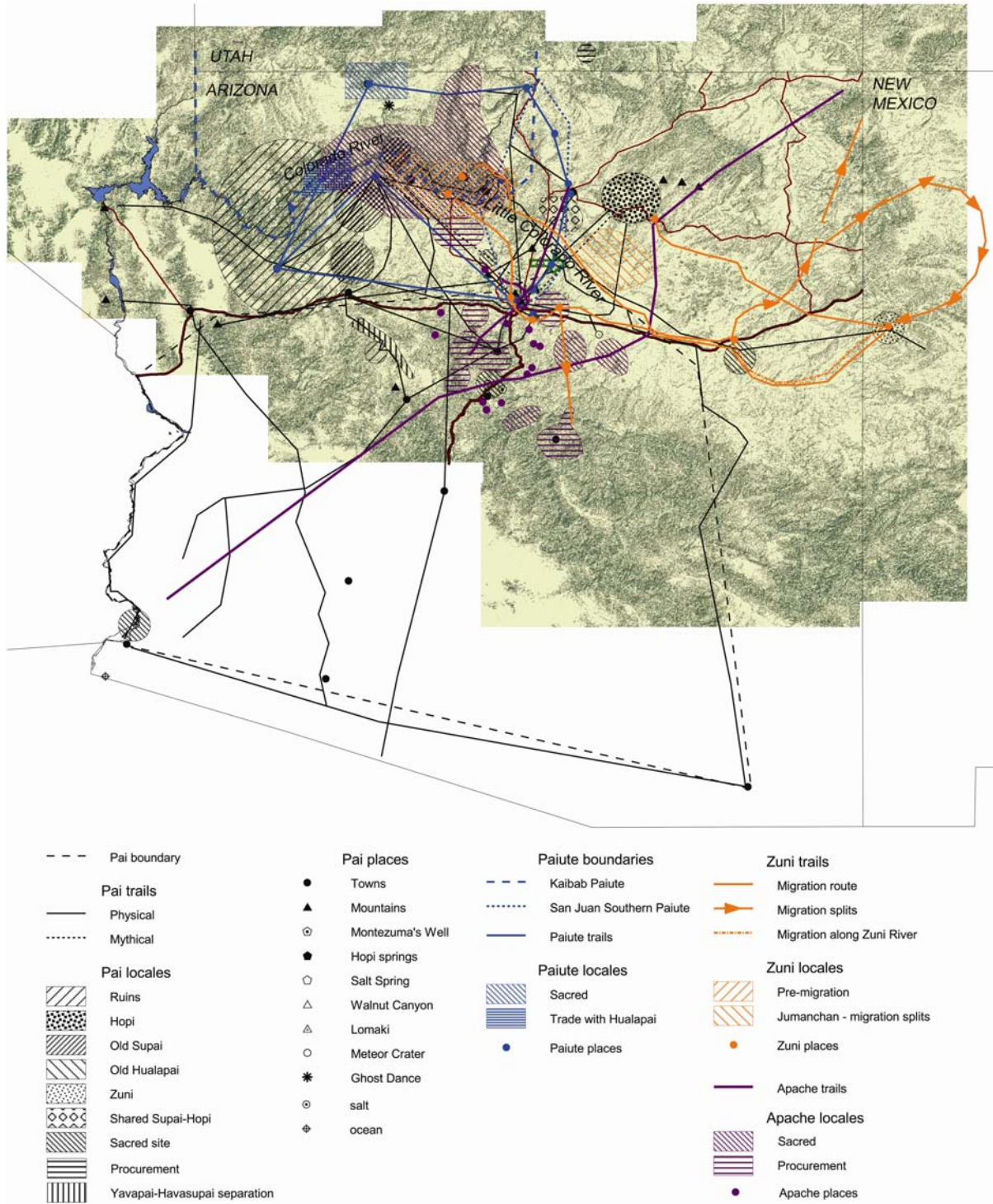


Figure 6.8. Ethnographic landscape data for the Hualapai, Havasupai, Yavapai, Southern Paiute, Zuni, and Western Apache study participants.

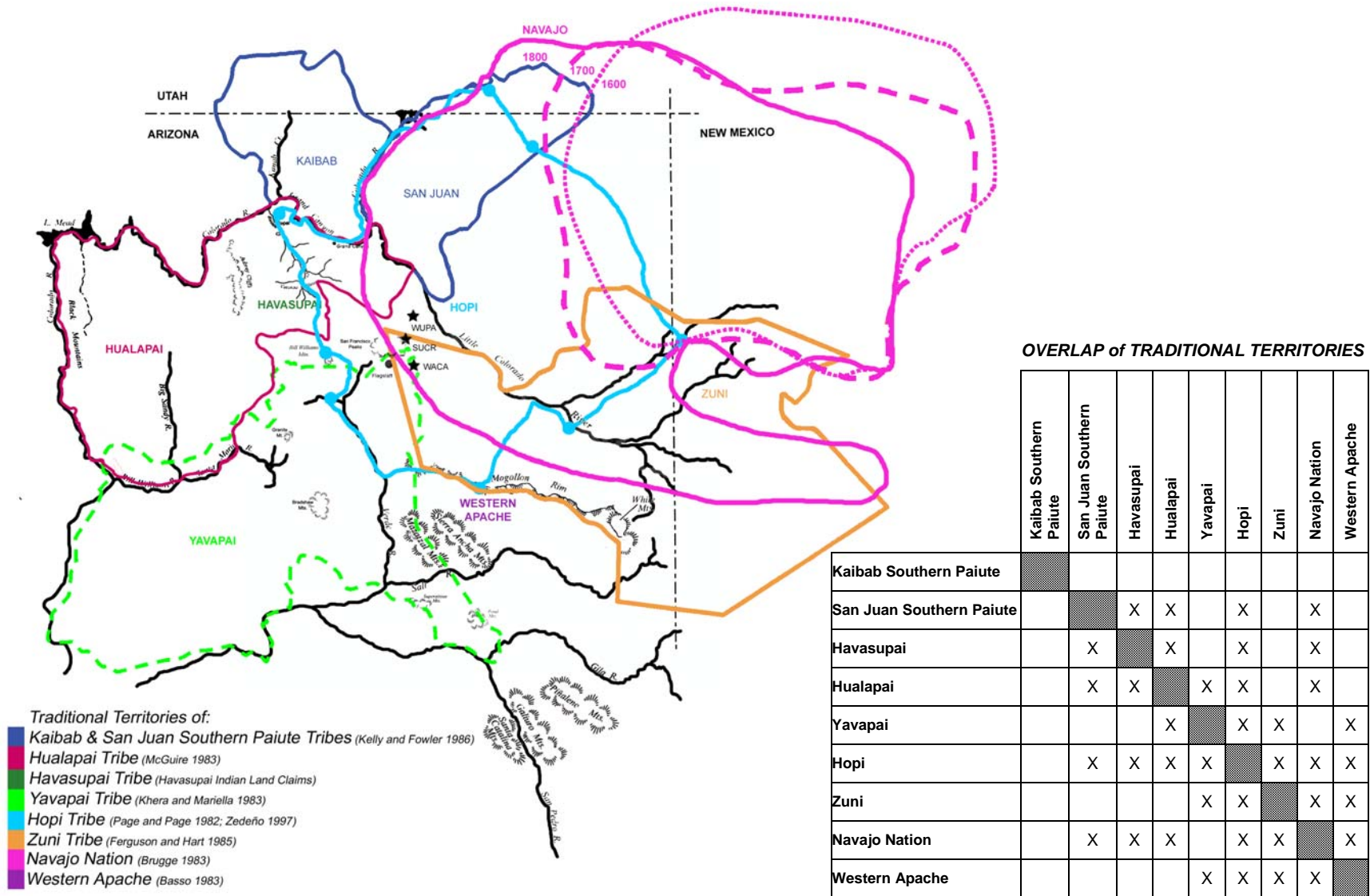


Figure 6.9. Traditional territory boundaries of the Hualapai, Havasupai, Yavapai, Southern Paiute, Hopi, Zuni, Navajo, and Western Apache people.

As the table in Figure 6.9 shows, the traditional territories of most of the nine tribes representing the six ethnic groups show marginal to significant overlap; the Kaibab Southern Paiute Tribe is the only one that has distinct, shared boundaries with no overlap. This difference only reflects the relationship of the Kaibab people to other Southern Paiute bands and does not represent the limit of their use area, which extends south across the Grand Canyon and Little Colorado River to the San Francisco Peaks area, north into Utah, east toward the Four Corners area, and west beyond the Spring Mountains (Stoffle, Halmo, and Austin 1997). The eastern extent lies somewhere beyond Navajo Mountain, which was known previously as Paiute Mountain.

The overlapping territories represent contested areas and/or shared use areas. The recognized relationships among the Hualapai, Havasupai, Hopi, and Zuni people suggest that the significant overlap of their territories reflects continuous shared use interactions rather than conflicts among these groups. As a contiguous east-west region, these territories are bounded on the north by Southern Paiute bands and the Navajo people, and on the south by Yavapai bands and Western Apache people. The overlap of these areas reflects more of a mix of shared use and conflicts. One factor contributing to territorial confusion is the variety and interchange of names used by Spanish and American explorers for the Apache, Havasupai, Hualapai, and Yavapai (Schroeder 1974).

The lack of information about the Pai groups may derive in part from inconsistent documentation about the Yavapai relationship with the San Francisco Peaks area. Maps from as early as 1540, however, show Yavapai occupation as far northeast as the vicinity of Wupatki (Schroeder 1974). In 1776, Garcés was told by the Havasupai, that they fought with the Indians, believed to be Yavapai, who lived in the San Francisco Mountains (Coues 1900). Northeastern Yavapai territory was recorded also as extending to Snider's Water Hole in the San Francisco Mountains, and in 1851, Sitgreaves (1853) referred to the Yavapai in the vicinity of San Francisco Peaks as the Yampais or Tontos based on information from his guide Leroux.

The Yavapai people are believed to have occupied the same general territory from at least 900 A.D. (Bolton 1919, 1930; Coues 1900; Gifford 1936; Schroeder 1974; Thomas 1932). That territory remained relatively constant into the 1870s with the only territorial boundary change resulting from movement by Western Apache people who bordered their southeastern range. In the mid-1700s, the Western Apaches entered the Tonto Basin region, although, the Yavapai people continued to make use of the area; the lower Tonto Basin eventually became an area of cooperative use and intermarriage (Schroeder 1974). The Yavapai people had mixed relationships with other neighboring tribes, maintaining friendships with the Mohave, Yuma, and Tohono O'odham (Papago) people, but engaging continually in conflicts with the Hualapai and Havasupai people with whom they are linguistically related. They also traded with the Hopi and Navajo people, although, during the 1860s, they had conflicts with these two groups (Coues 1900; Schroeder 1974).

The Havasupai had told Garcés that the San Francisco Peaks were on the edge of their territory (Schroeder 1974), however, they also considered these mountains to be the middle

of the world, possibly a result of being able to see the peaks from most parts of their territory (Smithson and Euler 1994). Any conflict they had in the mountains with the Yavapai, whom they told Garcés lived there, would likely result from contested use of the resources. The cultural significance of the San Francisco Peaks and surrounding area is conveyed in Havasupai stories and legends, and in the extensive use of the area by Havasupai shamans. They know that the San Francisco Peaks contain something with which to fight sickness, "...to drive it away and conquer it. This proved to be small red rocks, about a foot long, and cylindrical" (Smithson and Euler 1994:10). Sunset Crater is identified in legend as well. It is the home of the Sun and his daughters, and where the Sun used to live. All the tribes would gather around the crater and play games with the Sun, who always won and was the hero (Smithson and Euler 1994).

The Havasupai people traded a great deal with the Hopi people along trade routes, and when the Hopi visited the Havasupai villages. They also had good relationships with the Hualapai, Halchidoma, and Mojave people. The Southern Paiute people would visit and camp in Pai territories, and in 1890, introduced the Pai groups to the Ghost Dance (Smithson and Euler 1994).

Trading among the tribes was a significant activity that established connections between the Flagstaff area and Mexico, Central America, the western U.S. coast, and the Gulf of Mexico. Remnants of scarlet macaws from Mexico and Central America have been found and are known today among the tribes as part of their oral traditions. The Parrot-Macaw Clan of the Zuni Tribe is evidence of this connection according to the Apache participants in this study. Pai representatives noted the Gulf coast as the 'ocean' source of the first sweat lodge. Pai people acquired a sweat lodge or knowledge of how to construct one on a long journey that took them through Zuni.

The Hualapai territory boundary is further from the San Francisco Peaks than is the Havasupai boundary. Contemporary oral tradition, however, places the San Francisco Peaks as an origin site, a medicinal place, and a spiritual place. As examples of traditional lands that do not include all the historic use areas of the associated people, the Hualapai and Southern Paiute territories illustrate an elusive quality of human-nature relationships. The degree of overlap of the six ethnic groups' territories with the three Flagstaff monuments represents varying levels of interaction, interdependence, and place centrality. The San Francisco Peaks, like other physically significant and highly visible mountains, are recognized as origin sites of water and, consequently, life (Stoffle, Halmo, and Austin 1997; Toupal 2003). They cannot be ignored and when surrounding geologic formations such as cinder cones, ice caves, and blow holes are present, connections are recognized, meanings are understood, and cultures become intertwined.

The formation and eruption of Sunset Crater Volcano represents a turning point in the cultural history of the area, and in the relationships of the people and the land. The construction of settlements during this time frame, and the ceremonial and spiritual emphasis that the six ethnic groups place on the area indicate that people throughout the southwest, and possibly farther, were drawn to the area by the geologic activities rather than driven away. The presence of corn cob imprints in lava rocks suggests direct, life-threatening interactions

with lava flows rather than passive observation. Such activity suggests that the participants were spiritual leaders, medicine people, and/or other specialists. Other participants may have been there to go through some rite-of-passage, or to receive lesions from one of the specialists, a theory that has seen recent archaeological support (Elson et al. 2002).

One possible scenario for life in and around the three parks during the Sunset Crater era is that geologic activity and the eventual eruptions drew people to the area. They constructed buildings for various purposes and some sites appear to have served specific purposes for other sites. The possible relationships between the Citadel and Lomaki, and between Wupatki and Wukoki suggest that Wukoki and the Citadel offered observation vantages that specialists used and from where they communicated with others at Wupatki and Lomaki. Was Walnut Canyon also a support site? Was it another residential base from which specialists conducted their activities? What we can say is that the resources and sites in and around the three parks continue to be significant in the multi-cultural interdependent relationships involving the six ethnic groups, specifically the nine tribes, of this study. That significance is defined in part by the need to sustain cultural traditions and teachings, to interact with the spiritual world, and to effect a world balance that keeps the Creator and the volcanoes at peace.

CHAPTER SEVEN SUMMARY AND RECOMMENDATIONS

The traditional uses and resources of the three Flagstaff national monuments are summarized by identifying resources and uses by tribe. Specific management recommendations provided by participants in the field are summarized by ethnic group for each park. A summary of the contributions this study makes to the 2001 document review follows, and the chapter is concluded with suggestions for future research.

Summary of Traditional Uses and Resources

The most often mentioned traditional uses of the three Flagstaff national monuments include conducting ceremonies, making offerings, teaching children, and gathering plants and minerals. The need to visit places, become reacquainted, to teach their children has to do with reestablishing their responsibilities to the land, the ways to care for it, and to remind themselves of who they are and from where they come.

While plant and mineral resources were identified by the tribal representatives, few specific species or minerals were discussed due to cultural rules of sharing knowledge. As one Southern Paiute participant explained, “Spring is the wrong time to talk about medicines.” Table 7.1 summarizes the identified resources by tribe and use. Additional ethnobotanical data can be found in Appendices C-H.

Table 7.1. Traditional use resources and the ways in which these are used by the Pai, Southern Paiute, Zuni, and Western Apache tribes.

Category	Resource	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Legends	Weaponry	Other (unspecified)
	Serviceberry	Hualapai											
	Snakeweed				Hualapai								
	Squaw bush	S. Paiute W. Apache											
	Stickleaf	Hualapai											
	Sugar pine	W. Apache											
	Sumac	S. Paiute	Hualapai		S. Paiute								Zuni
	Sunflower	Hualapai											
	Tansy mustard	Hualapai	Hualapai										
	Walnut	W. Apache S. Paiute Zuni Hualapai											
	Wax currant	Yavapai Hualapai											
	Wild grape	Hualapai											
	Wild rose	Hualapai											
	Wild spinach	W. Apache											
	Willow		Hualapai		W. Apache Hualapai								
	Winterfat		Hualapai	Hualapai							Hualapai		
	Wolfberry	Hualapai	Hualapai	Hualapai	Hualapai						Hualapai		
	Wright's beebrush		Hualapai										
	Yucca	S. Paiute Zuni	Hualapai	Zuni	S. Paiute Havasupai Yavapai Zuni Hualapai			Hualapai	Hualapai				
Animals	Bobcat												S. Paiute
	Mountain lion												S. Paiute
	Mountain sheep												S. Paiute
	Deer	S. Paiute Zuni Havasupai W. Apache	Zuni	Havasupai Zuni S. Paiute W. Apache	Zuni S. Paiute Yavapai				Havasupai Yavapai S. Paiute W. Apache				Yavapai

Table 7.1. Traditional use resources and the ways in which these are used by the Pai, Southern Paiute, Zuni, and Western Apache tribes.

Category	Resource	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Legends	Weaponry	Other (unspecified)
	Turkey	Zuni			Zuni								Zuni S. Paiute
	Rabbit	Zuni W. Apache	Zuni	Havasupai	Zuni				Zuni				S. Paiute Yavapai
	Coyote			Havasupai									Yavapai
	Eagle			Havasupai									Yavapai
	Raccoon												Yavapai
	Fox												Yavapai
	Flaker												Zuni
	Bear		Yavapai	Yavapai							Havasupai		
	Hawk		S. Paiute	Havasupai S. Paiute	S. Paiute								Yavapai
	Chipmunk												S. Paiute
	Prairie dogs												S. Paiute
	Squirrel	S. Paiute Zuni											Zuni
	Trout	S. Paiute											
	Elk	Zuni Yavapai Havasupai	Zuni										S. Paiute
	Porcupine	Zuni											
	Antelope	Zuni	Zuni										S. Paiute
	Blue jay		Zuni	Zuni									
	Packrat	W. Apache Zuni											
	Fly			Zuni									
	Quail	W. Apache											S. Paiute
Minerals, Geologic features	Lava rocks		Yavapai	Yavapai S. Paiute	Zuni S. Paiute						Havasupai		Yavapai Havasupai
	Hornitos, spatter cones										W. Apache		Yavapai
	Mountains										Havasupai		
	Sunset Crater			Havasupai Zuni S. Paiute Yavapai							Havasupai W. Apache		Zuni

Tribal Recommendations

The following recommendations and related comments come from the tribal consultants. These are paraphrased or quoted as necessary and organized by park and ethnic group. The predominant themes in these comments include inter-tribal cooperation, multi-ethnic cultural interpretations, needs for access to conduct ceremonies, making offerings, teaching their children, conducting an inventory traditional sacred sites, plants, and minerals, and gathering plants and minerals. All of the groups expressed appreciation for the Park Service's protection efforts and willingness to provide them access for traditional purposes when requested.

Sunset Crater Volcano National Monument

Pai Tribal Representatives

The Pai consultants expressed concern about an apparent lack of security, bathroom maintenance, and problems with tourists littering, particularly cigarettes. They felt that visitors who treaded off established trails were a problem that illustrated a general lack of respect from the visitors. They suggested that more signage might help control people and minimize damage to resources, but would like to see night-time closure and security.

There should be patrolling rangers who are sociable and approachable. Maybe volunteer retirees would want to be rangers. Also, they should put up signs about respecting the rocks. I saw one person banging lava rocks on each other, then throwing them.

The Pai consultants felt that indigenous people should be on-site more to serve in interpretive roles at the trail markers and possibly as rangers to help monitor visitor behavior. They could talk about traditional use of the area by their people but they would also like to see more about that in the interpretations at the Visitor Center.

These consultants confirmed tribal desires for access to the park for traditional practices such as prayers, vision quests, plant gathering, and collecting feathers. They would like to be able to conduct ceremonies at the top of Sunset Crater, and make astronomical observations as well. While the Supai have been less vocal about their spirituality and culture, they have affiliations in this area and retain knowledge of volcanic eruptions in their stories and legends.

One shaman who went up to the San Francisco Peaks when there was still volcanic activity, the wind and volcano gave him power.

One Pai consultant expressed a desire for park managers to develop resource use agreements with the tribes who want access for their traditional practices. The Pai consultants would like to work with the park as well on revegetation projects designed to bring back the wildlife and on controlled burns. They would like to obtain some post-burn materials including trees [deadwood].

Southern Paiute Tribal Representatives

At the Lava Flow Trail, the Southern Paiute consultants expressed concern about human remains they recently (2001-2002) learned about relative to the park. They indicated a pressing desire to consult with the park about these remains. They would also like to see more protection for the ruins.

These consultants expressed feelings similar to the Pai consultants regarding the need to bring back the wildlife, however, they felt closing the park to visitors would be necessary for that to happen. Their concerns reflected a sense of the park being out of balance as a result of too much non-Indian activity and a lack of traditional Indian practices. Another sentiment they share with the Pai consultants is the belief that the geologic features are suffering from a lack of Indian use. One such feature is the caves in the park; the Southern Paiute consultants would like access to the caves, which are important sources of songs needed for ceremonies, rituals, and rites-of-passage (Stoffle et al. 1998). They also would like to be able to camp and have fires during traditional activities within the park.

At the Visitor Center, the Southern Paiute consultants identified plants, animals, and trails as needing more care and protection. Traditional harvesting, pruning, and burning were suggested to improve plant condition. While they identified animals as suffering from a lack of use and care, they did not specify remedies. The consultants felt the trail boundaries need to be improved, that visitors need to be kept on the sidewalks and trails, and that fences are needed to keep people off the lava beds to avoid crushing the rock. The consultants expressed mixed feelings about impacts from visitors and traffic including pollution. Several of them suggested improvements to the bathroom facilities.

The Southern Paiute consultants would like access to the park so that they can teach their children about how their people lived in earlier days. They would like to harvest plants for traditional uses, such as sumac for baskets, cedar for medicine, and cedar branches for warding off evil. The Kaibab representatives emphasized contacting the San Juan Southern Paiutes to discuss their needs for access and traditional use of the park.

Zuni Tribal Representatives

The Zuni consultants expressed concern about the volume of traffic and impacts of the visitors including going off trails and littering. They described the park as a place of prayer and meditation that should be protected and treated with respect. They would like the visitors to know that the park is a sacred place to the tribes and that, consequently, they need to be more respectful and quiet. "The crater has power. It was saving the people back then." These consultants would like to see the trails improved and more signs put up to direct people to stay on the established trails.

The Zuni consultants were glad to see the ice cave was protected with heavy iron gating but emphasized continued Native American access for prayers was just as important. They would like to see the trail routed away from the ice cave altogether to keep non-Indian visitors away from the entrance, and emphasized that the public should not be allowed in the ice cave.

They were not concerned about the wildlife because “wild animals are supernatural beings and have supernatural powers. They are the relatives of the Zuni and are brothers and sisters to the Zuni. Animals can take care of themselves and are smarter than humans,” and “they know springs better than we do.” These consultants, however, would like to make offerings to the animals as signs of traditional respect and interaction. They would like also to do an extensive plant inventory in the months of July and August so that they can make proper recommendations to the park for access to gather plants.

NPS is changing policy; [it's] getting easier for tribes to collect on park land. The park service [is beginning] to understand that we don't take the whole plant, just what we need.

Collecting trims the plant down a little and it would help the plant.

Other requests from the Zuni consultants include opportunities for offerings and prayers, for collecting plants in the park for offerings, for on-site teaching of their culture and traditional ways to their children, and for more protection of the park and surrounding area. The latter request includes a desire to have the San Francisco Peaks nominated as a Traditional Cultural Property, particularly an area of different sand that they traditionally collected for mineral pigments.

We need to know more of parks and see if there are places where we need to bring our children to teach our culture and traditions.

Our different societies need to collect plants, minerals, soil, and cinders, and make pilgrimages to the ice cave.

We would like to make offerings with proper arrangements with the park. This was demonstrated today as Zuni came onto the monument and were given access to the ice cave in order to make their offerings.

Other management issues that the Zuni consultants would like the park to consider include using more than only Hopi names on the signs, and monitoring the public more to protect the resources. They would like a co-management arrangement for interpretation as well.

We want to have a say in what visitors know, including interpretations and maybe a cultural day.

Western Apache Tribal Representatives

The Western Apache consultants expressed concern about the drought and people pumping water to desert areas because the water “has its own songs and we have songs about the water, water songs about the trees and pine trees.” The consultants feel the animals are

being affected negatively by the tourist activities, however, they did not make recommendations for improving the animals' condition.

The consultants stated that it was difficult to make management recommendations without consulting their tribal advisors but they felt that things would be better without the campgrounds and tourists. They also expressed concern about sharing knowledge including what was shared and with whom.

Probably an inventory of some real, so to say, potent plants ought to be undertaken to see in fact what we have here and that would be a cooperative effort on all the people that have ties to here. And then that way, we have kind of a sense of what's here and also be able to, if they begin to start disappearing, then maybe we should start doing something about it. Then we could make recommendations.

*One of the things is the less said about it, you know. It's along the same sense that when we, well to give you a good example, Keith Basso. When he did his book called *Wisdom Sits in Places*, his informants went out and they showed him a lot of things and he just, with his help and their recommendations, they stayed away from all things that are very sacred. Their attitude was that if they let this out, then people that really don't need to go there ... they don't know what it really is for, or [will] disrupt all the different harmony so to say, that [has] gotten out of place. And then the other problem is that with this day and age, with all different sects, like the new age crystal people, they would flock to places like that and desecrate them so, and I feel kind of the same way like with these wikiup things {spatter cones}, and where the corn kernel impressions... and, well, the ice cave is a good example too, that, you know, the less said about it...*

Access to the park is important to the consultants particularly for teaching the younger generations about their history with the area, about medicinal plants, and about sacred places in the park like the spatter cones, the ice cave, and other features in places that the public does not see. Special accommodations might be needed for elders to access these places as well. One consultant gave the example of a resort in Boynton Canyon near Sedona where there is a trail that is locked. On the last day of February, the Apache people go to pray there with a medicine man. This consultant wondered whether something similar could be arranged at the park particularly with and for the elders who know about the place. In their discussions about access, these consultants also felt an agreement among the various tribes would be good so they did not conflict with each other's practices.

These consultants expressed a need for a blessing ceremony for the park area. One consultant thought it would need to be in the spring and that overnight camping would be necessary.

... say March or April and we would come in here ... again with all privacy due it, it would not be a public thing. Probably a one day thing, I

don't know; some of the elders might say four days because the mountain spirits live up there [San Francisco Peaks] and they ask them to come down and dance and so they may ... it would be at night, so we'd need to be able to stay overnight.

If you offered prayers you must do it whole heartily [heartedly], do it sincerely, observe all the rules. But some people don't listen or respect it and that's why it is throwing us off. ... You have to live it to know. ... You rely on integrity and spirituality. Always be truthful and have integrity. ... A lot of these things, even among ourselves, are not ... everybody knows and because of that there are a lot of things that are said or done, or like I said, pilgrimages; only the few that still remember and know and respect it still do these things. They need to know; because they don't know these things, and they don't do these things anymore, that a lot of bad things are happening. We need ... to go back to our roots like this place here. We need to tell them again so it can still be a living thing. ... When we tell this story of what happened here between good and evil, and why it happened and why we have to...because it's still today, it's a living part within our heart that sets a path for you to live the way you're supposed to. ...I guess the crux of the conversation is that this place is a very holy place."

Walnut Canyon National Monument

Pai Tribal Representatives

The Pai representatives' interest in Walnut Canyon focused on ceremonies, NAGPRA issues, and general management concerns. They felt that medicine men and spiritual leaders should hold ceremonies and make offerings to renew the traditional relationships with the place and to improve the general condition of the place. According to the consultants, Walnut Canyon is a Pai storage place, "the refrigerator of the Pai people," and a place for gathering.

Recognizing multi-ethnic connections to the park, these consultants suggested having a Park Service-sponsored meeting for all the affiliated tribes to work out access and NAGPRA issues. Such a meeting would require offerings to set a good tone for the meeting. They would like to see cooperation among the tribes and the park that would include having representatives from each tribe at the visitor centers to teach the visitors about their histories with the park, to balance the Sinagua focus with more about the multi-ethnic history, and to spread responsibility among the tribes. The consultants stated that Walnut Canyon was open to tribes from all areas, and that the Yavapai and Supai were related. Because the Cohonina were closest to the Hopi, the consultants recommended the park take the "probably" out of Cohonina-Hopi relationships.

The consultants were troubled by broken pot sherds, graffiti and urine in the habitations, posted plant information, and feelings of discomfort around park rangers. They would like to see more monitoring of visitors, signs encouraging more appropriate behavior, and friendly attitudes among the rangers. The consultants felt that the posted plant use

information would encourage visitors to use the plants, possibly endangering themselves. They would like to see the use information removed from the signs.

The Pai consultants would like more access to the dwellings on the north-facing walls of the canyon, to other dwellings that are closed to the public, and to petroglyphs to make offerings. One consultant felt that the petroglyphs could have been made by the [*Kamee*] clan that was there at some time. They would like to be notified of excavations, particularly burials, to be escorted to sites, and granted privacy at the sites if they felt the need for it. Access during the winter is important because it is a time when they can talk about the ancestors and legends of *Juka* (ancient people), and it is a good time for ceremonies.

Southern Paiute Tribal Representatives

On the Island Trail, the Southern Paiute consultants acknowledged the plants were in poor shape from the drought but also from a lack of traditional practices such as ceremonies, proper gathering, thinning, and burning. They indicated a need to conduct their songs and traditions to bring back the rain, and access so their children could see how the old people lived in this place.

While the consultants felt the place is well-protected now, they pointed out where people had touched the “homes,” which they equated to vandalism. They recommended closing sections of the ruins walks to protect the dwelling walls, protect the walls beginning with those places where the ruins are clustered, and rotate the closed sections to minimize visitor impacts.

Zuni Tribal Representatives

The Zuni consultants stated that they do not mind having other people visit the ruins as it is a way for them to learn about Zuni history and culture. They recognized Park Service efforts to stabilize the ruins along the trail and although it has not been in the manner they preferred, it was good that the Park Service continues to stabilize them.

The consultants would like visitors to stay off the walls and stop urinating in the rooms and on the walls. They feel it is important for visitors to recognize it is an important place with shrines and for worship, and would like to see the park rangers continue to monitor and protect the place from visitor impacts.

The Zuni consultants recommended that the Park Service not deny access to anyone with traditional connections to Walnut Canyon who needs to leave offerings or gather plants. They recognize that tribes have been given permission in the past for access to plants and materials needed for ceremonies and hope this will continue. They also need to conduct ceremonies and make connections with their ancestors who remain in the park, and to bring their children for private lessons about their traditions and culture. One consultant suggested arranging for one- to two-day cultural events when the park would be open only to the tribe for teaching their children, for offerings. They also need privacy for gathering plants although they did not suggest additional days when the park would be open only to the tribe. Possibly non-public areas might be made available to them for this activity.

Zunis are still making offerings but are discrete about it in places where people won't notice. ...Zunis always take their corn meal that already has small pieces of turquoise in it and wherever they stop and make an offering it is like a church. They don't use things like prayer sticks or prayer bundles.

The consultants felt changes are needed to the visitor center. They identified a need to include Zuni and all ancestral Pueblo people in addition to the Hopi because they too are descendants of the people who lived in this area. As suggested during a previous consultation, the consultants would like to see Zuni names as well as Hopi names for sites and the crops being grown in the visitor center garden.

Wupatki National Monument

Pai Tribal Representatives

The Pai consultants identified significant natural impacts to the ruins such as too much wind and a lack of rain. They said that both problems derive from a lack of Indian ceremonies for rain, a lack of respect, and tourists being too close to some sacred places. The consultants observed cigarette butts, scratches in some of the stones, and people throwing sand in the blowhole and rocks in the ballcourt. They stated that these behaviors along with the cars and modern buildings are disturbing and changing the spiritual balance of the park. They noted that the visitors did not make offerings or prayers, and that they need to know they are in a sacred area because they bring in all kinds of spirits including bad spirits; prayers and offerings would protect against that. The consultants pointed out that visitors pretending “to be the people from the past [playing games] while in the ballcourt” was “alright.”

The consultants would like to see access restricted to protect the spiritual balance of the place. They would also like to see the park adopt stabilization methods more like the ancient methods of construction rather than rely on metal and other modern techniques. The grill over the blowhole was recognized as a good effort by the park to protect it and visitors, but the consultants said it also encroaches on the spirit and function of the blowhole. They explained that rather than block the blowhole, they traditionally did not allow children to go near such places given the danger unless they were young shamans.

The consultants recommendations included more protection for the first stop [on the main Wupatki trail] and an emphasis on the sacredness of the place especially through programs explaining that sacredness. They felt such a program should be developed by all the culturally affiliated tribes and that tribal representatives should participate in the interpretation.

The Pai consultants would like to not have to pay entrance fees as the parks are part of their traditional areas. They would like to hold special ceremonies involving all the people traditionally associated with the area but away from public view and access. One consultant suggested arranging a special area away from the public for their camping and ceremonial needs. Other needs for access included for prayers, offerings to the old spirits, and to bring tribes together in an annual gathering of traditional sharing. The consultants said the tribes

also need to bring their children so they can learn about their culture. One of the main reasons the children need to come to the parks is to pray for rain, which will help them create a spiritual foundation. They emphasized that it was important to keep all these things traditional and avoid political aspects.

Southern Paiute Tribal Representatives

The Southern Paiute consultants noted that the prairie dogs were not coming out of their holes and that was an indication that something was wrong. They were concerned as well about the condition of the ruins and the way some visitors treated them. Their recommendations were for education, maintenance, and access including restricted access.

Clean up the picnic stop, add chairs and unlock the restrooms. Have more information available about the land, so tourists care about what they're doing. The information in the visitor's center was good, but there should be information on the San Juan Paiute. The people who lived here may have become Southern Paiutes.

Access to the hole should be limited. It isn't an air conditioner. They should limit access to the park. The people that come here don't know how to take care of it.

Put up wire fencing to keep people off of it [the ruins]. Have people look from the outside, or completely rebuild it.

The hole should have a banner around it so tourists can't get too close. It could make them sick.

The consultants identified needs for access to plants, animals, and water for ceremonies and dances. The traditional practices they recommended include harvesting plants, winter burning, and prayers.

The older people need to pray to bring in rain. The people who make the rain are gone [but] the wind just may have a song to make it rain.

Zuni Tribal Representatives

At the Citadel, the Zuni consultants identified plants, trails, and ruin walls as needing protection and monitoring. They would like access for visiting ancestral sites and gathering plants, particularly for species they do not have at Zuni such as “Mormon tea, white flower bush, hackberry, and salt berry.” Traditional prayers are needed also for protection of the resources.

At Doney Mountain, the Zuni consultants talked about impacts from park visitors at the ruins and along the trails. They noted places where the rock was shiny from oils or sunscreens, and where people had strayed off the established trails and trampled on plants. The consultants felt the protection measures the park has taken were good but the modern techniques for stabilization gave the ruins a “funky” appearance. They would prefer a better

balance between the natural look and stabilization techniques. While they recognized the possible need to use cement, they indicated it would block circulation and spirits, which would disrupt the balance of the place further.

The consultants suggested more monitoring of visitors, more clearly defined trails, providing visitors with information that would give them a better understanding of and responsibility for protecting the resources. They are concerned about existing signage and would like to see information about Zuni people and other Indian people on the signs and in the visitor center. Presently, only the Hopi are shown as the descendants of those who saw the eruptions of Sunset Crater Volcano.

Zuni are the brothers of the Hualapai. When these people were created, the Hualapai went there and stayed while the Zuni and others went east in search of the middle place, which is present day Zuni. On the migration some peoples went south and others north while others went east to the middle place. Those that went to the south are the people of the everlasting sun which means the summer time. Those that went south took the parrot with them. Those that went to the center took the crow. The elders talk about the link between the Zuni, Hualapai and the Hopi and know more about it.

We need to set the record straight. Park Service is only mentioning Hopis. The Rio Grande tribes need recognized; ancestral pueblos should mean all pueblo tribes. They need to write down an accurate account that tribes review, then that needs to be what all NPS employees tell visitors. They need the tribal view, maybe set up times for the tribes to share their stories directly with the visitors.

The hills are also parts of the migration of the Zuni people.

Make interpretations straight of how the land was used, why people lived here; not like that girl's [volunteer at Wupatki] talk this morning - using fibers for cloth and diapers. There aren't any plants here that we use that way.

The Zuni consultants would like access to springs for ceremonial use and to plants for prayer sticks. They suggested a reconnaissance of use plants so they could make recommendations for care, harvest, and access. They felt they probably would need two or three different places for collecting plants and privacy to do so. The consultants would like to locate and identify meditation places and ice caves, and make offerings to these features and the blowhole. Such ceremonies would require privacy and possibly closing areas to public view. Ceremonies for the ice cave and blowhole, for example, would require private access every four years. The consultants would like to visit ancestral sites in the park. For such visits and at ceremonial times, their elders might need transportation assistance from the Park Service. They also feel they should not have to pay for access to their traditional places.

As part of their traditional management practices, they would need to gather seeds from certain plants before a burn so that these could be reseeded afterward. They

recommended looking to trees and other plants for indications of whether these could survive a burn, such as whether they were dry or had adequate sap.

At Lomaki, the Zuni consultants said it was good for visitors to see the places in the parks because these showed them the history of the Zuni people and others. They felt, however, that the park needed better control over the visitors as they saw children climbing on walls at Wupatki. They thought more information, possibly through signage, might help visitors to understand the places better and be more careful about protecting the sites.

The consultants said access was necessary because they still make pilgrimages to different places that are “stops along the way at places in the prayers” such as to the Grand Canyon for minerals, paints, and materials for prayer sticks. They would like access for gathering medicine plants and paint minerals, and for visiting springs. Plant gathering would require privacy, offerings, and ceremonies so that the plants would return the next year.


Contributions of Traditional Use to Affiliation Review


The purpose of this traditional use study was to improve the anthropological evidence of cultural affiliation for the Pai, Southern Paiute, Hopi, Zuni, Navajo, and Western Apache people. As such, the results address only a portion of the data needs identified in the 2001 document review. The extent to which this study addresses those data needs is summarized in the following tables. Table 7.2 shows the enrichment of anthropological evidence that was a goal of this study. Table 7.3 shows the temporal contributions of the new information. Table 7.4 itemizes the original needs list (Table 2.7) as those needs that have been addressed adequately or in part by this study, or that still lack sufficient data. Those needs that were expected to be addressed by this study but remain unmet are the result of either too few participants or no participants.

Park	Tribe	Anthropological	Archaeological	Biological	Folkloric	Geographical	Historical	Kinship	Linguistic	Oral tradition	Other
SUCR	Apache	x	x	x	x	x	x	x	x	x	x
	Hopi	x	X							x	
	Navajo	x	X	X	X	x	X	X	x	X	X
	Pai	x	x	x	x	X	x	X	x	X	x
	Paiute		x	x	x	x	x			x	x
	Zuni	x	x			x				x	
WACA	Apache	x	x	x	x	x	x	x	x	x	x
	Hopi	X	X	X	x	X	x			X	
	Navajo	x	X	X	X	x	X	X	x	X	X
	Pai	x	x	X	X	X	x	X			x
	Paiute		x	x		x				x	x
	Zuni	X	x	X		X				X	
WUPA	Apache	x	x	x	x	x	x	x	x	x	x
	Hopi	X	X	X		x				X	x
	Navajo	x	X	X	X	x	X	X	x	X	X
	Pai	x	X	x	X	X	X	X		X	x
	Paiute		x	x	x	x	x			x	x
	Zuni	X	x	X		X				X	x

Table 7.2. Changes to 2001 Review of Evidence of Affiliation

x indicates 2001 Evidence Found, **X** indicates Evidence is Adequate

 indicates New or Additional Evidence Identified in this Study

 indicates New or Additional Evidence provides Adequacy

Park	Tribe	Traditional	Aboriginal (time of extinguishment, mid-1800s)	Historic	Today
SUCR	Apache	x	x	X	X
	Hopi	x	X	X	X
	Navajo	x	X	X	X
	Pai	x	X	X	X
	Paiute	x		X	
WACA	Zuni	X	X		
	Apache	x	X	X	X
	Hopi	x	X	X	X
	Navajo	x	X	X	X
	Pai	X	X	X	X
WUPA	Paiute			X	
	Zuni	X	X		
	Apache	x	x	X	X
	Hopi	x	X	X	X
	Navajo	x	X	X	X
	Pai	X	X	X	X
	Paiute	x		X	
	Zuni	X	X		

Table 7.3. Changes to the Time Matrix

x indicates 2001 Evidence Found

X indicates Additional Evidence Identified in this Study

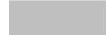
 indicates New Evidence Identified in this Study

Table 7.4. Changes in data needs as a result of the traditional use study.

Pai	SUCR, WACA, WUPA	
<i>Overall</i>	<ul style="list-style-type: none"> Clarify Pai-Sinagua connection Identify other activities, including burials that could occur with the Yavapai people's plant and animal use of the area Havasupai tribal elders to document stories (geographic) Direct documentation of the traditions and stories Inter-tribal relations and ethnic groups' uses of these areas Clarify the impacts of inter-ethnic marriage and migration on uses and occupation of SUCR and the surrounding area More complete account of Hualapai oral history Pai tribal elders for complimentary stories, and review of the stories to clarify the Pai-Zuni relationship 	<ul style="list-style-type: none"> Data gap partially filled Data gap partially filled. Data gap partially filled. Data gap partially filled. Data gap addressed. Data gap addressed. Data gap partially filled. Data gap partially filled.
Paiute	SUCR, WACA, WUPA	
<i>Overall</i>	<ul style="list-style-type: none"> Clarify Hopi-Paiute connections and Paiutes as part of multi-ethnic groups that represent the Sinagua As part of an area of multi-ethnic use, SUCR, WACA, and WUPA likely contain some materials associated with Paiute activities More complete account of the oral history and possible foundation for TCP nominations Review of Southern Paiute and Hopi histories Relationship between the Kaibab Paiute and the Hopi tribe regarding treatment of Anasazi remains suggests an inter-tribal recognition of Paiute affiliation with the area 	<ul style="list-style-type: none"> Data gap partially filled Data gap addressed. Data gap partially filled. Data gap remains. Data gap remains.
Hopi	SUCR	
<i>Overall</i>	<ul style="list-style-type: none"> Contemporary use of Bonito Park for religious activities Continued collection of medicinal plants In some cultural affiliation studies, Kayenta and Sinagua ceramics are directly associated with Hopi. Association of these ceramics with Zuni needs investigation. 	<ul style="list-style-type: none"> Data gap partially filled Data gap partially filled Data gap beyond scope of this study.
Zuni	SUCR, WACA, WUPA	
<i>Archaeological</i>	<ul style="list-style-type: none"> In some cultural affiliation studies, association of Kayenta and Sinagua ceramics with Zuni needs investigation. 	<ul style="list-style-type: none"> Data gap beyond scope of this study.
Navajo	SUCR, WUPA	
<i>Anthropological</i>	<ul style="list-style-type: none"> Review reference literature on Navajo material culture, preferably with guidance from Navajo Nation Historic Preservation Department (NNHPD) and local traditionalists. Complete inventory of "objects of cultural as described by Navajo Nation (doc. 24) in WUPA collections. (an ethnobotany collection put together by the late Clyde Peshlakai is a type of item specified by doc. 24). Do any of items that doc. 29 describes in NPS Flagstaff "ethnology collection" come from WUPA? If so, consult NNHPD and Navajo traditionalists about those items and also about "intellectual property" (cultural patrimony) in collections and interpretive materials. 	<ul style="list-style-type: none"> Data gap partially filled Data gap beyond scope of this study.
<i>Archaeological</i>	<ul style="list-style-type: none"> Archaeological inventory of SUCR Review literature on Navajo archaeology of the surrounding region. Consider what ancestral Apache/Navajo archaeological sites might look like, including undated or precolumbian small or anomalous sites, features on larger precolumbian sites, etc. See Folkloric needs and Oral Tradition below for revising cultural affiliation of Wupatki and for dealing with petroglyphs. Consult NNHPD and Navajo traditionalists re items in "archeology collection" at NPS Flagstaff office and re "intellectual property" (cultural patrimony) in collections and interpretive materials. 	<ul style="list-style-type: none"> Data gap beyond scope of this study.

Table 7.4. Changes in data needs as a result of the traditional use study.

Navajo, cont.	WACA	
<i>Anthropological</i>	<ul style="list-style-type: none"> Complete inventory of “objects of cultural patrimony” as described by Navajo Nation (doc. 24) in WACA collections. Do any of items that doc. 29 describes in NPS Flagstaff “ethnology collection” come from WUPA? If so, consult NNHPD and Navajo traditionalists about those items and also about “intellectual property” (cultural patrimony) in collections and interpretive materials. 	<ul style="list-style-type: none"> Data gap beyond scope of this study.
<i>Archaeological</i>	<ul style="list-style-type: none"> Review literature on Navajo archaeology of the surrounding region.. Consider what ancestral Apache/Navajo archaeological sites might look like, including undated or precolumbian small or anomalous sites, features on larger precolumbian sites, etc.. Note cluster of late 1800s Navajo sites near junction of Walnut Creek and San Francisco Wash, with hints of early 1800s use (wood possibly re-used from early nearby Navajo dwellings) (Navajo Nation n.d.; Stokes & Smiley 1964, sites W-LLC-SF-G through L. See Folkloric needs below for dealing with petroglyphs. Consult NNHPD and Navajo traditionalists re items in “archeology collection” at NPS Flagstaff office and re “intellectual property” (cultural patrimony) in collections and interpretive materials. 	<ul style="list-style-type: none"> Data gap beyond scope of this study.
<i>Folkloric</i>	<ul style="list-style-type: none"> Comparisons of various Southwest and Mesoamerican oral traditions for clues to processes of oral tradition transmission that link present and past groups, including whether ancestral Navajo transmission reflects entirely postcolumbian synthesis with Puebloan groups or precolumbian synthesis as well. More comparisons of Navajo oral tradition and Anasazi archaeology. 	<ul style="list-style-type: none"> Data gap beyond scope of this study.
<i>Geographical</i>	<ul style="list-style-type: none"> Consulting more Navajo traditionalists would probably reveal more culturally significant locations and place names and answer question whether Navajo place name for Walnut Canyon really also applies to Oak Creek and, if so, whether a traditional trail connected the two. 	<ul style="list-style-type: none"> Data gap partially filled
<i>Historical</i>	<ul style="list-style-type: none"> Flagstaff NPS office should identify any archive materials that relate to Navajos at WACA (presumably reviewed for Docs. 14-16 but not inventoried there). 	<ul style="list-style-type: none"> Data gap beyond scope of this study.
<i>Kinship</i>	<ul style="list-style-type: none"> Investigate origin stories of Navajo clans connected to surrounding region (or at least the “original” clans for Wupatki Basin and Gray Mountain). Use both literature and consultations with NNHPD and local families. Identify similarities among Navajo clan histories and those of other groups. 	<ul style="list-style-type: none"> Data gap beyond scope of this study.
<i>Linguistic</i>	<ul style="list-style-type: none"> Compilation and systematic comparison of place names and clan names associated with WACA and surrounding region in Navajo and languages of other neighboring groups might offer clues to links of these groups with past users of WACA. Semantic, phonological, and structural convergences of languages offer evidence of intergroup contacts, past and present. Look for possible examples of overlapping names (Zuni and Navajo around WACA, Navajo, Hopi, and Keresan around NAVA). This kind of work requires consultation with various tribal cultural resource/historic preservation offices and knowledgeable traditionalists, to whom comparative study may be offensive and therefore not feasible 	<ul style="list-style-type: none"> Data gap beyond scope of this study.

Table 7.4. Changes in data needs as a result of the traditional use study.

<i>Oral Tradition</i>	<ul style="list-style-type: none"> • Compiling information from unpublished ceremonial and clan texts may be beyond the scope of research indicated by NAGPRA regs. • Consultations with more Navajo traditionalists, especially members of clans and practitioners of ceremonies associated with surrounding region. Consultations with practitioners of ceremonies whose origin stories include routes of travel through the Flagstaff area might be especially useful. Significance of Navajo name for Anderson Mesa and other nearby places (Mormon Lake, etc.) Should be explored, along with question of whether one place name covers both Walnut Canyon and Oak Creek and, if so, whether the link indicates a traditional trail. • Consultations with Navajo traditionalists are also necessary to guide WACA in interpreting traditional information like plant uses without infringing on traditional intellectual “property” rights. 	<ul style="list-style-type: none"> • Data gap remains.
Apache	WACA	
<i>Anthropological</i>	<ul style="list-style-type: none"> • Guided by Western Apache traditionalists through coordinated Western Apache cultural resource compliance programs, identify items collected from WACA as well as “intellectual property” (cultural patrimony) in collections or interpretive materials. 	<ul style="list-style-type: none"> • Data gap remains.
<i>Archaeological</i>	<ul style="list-style-type: none"> • Assemble descriptions of archaeological sites conventionally identified as early Western Apache. Such descriptions may be rare (Basso 1983:463). • Consider what possible early ancestral Apache/Navajo sites might look like, including undated or precolumbian small or anomalous sites, features on larger precolumbian sites, etc. • Guided by Western Apache traditionalists, reassess WACA archaeological inventory (Doc. 16). • Consult Western Apache traditionalists and CRM programs about items in NPS Flagstaff “archeology collection.” 	<ul style="list-style-type: none"> • Data gap beyond scope of this study.
<i>Folkloric</i>	<ul style="list-style-type: none"> • Compile oral tradition from the available literature and from consultations with Western Apache CRM programs and traditionalists, most likely through a study of place names in and around WACA (and WUPA/SUCR) (see Oral Tradition below). • Oral tradition contributes folkloric evidence as defined here when elements of oral tradition are analyzed for clues to the past and connections with groups who might have used the Monuments and surrounding area. Documents in this collection accomplish neither of these goals. 	<ul style="list-style-type: none"> • Data gap partially addressed.
<i>Geographical</i>	<ul style="list-style-type: none"> • Consult today’s Western Apache CRM programs and traditionalists by extending current place name study to area around WACA (also SUCR/WUPA?). Such evidence can show where Western Apaches have links to past users. 	<ul style="list-style-type: none"> • Data gap remains.
<i>Kinship</i>	<ul style="list-style-type: none"> • Consultations with Western Apache traditionalist. 	<ul style="list-style-type: none"> • Data gap remains.
<i>Linguistic</i>	<ul style="list-style-type: none"> • Extension of current Western Apache place name study to region around WACA. 	<ul style="list-style-type: none"> • Data gap remains.

Areas of Future Investigation

An extensive literature review was recommended in the 2001 document review. While most of that recommendation remains to be addressed, this study has documented ethnographic evidence of strong traditional associations of the Yavapai, Hualapai, Havasupai, Kaibab Southern Paiute, San Juan Southern Paiute, Zuni, and Western Apache tribes with Sunset Crater Volcano, Walnut Canyon, and Wupatki National Monuments. As traditional use associations, these relationships may have implications for cultural items subject to consideration under the Native American Graves Protection and Repatriation Act of 1990, as deaths and burials during trade and seasonal use had to have occurred. A literature review and/or ethnographic investigation of burial practices could provide better indicators of cultural affiliation with any unidentified artifacts and human remains.

The literature review recommendations of the 2001 document review remain a future research need that would contribute significantly to the data gaps of that study, and build on the findings of this study. A review of archaeological collections as recommended in the 2001 study also remains a research need for the same purposes, as does ethnographic research with Hopi and Navajo elders and/or cultural experts, and additional ethnographic work with Apache, Hualapai, Havasupai, and Yavapai elders. While the data collected from the latter groups was detailed and informative, the number of participants was limited. These groups either lack financial resources for field participation or have so many cultural resource responsibilities that it is difficult for them to participate in projects such as this traditional use study. Additional meetings with the Pai tribes might improve field participation but financial resources, cultural resource responsibilities, and transportation were the primary impediments to full participation in this study.

Two points of interest indicate a new area of investigation. First, the term *Sinagua* for the ancient people of these places and the apparent interaction with the volcanic events at Sunset Crater. All the participants of this study referred to the San Francisco Peaks as a source of water that traditionally could be tapped into throughout the surrounding landscape in the form of springs, ice caves, run-off, and streams. Everyone identified the water from these mountains as an important resource that has medicinal and spiritual qualities that contribute to its cultural significance. So to refer to the ancient people as being ‘without water’ seems incongruous; it reflects a misunderstanding about the relationships between the traditional groups and the landscape. While a change in terminology is unrealistic, the difference in viewpoints is worth addressing in the cultural interpretations of the parks.

The second point has to do with the interactions traditional people had with the volcanic events at Sunset Crater. Ritual offerings to volcanoes are known in other parts of the world, however, the corn rocks of Sunset Crater are the first evidence in the Southwest of such behavior (Elson et al. 2002). This evidence and the traditional perspective of the eruptions as renewal and rebalancing of a world gone awry, indicates that our current understanding of abandonment and agriculture is simplistic and misleading. There is much more to learn about American Indian responses to the 11th Century eruption of Sunset Crater Volcano if we are to gain a deeper understanding of past and contemporary ties to the land. We believe that the ancestors of the six ethnic groups may have anticipated the event, that

religious and spiritual leaders may have occupied the settlements of Wupatki and Walnut Canyon, that they interacted with the built lava during the eruption, and that the cooled lava flow became a destination of regional, inter-ethnic pilgrimages. The religious aspects of the eruption events warrant further investigation.

The landscape encompassing the three parks has a rich cultural and biophysical heritage. It is an area of shared and contested uses, of spiritual energy, and ceremonial importance. The power of the area and its spiritual aspects suggest that it is not a place for daily routines and permanent residence. While people did reside here, we believe they were primarily specialists although some support families likely were involved. It is more common, however, for places of such power to be restricted because the power is dangerous and most people would not know how handle it and could be harmed. Given this scenario, we believe that this area could be nothing less than multi-cultural and a landscape of shared physical and spiritual resources.

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APPENDIX A: 2001 DOCUMENT REVIEW LIST

Document Number – Document Name

- 1 – NPS-Tribes Meeting, 8/25/98
- 2 – NPS-Tribes Meeting, 12/12/97
- 3 – Flagstaff GMP Meeting, 10/30/97
- 4 – Preliminary Assessment of Hopi Ethnohistory in the Wupatki, Sunset Crater Volcano, and Walnut Canyon National Monument Areas
- 5 – Zuni Traditional Cultural Properties in the Flagstaff Area National Monuments, 12/2000
- 6 – *Nihi Kéh nahazá: Our Place in this Land*
- 7 – Log of tribal correspondence from 1990-1998 from NAU report
- 8 – Anthropological Literature Review and Annotated Bibliography for Sunset Crater Volcano and Wupatki National Monuments
- 9 – NPS Wupatki National Monument NAGPRA Inventory, 11/11/95
- 10 – NAGPRA Record Number 152 for WUPA, 11/11/95
- 11 – USFS Cultural Affiliation Assessment for Cohonina
- 12 – USFS Cultural Affiliation Assessment for Sinagua
- 13 – Wupatki Archeological Inventory Survey Project: Final Report, 1990
- 14 – Walnut Canyon and Wupatki: A History, May 1988
- 15 – Walnut Canyon National Monument: An Administrative History
- 16 – Walnut Canyon National Monument: An Archeological Survey, April 1986
- 17 – NAGPRA Review Committee Meeting 5/4/99
- 18 – Pueblos Meeting 9/11-12/95
- 19 – Apache Summit Meeting 9/26-27/95
- 20 – Notes from Consultation Meeting with Navajo Nation 10/5/95
- 21 – NPS letter to Governor Paul Chinana 4/10/95
- 22 – Results of the Conference “Traditional Histories of the Pre-Columbian Past” 6/95
- 23 – Preliminary NAGPRA Inventory-related Information
- 24 – Report of the Navajo Nation/Navajo Lands Area Superintendents Summit Meeting 4/16-17/97
- 25 – Affiliation Conference on Ancestral Peoples of the Four Corners Region 3/99, Vol 1
- 26 – Affiliation Conference on Ancestral Peoples of the Four Corners Region 3/99, Vol 2
- 27 – Affiliation Conference on Ancestral Peoples of the Four Corners Region 3/99, Vol 3
- 28 – Miscellaneous phone and mailing list, 5 pages
- 29 – Letter from Jeri DeYoung to Alexa Roberts, 1/16/01
- 30 – Navajo National Monument: A Place and Its People
- 31 – Navajo National Monument NAGPRA Inventory Funerary Objects 10/95
- 32 – NPS Navajo National Monument NAGPRA Inventory 11/2/95 and accompanying NPS Memorandum 11/2/95
- 33 – NPS Memorandum 12/8/95
- 34 – Notes from Bruce Mellberg to Alexa Roberts regarding NAVA NAGPRA Inventory, 3 pages
- 35 – NAGPRA Record Number 135, NAVA 11/2/95
- 36 – NAGPRA Record Number 134, NAVA 11/2/95

- 37 – NAGPRA Record Number 133, NAVA 11/2/95
- 38 – NAGPRA Record Number 133, NAVA 11/2/95
- 39 – NAGPRA Record Number 132, NAVA 11/2/95
- 40 – NAGPRA Record Number 131, NAVA 11/2/95
- 41 – NAGPRA Record Number 130, NAVA 11/2/95
- 42 – NAGPRA Record Number 129, NAVA 11/2/95
- 43 – NAGPRA Record Number 128, NAVA 11/2/95
- 44 – NAGPRA Record Number 111, NAVA 11/2/95
- 45 – NAGPRA Record Number 110, NAVA 11/2/95
- 46 – NAGPRA Record Number 109, NAVA 11/2/95
- 47 – NAGPRA Record Number 108, NAVA 11/2/95
- 48 – NAGPRA Record Number 129, NAVA 12/4/95 (2 of these)
- 49 – NPS Navajo National Monument NAGPRA Inventory 12/4/95
- 50 – NPS Memorandum to Assoc. Regional Director from Superintendent Navajo National Monument
- 51 – Navajo National Monument NAGPRA Bibliography
- 52 – Notes regarding Erik K. Reed's unpublished manuscript "Human Skeletal Material from Navajo National Monument, Arizona" 1967
- 53 – NAGPRA Project Statement Intermountain Field Area 1996
- 54 – Correspondence between Alexa Roberts and Russ and Dave Ruppert 8/27/96
- 55 – Letter to Mr. Leigh Jenkins from Ed Natay 4/19/96
- 56 – Letter to Bruce Mellberg from Delfred Leslie 12/4/95, with Report on Judge Delfred Leslie's visit to Snake House Ruin on 12/2/95
- 57 – Letter to J.W. Brewer from Charlie R. Steen with Navajo story 12/12/39
- 58 – Fax to Bruce Mellberg from Alexa Roberts regarding Navajo National Monument 11/22/95, 2 pages
- 59 – US Govt. Memorandum to Williams from Wenger 1/17/68 with maps and 19th century military correspondence
- 60 – NPS Memorandum to Superintendent, Canyon de Chelly from Acting Regional Archeologist 6/25/64 with bibliography and map

**APPENDIX B:
SURVEY INSTRUMENTS**

**NATIVE AMERICAN ETHNOGRAPHIC RESOURCES
THREE MONUMENTS PROJECT**

University of Arizona Site Interview Form

NOTE: You must record a response for every question asked in order for data to be correctly coded

Interview Number: _____

1. Date: _____

2. Respondent's Name: _____

3. Tribe/Organization: _____

3a. Ethnic Group: _____

4. Gender: Male Female

5. Date of Birth: ___/___/___

5a. Age _____

6. Place of Birth (Town, Reservation): _____

6a. U.S. State of Birth _____

7. Study Area Site Number (ethnographer fill this in): _____

8. What is the name of this place in English?

8a. What is the name of this place in your native language?

9. Please describe the geography of this area or elements which stand out (are most impressive to you).

10. Would Indian people have used this area?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

10a. (IF YES) Why or for what purpose would Indian people have used this area?

1 = [permanent]LIVING 2 = HUNTING 3 = [seasonal] CAMPING 4 = CEREMONY/POWER
5 = GATHERING FOOD 6 = WATCHING STARS 7 = OTHER 8 = Don't Know 9 = No Response

10b. Comments on 10a:

11. Is this place part of a group of connected places (Is this place connected to others?)

1 = Yes 2 = No 8 = Don't Know 9 = No Response

11a. (IF YES) What kinds of other places might this place be connected with and where are they?

1 = Comment given 8 = Don't Know 9 = No Response

11b. (IF COMMENT GIVEN) How is this place connected to the others you mentioned?

1 = Comment given 8 = Don't Know 9 = No Response

11c. (IF ANSWERED 1 TO 11b) Comments given:

PLACE FEATURES (Explain you will now begin asking questions about the physical features of the place)

12. Which, if any, of the following features is an important part of why this place is significant to Indian people?

Feature Type	1 = Yes	2 = No	List and Describe each Specific Feature, e.g. waterfall, Mormon Tea, mtn sheep
12a. Source for Water			12aa.
12b. Source for Plants			12bb.
12c. Source for Animals			12cc.
12d. Evidence of Previous Indian Use e.g.- rock rings, historic structures, rock art			12dd.
12e. Geological Features e.g.- mountains, springs, caves, landmarks, cones, lava fields			12ee.

FOR EACH FEATURE MARKED ‘YES,’ PLEASE FILL OUT THE APPROPRIATE FEATURE PAGE...

FEATURE TYPE A: WATER SOURCE (List feature from previous table) _____

13. Would Indian people have used this (feature) _____?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

13a. (IF YES) When would Indian people have used this (feature) _____?

1 = DAILY 2 = SEASONALLY 3 = ANNUALLY 4 = CALENDERICALLY 5 = PRE-HISTORICALLY
6 = HISTORICALLY 7 = TODAY 8 = Don't Know 9 = No Response

13b. (IF YES) Why or for what purpose would Indian people have used this (feature) _____?

1 = FOOD/DRINK 2 = MEDICINE 3 = CEREMONY 4 = OTHER 8 = Don't Know 9 = No Response

13c. Comments:

14. How would you evaluate the condition of the (feature) _____?

1 = Excellent 2 = Good 3 = Fair 4 = Poor 9 = No Response

15. Is there anything affecting the condition of the (feature) _____?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

15a. (IF YES) What in your opinion, is affecting the condition of the (feature) _____?

FEATURE TYPE B: PLANT SOURCE (List feature from previous table) _____

16. Would Indian people have used this (feature) _____?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

16a. (IF YES) When would Indian people have used this (feature) _____?

1 = DAILY 2 = SEASONALLY 3 = ANNUALLY 4 = CALENDERICALLY 5 = PRE-HISTORICALLY
6 = HISTORICALLY 7 = TODAY 8 = Don't Know 9 = No Response

16b. (IF YES) Why or for what purpose would Indian people have used this (feature) _____?

1 = FOOD 2 = MEDICINE 3 = CEREMONY 4 = MAKING THINGS 8 = Don't Know 9 = No Response

16c. Comments:

17. How would you evaluate the condition of the (feature) _____?

1 = Excellent 2 = Good 3 = Fair 4 = Poor 9 = No Response

18. Is there anything affecting the condition of the (feature) _____?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

18a. (IF YES) What in your opinion, is affecting the condition of the (feature) _____?

FEATURE TYPE C: ANIMAL SOURCE (List feature from previous table) _____

16. Would Indian people have used this (feature) _____?
1 = Yes 2 = No 8 = Don't Know 9 = No Response
- 16a. (IF YES) When would Indian people have used this (feature) _____?
1 = DAILY 2 = SEASONALLY 3 = ANNUALLY 4 = CALENDERICALLY 5 = PRE-HISTORICALLY
6 = HISTORICALLY 7 = TODAY 8 = Don't Know 9 = No Response
- 16b. (IF YES) Why or for what purpose would Indian people have used this (feature) _____?
1 = FOOD 2 = MEDICINE 3 = CEREMONY 4 = CLOTHING 5 = TOOLS
6 = OTHER 8 = Don't Know 9 = No Response
- 16c. Comments:
17. How would you evaluate the condition of the (feature) _____?
1 = Excellent 2 = Good 3 = Fair 4 = Poor 9 = No Response
18. Is there anything affecting the condition of the (feature) _____?
1 = Yes 2 = No 8 = Don't Know 9 = No Response
- 18a. (IF YES) What in your opinion, is affecting the condition of the (feature) _____?

FEATURE TYPE D: EVIDENCE OF PREVIOUS OCCUPATION OR USE (List feature from previous table) _____

19. Would Indian people have used this site and/or artifacts?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

19a. (IF YES) When would Indian people have used this site and/or artifacts?

1 = DAILY 2 = SEASONALLY 3 = ANNUALLY 4 = CALENDERICALLY 5 = PRE-HISTORICALLY
6 = HISTORICALLY 7 = TODAY 8 = Don't Know 9 = No Response

19b. (IF YES) Why or for what purpose would Indian people have used this site and/or artifacts?

1 = LIVING 2 = HUNTING 3 = GATHERING FOOD 4 = CAMPING 5 = CEREMONY/POWER
6 = OTHER 8 = Don't Know 9 = No Response

19c. Comments:

20. How would you evaluate the condition of the (feature) _____?

1 = Excellent 2 = Good 3 = Fair 4 = Poor 9 = No Response

21. Is there anything affecting the condition of the (feature) _____?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

21a. (IF YES) What in your opinion, is affecting the condition of the (feature) _____?

FEATURE TYPE E: GEOLOGIC FEATURES (List feature from previous table) _____

22. Would Indian people have used this (feature) _____?
1 = Yes 2 = No 8 = Don't Know 9 = No Response
- 22a. (IF YES) When would Indian people have used this (feature) _____?
1 = DAILY 2 = SEASONALLY 3 = ANNUALLY 4 = CALENDERICALLY 5 = PRE-HISTORICALLY
6 = HISTORICALLY 7 = TODAY 8 = Don't Know 9 = No Response
- 22b. (IF YES) Why or for what purpose would Indian people have used this (feature) _____?
1 = SEEK KNOWLEDGE/POWER 2 = COMMUNICATE WITH OTHER INDIANS 3 = CEREMONY
4 = TEACHING OTHER INDIANS 5 = COMMUNICATE WITH SPIRITUAL BEINGS 6 = TERRITORIAL MARKER
7 = OTHER 8 = Don't Know 9 = No Response
- 22c. Comments:
23. How would you evaluate the condition of the (feature) _____?
1 = Excellent 2 = Good 3 = Fair 4 = Poor 9 = No Response
24. Is there anything affecting the condition of the (feature) _____?
1 = Yes 2 = No 8 = Don't Know 9 = No Response
- 24a. (IF YES) What in your opinion, is affecting the condition of the (feature) _____?

MANAGEMENT AND ACCESS RECOMMENDATIONS

25. How would you evaluate the overall condition of this place?
1 = Excellent 2 = Good 3 = Fair 4 = Poor 9 = No Response
26. Is there anything affecting the condition of this place?
1 = Yes 2 = No 8 = Don't Know 9 = No Response
- 26a. (IF YES) What in your opinion is affecting the condition of this place?
-
-
-
-
-
-
-
-
-
-
27. What would be your top recommendations for protecting this place?
-
-
-
-
-
-
-
-
-
-
28. What would you recommend for protecting the specific features you identified as important to this site?
- Water Source:
-
-
-
-
-
-
-
-
-
-
- Plant Source:
-
-
-
-
-
-
-
-
-
-
- Animal Source:

Traditional Use Feature:

Geological Feature:

29. Do you think Indian people would want to have access to this place?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

29a. (IF YES) Why would Indian people want to come to this place?

30. Are there any special conditions that must be met for Indian people to use this place?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

30a. (IF YES) What special conditions are needed for Indian people who want to come to this place?

31. Are there any traditional management practices that would help the animals or plants?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

31a. (If YES) what would those practices be?

Comments:

**NATIVE AMERICAN ETHNOGRAPHIC RESOURCES
THREE MONUMENTS PROJECT**

LANDSCAPE QUESTIONS

University of Arizona Interview Form

NOTE: You must record a response for every question asked in order for data to be correctly coded

Ethnographer _____ **Location** _____

Respondent Name _____ **Tape** _____ **Date** _____

(Show regional map at this time)

1. Were there Indian villages in relation to this area?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

1a. If yes, were the area villages connected with villages elsewhere in the region (or in your traditional territory)?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

1b. If yes, how were these connected?

2. Do you know what the Indian people did when they were here in this area?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

-
- 2a. If yes, what kinds of activities -
- farming
 - gathering plants
 - gambling
 - ceremonies
 - political meetings
 - looking at the skyline or the stars
 - hunting
 - others (specify)
3. Do you know of Indian trails that were connected with this area?
- 1 = Yes 2 = No 8 = Don't Know 9 = No Response
- 3a. If yes, can you tell me something about those trails - like
- Where did they go?

Why did your people travel the trails?

Were these trails somehow special to your people? How?

4. Do you know of any songs associated with this area?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

4a. If yes, can you tell me something about the songs – were they

Traveling songs?

Ceremony songs?

Other-purpose songs?

5. Do you know of any ceremonies that were conducted at or near this area ?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

5a. If yes, can you tell me something about these ceremonies?

Ceremony #1 - place _____, when _____, why _____

Ceremony #2 - place _____, when _____, why _____

Ceremony #3 - place _____, when _____, why _____

NOTE: IF THEY SAY NO TO CREATION PLACES, MAKE SURE TO ASK ABOUT MIGRATION PLACES

6. Is this area at or near the place where your people were created ?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

6a. If yes, where is the Creation place?

7. Do you know if there are other places in this region that are also connected with the Creation of your people?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

7a. If yes, what and where are those places?

8. Do you recall or have your heard about events in history that occurred at or near this area?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

8a. Will you tell me something about those events?

Event #1 - date _____, place _____, what happened?

Event #2 - date _____, place _____, what happened?

Event #3 - date _____, place _____, what happened?

9. Is there a connection between this area and nearby mountains (outcrops, scatter cones, volcanoes)?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

9a. If yes, what mountains and how are they connected to the area?

Mtn. #1: name in English _____, name in native language _____, how connected?

Mtn. #2: name in English _____, name in native language _____, how connected?

Mtn. #3: name in English _____, name in native language _____, how connected?

10. Is there a connection between this area and any section of the Little Colorado River /Puerco River? Any other rivers?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

10a. If yes, what section of the river and how is it connected this area?

River Section #1: English name _____, Indian name _____, how connected?

River Section #2: English name _____, Indian name _____, how connected?

River Section #3: English name _____, Indian name _____, how connected?

11. Is this area connected to any places or events in the region (or in your traditional territory) that we have not already talked about?

1 = Yes 2 = No 8 = Don't Know 9 = No Response

11a. If yes, what other connections would you like to talk about?

Connection #1 - place _____, event _____, connection _____

Connection #1 - place _____, event _____, connection _____

Connection #1 - place _____, event _____, connection _____

12. Are there any additional comments you would like to make about this park?

APPENDIX C:
PAI ETHNOBOTANIES

**Havasupai
Hualapai
Yavapai**

Havasupai Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
Achnatherum hymenoides	Indian Ricegrass	Seeds parched, ground fine, boiled, thickened, made into balls and eaten as dumplings.											Weber and Seaman 1985 (p. 66)
		Seeds and Indian millet seeds ground and used to make soup or mush.											Ibid. p. 73
		Seeds ground and eaten as a ground or parched meal.											Ibid. p. 67
Agave sp.	Mescal	Leaves and young buds baked, soaked in water and used as a drink.											Whiting 1939 (p. 71)
		Leaves and young buds baked.											Ibid. p. 71
		Stalk and fiber used to make ceremonial equipment.											Ibid. p. 71
		Leaves and young buds traded with the Hopi.											Ibid. p. 71
Agave utahensis	Utah Agave	Plant used to make a drink.											Weber and Seaman 1985 (p. 66)
		Used to make brushes for the hair and for cleaning grinding stones.											Ibid. p. 212
		Used to make spoons for thin drinks.											Ibid. p. 212
Aloysia wrightii	Wright's Beebrush	Plant boiled and taken for headaches.											Spier 1928 (p. 285)
		Plant boiled and taken for rheumatism.											Ibid. p. 285
		Plant boiled and taken for slight distempers.											Ibid. p. 285
		Leaves boiled into tea.											Weber and Seaman 1985 (p. 238)
		Twigs boiled to make tea.											Ibid. p. 66
Amaranthus hybridus	Slim Amaranth	Seeds parched, ground fine, boiled, thickened, made into balls and eaten as dumplings.											Ibid. p. 66
		Seeds parched, ground and used to make mush.											Ibid. p. 67
		Seeds parched, ground and used to make soup.											Ibid. p. 67
		Leaves and squash flowers boiled, ground and fresh or dried corn and water added to make soup.											Ibid. p. 74
		Seeds used for food.											Ibid. p. 218
		Leaves of young plants cooked like spinach.											Ibid. p. 218
		Young, fresh, tender leaves boiled, drained, balled into individual portions and served.											Ibid. p. 66
Amelanchier utahensis	Utah Serviceberry	Fruit eaten by deer.											Ibid. p. 222
		Wood used to make basket rims.											Ibid. p. 222
		Wood used to make cradle boards.											Ibid. p. 222
		Wood used to make flat parching trays.											Ibid. p. 222
		Stems made into arrow shafts and used for hunting.											Ibid. p. 222
Artemisia campestris ssp. borealis var. scouleriana	Pacific Wormwood	Wood used to make the spindle of the fire drill.											Ibid. p. 222
		Sprays used in the sweatbaths or infusion of leaves taken for sicknesses.											Ibid. p. 245
Artemisia ludoviciana	Louisiana Sagewort	Sprays used in the sweatbaths or infusion of leaves taken for sicknesses.											Ibid. p. 245
Artemisia sp.	Wormwood	Seeds parched, ground, kneaded into seed butter and eaten with fruit drinks or spread on bread.											Ibid. p. 67
Artemisia tridentata	Big Sagebrush	Stems and leaves used for colds.											Ibid. p. 246
		Stems and leaves used for coughs.											Ibid. p. 246
		Decoction of leafy stems and leaves used as a wash for sores or pimples.											Ibid. p. 246
		Stems and leaves used for intestinal upset.											Ibid. p. 246
		Stems and leaves used for runny noses.											Ibid. p. 246
		Stems and leaves used for sore throats.											Ibid. p. 246
		Plant used for thatch.											Ibid. p. 246
Astragalus sp.	Loco Weed	Bark used as a plug to keep water from spilling out of a water jug.											Ibid. p. 246
Atriplex canescens	Fourwing Saltbush	Seeds used for food.											Ibid. p. 226
		Leaves made into a soapy lather and used to wash the hair.											Ibid. p. 217
Baccharis emoryi	Emory's Baccharis	Leaves made into a soapy lather and used for itches or rashes, such as chickenpox or measles.											Ibid. p. 217
		Used in coil basketry.											Ibid. p. 246
		Used to make fence posts and in brush house construction.											Ibid. p. 246
		Wood used for firewood.											Ibid. p. 246
		Wood used to make planting sticks.											Ibid. p. 246
		"Down" put onto fires by children to produce a sudden burst of flame which spreads rapidly.											Ibid. p. 246
		Pith used to make "peashooters," stems and twigs used to make the shooter.											Ibid. p. 246
Celtis laevigata var. reticulata	Netleaf Hackberry	Wood used for firewood.											Ibid. p. 215

Havasupai Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source		
<i>Cercocarpus ledifolius</i>	Curlleaf Mountain Mahogany				Inner bark used as a red dye for buckskin.								Ibid. p. 222		
<i>Chenopodium fremontii</i>	Fremont's Goosefoot	Seeds used to make bread.											Ibid. p. 66		
<i>Chenopodium</i> sp.	Goosefoot	Seeds parched, ground fine, boiled, thickened, made into balls and eaten as dumplings.											Ibid. p. 66		
		Seeds ground, kneaded into a thick paste, rolled into little balls, boiled and eaten as marbles.												Ibid. p. 66	
		Seeds ground and eaten as a ground or parched meal.												Ibid. p. 67	
		Seeds used for food.												Ibid. p. 217	
<i>Cirsium</i> sp.	Thistle	Leaves held in flames to burn the spines off and eaten by hunting parties when food was scarce.											Ibid. p. 247		
<i>Cleome serrulata</i>	Rocky Mountain Beeplant	Seeds used for food.											Ibid. p. 221		
<i>Cucurbita foetidissima</i>	Missouri Gourd											Fruits used by girls for juggling.	Ibid. p. 243		
												Roots made into wooden ball and used in playing the "four hills" game.	Ibid. p. 243		
<i>Datura wrightii</i> (syn. <i>D. inoxia</i> P. Mill. ssp.)	Sacred Thornapple	Leaf folded several times and rubbed onto red ant bite.											Ibid. p. 239		
		Leaves or seeds, when eaten, made a person intoxicated for a day or more.												Ibid. p. 239	
<i>Descurainia</i> sp.	Tansy Mustard	Seeds ground and added to water to make a refreshing, summer drink.											Ibid. p. 66		
		Seeds parched, ground, kneaded into seed butter and eaten with fruit drinks or spread on bread.												Ibid. p. 67	
		Seeds parched and ground into a flour.												Ibid. p. 220	
		Seeds dried for future use.												Ibid. p. 232	
		Fresh or dried seeds parched, ground and made into mush.												Ibid. p. 232	
			Pieces of plant used as tray for baked mescal.												Ibid. p. 232
			Used as improvised cooking vessels particularly on hunting expeditions.												Ibid. p. 232
	Red spines fire warmed and bent into finger rings.												Ibid. p. 232		
<i>Ephedra fasciculata</i>	Arizona Jointfir	Upper portions of plant boiled into tea.											Ibid. p. 207		
<i>Ephedra nevadensis</i>	Nevada Jointfir	Upper portions of plant boiled into tea.											Ibid. p. 207		
<i>Ephedra</i> sp.	Mormon Tea	Twigs used to make drying mat for pulp.											Bell and Castetter 1941 (p. 17)		
<i>Ephedra torreyana</i>	Torrey's Jointfir	Upper portions of plant boiled into tea.											Weber and Seaman 1985 (p. 207)		
<i>Ephedra viridis</i>	Mormon Tea	Used to make a draught and taken to vomit for bowel complaints.											Spier 1928 (p. 285)		
		Used to make a draught and taken to clear the bowels.												Ibid. p. 285	
		Upper portions of plant boiled into tea.												Weber and Seaman 1985 (p. 207)	
		Twigs boiled into a tea.												Ibid. p. 66	
<i>Eriogonum corymbosum</i>	Crispleaf Buckwheat	Decoction of leaves taken three times a day for headaches.											Ibid. p. 216		
<i>Eriogonum microthecum</i>	Slender Buckwheat	Used to make tea.											Ibid. p. 217		
<i>Fallugia paradoxa</i>	Apacheplume				Used for the top ring of baskets.								Ibid. p. 223		
					Used for the ladderback rungs of the cradleboards.								Ibid. p. 223		
<i>Gaillardia pinnatifida</i>	Red Dome Blanketflower	Seeds parched, ground, kneaded into seed butter and eaten with fruit drinks or spread on bread.											Ibid. p. 67		
<i>Gilia sinuata</i>	Rosy Gilia	Seeds parched, ground, kneaded into seed butter and eaten with fruit drinks or spread on bread.											Ibid. p. 67		
<i>Helianthus petiolaris</i>	Prairie Sunflower	Seeds sun dried and stored for winter use.											Ibid. p. 248		
		Seeds parched, ground, kneaded into seed butter and eaten with fruit drinks or spread on bread.												Ibid. p. 67	
		Seeds ground and eaten as a ground or parched meal.												Ibid. p. 67	
<i>Helianthus</i> sp.	Sunflower	Seeds ground, made into small cakes and baked for a short time.											Ibid. p. 65		
<i>Juniperus osteosperma</i>	Utah Juniper	Green branches used singly or together with other plants for colds.											Ibid. p. 206		
		Dried berries used to make a drink.												Ibid. p. 206	
		Berries sun dried and stored for winter use.												Ibid. p. 206	
			Logs and brush, covered with dirt, used to make winter houses.											Ibid. p. 206	
			Bark used on top of the brush covering of the winter houses to keep the dirt from falling through.											Ibid. p. 206	
			Wood used for firewood.											Ibid. p. 206	
			Crushed bark used for tinder.											Ibid. p. 206	
			Crushed bark used as a "slow match."											Ibid. p. 206	
	Wood used to make the pole of the hoop and pole game.											Ibid. p. 206			

Havasupai Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
Koeleria macrantha	Prairie Junegrass	Seeds used to make bread.											Ibid. p. 66	
		Plant grazed by livestock.												Ibid. p.209
		Seeds used for food.												Ibid. p.209
		Seeds stored in blankets or bags of skin in caves.												Ibid. p.209
Lycium pallidum	Pale Wolfberry	Dried berries ground and mixed with water to make a drink.											Ibid. p. 239	
		Berries sun dried for future use.											Ibid. p. 239	
Mahonia fremontii	Fremont's Mahonia				Roots used as a yellow buckskin dye.								Ibid. p. 219	
Mahonia repens	Oregongrape	Cooled decoction of roots taken three times a day for headaches.											Ibid. p. 219	
		Cooled decoction of roots used as a wash for aches.											Ibid. p. 219	
		Cooled decoction of roots used as a wash for colds.												Ibid. p. 219
		Cooled decoction of roots taken three times a day for stomach upsets.												Ibid. p. 219
		Cooled decoction of roots taken as a laxative for colds and stomach ailments.												Ibid. p. 219
		Cooled decoction of roots given to sick babies.												Ibid. p. 219
Melilotus sp.	Sweet Clover	Cooled decoction of roots given to sick babies.											Ibid. p. 219	
												Leaves dried, ground, placed in a small bundle and tied onto women's clothes as a perfume.	Ibid. p. 227	
Mentzelia albicaulis	Whitestem Blazingstar	Seeds parched, ground, kneaded into seed butter and eaten with fruit drinks or spread on bread.											Ibid. p. 67	
		Seeds and Indian millet seeds ground and used to make soup or mush.											Ibid. p. 73	
		Seeds formerly used for food.											Ibid. p. 232	
Nicotiana attenuata	Coyote Tobacco										Leaves smoked for pleasure.	Ibid. p. 240		
Opuntia phaeacantha	Tulip Pricklypear	Plant used to make a drink.											Ibid. p. 66	
		Dried fruit pounded into cakes for storage or pieces of cake eaten without further preparation.												Ibid. p. 233
		Fruits sun dried for future use.												Ibid. p. 233
		Fruits eaten fresh.												Ibid. p. 233
		Used in preparing pottery clay.												Ibid. p. 233
		Spines used to prick the design into the skin for tattooing.												Ibid. p. 233
Opuntia sp.	Cholla				Juice used to mix with pottery clay.							Ibid. p. 234		
Phaseolus acutifolius	Tepary Bean	Beans parched, ground and added to hot water to make a soup.											Ibid. p. 227	
		Beans cooked with fresh corn, cooked in hot ashes under a fire or boiled.											Ibid. p. 227	
		Beans stored in granaries or in frame houses for later use.											Ibid. p. 227	
Phaseolus lunatus	Sieva Bean	Beans parched, ground and added to hot water to make a soup.											Ibid. p. 227	
		Beans cooked with fresh corn, cooked in hot ashes under a fire or boiled.											Ibid. p. 227	
		Beans stored in granaries or in frame houses for later use.											Ibid. p. 227	
Phaseolus sp.	Bean	Seeds parched, ground and used to make mush.											Ibid. p. 67	
		Seeds parched, ground and used to make soup.											Ibid. p. 67	
Phaseolus vulgaris	Kidney Bean	Beans parched, ground and added to hot water to make a soup.											Ibid. p. 227	
		Beans cooked with fresh corn, cooked in hot ashes under a fire or boiled.											Ibid. p. 227	
		Beans stored in granaries or in frame houses for later use.											Ibid. p. 227	
Phlox austromontana	Desert Phlox	Decoction of pounded roots rubbed all over the body for aches.											Ibid. p. 238	
		Decoction of pounded roots rubbed all over the body for colds.											Ibid. p. 238	
		Decoction of pounded roots given to babies with stomachaches.											Ibid. p. 238	
		Decoction of pounded roots given to babies with stomachaches.											Ibid. p. 238	
Phoradendron juniperinum	Juniper Mistletoe	Plant pounded and boiled for food.										Ibid. p. 216		
Phragmites australis	Common Reed	Stems used to make mats for drying yucca fruit pulp, baked mescal, peaches or figs.											Ibid. p. 209	
		Stems used for arrow shafts.											Ibid. p. 209	
		Stems used to make pipe stems.											Ibid. p. 209	
Pinus edulis	Twoneedle Pinyon	Poultice of melted gum applied to cuts.											Ibid. p. 205	
		Poultice of melted gum applied to horses for cuts.											Ibid. p. 205	
		Seeds parched, ground, kneaded into seed butter and eaten with fruit drinks or spread on bread.											Ibid. p. 67	

Havasupai Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
		Nuts ground with the shells and used to make soup.											Ibid. p. 73
		Sprigs placed in the cooking pit with porcupine, bobcat or badger to improve the taste of the meat.											Ibid. p. 205
		Nuts formerly used as an important food source.											Ibid. p. 205
		Wood used for house construction.											Ibid. p. 205
		Melted gum used to plug a leaky canteen or other containers.											Ibid. p. 205
		Nuts sold in considerable quantities to stores.											Ibid. p. 205
		Wood used for firewood.											Ibid. p. 205
		Gum used in the paint used on the base of arrows.											Ibid. p. 205
		Wood used to make the knife for trimming mesal heads.											Ibid. p. 205
		Gum used to waterproof basketry water jugs and basketry drinking cups.											Ibid. p. 205
<i>Pinus ponderosa</i>	Ponderosa Pine	Nuts roasted and eaten.											Ibid. p. 206
<i>Poa fendleriana</i>	Muttongrass	Seeds parched, ground fine, boiled, thickened, made into balls and eaten as dumplings.											Ibid. p. 66
		Seeds ground, kneaded into a thick paste, rolled into little balls, boiled and eaten as marbles.											Ibid. p. 66
		Seeds ground and eaten as a ground or parched meal.											Ibid. p. 67
		Seeds used for food.											Ibid. p. 210
<i>Populus fremontii</i>	Fremont's Cottonwood	"Berries" eaten or chewed like gum.											Ibid. p. 213
		Peeled stems split and used to make baskets.											Ibid. p. 213
		Wood used for fence posts and in the construction of shades and houses.											Ibid. p. 213
		Wood used to make bowls and plates.											Ibid. p. 213
		Wood used for firewood.											Ibid. p. 213
		Hollowed logs used to make drums.											Ibid. p. 213
		Falling seeds indicate the time to plant.											Ibid. p. 213
<i>Pseudotsuga menziesii</i>	Douglas Fir	Leaves boiled and used as medicine.											Ibid. p. 206
		Branches used ceremonially.											Ibid. p. 206
<i>Purshia mexicana</i>	Mexican Cliffrose	Decoction of green branches, sagebrush and juniper used for colds to loosen the mucus.											Ibid. p. 223
		Decoction of green branches, sagebrush and juniper used as a laxative for colds.											Ibid. p. 223
		Bark crushed, rubbed into softness and stuffed into over shoes for warmth.											Ibid. p. 223
		Soft bark used as an absorbent diaper for children.											Ibid. p. 223
		Soft bark used in a thick layer in infants' cradleboards.											Ibid. p. 223
		Bark made into loosely twisted ropes and used to make sleeping mats.											Ibid. p. 223
		Fine, soft bark used as tinder for the fire drill.											Ibid. p. 223
<i>Quercus gambelii</i>	Gambel's Oak	Acorns parched, ground and used to make mush.											Ibid. p. 67
		Acorns parched, ground and used to make soup.											Ibid. p. 67
		Acorns ground and added to flavor beef or deer soups.											Ibid. p. 215
		Acorns ground and added to flavor beef or deer soups.											Ibid. p. 74
		Acorns parched on a tray or eaten raw.											Ibid. p. 215
		Wood used to make handles for implements, such as hoes and axes.											Ibid. p. 215
<i>Rhus trilobata</i>	Skunkbush Sumac	Berries crushed, soaked in water, ground, more water added and used as a drink.											Ibid. p. 229
		Berries sun dried and kept in sacks for future use.											Ibid. p. 229
		Stems used as an important basketry material.											Ibid. p. 229
<i>Ribes cereum</i>	Wax Currant	Stems made into arrow shafts and used in hunting large game.											Ibid. p. 221
		Stems made into arrow shafts and used in war.											Ibid. p. 221
<i>Ribes cereum</i> var. <i>pedicellare</i>	Whisky Currant	Stems made into arrow shafts and used in hunting large game.											Ibid. p. 221
		Stems made into arrow shafts and used in war.											Ibid. p. 221
<i>Rumex crispus</i>	Curly Dock	Leaves boiled and eaten.											Ibid. p. 217
		Young, fresh, tender leaves boiled, drained, balled into individual portions and served.											Ibid. p. 66

Havasupai Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
Salix bonplandiana	Red Willow				Young shoots used for basketry.								Ibid. p. 214	
					Wood used for fence posts and as fuel for fires.								Ibid. p. 214	
Sphaeralcea fendleri	Fendler's Globemallow				Juice made into a paste and mixed with clay before molding it into a pot.								Ibid. p. 232	
Sphaeralcea grossulariifolia	Gooseberryleaf Globemallow				Juice made into a paste and mixed with clay before molding it into a pot.								Ibid. p. 232	
Sphaeralcea parvifolia	Smallflower Globemallow				Juice made into a paste and mixed with clay before molding it into a pot.								Ibid. p. 232	
Stanleya pinnata	Desert Princesplume				Fresh leaves considered poisonous.								Ibid. p. 220	
					Leaves boiled two or three times to remove poisons and eaten.								Ibid. p. 220	
					Young, fresh, tender leaves boiled, drained, balled into individual portions and served.								Ibid. p. 66	
Symphoricarpos sp.	Snowberries				Stems used to make the rim of the shade for cradleboards.								Ibid. p. 243	
Thlaspi montanum	Alpine Pennycress	Seeds used in a variety of ways.											Ibid. p. 221	
Vitis arizonica	Canyon Grape	Fruit used for food.											Ibid. p. 231	
												Vines used to make the hoop of the hoop and pole game.	Ibid. p. 231	
Yucca angustissima	Narrowleaf Yucca				Leaves used to tie or repair holes in sacking.								Ibid. p. 213	
												Leaves used as tally sticks to keep track of scores in the hidden ball game.	Ibid. p. 213	
Yucca baccata	Banana Yucca	Plant used to make a drink.											Ibid. p. 66	
		Sheet of fruit flesh dried and the bits eaten dry when needed.											Bell and Castetter 1941 (p. 17)	
		Fruits split, sun dried and prepared for storage in the shape of a mat.												Weber and Seaman 1985 (p. 212)
					Leaf fiber braided into ropes.									Ibid. p. 212
									Roots used as a soap for washing the hair.					Ibid. p. 212
					Terminal spines used as needles.									Ibid. p. 212
													Ring of leaves wrapped in buckskin used in the hoop and pole game.	Ibid. p. 212
					Dried leaves boiled with gum, hardened, powdered, mixed with water & used to waterproof baskets.							Ibid. p. 212		

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HUALAPAI ETHNOBOTANY

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source		
Agave sp.	Mescal Agave	Used as a facial cream.												Watahomigie 1982 (p. 55)	
		Plant considered a main staple.													Ibid. (p. 55)
		Stems, before blooming, eaten like sugar cane.													Ibid. (p. 55)
		Plant stored for winter use.													Ibid. (p. 55)
											Cut, split leaves used to make sandals.				Ibid. (p. 55)
							Cut, split leaves used to make rope.								Ibid. (p. 55)
							Cut, split leaves used to make cradle mats.								Ibid. (p. 55)
					Crushed fibers used as an ingredient in pottery making.								Ibid. (p. 55)		
X	X	X			X		X						Hualapai Tribe 2004		
Aloysia wrightii Heller ex Abrams	Wright's Beebrush	Plant used for gonorrhoea.													Spier 1928 (p. 285)
Amaranthus spp.	amaranth	X	X									oral history, stories	Hualapai Tribe 2004		
Amelanchier utahensis	serviceberry	X											Hualapai Tribe 2004		
Arctostaphylos sp.	Arizona Manzanita	Berries used to make a drink.													Watahomigie 1982 (p. 46)
		Berries dried and stored for future use.													Ibid. (p. 46)
		Berries eaten fresh.													Ibid. (p. 46)
X	X			X			X						Hualapai Tribe 2004		
Artemisia sp.	Big Sagebrush	Infusion of leaves used as a bitter tonic for headaches.													Watahomigie 1982 (p. 46)
		Infusion of leaves used as a bitter tonic for colds.													Ibid. (p. 41)
		Infusion of leaves used as a bitter tonic for indigestion.													Ibid. (p. 41)
		Leaves used for cleansing the lungs in the sweathouse.													Ibid. (p. 41)
			X	X				X	X	X				sacred	Hualapai Tribe 2004
X	X					X	X	X				sacred	Hualapai Tribe 2004		
Asclepias spp.	milkweed							X				women	Hualapai Tribe 2004		
								X				women	Hualapai Tribe 2004		
Atriplex sp.	Four Winged Salt Bush	Infusion of smaller leaves used as a wash for aching body, joints and sore muscles.													Watahomigie 1982 (p. 11)
		X			dye									Hualapai Tribe 2004	
Baccharis sp.	Seep Willow	Hot poultice of leaves applied to swellings and aches.													Watahomigie 1982 (p. 17)
		Long, straight stems used for ramada roofs.													Ibid. (p. 17)
		Stems used for firewood.													Ibid. (p. 17)
Castilleja sp.	paintbrush			dye	dye				dye				Hualapai Tribe 2004		
Celtis laevigata var. reticulata (Torr.) L. Benson	Netleaf Hackberry	Fruit dried for winter use.													Watahomigie 1982 (p. 6)
		Fruit eaten fresh.													Ibid. (p. 6)
Celtis reticulata	hackberry	X				X	X					oral history, stories	Hualapai Tribe 2004		
Chrysothamnus spp.	rabbitbrush				X	X							Hualapai Tribe 2004		
Cowania sp.	cliffrose											Bark made into a ring used in a hoop and pole game.	Bell and Castetter 1941 (p. 54)		
Cucurbita foetidissima	gourd		X	X	X		X					sacred, men	Hualapai Tribe 2004		
Cymopterus sp.	Wild Onion	Roots pit roasted, mashed and fried into cakes.													Watahomigie 1982 (p. 46)
		Roots boiled for stew.													Ibid. (p. 46)
		Roots eaten raw.													Ibid. (p. 46)
Datura innoxia (D. meteloides)	sacred datura			X								oral history, stories, men	Hualapai Tribe 2004		
Descurainia spp.	tansymustard	X	X										Hualapai Tribe 2004		
Encelia frutescens var. resinosa	brittlebush		X										Hualapai Tribe 2004		
Ephedra sp.	Indian Tea	Infusion of green branches taken for medicinal purposes.													Watahomigie 1982 (p. 34)
		X	X	X	dye		X	X	dye				oral history	Hualapai Tribe 2004	
Erodium cicutarium	filaree	X	X										Hualapai Tribe 2004		
Eurotia lanata	winterfat		X	X								sacred, oral history, stories	Hualapai Tribe 2004		
Fallugia paradoxa	Apache plume				X		X					oral history, stories	Hualapai Tribe 2004		

HUALAPAI ETHNOBOTANY

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
					Branches used to make cradleboard hoods and beds.								Watahomigie 1982 (p. 37)
Gutierrezia sp.	Snake Weed				Used as a utilitarian brush to remove stickers off prickly pear fruits and for sweeping the floor.								Ibid. (p. 16)
					Used as an important plant in rain ceremonies.								Ibid. (p. 16)
			X	X			X					sacred	Hualapai Tribe 2004
Helianthus sp.	Sunflower	Seeds used for food.											Watahomigie 1982 (p. 2)
		Seeds stored for winter use.											Ibid. (p. 2)
					Seeds used to make a black dye.								Ibid. (p. 2)
					Seeds used to make a black dye.								Ibid. (p. 2)
		X		dye	dye				dye	X			Hualapai Tribe 2004
Juglans major (Torr.) Heller	Arizona Walnut	Nuts used for food.											Watahomigie 1982 (p. 13)
					Nut shells boiled and used as a dye.								Ibid. (p. 13)
		X		dye	X	X							Hualapai Tribe 2004
Juniperus sp.	Juniper				Poultice of leaf ash applied to sores.								Watahomigie 1982 (p. 32)
					Decoction of leaves taken for various disorders.								Ibid. (p. 32)
					Berries considered a starvation food because of their abundance.								Ibid. (p. 32)
		X	X	X	X	X	X					oral history, stories	Hualapai Tribe 2004
Lycium spp.	wolfberry	X	X	X	X							sacred, oral history, stories	Hualapai Tribe 2004
Mahonia fremontii (Torr.) Fedde	Fremont's Mahonia				Roots used as a bitter tonic to promote digestion.								Watahomigie 1982 (p. 5)
					Roots made into a bitter tonic and used as a laxative.								Ibid. (p. 5)
					Roots used as a bitter tonic for the liver.								Ibid. (p. 5)
					Berries used to make a beverage.								Ibid. (p. 5)
					Berries used for food.								Ibid. (p. 5)
					Roots used to make a brilliant yellow dye.								Ibid. (p. 5)
					Roots used as a yellow basket dye.								Weber and Seaman 1985 (p. 219)
		X	X	dye	dye				dye			oral history, stories	Hualapai Tribe 2004
Mahonia (Berberis) repens	oregongrape	X											Hualapai Tribe 2004
Mentzelia sp.	Stick Leaf				Mature seeds parched and stored for winter use.								Watahomigie 1982 (p. 52)
					Green seeds pounded into a gruel and cooked.								Ibid. (p. 52)
					Seeds considered an important staple.								Ibid. (p. 52)
Mimulus spp.	monkeyflower		X										Hualapai Tribe 2004
Nicotiana obtusifolia var. obtusifolia	Desert Tobacco				Used to smoke in ceremonials.								Watahomigie 1982 (p. 54)
			X	X			X					sacred, oral history, stories	Hualapai Tribe 2004
Opuntia sp.	Prickly Pear				Inner pad juice applied to burns.								Watahomigie 1982 (p. 4)
					Inner pad juice applied to cuts.								Ibid. (p. 4)
					Fruit made into a drink.								Ibid. (p. 4)
					Fruits sun dried and used for food.								Ibid. (p. 10)
					Fruit dried for future use.								Ibid. (p. 4)
					Fruits pit baked and eaten.								Ibid. (p. 10)
					Fruit eaten fresh.								Ibid. (p. 4)
		X		X								oral history, stories	Hualapai Tribe 2004
Opuntia whipplei	cholla	X		X	X		X					oral history, stories	Hualapai Tribe 2004
Phoradendron juniperinum	juniper mistletoe							X					Hualapai Tribe 2004
Phragmites australis (Cav.) Trin. ex Steud.	Common Reed				Shoots used to make arrow shafts.								Watahomigie 1982 (p. 7)
												Shoots used to make flutes.	Ibid. (p. 7)
Physalis sp.	Wild Tomato				Berries eaten fresh from the vine.								Ibid. (p. 9)
					Berries used to make preserves.								Ibid. (p. 9)
					Berries used to make relish.								Ibid. (p. 9)
Pinus edulis Engelm.	Twoneedle Pinyon				Decoction of inner bark taken as an expectorant tea.								Ibid. (p. 35)
					Fresh, white pitch burned to purify the air.								Ibid. (p. 35)
					Needles used to make a tea.								Ibid. (p. 35)

HUALAPAI ETHNOBOTANY

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
													Ibid. (p. 35)
													Ibid. (p. 35)
													Ibid. (p. 35)
													Ibid. (p. 35)
													Ibid. (p. 35)
					Pitch used to glue arrows and cradleboards.								Ibid. (p. 35)
												Pitch spread on the palms of the hand to make gripping rope easier.	Ibid. (p. 35)
													Ibid. (p. 35)
		X	X		X	X	X						Hualapai Tribe 2004
Pinus ponderosa	Ponderosa pine		X	X	X	X	X					sacred, oral history, stories	Hualapai Tribe 2004
													Trees considered a main economic resource for the tribe.
													Watahomigie 1982 (p. 21)
Populus sp.	Cottonwood Tree				New shoots used in basketry.								Ibid. (p. 3)
					Trunk hollowed out and used as a drum.								Ibid. (p. 3)
			X	X	X	X		X				oral history, stories	Hualapai Tribe 2004
Purshia mexicana (D. Don) Henrickson	Mexican Cliffrose				Leaves chewed for arthritis.								Watahomigie 1982 (p. 31)
					Leaves made into a tea for bathing and cleansing the skin.								Ibid. (p. 31)
					Inner bark used for huts and the lining of sweatshouses.								Ibid. (p. 31)
													Ibid. (p. 31)
			X	X	X	X	X	X	X			oral history, stories	Hualapai Tribe 2004
Quercus gambelii Nutt.	Gambel's Oak				Acorns used to make soup.								Watahomigie 1982 (p. 12)
					Acorns roasted and used for food.								Ibid. (p. 12)
		X			X	X							Hualapai Tribe 2004
Rhus trilobata Nutt.	Skunkbush Sumac				Leaves used on a person's body as an insect repellent.								Watahomigie 1982 (p. 15)
					Berries used to make a drink.								Ibid. (p. 15)
					Berries used for food.								Ibid. (p. 15)
					Roots boiled and used to make a dye.								Ibid. (p. 15)
					Limbs used to make baskets.								Ibid. (p. 15)
					Leaves used on a person's body as a snake repellent.								Ibid. (p. 15)
		X	X		X		X					lemonade	Hualapai Tribe 2004
Ribes cereum	wax currant	X											Hualapai Tribe 2004
Robinia neomexicana Gray	New Mexico Locust				Branches used to make cradleboards.								Watahomigie 1982 (p. 34)
					Wood, cured for a year, used to make hunting bows.								Ibid. (p. 34)
Rosa spp.	wild rose	X	X	X									Hualapai Tribe 2004
Rumex crispus	curly dock	X	X										Hualapai Tribe 2004
Salix sp.	willow				Used as the frame in coiled basketry.								Watahomigie 1982 (p. 29)
					Used to make shelters.								Ibid. (p. 29)
					Used for firewood.								Ibid. (p. 29)
			X	X	X		X					sacred, oral history, stories	Hualapai Tribe 2004
Sarcobatus vermiculatus	greasewood (creosote)		X		X			X				oral history, stories	Hualapai Tribe 2004
Sphaeralcea spp.	globemallow		X	X								sacred	Hualapai Tribe 2004
Vitis sp.	Wild Grape				Fruit used to make juice.								Watahomigie 1982 (p. 23)
					Fruit sun dried and stored for later use.								Ibid. (p. 23)
					Fruit eaten raw from the vine.								Ibid. (p. 23)
		X											Hualapai Tribe 2004
Yucca angustissima	narrowleaf yucca			X	X			X	X				Hualapai Tribe 2004
Yucca baccata	banana yucca	X	X	X	X		X	X				oral history, stories	Hualapai Tribe 2004
					Fruit used to make a fermented beverage.								Watahomigie 1982 (p. 39)
					Fruit baked, prepared and dried for winter use.								Ibid. (p. 39)
					Fruit eaten raw.								Ibid. (p. 39)

HUALAPAI ETHNOBOTANY

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
													Ibid. (p. 39)
													Bell and Castetter 1941 (p. 17)
													Ibid. (p. 17)
													Watahomigie 1982 (p. 39)
													Ibid. (p. 39)
													Ibid. (p. 39)
													Ibid. (p. 40)
Poaceae	grasses (seeds especially)	X	X	X	X		X	X				oral history, stories	Hualapai Tribe 2004

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Hualapai Ethnobotany

Scientific Name	Common Name	Hualapai Name
Agave sp.	mescal agave	<i>viyal</i>
Ageratina herbacea	snakeroot	
Amaranthus spp.	amaranth	
Amelanchier utahensis	serviceberry	
Artemisia spp.	sagebrush	<i>maqwapda</i>
Artiplex spp.	Four winged salt bush	<i>dasilk</i>
Asclepias spp.	milkweed	<i>liwithuj</i>
Berberis fermti	Algerita	<i>amaq</i>
Berberis repens	oregongrape	
Castilleja spp.	paintbrush	
Celtis reticulata	hackberry	<i>aqwa</i>
Cercocarpus montanus	mountain mahogany	<i>nyambuk</i>
Chrysothamnus spp.	rabbitbrush	
Cucurbita foetidissima	gourd	<i>a'ha:l</i>
Datura meteloides	Sacred datura	<i>smadk gadu</i>
Descurainia spp.	tansymustard	
Encelia frutescens var. resinosa	brittlebush	
Ephedra spp.	Indian Tea	<i>jumway</i>
Erodium cicutarium	Filaree	<i>min'min'ya'</i>
Eurotia lanata	winterfat	
Fallugia paradoxa	Apache plume	<i>madki</i>
Gutierrezia spp.	snakeweed	<i>gohwa:yo</i>
Helianthus spp.	Sunflower	<i>agad</i>
Juglans major	Black Walnut	<i>gamjudk</i>
Juniperus spp.	junipers	<i>joq</i>
Lycium spp.	wolfberry	
Mimulus spp.	monkeyflower	
Nicotiana spp.	tobacco	<i>u:v</i>
Opuntia spp.	prickly pear	<i>alav</i>
Opuntia whipplei	cholla	<i>daqwi:s</i>
Phoradendron juniperinum	juniper mistletoe	
Pinus edulis	Pinyon pine	<i>ko'</i>
Pinus ponderosa	Ponderosa pine	<i>hwa:l</i>
Populus spp.	cottonwood	<i>aha:</i>
Purshia spp.	cliffrose	<i>jiqya:l</i>
Quercus gambelii	Gambel Oak	<i>gambi</i>
Rhus trilobata	skunkbush sumac (lemonade bush)	<i>gith'e:</i>
Ribes cereum	wax currant	
Rosa spp.	wild rose	
Rumex crispus	curly dock	
Salix spp.	willow	<i>i'yo:</i>
Sarcobatus vermiculatus	greasewood (creosote)	<i>ivthi:</i>
Sphaeralcea spp.	globemallow	<i>jik buny</i>
Vitis arizonica	canyon grape	<i>i'je:qa</i>
Yucca angustissima	narrowleaf yucca	
Yucca baccata	banana yucca	<i>manad</i>
	grasses (seeds especially)	

Yavapai Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
Agave sp.	Mescal	Leaf stubs and heads pounded to express juice and used as a drink.											Gifford 1936
		Grass stem brush used to transfer excess mescal juice from dish to slab.											Ibid. (p. 259)
		Pounded, cooked, dried meaty centers of leaves stored in houses for later use.											Ibid. (p. 260)
		Flower stalk baked and soft, inner part used for food.											Ibid. (p. 259)
Amaranthus sp.		Leaves boiled for greens and sometimes mixed with dried mescal.											Ibid. (p. 256)
Arenaria sp.	Sandwort	Decoction of pounded root, with cathartic qualities, taken for stomachaches.											Gifford 1936
		Decoction of pounded root taken for stomachaches.											Ibid. (p. 261)
Baccharis pteronioides	Yerba De Pasmó	Decoction of leaves and roots used as wash for rheumatism.											Ibid. (p. 261)
		Decoction of leaves and roots used as wash for gonorrhoea.											Ibid. (p. 261)
Chenopodium sp.		Parched, ground, boiled seeds used for food.											Ibid. (p. 256)
		Leaves and stems boiled for greens.											Ibid. (p. 256)
Chrysothamnus viscidiflorus	Green Rabbitbrush	Stems used to brush off spines on fruits.											Ibid. (p. 257)
Clematis ligusticifolia	Western White Clematis	Decoction of pulverized root taken for stomachaches.											Ibid. (p. 261)
Cordylanthus sp.	Sunflower	Parched, ground seeds eaten dry or dampened.											Ibid. (p. 256)
Cyperus sp.		Decoction of dried, pulverized root taken for colds.											Ibid. (p. 261)
		Dried, pulverized root dusted on sores.											Ibid. (p. 261)
		Decoction of dried, pulverized root taken for stomachaches.											Ibid. (p. 261)
Euphorbia sp.		Decoction used for sores.											Ibid. (p. 261)
		Decoction used for gonorrhoea.											Ibid. (p. 261)
Iris missouriensis	Rocky Mountain Iris	Decoction of root taken as a purgative.											Ibid. (p. 261)
Juglans major	Arizona Walnut	Decoction of pulverized nut juice dipped up and sucked.											Gifford 1932
		Meat pulverized in mescal syrup and used as a beverage.											Gifford 1936
		Nut meat used for food.											Ibid. (p. 256)
		Nuts stored for later use.											Ibid. (p. 256)
Juniperus deppeana	Alligator Juniper	Pulverized berries soaked in water, put in mouth and juice sucked, the solid matter spat out.											Gifford 1932
		Ground berries made into a meal, water added and used as a beverage.											Gifford 1936
		Ground berries made into a meal, stored in baskets and later made into a cake by dampening.											Ibid. (p. 257)
		Ground berries made into a meal, water added and used as a beverage.											Ibid. (p. 257)
		Dead wood used for fuel.											Ibid. (p. 259)
Juniperus osteosperma	Utah Juniper	Ground berries made into a meal, water added and used as a beverage.											Ibid. (p. 257)
		Ground berries made into a meal, stored in baskets and later made into a cake by dampening.											Ibid. (p. 257)
		Ground berries made into a meal, water added and used as a beverage.											Ibid. (p. 257)
		Dead wood used for fuel.											Ibid. (p. 259)
		Bark used as a torch.											Ibid. (p. 259)
Lupinus sp.		Boiled leaves used for greens.											Ibid. (p. 257)
Mahonia fremontii	Fremont's Mahonia	Raw berries used for food.											Ibid. (p. 257)
Mimulus guttatus	Seep Monkeyflower	Decoction taken as tea for stomachache.											Ibid. (p. 261)
Nicotiana attenuata	Coyote Tobacco	Dried stems and leaves used for smoking.											Ibid. (p. 263)
Opuntia erinacea	Grizzlybear Pricklypear	Raw fruit used for food.											Ibid. (p. 257)
Opuntia sp.		Ground fruit made into cakes.											Ibid. (p. 257)
		Fruit dried in cakes or opened and dried without expressing juice.											Ibid. (p. 257)
		Salty fruit eaten only out of necessity and the seeds spat out.											Ibid. (p. 257)
		Juice used as a beverage.											Ibid. (p. 257)
Quercus gambelii	Gambel's Oak	Acorns sometimes added as thickening to venison stews.											Ibid. (p. 257)
		Uncooked acorns used for food.											Ibid. (p. 257)

Yavapai Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual/ Ceremony	Construction, Manufacture	Fuel	Economic	Bathing/ Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
Rhus trilobata var. pilosissima	Pubescent Squawbush	Mashed berries mixed with water or mescal syrup and used as a beverage.											Gifford 1936
		Seeds used for food.											Ibid. (p. 257)
Rumex crispus	Curly Dock	Decoction of tubers taken for coughs.											Ibid. (p. 261)
		Dried, pulverized tubers used for sores.											Ibid. (p. 261)
		Decoction of tubers taken for stomachache.											Ibid. (p. 261)
		Dried, pulverized tubers used for babies with chafed skin.											Ibid. (p. 261)
		Decoction of tubers gargled for sore throat.											Ibid. (p. 261)
		Fresh or boiled tuber placed against gum or tooth or decoction held in mouth for toothaches.											Ibid. (p. 261)
		Decoction of tuber used as wash and powder applied for gonorrhoea.											Ibid. (p. 261)
		Upper stalk roasted during food shortage.											Ibid. (p. 258)
Yucca baccata	Banana Yucca	Dried fruit soaked in water until pulp dissolved and liquid drunk.											Bell and Castetter 1941
		Sun dried fruit boiled and used as a beverage.											Gifford 1936
		Sun dried fruit boiled and used for food.											Ibid. (p. 258)
		Fruit cooked in coals and used for food.											Ibid. (p. 258)
		Flower stalks gathered before blossoming, roasted in fire and prepared for use.											Bell and Castetter 1941
		Leaf fiber used to tie grass stems of mescal to make a brush.											Gifford 1936
		Root, stem and leaves pounded and worked in water to form lather for washing hair and body.											Bell and Castetter 1941
Yucca sp.	Soaproot	Boiled fruit used for food.											Gifford 1936
		Flower stalk picked before blooming, roasted in fire and used for food.											Ibid. (p. 258)

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APPENDIX D:
SOUTHERN PAIUTE ETHNOBOTANY

Southern Paiute Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
<i>Abronia elliptica</i> (syn. <i>A. fragrans</i> var. <i>elliptica</i> , <i>A. pumila</i> , <i>A. ramosa</i> , <i>A. salsa</i>)	Fragrant white sand verbena											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Achillea millefolium</i> var. <i>lanulosa</i> (syn. <i>A. millefolium</i> var. <i>occidentalis</i>)	Western yarrow		Leaves used to make tea for coughs, weak or upset stomachs.									x	CGTO 1996 (pG--14-17, A--1-35)	
			Crushed green plant smelled for headaches.											Stoffle and Dobyns 1983 (p142)
<i>Achillea millefolium</i> var. <i>occidentalis</i>	Western Yarrow		Compound decoction of plant taken for gonorrhoea.										Train, Henrichs, and Archer 1941 (p. 31-33)	
			Decoction of leaves taken for headaches.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Decoction of leaves used as a wash for fevers.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Decoction of plant taken as a blood tonic after childbirth.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Decoction of plant taken for bladder ailments.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Decoction of plant used as a liniment or wash for sores or rashes.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Decoction of plant used to disinfect cuts and saddle sores on horses.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Decoction of root believed to be good for the kidneys.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Decoction of root taken for gas pains.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Green leaves or roots used in various ways for toothaches.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Poultice of boiled leaves applied to collar sores on horses.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Poultice of boiled, whole plant applied to pains or sores.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Poultice of boiled, whole plant applied to sores.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Poultice of mashed leaves applied as a compress for headaches.											Train, Henrichs, and Archer 1941 (p. 31-33)
			Poultice of mashed leaves applied to swellings or sores.											Train, Henrichs, and Archer 1941 (p. 31-33)
	Poultice of mashed, green plant applied to swellings.											Train, Henrichs, and Archer 1941 (p. 31-33)		
	Root chewed for colds.											Train, Henrichs, and Archer 1941 (p. 31-33)		
	Strained decoction of leaves used as drops for sore eyes.											Train, Henrichs, and Archer 1941 (p. 31-33)		
<i>Achnatherum hymenoides</i> (see syn. <i>Oryzopsis hymenoides</i>)	Indian Ricegrass		Ground seeds used for flour.										Murphey 1990 (p. 32)	
			Ground seeds used for sauce.											Murphey 1990 (p. 32)
			Roasted and ground into flour.											Steward 1933 (p. 244)
			Seeds ground into a meal for mush.											Murphey 1990 (p. 26-27)
			Seeds ground											Stoffle and Dobyns 1983 (p81)
												x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Achnatherum speciosum</i>	Desert Needlegrass		Seeds used to make mush.										Steward 1933 (p. 243)	
<i>Agave parryi</i>	Parry's agave											x	CGTO 1996 (pG--14-17, A--1-35)	
			Used as one of the most important foods.										Castetter 1935 (p. 10)	
<i>Agropyron cristatum</i>	Crested wheatgrass											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Agropyron pseudorepens</i>	False quackgrass											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Agropyron smithii</i>	Western wheatgrass		Ground into flour									x	CGTO 1996 (pG--14-17, A--1-35)	
													Stoffle and Dobyns 1983 (p80)	
<i>Agropyron</i> sp.	Wheat Grass		Species used for food.										Steward 1933 (p. 243)	
<i>Agropyron trachycaulum</i>	Slender wheatgrass											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Allenrolfea occidentalis</i>	Iodine-bush		Ground										Stoffle and Dobyns 1983 (p80)	
<i>Amaranthus albus</i> (syn. <i>A. graecizan</i>)	Amaranth, Prostrate pigweed		The seeds of the Amaranth were processed into food through various methods									x	CGTO 1996 (pG--14-17, A--1-35)	
													Stoffle and Dobyns 1983 (p80)	
<i>Amaranthus blitoides</i>	Mat amaranth											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Amaranthus powellii</i>	Powell's Amaranth		Fresh greens, pot herbs.										Stoffle and Dobyns 1983 (p86)	
			Seeds processed into food by various methods.										Stoffle and Dobyns 1983 (p80)	
												x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Amaranthus retroflexus</i>	Redroot amaranth		Fresh greens, pot herbs.										Stoffle and Dobyns 1983 (p86)	

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
		Seeds processed into food by various methods.											Stoffle and Dobyns 1983 (p80)
												x	CGTO 1996 (pG--14-17, A--1-35)
Amaranthus wrightii	Wright's amaranth											x	CGTO 1996 (pG--14-17, A--1-35)
Ambrosia artemisiifolia	Annual ragweed											x	CGTO 1996 (pG--14-17, A--1-35)
Amelanchier utahensis	Utah Serviceberry	Berries crushed, dried and used for food.											Kelly 1932 (p. 100)
												x	CGTO 1996 (pG--14-17, A--1-35)
		Berries eaten fresh.											Kelly 1932 (p. 100)
Androstephium breviflorum	Pink funnellily											x	CGTO 1996 (pG--14-17, A--1-35)
Arabis perennans	Perennial rockcross											x	CGTO 1996 (pG--14-17, A--1-35)
Arceuthobium divaricatum	Pinyon dwarf mistletoe											x	CGTO 1996 (pG--14-17, A--1-35)
Arenaria confusa	Spreading sandwort											x	CGTO 1996 (pG--14-17, A--1-35)
Arenaria eastwoodiae	Eastwood's sandwort											x	CGTO 1996 (pG--14-17, A--1-35)
Arenaria lanuginosa ssp. saxosa	Spreading sandwort											x	CGTO 1996 (pG--14-17, A--1-35)
Artemisia bigelovii	Bigelow's sagebrush											x	CGTO 1996 (pG--14-17, A--1-35)
Artemisia dracunculoides	Taragon, wormwood	The seeds were gathered and ground.											Stoffle and Dobyns 1983 (p80)
												x	CGTO 1996 (pG--14-17, A--1-35)
		Leaves used to make tea for colds, coughs, stomach ache, childbirth, worm, swellings and bruises.											Stoffle and Dobyns 1983 (p142)
		Foliage used for medicine man's costume.											Murphey 1990 (p. 51)
		Hot decoction of branches used as a wash for rheumatism.											Train, Henrichs, and Archer 1941 (p. 39, 40)
		Hot poultice of plant tops applied to sprains, swellings or rheumatism.											Train, Henrichs, and Archer 1941 (p. 39, 40)
		Poultice of plant tops applied for swellings.											Train, Henrichs, and Archer 1941 (p. 39, 40)
		Decoction of whole plant taken as a tonic after childbirth.											Train, Henrichs, and Archer 1941 (p. 39, 40)
		Poultice of plant tops applied for sprains.											Train, Henrichs, and Archer 1941 (p. 39, 40)
		Decoction of whole plant taken as a tonic after childbirth.											Train, Henrichs, and Archer 1941 (p. 39, 40)
Artemisia filifolia	Sand sagebrush											x	CGTO 1996 (pG--14-17, A--1-35)
		Leaves used to make tea for colds, coughs, stomach ache, childbirth, worm, swellings nd bruises.											Stoffle and Dobyns 1983 (p142)
Artemisia frigida	Fringed sagewort											x	CGTO 1996 (pG--14-17, A--1-35)
Artemisia ludoviciana	White sagebrush, Louisiana sagewort	The seeds were gathered and ground											Stoffle and Dobyns 1983 (p80)
												x	CGTO 1996 (pG--14-17, A--1-35)
		Leaves used to make tea for colds, coughs, stomach ache, childbirth, worm, swellings nd bruises.											Stoffle and Dobyns 1983 (p142)
		Decoction of plant used as a soaking bath for aching feet.											Train, Henrichs, and Archer 1941 (p. 40-42)
Artemisia ludoviciana ssp. ludoviciana	Foothill Sagewort	Plant used as wash by dancers after the Sun Dance.											Murphey 1990 (p. 51)
		Hot or cold decoction of whole plant or young growth taken for stomachaches.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Poultice of steamed plants or bruised leaves used for rheumatism or other aches.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Poultice of steeped leaves used as a compress for headaches.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Decoction of plant taken for diarrhea.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Branches used in a sweatbath for rheumatism.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Poultice of steamed plants or bruised leaves used for rheumatism or other aches.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Decoction of plant used as a wash for rashes, itching or skin eruptions.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Poultice of leaves or stems and leaves applied to swellings, boils and sores.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Branches used as a bed in a sweatbath to steam out infection of influenza.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Branches used as a bed in a sweatbath to steam out infection of influenza.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Decoction of leaves used as an eyewash.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Poultice of steeped leaves used, especially for babies, as a compress for fevers.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Decoction of whole plant or shoots taken for stomachaches.											Train, Henrichs, and Archer 1941 (p. 40-42)
		Decoction of root or entire plant taken as a tonic after childbirth.											Train, Henrichs, and Archer 1941 (p. 40-42)

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
			Infusion of leaves used as a regulator of menstrual disorders.										Train, Henrichs, and Archer 1941 (p. 40-42)
			Branches used as a bed in a sweatbath to steam out infection of influenza.										Train, Henrichs, and Archer 1941 (p. 40-42)
			Branches used as a bed in a sweatbath to steam out infection of influenza.										Train, Henrichs, and Archer 1941 (p. 40-42)
			Decoction of plant used as a soaking bath for aching feet.										Train, Henrichs, and Archer 1941 (p. 40-42)
			Poultice of steeped leaves used, especially for babies, as a compress for fevers.										Train, Henrichs, and Archer 1941 (p. 40-42)
			Decoction of root or entire plant taken as a tonic after childbirth.										Train, Henrichs, and Archer 1941 (p. 40-42)
			Decoction of plant tops taken for venereal diseases.										Train, Henrichs, and Archer 1941 (p. 40-42)
			Poultice of steamed plants or bruised leaves used for rheumatism or other aches.										Train, Henrichs, and Archer 1941 (p. 40-42)
			Poultice of steamed plants or bruised leaves used for rheumatism or other aches.										Train, Henrichs, and Archer 1941 (p. 40-42)
<i>Artemisia pacifica</i>	Pacific wormwood											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Artemisia tridentata</i>	Big Sagebrush	Seeds roasted, ground into flour and eaten with water.											Steward 1933 (p. 243)
												x	CGTO 1996 (pG--14-17, A--1-35)
			Leaves used to make tea for colds, coughs, stomach ache, childbirth, worm, swellings nd bruises.										Stoffle and Dobyns 1983 (p142)
			Wash made for sore eyes.										Stoffle and Dobyns 1983 (p148)
		Seeds used, generally mixed with other seeds, in times of food shortages.											Steward 1933 (p. 243)
		Seeds used, generally mixed with other seeds, in times of food shortages.											Steward 1933 (p. 243)
		Burning plant used as an inhalant for headache.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of branches taken for headache.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of branches taken for stomachaches, especially children's.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Burning branches used as an inhalant for head colds.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Compound decoction of plant tops taken for colds.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of leaves taken or raw leaves eaten for colds.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Poultice of mashed, green leaves applied for chest colds.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of leaves used as an antiseptic wash for cuts, wounds or sores.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Poultice of wet, steeped leaves applied to bullet wounds.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Pulverized leaves used as a talcum powder for babies.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of leaves used as an antiseptic wash for cuts, wounds or sores.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of leaves taken for malarial fever.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of branches used for stomachaches, especially children's.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Raw leaves chewed for indigestion.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of plant taken as a general tonic, especially after childbirth.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of leaves taken for malarial fever.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of branches used as liniment for lumbago, muscular cramps and sore feet.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of branches used for stomachaches, especially children's.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Finely pulverized dried leaves used as a baby powder.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Compound decoction of leaves taken and poultice of decoction used for pneumonia.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Poultice of mashed, green leaves applied for chest colds.											Train, Henrichs, and Archer 1941 (p. 44-47)
		Decoction of plant taken as a general tonic, especially after childbirth.											Train, Henrichs, and Archer 1941 (p. 44-47)
<i>Asclepias asperula</i> ssp. <i>Capricornus</i>	Antelopehorns											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Asclepias involucrata</i>	Dwarf milkweed											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Asclepias latifolia</i>	Broadleaf milkweed											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Asclepias subverticillata</i>	Whorled milkweed											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Aster arenosus</i>	Rose heath											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Aster spinosus</i>	Spiny chloracantha											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Astragalus allochrous</i>	Halfmoon milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Astragalus amphioxys</i>	Crescent milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source			
<i>Astragalus episcopus</i>	Bishop's milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Astragalus lancearius</i>	Bishop's milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Astragalus lentiginosus</i>	Specklepod milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Astragalus lentiginosus</i> var. <i>albiflorus</i> (syn. <i>A. lentiginosus</i> var. <i>diphysus</i>)	Specklepod milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Astragalus praelongus</i>	Stinking milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Astragalus recurvus</i>	Recurved milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Astragalus tephrodes</i>	Ashen milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Astragalus wootonii</i>	Wooton's milkvetch											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Atriplex canescens</i>	Fourwing saltbush											x	CGTO 1996 (pG--14-17, A--1-35)			
			Poultice or powder for sores.											Stoffle and Dobyns 1983 (p146)		
<i>Atriplex confertifolia</i>	Shadscale saltbush	The seeds are gathered and ground										x	CGTO 1996 (pG--14-17, A--1-35)			
														Stoffle and Dobyns 1983 (p80)		
<i>Atriplex obovata</i>	Mound saltbush	The seeds are gathered and ground										x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Atriplex</i> sp.	Salt Bush	Species used for food.											Steward 1933 (p. 244)			
<i>Baccharis pteronioides</i>	Yerba de pasmo											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Baccharis wrightii</i>	Wright's baccharis											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Berberis fremontii</i>	Fremont's mahonia	Berries eaten fresh.										x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Berberis repens</i> (syn. <i>Mahonia repens</i>)	Oregongrape		Plant chewed for colds.									x	CGTO 1996 (pG--14-17, A--1-35)			
			Decoction of root taken to prevent or stop bloody dysentery.											Train, Henrichs, and Archer 1941 (p. 51, 52)		
			Decoction of root taken as a blood tonic or purifier.												Train, Henrichs, and Archer 1941 (p. 51, 52)	
			Decoction of root taken to "thicken the blood of haemophilic persons."												Train, Henrichs, and Archer 1941 (p. 51, 52)	
			Decoction of root, sometimes with whiskey, taken for coughs.												Train, Henrichs, and Archer 1941 (p. 51, 52)	
			Decoction of stems taken as a tonic for stomach troubles.													Train, Henrichs, and Archer 1941 (p. 51, 52)
			Decoction of root taken for bladder difficulties.													Train, Henrichs, and Archer 1941 (p. 51, 52)
			Decoction of roots taken for venereal diseases.													Train, Henrichs, and Archer 1941 (p. 51, 52)
<i>Brickellia oblongifolia</i>	Mojave brickellbush											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Calochortus ambiguus</i>	Doubting Mariposa lily											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Carex geophila</i>	White Mountain sedge											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Carex lanuginosa</i>	Woolly sedge											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Carex occidentalis</i>	Western sedge											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Castilleja chromosa</i> (syn. <i>C. applegatei</i> ssp. <i>martinii</i>)	Northwestern Indian paintbrush											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Castilleja integra</i>	Wholeleaf Indian paintbrush											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Castilleja linariifolia</i>	Wyoming Indian paintbrush											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Castilleja</i> sp.	Indian Paint Brush	Plant bases sucked for the sweetness.											Steward 1933 (p. 246)			
<i>Cercocarpus montanus</i>	True mountain mahogany											x	CGTO 1996 (pG--14-17, A--1-35)			
<i>Chamaebatiaria millefolium</i>	Fernbush											x	CGTO 1996 (pG--14-17, A--1-35)			
			Compound decoction of young shoots taken for lumbago.											Train, Henrichs, and Archer 1941 (p. 56, 57)		
<i>Chenopodium album</i>	Lambsquarters											x	CGTO 1996 (pG--14-17, A--1-35)			
			Seeds parched, ground and eaten as meal.											Kelly 1932 (p. 98)		
			Species used for food.											Steward 1933 (p. 244)		
<i>Chenopodium berlandieri</i>	Pitseed goosefoot											x	CGTO 1996 (pG--14-17, A--1-35)			

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Chenopodium fremontii	Fremont's goosefoot											x	CGTO 1996 (pG--14-17, A--1-35)	
		Species used for food.											Steward 1933 (p. 243)	
Chenopodium graveolens var. neomexicanum	Fetid goosefoot											x	CGTO 1996 (pG--14-17, A--1-35)	
Chenopodium hians	Hians goosefoot											x	CGTO 1996 (pG--14-17, A--1-35)	
Chenopodium incisum	Fetid goosefoot											x	CGTO 1996 (pG--14-17, A--1-35)	
Chenopodium leptophyllum	Narrowleaf goosefoot											x	CGTO 1996 (pG--14-17, A--1-35)	
Chenopodium sp.		Cultivated and used as cereal and greens											Stoffle and Dobyns 1983 (p70)	
Chrysothamnus depressus	Longflower rabbitbrush											x	CGTO 1996 (pG--14-17, A--1-35)	
Chrysothamnus nauseosus	Rubber rabbitbrush											x	CGTO 1996 (pG--14-17, A--1-35)	
Chrysothamnus nauseosus ssp. consimilis (syn. Ericameria nauseosa var. oreophila)	Rubber rabbitbrush											x	CGTO 1996 (pG--14-17, A--1-35)	
Chrysothamnus viscidiflorus (syn. Ericameria nauseosa var. nauseosa)	Green Rabbitbrush		Decoction of young growth taken for coughs.											Train, Henrichs, and Archer 1941 (p. 57, 58)
			Branches used as a bed in the sweatbath for rheumatism.											Train, Henrichs, and Archer 1941 (p. 57, 58)
			Infusion of crushed leaves taken for colds.											Train, Henrichs, and Archer 1941 (p. 57, 58)
												x	CGTO 1996 (pG--14-17, A--1-35)	
Cirsium arizonicum	Arizona thistle											x	CGTO 1996 (pG--14-17, A--1-35)	
Cirsium pulchellum (syn. C. calcareum)	Cainville thistle											x	CGTO 1996 (pG--14-17, A--1-35)	
Cirsium vulgare	Bull thistle											x	CGTO 1996 (pG--14-17, A--1-35)	
Cirsium wheeleri	Wheeler's thistle											x	CGTO 1996 (pG--14-17, A--1-35)	
Clematis ligusticifolia	Western white clematis											x	CGTO 1996 (pG--14-17, A--1-35)	
			Decoction of leaves used as a wash or tub bath for dropsical conditions.											Train, Henrichs, and Archer 1941 (p. 59, 60)
Corallorrhiza maculata	Summer Coralroot		Decoction of stalks used to "build up the blood" of pneumonia patients.											Train, Henrichs, and Archer 1941 (p. 60)
			Infusion of dried stalks taken to build up the blood of pneumonia patients.											Train, Henrichs, and Archer 1941 (p. 60)
Cordylanthus wrightii	Wright's bird's beak											x	CGTO 1996 (pG--14-17, A--1-35)	
Cornus stolonifera (syn. C. sericea)	Redosier dogwood											x	CGTO 1996 (pG--14-17, A--1-35)	
			Smoked for unspecified complaint.											Stoffle and Dobyns 1983 (p150)
Coryphantha vivipara	Spinystar											x	CGTO 1996 (pG--14-17, A--1-35)	
Cowania mexicana	Mexican cliffrose											x	CGTO 1996 (pG--14-17, A--1-35)	
			Leaves used to make tea for venereal disease and colds.											Stoffle and Dobyns 1983 (p142)
Cryptantha cinerea	James' catseye											x	CGTO 1996 (pG--14-17, A--1-35)	
Cryptantha crassisejala	Thicksepal catseye											x	CGTO 1996 (pG--14-17, A--1-35)	
Cryptantha gracilis	Narrowstem catseye											x	CGTO 1996 (pG--14-17, A--1-35)	
Cryptantha jamesii	James' catseye											x	CGTO 1996 (pG--14-17, A--1-35)	
Cryptantha pterocarya	Wingnut catseye											x	CGTO 1996 (pG--14-17, A--1-35)	
Cryptantha setosissima	Bristly catseye											x	CGTO 1996 (pG--14-17, A--1-35)	
Cucurbita foetidissima	Missouri gourd	Fruit and seed eaten											Stoffle and Dobyns 1983 (p68)	
			Decoction of root taken as a physic for venereal disease.											Train, Henrichs, and Archer 1941 (p. 62, 63)
		Seeds ground											Stoffle and Dobyns 1983 (p80)	
			Tea from root/bark/branch for venereal disease.											Stoffle and Dobyns 1983 (p144)
			Poultice or powder applied to piles and sores.											Stoffle and Dobyns 1983 (p146)
			Decoction of root used to kill maggots in wounds.											Train, Henrichs, and Archer 1941 (p. 62, 63)
			Decoction of root taken as an emetic for venereal disease.											Train, Henrichs, and Archer 1941 (p. 62, 63)

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			Decoction of root taken as an emetic and physic for venereal diseases.										Train, Henrichs, and Archer 1941 (p. 62, 63)
			Pulverized seeds sprinkled on venereal sores.										Train, Henrichs, and Archer 1941 (p. 62, 63)
<i>Cymopterus bulbosus</i>	Bulbous springparsley											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Cymopterus multinervatus</i>	Purplenerve springparsley											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Cymopterus purpurascens</i>	Widewing springparsley											x	CGTO 1996 (pG--14-17, A--1-35)
												Roots used.	Stoffle and Dobyns 1983 (p83)
<i>Dalea filiformis</i>	Sonoran prairieclover											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Dalea lanata</i> var. <i>terminalis</i>	Woolly prairieclover											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Dalea</i> sp.		Species used for food.											Steward 1933 (p. 243)
<i>Datura innoxia</i> (syn. <i>D. wrightii</i>)	Sacred Thornapple, Angel's trumpet		Roots used to make a narcotic tea and not used medicinally.										Train, Henrichs, and Archer 1941 (p. 66, 67)
												x	CGTO 1996 (pG--14-17, A--1-35)
			Plant chewed for coughs.										Stoffle and Dobyns 1983 (p149)
			Plant enabled one to ascertain one's life span and "whose days were numbered."										Steward 1933 (p. 318)
			Plant taken to find lost objects and remember where things were hidden.										Steward 1933 (p. 318)
			Seeds eaten for good luck while gambling and enabled the eater to guess correctly in the hand game.										Steward 1933 (p. 318)
<i>Datura meteloides</i>	Sacred thornapple											x	CGTO 1996 (pG--14-17, A--1-35)
			Plant chewed for coughs.										Stoffle and Dobyns 1983 (p149)
<i>Descurainia californica</i>	Sierran tansymustard											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Descurainia obtusa</i>	Blunt tansymustard											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Descurainia pinnata</i>	Tansey mustard	Fresh greens, pot herbs.											Stoffle and Dobyns 1983 (p86)
		Seeds ground											Stoffle and Dobyns 1983 (p80)
												x	CGTO 1996 (pG--14-17, A--1-35)
<i>Descurainia pinnata</i> ssp. <i>glabra</i>	Western tansymustard											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Descurainia pinnata</i> ssp. <i>ochroleuca</i>	Western tansymustard											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Descurainia richardsonii</i> (syn. <i>D. incana</i> ssp. <i>incana</i>)	Mountain tansymustard											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Distichlis spicata</i> var. <i>stricta</i>	Inland saltgrass											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Dyssodia pentachaeta</i>	Fiveneedle pricklyleaf											x	CGTO 1996 (pG--14-17, A--1-35)
			Smoke for sore eyes.										Stoffle and Dobyns 1983 (p150)
<i>Echinocactus polycephalus</i>	Cottontop cactus											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Echinocereus fendleri</i>	Pinkflower hedgehog cactus											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Echinocereus triglochidiatus</i> var. <i>melanacanthus</i> (syn. <i>E. melanacanthus</i>)	Scarlet hedgehog cactus											x	CGTO 1996 (pG--14-17, A--1-35)
			Poultice or powder for boils.										Stoffle and Dobyns 1983 (p146)
<i>Elymus canadensis</i>	Canada wildrye	Seeds ground											Stoffle and Dobyns 1983 (p80)
												x	CGTO 1996 (pG--14-17, A--1-35)
<i>Encelia frutescens</i> var. <i>resinosa</i>	Button brittlebush											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Ephedra cutleri</i>	Mormon tea											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Ephedra</i> sp.	Indian Tea	Dried twigs made into an aromatic tea.											Murphey 1990 (p. 17)
<i>Ephedra torreyana</i>	Torrey's jointfir											x	CGTO 1996 (pG--14-17, A--1-35)
			Leaves used to make tea for internal disorder, veneral disease, stomach ache.										Stoffle and Dobyns 1983 (p142)
			Poultice or powder for burns and venereal disease.										Stoffle and Dobyns 1983 (p146)
<i>Ephedra viridis</i>	Mormon tea	Leafless needles boiled into a drink.											Steward 1933 (p. 245)
												x	CGTO 1996 (pG--14-17, A--1-35)
			Leaves used to make tea for internal disorder, veneral disease, stomach ache.										Stoffle and Dobyns 1983 (p142)

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			Compound infusion of plant given to children for diarrhea.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Infusion or decoction of twigs or branches taken for rheumatism.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Infusion or decoction of twigs or branches taken as a blood purifier.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Infusion or decoction of twigs or branches taken for colds.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Dried, powdered stems applied to sores.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Infusion or decoction of twigs or branches used for stomach ulcers and disorders.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Infusion or decoction of twigs or branches taken as a kidney regulator.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Compound infusion of plant given to children for diarrhea.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Infusion or decoction of twigs or branches taken as a tonic.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Infusion or decoction of twigs or branches used as a kidney regulator and for bladder.										Train, Henrichs, and Archer 1941 (p. 68-70)
			Decoction of twigs taken for syphilis or gonorrhea.										Train, Henrichs, and Archer 1941 (p. 68-70)
Equisetum laevigatum	Smooth horsetail											x	CGTO 1996 (pG--14-17, A--1-35)
Eragrostis pectinacea	Tufted lovegrass	Seeds ground											Stoffle and Dobyns 1983 (p80)
												x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron concinnus	Navajo fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron concinnus var. condensatus	Navajo fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron divergens	Spreading fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron flagellaris	Trailing fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron modestus	Plains fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron neomexicanus	New Mexico fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron oreophilus	Chaparral fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron pringlei	Pringle's fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron pumilus ssp. concinoides	Navajo fleabane											x	CGTO 1996 (pG--14-17, A--1-35)
Erigeron schiedeanus	Pineland marshall											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum alatum	Winged buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum corymbosum	Crispleaf buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum corymbosum var. glutinosum	Crispleaf buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum deflexum	Flatcrown buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum divaricatum	Divergent buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum hookeri	Hooker's buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum jamesii var. flavescens	James' buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum jonesii	Jones' buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum leptocladon	Sand buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum racemosum	Redroot buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum umbellatum	Sulphur Wildbuckwheat		Poultice of mashed leaves, often with roots, used for lameness or rheumatism.										Train, Henrichs, and Archer 1941 (p. 73)
			Hot decoction of roots taken for colds.										Train, Henrichs, and Archer 1941 (p. 73)
			Decoction of root taken for stomachaches.										Train, Henrichs, and Archer 1941 (p. 73)
			Poultice of leaves, and sometimes roots, applied for lameness or rheumatism.										Train, Henrichs, and Archer 1941 (p. 73)
Eriogonum umbellatum var. cognatum	Sulphurflower buckwheat		Decoction of roots taken for stomachaches.									x	CGTO 1996 (pG--14-17, A--1-35)
Eriogonum wetherillii	Wetherill's buckwheat											x	CGTO 1996 (pG--14-17, A--1-35)
Erodium cicutarium	Redstem stork's bill											x	CGTO 1996 (pG--14-17, A--1-35)

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Euphorbia albomarginata (syn. Chamaesyce albomarginata)	Whitemargin sandmat		Wash made for sore eyes.									x	CGTO 1996 (pG--14-17, A--1-35)	
			Smoke for sore eyes.										Stoffle and Dobyns 1983 (p148)	
														Stoffle and Dobyns 1983 (p150)
Euphorbia exstipulata	Squareseed spurge											x	CGTO 1996 (pG--14-17, A--1-35)	
Euphorbia fendleri (syn. Chamaesyce fendleri)	Fendler's sandmat											x	CGTO 1996 (pG--14-17, A--1-35)	
Euphorbia lurida (syn. E. brachycera)	San Francisco Mountain spurge											x	CGTO 1996 (pG--14-17, A--1-35)	
Euphorbia micromera (syn. Chamaesyce micromera)	Sonoran sandmat											x	CGTO 1996 (pG--14-17, A--1-35)	
Euphorbia parryi (syn. Chamaesyce parryi)	Parry's sandmat											x	CGTO 1996 (pG--14-17, A--1-35)	
Euphorbia revoluta (syn. Chamaesyce revoluta)	Threadstem sandmat											x	CGTO 1996 (pG--14-17, A--1-35)	
Euphorbia serpyllifolia (syn. Chamaesyce serpyllifolia ssp. serpyllifolia)	Thymeleaf sandmat											x	CGTO 1996 (pG--14-17, A--1-35)	
Eurotia lanata (syn. Krascheninnikovia lanata)	Winterfat		Decoction of plant used as a head and scalp tonic and prevents graying.										Train, Henrichs, and Archer 1941 (p. 74, 75)	
			Decoction of leaves alone or with stems used as a wash or compress for sore eyes.										x	CGTO 1996 (pG--14-17, A--1-35)
Fallugia paradoxa	Apacheplume											x	CGTO 1996 (pG--14-17, A--1-35)	
Forsellesia nevadensis	Spiny greasebush											x	CGTO 1996 (pG--14-17, A--1-35)	
Gaura coccinea	Scarlet beeblossom											x	CGTO 1996 (pG--14-17, A--1-35)	
Gilia aggregata (syn. Ipomopsis aggregata ssp. aggregata)	Skyrocket gilia		Tea from root/bark/branch for stomach ache.										x	CGTO 1996 (pG--14-17, A--1-35)
														Stoffle and Dobyns 1983 (p144)
Gutierrezia microcephala	Threadleaf snakeweed											x	CGTO 1996 (pG--14-17, A--1-35)	
Gutierrezia sarothrae	Broom snakeweed		Poultice of boiled leaves in cloth applied as a heat pack for rheumatism.										Train, Henrichs, and Archer 1941 (p. 82, 83)	
			Poultice of boiled leaves applied to top of head for nosebleed.										x	CGTO 1996 (pG--14-17, A--1-35)
			Poultice of boiled leaves applied for sprains.											Train, Henrichs, and Archer 1941 (p. 82, 83)
Helianthus petiolaris	Prairie sunflower											x	CGTO 1996 (pG--14-17, A--1-35)	
Heliotropium curassavicum	Salt heliotrope		Decoction of plant or roots taken in cases of "retention of urine."										Train, Henrichs, and Archer 1941 (p. 84, 85)	
			Tea from root/bark/branch for internal disorders.										x	CGTO 1996 (pG--14-17, A--1-35)
			Decoction of root taken as an emetic.											Train, Henrichs, and Archer 1941 (p. 84, 85)
			Decoction of root gargled for sore throat.											Train, Henrichs, and Archer 1941 (p. 84, 85)
Holodiscus dumosus	Rockspirea		Decoction of root taken for diarrhea.										Train, Henrichs, and Archer 1941 (p. 88, 89)	
			Decoction of stems taken for colds.										x	CGTO 1996 (pG--14-17, A--1-35)
			Decoction of root taken for stomach disorders.											Train, Henrichs, and Archer 1941 (p. 88, 89)
Ipomopsis aggregata	Skyrocket gilia		Simple or compound decoction of plant or root taken as a physic.										Train, Henrichs, and Archer 1941 (p. 76, 77)	
			Decoction of root taken as a cold remedy.										x	CGTO 1996 (pG--14-17, A--1-35)
			Simple or compound decoction of plant or root taken as an emetic.											Train, Henrichs, and Archer 1941 (p. 76, 77)
Ipomopsis gunnisonii	Sanddune skyrocket											x	CGTO 1996 (pG--14-17, A--1-35)	
Ipomopsis longiflora	Flaxflowered gilia											x	CGTO 1996 (pG--14-17, A--1-35)	
Ipomopsis multiflora	Manyflowered gilia											x	CGTO 1996 (pG--14-17, A--1-35)	
Ipomopsis polyantha	Pagosa skyrocket											x	CGTO 1996 (pG--14-17, A--1-35)	

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<i>Ipomopsis polycladon</i>	Manybranched gilia											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Iris missouriensis</i>	Rocky Mountain iris		Decoction of root taken for stomachaches.									x	CGTO 1996 (pG--14-17, A--1-35)		
			Paste of ripe seeds applied to sores.											Train, Henrichs, and Archer 1941 (p. 89, 90)	
			Warm decoction of root dropped into ear for earache.												Train, Henrichs, and Archer 1941 (p. 89, 90)
			Decoction of root taken for stomachaches.												Train, Henrichs, and Archer 1941 (p. 89, 90)
			Raw root placed in cavity or against gum for toothache.												Train, Henrichs, and Archer 1941 (p. 89, 90)
			Decoction of root taken for bladder troubles.												Train, Henrichs, and Archer 1941 (p. 89, 90)
			Decoction of root used for gonorrhea.												Train, Henrichs, and Archer 1941 (p. 89, 90)
<i>Iris spp.</i>	iris	Bulb used.											Stoffle and Dobyns 1983 (p83)		
<i>Iva axillaris</i>	Povertyweed		Leaves used as a plaster or infusion used as a wash for sores or skin irritations.										Train, Henrichs, and Archer 1941 (p. 90, 91)		
<i>Iva axillaris</i>	Povertyweed											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Juniperus deppeana</i>	Alligator juniper											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Juniperus monosperma</i>	Oneseed juniper		Decoction of twigs taken and fumes from burning branches inhaled for colds.										Train, Henrichs, and Archer 1941 (p. 92)		
												x	CGTO 1996 (pG--14-17, A--1-35)		
			Heated twigs rubbed on measles eruptions to relieve the discomfort.											Train, Henrichs, and Archer 1941 (p. 92)	
			Heated twigs rubbed on measles eruptions to relieve the discomfort.										Train, Henrichs, and Archer 1941 (p. 92)		
<i>Juniperus osteosperma</i>	Utah juniper	Berries roasted											Stoffle and Dobyns 1983 (p82)		
			Decoction of berries taken for menstrual cramps.											Train, Henrichs, and Archer 1941 (p. 93-96)	
													x	CGTO 1996 (pG--14-17, A--1-35)	
			Decoction of young twigs taken for stomachaches.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Fumes from burning twigs inhaled for headaches and colds.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of young twigs taken for hemorrhages.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Branches used in the sweatbath for rheumatism.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of berries taken or poultice of decoction applied for rheumatism.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Poultice of boiled twigs applied and cooled decoction used as a wash for rheumatism.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of berries or young twigs taken as a blood tonic.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Branches used in the sweatbath for heavy colds.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Fumes from burning twigs or leaves inhaled for headaches and colds.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Simple or compound decoction of twigs or berries taken for colds.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of twigs or berries taken for coughs.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Compound poultice of twigs used as a drawing agent for boils or slivers.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Poultice of mashed twigs applied for swellings or rheumatism.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Strong decoction used as an antiseptic wash for sores.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Branches burned as a fumigant after illness.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Strong decoction of twigs used as an antiseptic wash for sores.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of berries taken to induce urination.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Simple or compound decoction of young twigs taken for fevers.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of young twigs taken for stomachaches.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of berries taken for menstrual cramps.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of berries taken for kidney ailments.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Simple or compound decoction of young twigs taken for kidney trouble.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Compound decoction of twigs taken for smallpox.												Train, Henrichs, and Archer 1941 (p. 93-96)
			Decoction of young twigs taken for influenza.												Train, Henrichs, and Archer 1941 (p. 93-96)
	Compound decoction of twigs taken for fevers, pneumonia and influenza.												Train, Henrichs, and Archer 1941 (p. 93-96)		
	Decoction of young twigs or berries taken as a blood tonic.												Train, Henrichs, and Archer 1941 (p. 93-96)		
	Decoction of shaved root taken for venereal disease.												Train, Henrichs, and Archer 1941 (p. 93-96)		

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			Decoction of twig or compound decoction of berry taken for venereal disease.											Train, Henrichs, and Archer 1941 (p. 93-96)	
<i>Juniperus scopulorum</i>	Rocky Mountain juniper											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Lappula redowskii</i> (syn. <i>occidentalis</i> var. <i>occidentalis</i>)	Desert stickseed											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Linum lewisii</i>	Prairie flax		Poultice of leaves alone or stems and leaves applied to swellings.										x	Train, Henrichs, and Archer 1941 (p. 101,102)	
			Infusion or decoction of plant parts used as an eyewash.										x	CGTO 1996 (pG--14-17, A--1-35)	
			Poultice of leaves applied for goiter.										x	Train, Henrichs, and Archer 1941 (p. 101,102)	
													x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Lupinus argenteus</i>	Silvery lupine											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Lupinus kingii</i>	King's lupine											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Lupinus palmeri</i>	Bluebonnet lupine											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Lupinus pusillus</i>	Rusty lupine											x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Lupinus</i> sp.	Lupine		Plant used for "failure in urination."										x	Train, Henrichs, and Archer 1941 (p. 102)	
<i>Lycium andersonii</i>	Anderson's wolfberry, Waterjacket	Berries roasted												Stoffle and Dobyns 1983 (p82)	
													x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Lycium pallidum</i>	Pale wolfberry, pale desert thorn	Berries roasted												Stoffle and Dobyns 1983 (p82)	
													x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Marrubium vulgare</i>	Horehound	Branches used to whip aching body parts to stimulate circulation.												Train, Henrichs, and Archer 1941 (p. 103)	
													x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Melilotus albus</i>	Yellow sweetclover												x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Menodora scabra</i>	Rough menodora												x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Mentzelia albicaulis</i>	Whitestem blazingstar	Both wild species of blazing star were cultivated by the southern Paiute as cereal seed												Stoffle and Dobyns 1983 (p70)	
		Fried seeds and water used for gravy.												Murphey 1990 (p. 27)	
														x	CGTO 1996 (pG--14-17, A--1-35)
<i>Mentzelia pumila</i>	Dwarf mentzelia, blazing star	Seeds parched, ground and eaten as meal.												Kelly 1932 (p. 98)	
		Both wild species of blazing star were cultivated by the southern Paiute as cereal seed												Stoffle and Dobyns 1983 (p70)	
												x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Mimulus guttatus</i>	Seep monkeyflower												x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Mirabilis multiflora</i>	Colorado four o'clock												x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Monardella odoratissima</i>	Pacific monardella	Decoction of plant taken for gas pains.												Train, Henrichs, and Archer 1941 (p. 105,106)	
													x	CGTO 1996 (pG--14-17, A--1-35)	
		Decoction of plant taken for colds.												Train, Henrichs, and Archer 1941 (p. 105,106)	
		Decoction of branches used as an eyewash for soreness or inflammation.												Train, Henrichs, and Archer 1941 (p. 105,106)	
<i>Muhlenbergia curtifolia</i>	Utah muhly	Decoction of plant taken for indigestion, gas pain or minor digestive upset.												Train, Henrichs, and Archer 1941 (p. 105,106)	
		x													Stoffle and Dobyns 1983 (p81)
													x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Muhlenbergia minutissima</i>	Annual muhly	x												Stoffle and Dobyns 1983 (p81)	
												x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Muhlenbergia montana</i>	Mountain muhly	x												Stoffle and Dobyns 1983 (p81)	
												x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Muhlenbergia monticola</i>	Slimflower muhly	x												Stoffle and Dobyns 1983 (p81)	
												x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Muhlenbergia pauciflora</i>	New Mexico muhly	x												Stoffle and Dobyns 1983 (p81)	
												x	CGTO 1996 (pG--14-17, A--1-35)		
<i>Muhlenbergia porteri</i>	Bush muhly	x												Stoffle and Dobyns 1983 (p81)	
												x	CGTO 1996 (pG--14-17, A--1-35)		

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Muhlenbergia racemosa	Marsh muhly	x											Stoffle and Dobyns 1983 (p81) CGTO 1996 (pG--14-17, A--1-35)
Muhlenbergia rigens	Deergrass	x											Stoffle and Dobyns 1983 (p81) CGTO 1996 (pG--14-17, A--1-35)
Muhlenbergia sp.	muhly	Parched											Stoffle and Dobyns 1983 (p81)
Muhlenbergia wrightii	Spike muhly	x											Stoffle and Dobyns 1983 (p81) CGTO 1996 (pG--14-17, A--1-35)
Nicotiana attenuata	Coyote tobacco		Decoction of leaves taken sparingly to expel worms.										Train, Henrichs, and Archer 1941 (p. 106,107) CGTO 1996 (pG--14-17, A--1-35)
			Poultice or powder for cuts and sore eyes.										Stoffle and Dobyns 1983 (p146)
			Smoked for coughs.										Stoffle and Dobyns 1983 (p150)
			Crushed seeds used as a liniment for rheumatic swellings.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Poultice of crushed leaves applied to swellings, especially from rheumatism.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Weak decoction of leaves taken as a physic.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Dried leaves smoked alone or in a compound for colds and asthma.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Decoction of leaves used as a healing wash for hives or other skin irritations.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Poultice of chewed leaves applied to cuts.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Poultice of crushed leaf applied or crushed seed used as a liniment for swellings.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Poultice of crushed leaves applied to eczema or other skin infections.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Pulverized dust of plant sprinkled on sores.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Decoction of leaves used as a healing wash for hives or other skin irritations.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Poultice of crushed leaves applied to eczema or other skin infections.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Weak decoction of leaves taken as an emetic.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Decoction of leaves used as a wash for "dropsical conditions."										Train, Henrichs, and Archer 1941 (p. 106,107)
			Compound containing dried leaves smoked for asthma.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Poultice of chewed leaves bound on snakebite after removing poison.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Compound containing dried leaves smoked for tuberculosis.										Train, Henrichs, and Archer 1941 (p. 106,107)
			Leaves dried, ground, moistened and made into balls for preservation.										Steward 1933 (p. 319)
Nicotiana trigonophylla	Desert tobacco											x	CGTO 1996 (pG--14-17, A--1-35)
Oenothera hookeri (syn. O. elata ssp. hookeri)	Hooker's Eveningprimrose												Root rubbed on h Murphey 1990 (p. 50)
													Root rubbed on h Murphey 1990 (p. 50)
			Species used for food.										Steward 1933 (p. 243)
Oenothera pallida	Pale eveningprimrose											x	CGTO 1996 (pG--14-17, A--1-35)
Oenothera pallida ssp. runcinata	Pale eveningprimrose											x	CGTO 1996 (pG--14-17, A--1-35)
Opuntia erinacea	Grizzlybear pricklypear											x	CGTO 1996 (pG--14-17, A--1-35)
Opuntia fragilis	Brittle pricklypear											x	CGTO 1996 (pG--14-17, A--1-35)
Opuntia macrorhiza	Twistspine pricklypear											x	CGTO 1996 (pG--14-17, A--1-35)
Opuntia phaeacantha	Tulip pricklypear											x	CGTO 1996 (pG--14-17, A--1-35)
Opuntia spp.	prickly pear	Cooked new leaf.											Stoffle and Dobyns 1983 (p86)
Opuntia whipplei	Whipple cholla											x	CGTO 1996 (pG--14-17, A--1-35)
Orobancha cooperi	Desert broomrape											x	CGTO 1996 (pG--14-17, A--1-35)
Orobancha fasciculata	Clustered broomrape	Fresh greens, raw plant used.											Stoffle and Dobyns 1983 (p86)
												x	CGTO 1996 (pG--14-17, A--1-35)
												x	Stoffle and Dobyns 1983 (p83)
Panicum bulbosum	Bulb panicgrass											x	CGTO 1996 (pG--14-17, A--1-35)
Panicum capillare	Witchgrass											x	CGTO 1996 (pG--14-17, A--1-35)

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Panicum sp.	Panicum	Seeds ground											Stoffle and Dobyns 1983 (p81)		
Panicum virgatum	Switchgrass											x	CGTO 1996 (pG--14-17, A--1-35)		
Parthenocissus vitacea	Woodbine											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon ambiguus	Gilia beardtongue											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon barbatus	Beardlip penstemon											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon barbatus ssp. torreyi	Torrey's penstemon											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon bridgesii (syn. P. rostriflorus)	Bridge penstemon											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon clutei (Sunset Crater beardtongue or Sunset Crater penstemon)	Sunset Crater beardtongue											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon jamesii	James' beardtongue											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon jamesii ssp. ophianthus (syn. P. ophianthus)	Coiled anther penstemon											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon linarioides	Toadflax penstemon											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon sp.	White Penstemon		Chewed root inserted into the tooth cavity for pain.										Train, Henrichs, and Archer 1941 (p. 114,115)		
Penstemon thompsoniae	Thompson's beardtongue											x	CGTO 1996 (pG--14-17, A--1-35)		
Penstemon virgatus	Upright blue beardtongue											x	CGTO 1996 (pG--14-17, A--1-35)		
Phacelia crenulata	Cleftleaf wildheliotrope											x	CGTO 1996 (pG--14-17, A--1-35)		
Phacelia integrifolia	Gypsum scorpionweed											x	CGTO 1996 (pG--14-17, A--1-35)		
Phacelia magellanica	Kaweah River scorpionweed											x	CGTO 1996 (pG--14-17, A--1-35)		
Phacelia welshii	Welsh's phacelia											x	CGTO 1996 (pG--14-17, A--1-35)		
Phaseolus angustissimus	Slim leaf bean, black-eyed pea	Dried seed used											Stoffle and Dobyns 1983 (p71)		
		Multiple species of Phaseolus were cultivated and used as food											Stoffle and Dobyns 1983 (p68)		
		Seeds and pod eaten green											Stoffle and Dobyns 1983 (p71)		
Phlox austromontana	Desert phlox											x	CGTO 1996 (pG--14-17, A--1-35)		
Phlox woodhousei	Woodhouse's phlox											x	CGTO 1996 (pG--14-17, A--1-35)		
Phragmites australis (syn. P. communis)	Common Reed	Sugary sap taken by pneumonia patients to loosen phlegm and soothe lung pain.											Train, Henrichs, and Archer 1941 (p. 116)		
		Sugary sap taken by pneumonia patients to loosen phlegm.												Train, Henrichs, and Archer 1941 (p. 116)	
		Sugary sap taken by pneumonia patients to loosen phlegm and soothe lung pain.												Train, Henrichs, and Archer 1941 (p. 116)	
		Honey dew scraped off.													Stoffle and Dobyns 1983 (p87)
		Dried sap made into balls, softened by fire and eaten like sugar.												x	Steward 1933 (p. 245)
		Plant chewed for pneumonia.													CGTO 1996 (pG--14-17, A--1-35)
Physalis fendleri (syn. P. hederifolia var. fendleri)	Fendler's groundcherry											x	Stoffle and Dobyns 1983 (p149)		
Physalis hederifolia	Ivyleaf groundcherry											x	CGTO 1996 (pG--14-17, A--1-35)		
Physaria newberryi	Newberry's twinpod											x	CGTO 1996 (pG--14-17, A--1-35)		
Pinus edulis	Twoneedle pinyon	Nuts roasted and ground										x	CGTO 1996 (pG--14-17, A--1-35)		
Pinus flexilis	Limber pine											x	Stoffle and Dobyns 1983 (p85)		
Pinus ponderosa	Ponderosa pine											x	CGTO 1996 (pG--14-17, A--1-35)		
Pinus ponderosa var. scopulorum	Ponderosa pine											x	CGTO 1996 (pG--14-17, A--1-35)		
Poa fendleriana	Muttongrass											x	CGTO 1996 (pG--14-17, A--1-35)		
Polygonum sp.	Knotweed	Species used for food.											CGTO 1996 (pG--14-17, A--1-35)		
													Steward 1933 (p. 244)		

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<i>Populus angustifolia</i>	Narrowleaf cottonwood											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Populus fremontii</i>	Fremont's cottonwood											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Populus tremuloides</i>	Quaking aspen											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Portulaca mundula</i>	Kiss me quick											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Portulaca retusa</i> (syn. <i>P. oleracea</i>)	Pulsane	Seeds ground											Stoffle and Dobyns 1983 (p81)	
	Little hogweed											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Psoralea lanceolata</i>	Lemon scurfpea											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Purshia mexicana</i>	Mexican Cliffrose		Decoction of leaves and stems or flowers taken for colds.										Train, Henrichs, and Archer 1941 (p. 61)	
			Decoction of leaves and stem or flowers taken for venereal diseases.										Train, Henrichs, and Archer 1941 (p. 61)	
<i>Purshia mexicana</i> var. <i>stansburiana</i> (syn. <i>P. stansburiana</i>)	Stansbury cliffrose		Decoction of leaves and stems or flowers taken as a physic.										Train, Henrichs, and Archer 1941 (p. 61)	
<i>Quercus gambelii</i>	Gambel's oak											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Quercus undulata</i> (syn. <i>Q. x pauciloba</i>)	Wavyleaf oak											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Rhus trilobata</i>	Skunkbush sumac, three leaf sumac, squawbush	Berries eaten fresh.											Stoffle and Dobyns 1983 (p82)	
		Dried, powdered fruits used as an astringent for smallpox sores.										x	CGTO 1996 (pG--14-17, A--1-35)	
		Astringent for smallpox.												Stoffle and Dobyns 1983 (p146)
<i>Ribes inebrians</i> (syn. <i>Ribes cereum</i> var. <i>pedicellare</i>)	Wax currant	Fruits eaten fresh.											Kelly 1932 (p. 100)	
		several species of <i>Ribes</i> were used as food											Stoffle and Dobyns 1983 (p69)	
		Several species of <i>Ribes</i> were used as food										x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Ribes pinetorum</i>	Orange gooseberry		Several species of <i>Ribes</i> were used as food										Stoffle and Dobyns 1983 (p69)	
<i>Rosa arizonica</i>	Woods' rose											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Rosa neomexicana</i> (syn. <i>R. woodsii</i> var. <i>woodsii</i>)	Woods' rose		Decoction of root taken by adults and children for diarrhea.										Train, Henrichs, and Archer 1941 (p. 129-131)	
												x	CGTO 1996 (pG--14-17, A--1-35)	
			Poultice of various plant parts applied to burns.											Train, Henrichs, and Archer 1941 (p. 129-131)
			Decoction of root or inner bark taken for colds.											Train, Henrichs, and Archer 1941 (p. 129-131)
			Poultice of mashed fungus galls applied to opened boils.											Train, Henrichs, and Archer 1941 (p. 129-131)
			Poultice of various plant parts applied to sores, cuts, swellings and wounds.											Train, Henrichs, and Archer 1941 (p. 129-131)
			Decoction of roots given to children for intestinal influenza.											Train, Henrichs, and Archer 1941 (p. 129-131)
			Decoction of roots given to children for intestinal influenza.											Train, Henrichs, and Archer 1941 (p. 129-131)
	Infusion of leaves taken as a spring tonic.											Train, Henrichs, and Archer 1941 (p. 129-131)		
<i>Rosa odorata</i>	Tea rose											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Rosa</i> sp.	Rose	Berries eaten fresh.											Stoffle and Dobyns 1983 (p82)	
<i>Rubus neomexicanus</i>	New Mexico raspberry	Berries eaten fresh.											Stoffle and Dobyns 1983 (p82)	
<i>Rumex crispus</i>	Curly dock		Poultice of pulped root applied to rheumatic pains.										Train, Henrichs, and Archer 1941 (p. 131,132)	
												x	CGTO 1996 (pG--14-17, A--1-35)	
			Boiled seeds eaten alone or in a compound for diarrhea.											Train, Henrichs, and Archer 1941 (p. 131,132)
			Poultice of pulped root applied to rheumatic swellings.											Train, Henrichs, and Archer 1941 (p. 131,132)
			Decoction of root taken as a blood purifier.											Train, Henrichs, and Archer 1941 (p. 131,132)
			Poultice of pulped root applied to burns.											Train, Henrichs, and Archer 1941 (p. 131,132)
			Poultice of pulped root applied to bruises and swellings.											Train, Henrichs, and Archer 1941 (p. 131,132)
			Decoction of root taken as a general tonic.											Train, Henrichs, and Archer 1941 (p. 131,132)
	Decoction of root taken for venereal disease.											Train, Henrichs, and Archer 1941 (p. 131,132)		
<i>Salix</i>	Willow		Tea from root/bark/branch for blood purifier.										Stoffle and Dobyns 1983 (p144)	

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
					Willows were planted and the shoots and splints were harvested for use in basketry.								Stoffle and Dobyns 1983 (p72)
<i>Salix bonplandiana</i>	Red willow, Bonpland willow											x	CGTO 1996 (pG--14-17, A--1-35)
					Willows were planted and the shoots and splints were harvested for use in basketry.								Stoffle and Dobyns 1983 (p72)
<i>Salix lasiolepis</i>	Arroyo willow											x	CGTO 1996 (pG--14-17, A--1-35)
					Willows were planted and the shoots and splints were harvested for use in basketry.								Stoffle and Dobyns 1983 (p72)
<i>Salix scouleriana</i>	Scouler's willow											x	CGTO 1996 (pG--14-17, A--1-35)
					Willows were planted and the shoots and splints were harvested for use in basketry.								Stoffle and Dobyns 1983 (p72)
<i>Salix</i> sp.	Willow		Burned root taken as pills or infusion of burned stems taken for diarrhea.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Decoction of root taken as a blood purifier.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Decoction of woody stems taken as a physic.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Powder from dried, pulverized roots applied to syphilitic or purulent sores.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Powder of dried, stem bark applied to infant's navel.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Infusion of burned stems taken by adults and children for "failure to urinate."										Train, Henrichs, and Archer 1941 (p. 133-136)
			Infusion of young twigs with salt taken as a laxative.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Infusion of burned stems taken by adults and children for intestinal influenza.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Compound decoction of roots taken for lumbago.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Infusion of burned stems given to children for diarrhea.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Infusion of burned stems taken by adults and children for "failure to urinate."										Train, Henrichs, and Archer 1941 (p. 133-136)
			Infusion of burned stems taken by adults and children for intestinal influenza.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Powder of dried, stem bark applied to infant's navel.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Decoction of root bark taken as a spring tonic.										Train, Henrichs, and Archer 1941 (p. 133-136)
			Several species used in various ways for venereal disease.										Train, Henrichs, and Archer 1941 (p. 133-136)
<i>Salsola iberica</i> (syn. <i>S. tragus</i>)	Prickly Russian thistle											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Salvia reflexa</i>	Lanceleaf sage											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Sambucus glauca</i> (syn. <i>S. nigra</i> ssp. <i>Caerulea</i>)	Blue elderberry											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Sarcobatus vermiculatus</i>	Greasewood		Infusion of burned plant taken for diarrhea.										Train, Henrichs, and Archer 1941 (p. 138,139)
			Seeds ground										Stoffle and Dobyns 1983 (p81)
												x	CGTO 1996 (pG--14-17, A--1-35)
			Infusion of burned plant taken for rectal bleeding.										Train, Henrichs, and Archer 1941 (p. 138,139)
<i>Senecio douglasii</i> var. <i>longilobus</i> (syn. <i>S. flaccidus</i> var. <i>flaccidus</i>)	Threadleaf groundsel											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Senecio douglasii</i> var. <i>monoensis</i>	Mono groundsel											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Senecio multicapitatus</i>	Ragwort groundsel											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Senecio multilobatus</i>	Lobeleaf groundsel											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Senecio neomexicanus</i>	New Mexico groundsel											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Senecio spartioides</i>	Broom groundsel											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Sisymbrium altissimum</i>	Tall tumbled mustard											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Smilacina racemosa</i>	Feathery false lily-of-the-valley, Feather Solomon's seal, cauteberry	Berries eaten fresh.											Stoffle and Dobyns 1983 (p82)
												x	CGTO 1996 (pG--14-17, A--1-35)
<i>Smilacina stellata</i>	Starry false Solomon's seal											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Solanum douglasii</i>	Greenspot nightshade											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Solanum elaeagnifolium</i>	Silverleaf nightshade											x	CGTO 1996 (pG--14-17, A--1-35)
<i>Solanum jamesii</i>	Wild potato	Domesticated potaas were adopted as cultivars after contact. Before contact the wild varieties were also used											Stoffle and Dobyns 1983 (p66, 71)
												x	CGTO 1996 (pG--14-17, A--1-35)

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
<i>Solanum triflorum</i>	Cutleaf nightshade											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Solidago sparsiflora</i> (syn. <i>S. velutina</i>)	Threenerve goldenrod											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sphaeralcea fendleri</i>	Fendler's globemallow											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sphaeralcea grossularifolia</i>	Gooseberryleaf globemallow											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sphaeralcea leptophylla</i>	Scaly globemallow											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sphaeralcea parvifolia</i>	Smallflower globemallow											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sphaeralcea subhastata</i>	Globemallow											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sporobolus airoides</i>	Alkali sacaton											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sporobolus contractus</i>	Spike dropseed											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sporobolus cryptandrus</i>	Sand dropseed											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sporobolus flexuosus</i>	Mesa dropseed											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sporobolus giganteus</i>	Giant dropseed											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Sporobolus sp</i>	Dropseed	Grind, mix with others											Stoffle and Dobyns 1983 (p81)	
<i>Stanleya pinnata</i>	Desert princesplume	Fresh greens, raw plant used.											Stoffle and Dobyns 1983 (p86)	
		Poultice of mashed root applied for throat pain.											Train, Henrichs, and Archer 1941 (p. 142)	
													x	CGTO 1996 (pG--14-17, A--1-35)
		Poultice of mashed root applied for congestion of diphtheria.												Train, Henrichs, and Archer 1941 (p. 142)
		Poultice of mashed root applied for throat pain.												Train, Henrichs, and Archer 1941 (p. 142)
													Decoction of root taken as a tonic for general debility after an illness.	
													Train, Henrichs, and Archer 1941 (p. 142)	
<i>Stephanomeria spinosa</i>	Thorn skeletonweed	Decoction of plant tops taken for diarrhea.											Train, Henrichs, and Archer 1941 (p. 102,103)	
													x	CGTO 1996 (pG--14-17, A--1-35)
		Decoction of plant tops taken as a physic.												Train, Henrichs, and Archer 1941 (p. 102,103)
		Compound decoction of root used as a wash for swellings.												Train, Henrichs, and Archer 1941 (p. 102,103)
		Poultice of cottony fuzz applied to boils or sores to promote healing.												Train, Henrichs, and Archer 1941 (p. 102,103)
		Decoction of plant tops taken as an emetic.												Train, Henrichs, and Archer 1941 (p. 102,103)
													Cottony fuzz placed in cavity of aching tooth.	
													Train, Henrichs, and Archer 1941 (p. 102,103)	
<i>Stephanomeria tenuifolia</i> (syn. <i>S. minor</i> var. <i>minor</i>)	Narrowleaf wirelettuce											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Stipa arida</i>	Arid needlegrass											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Stipa comata</i>	Needleandthread											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Stipa neomexicana</i>	New Mexico needlegrass											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Stipa robusta</i>	Sleepygrass											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Stipa speciosa</i>	Desert needlegrass											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Streptanthella longirostris</i>	Longbeak streptanthella											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Suaeda torreyana</i> (syn. <i>S. moquinii</i>)	Mojave Seablite	Decoction of plant taken for kidney trouble.											Train, Henrichs, and Archer 1941 (p. 143)	
		Crushed fresh plants rubbed on chicken pox to stop itching and to dry sores.											Train, Henrichs, and Archer 1941 (p. 143)	
		Decoction of plant taken for bladder trouble.											Train, Henrichs, and Archer 1941 (p. 143)	
		Crushed fresh plants rubbed on chicken pox to stop itching and to dry sores.											Train, Henrichs, and Archer 1941 (p. 143)	
												x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Symphoricarpos oreophilus</i>	Whortleleaf snowberry											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Symphoricarpos spp.</i>	snowberry		Smoked for unspecified complaint.										Stoffle and Dobyns 1983 (p150)	
<i>Tamarix chinensis</i>	Fivestamen tamarisk											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Tetradymia canescens</i>	Spineless horsebrush											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Thalictrum fendleri</i>	Fendler's meadowrue											x	CGTO 1996 (pG--14-17, A--1-35)	
<i>Townsendia exscapa</i>	Stemless townsendia											x	CGTO 1996 (pG--14-17, A--1-35)	

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
Townsendia incana	Hoary townsendia											x	CGTO 1996 (pG--14-17, A--1-35)
Valeriana arizonica	Arizona valerian											x	CGTO 1996 (pG--14-17, A--1-35)
Viguiera multiflora	showy goldeneye	Seeds ground											Stoffle and Dobyans 1983 (p81)
	Showy goldeneye											x	CGTO 1996 (pG--14-17, A--1-35)
Vitis arizonica	Canyon grape	Grapes were cultivated and harvested for fruit											
													x
Wyethia arizonica	Arizona mulesears											x	CGTO 1996 (pG--14-17, A--1-35)
Yucca angustissima	Narrowleaf yucca											x	CGTO 1996 (pG--14-17, A--1-35)
Yucca baccata	Banana yucca	Blossoms eaten fresh											
		fruit roasted, pounded sundry											
													x
		Plant chewed for catharsis.											
												x	CGTO 1996 (pG--14-17, A--1-35)
Yucca baileyi var. navajoa	Navajo yucca											x	CGTO 1996 (pG--14-17, A--1-35)
Zigadenus elegans	Mountain deathcamas											x	CGTO 1996 (pG--14-17, A--1-35)
Zinnia grandiflora	Rocky Mountain zinnia											x	CGTO 1996 (pG--14-17, A--1-35)

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APPENDIX E:
ZUNI ETHNOBOTANY

Zuni Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
Achillea lanulosa	Western Yarrow		x									name means "cold leaf"	Dunmire and Tierney 1995:222 Stevenson 1915:8
Achillea millefolium	Western Yarrow		x	x									Blossoms and root chewed and juice applied before fire-eating or -walking. Poultice of pulverized plant mixed with water applied to burns. Stevenson 1915 (p. 42) Stevenson 1915 (p. 42)
Achnatherum hymenoides	Indian Ricegrass												Ground seeds used as a staple before the availability of corn. Used especially in earlier times as an important source of food. Stevenson 1915 (p. 67) Castetter 1935(p. 27)
Amaranthus blitoides	Mat Amaranth												Seeds originally eaten raw, but later ground with black corn meal, made into balls and eaten. Stevenson 1915 (p. 65)
Amaranthus graecizans	Prostrate Pigweed	x		x									Stevenson 1915:31
Amaranthus spp.	Amaranth	x										x	Dunmire and Tierney 1995:174-175 Underhill 1991:56
Ambrosia acanthicarpa	Flatspine Burr Ragweed												Infusion of whole plant taken and used as wash for "obstructed menstruation." Ground root placed in tooth for toothache. Stevenson 1915 (p. 51, 52) Stevenson 1915 (p. 51, 52)
Artemisia frigida	Fringed Sagewort												Infusion of whole plant taken as a cold remedy. Sprigs and corn ears attached to decorated tablets and carried by female dancers in a drama. Stevenson 1915 (p. 42) Stevenson 1915 (p. 87)
Artemisia frigida	Fringed Sagebrush												Sprigs dipped in water and planted with corn so that it would grow in abundance. Stevenson 1915 (p. 87)
Artemisia tridentata	Big Sagebrush		x									name means "seeds leaf sweet"	Stevenson 1915:8
Asclepias involucreta	Dwarf Milkweed												Infusion of leaves used for body aches. Infusion of leaves taken as a cold medicine. Leaves in shoes used for athlete's foot infection, fissures between toes and foot deodorant. x Dunmire and Tierney 1995:152
Asclepias spp.	Milkweed				x								Plant favored by jackrabbits. Dry powdered root and saliva used for unspecified illness. Stevenson 1915 (p. 65) Camazine and Bye 1980 (p. 373)
Asclepias subverticillata	Whorled Milkweed	x											Dunmire and Tierney 1995:197
Astragalus amphioxys	Crescent Milkvetch												Buds eaten by little boys. Stevenson 1915:31
Astragalus lentiginosus	Bladderpod Locoweed, Speckledpod Milkvetch	x											Pods dried for winter use. Pods eaten fresh, boiled and salted. Stevenson 1915 (p. 65) Stevenson 1915 (p. 65)
Astragalus sp.	Wild Pea											x	Coma made into cords and used for fastening plumes to the prayer sticks. Stevenson 1915 (p. 88)
Atriplex canescens	Fourwing Saltbush		x					x					Fresh or dried root chewed by medicine man before sucking snakebite and poultice applied to wound. Camazine and Bye 1980 (p. 376)
Bahia dissecta	Yellow Ragweed, Ragleaf Bahia		x										Stevenson 1915:31
Bouteloua gracilis	Blue Grama												Infusion of dried root and blossoms or poultice of blossoms used for ant bites. Poultice of fresh or dried flower used for ant bites. Twigs attached to prayer plumes and sacrificed to the cottontail rabbit to ensure good hunting. Stevenson 1915 (p. 44) Camazine and Bye 1980 (p. 374) Stevenson 1915 (p. 88)
Caesalpiniaii	James' Holdback												Powdered plant rubbed on affected parts for headache. Powdered plant rubbed on affected parts for rheumatism. Stevenson 1915:28 Stevenson 1915 (p. 62) Stevenson 1915 (p. 62)
Cercocarpus montanus	Alder-leaf Mountain			x									Grass bunches tied together and the severed end used as a hairbrush, the other as a broom. Stevenson 1915 (p. 83) Stevenson 1915 (p. 83)
Chenopodium album	Lambsquarters												Grass bunches tied together and used to strain goat's milk. Stevenson 1915 (p. 83)
Chenopodium graveolens	Fetid Goosefoot												Infusion of plant given to sheep to make them "prolific." Dunmire and Tierney 1995:137
Chenopodium leptophyllum	Narrowleaf Goosefoot												Young plants cooked as greens. Plant steeped in water and vapor inhaled for headache. Stevenson 1915 (p. 45)
													Ground seeds mixed with corn meal and salt, made into a stiff batter, formed into balls and steamed. Seeds considered among the most important food plants when the Zuni reached this world. Young plants boiled alone or with meat and used for food. Young plants cooked as greens. x Stevenson 1915 (p. 66) Castetter 1935(p. 21) Stevenson 1915 (p. 66) Castetter 1935(p. 16) Stevenson 1915:32

Zuni Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
Chenopodium spp.	Goosefoot		x									x name means "strong odor leaf"	Underhill 1991:56 Stevenson 1915:11	
Chrysothamnus nauseosus	Rabbitbrush								x			decorative	Dunmire and Tierney 1995:149 Dunmire and Tierney 1995:149	
Cleome serrulata	Rocky Mountain Beeplant	Leaves gathered in large quantities and hung indoors to dry for winter use. Young plants cooked with corn strongly flavored with chile. Tender leaves usually boiled with corn, on or off the cob, and highly seasoned with chile. Plant paste used with black mineral paint to color sticks of plume offerings to anthropic gods.											Stevenson 1915 (p. 69) Castetter 1935(p. 24) Stevenson 1915 (p. 69) Stevenson 1915 (p. 96) Stevenson 1915 (p. 82)	
												whole plant x	Underhill 1991:54	
Conyza canadensis	Horseweed		x									name means "leaf ball flower"	Stevenson 1915:21	
Conyza canadensis	Canadian Horseweed		Crushed flowers inserted in nostrils to cause sneezing, relieving "rhinitis."											Stevenson 1915 (p. 55)
Coreopsis tinctoria	Golden Tickseed	Plant formerly used to make a hot beverage until the introduction of coffee by traders. Infusion of whole plant, Blossoms used with other flowers as a mahogany red dye for yarn.											Stevenson 1915 (p. 66) Stevenson 1915 (p. 84) Stevenson 1915 (p. 80)	
Croton texensis	Doveweed, Texas Croton		x									name means "coyote leaf"	Dunmire and Tierney 1995:186 Stevenson 1915:11	
			x										Stevenson 1915 (p. 45) Stevenson 1915 (p. 45) Stevenson 1915 (p. 45) Camazine and Bye 1980 (p. 375) Camazine and Bye 1980 (p. 376) Camazine and Bye 1980 (p. 375) Camazine and Bye 1980 (p. 375)	
Cryptantha cinerea	James' Catseye		Powdered root used for a sore anus.											Camazine and Bye 1980 (p. 374)
Cryptantha crassisepala	Thicksepal Catseye		Hot infusion of pulverized plant applied to limbs for fatigue.											Stevenson 1915 (p. 45)
Cucurbita foetidissima	Coyote Gourd		x										Dunmire and Tierney 1995:216 Camazine and Bye 1980 (p. 375)	
			Poultice of powdered seeds, flowers and saliva applied to swellings.											Camazine and Bye 1980 (p. 375)
Datura meteloides	Sacred Datura		x	x									Stevenson 1915:12-13	
Datura wrightii	Sacred Thornapple		Powdered root given as an anesthetic for surgery. Poultice of root and flower meal applied to wounds to promote healing. Used as a narcotic. Powdered root given as a narcotic for surgery. Powdered root used by rain priests in a number of ways to ensure fruitful rains. Root pieces chewed by a robbery victim in order to find out the thief's identity.											Stevenson 1915 (p. 46, 48) Stevenson 1915 (p. 46, 48) Castetter and Underhill 1935 (p. 26) Stevenson 1915 (p. 46, 48) Stevenson 1915 (p. 88) Stevenson 1915 (p. 88)
Dimorphocarpa wislizeni	Touristplant		Warm infusion of pulverized plant applied to swelling, especially the throat. Flower and fruit eaten as an emetic for stomachaches. Decoction of entire plant given for delirium. Infusion of plant taken by men to "loosen their tongues so they may talk like fools"											Stevenson 1915 (p. 48, 49) Camazine and Bye 1980 (p. 375) Stevenson 1915 (p. 48, 49) Stevenson 1915 (p. 91)
Ephedra sp.			x									name means "stiff-jointed"	Stevenson 1915:15	
Eriogonum alatum	Winged Buckwheat		Root eaten as an emetic for stomachaches. Infusion of powdered root taken after a fall and relieve general misery.											Camazine and Bye 1980 (p. 378) Stevenson 1915 (p. 49)
			x	x								name means "slightly bad smelling"	Stevenson 1915:15	
Eriogonumii	James' Buckwheat		Root soaked in water and used as a wash for sore eyes. Fresh or dried root eaten for stomachaches. Root carried in mouth for sore tongue, then buried in river bottom. Ground blossom powder given to ceremonial dancers impersonating anthropic gods to bring rain.											Camazine and Bye 1980 (p. 378) Camazine and Bye 1980 (p. 378) Stevenson 1915 (p. 50) Stevenson 1915 (p. 91)
			x	x								name means "wood strong or hard to break"	Stevenson 1915:16	

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
Eriogonum spp.	Wild Buckwheat		x	x									Dunmire and Tierney 1995:168
Erodium cicutarium	Redstem Stork's Bill		Poultice of chewed root applied to sores and rashes.										Camazine and Bye 1980 (p. 376)
			Infusion of root taken for stomachache.										Camazine and Bye 1980 (p. 376)
Erysimum capitatum	Sanddune Wallflower		Infusion of whole plant used for muscle aches.										Camazine and Bye 1980 (p. 375)
			Flower and fruit eaten as an emetic for stomachaches.										Camazine and Bye 1980 (p. 375)
Erysimum sp.			Infusion of whole plant applied to forehead and temples for headache from heat.										Stevenson 1915 (p. 50)
			Infusion of whole plant rubbed over body to prevent sunburn.										Stevenson 1915 (p. 50)
			Plant used ceremonially to insure the coming of rain so that the corn and all vegetation would grow.										Stevenson 1915 (p. 92)
			x										Stevenson 1915:16
Euphorbia serpyllifolia	Thymeleaf Spurge	x	x	x								name means "make milk"	Stevenson 1915:34
Eurotia lanata	Winter Fat		x	x								name means "winter sage"	Stevenson 1915:17
Gilia sp.	Gilia		Infusion of fresh or dried plant taken and applied to head for headache.										Stevenson 1915 (p. 52, 53)
			Warm infusion of plant taken as a diuretic.										Stevenson 1915 (p. 52, 53)
			Warm infusion of plant taken as an emetic.										Stevenson 1915 (p. 52, 53)
			Infusion of fresh or dried plant taken and rubbed on body for fever.										Stevenson 1915 (p. 52, 53)
			Warm infusion of plant taken as a laxative.										Stevenson 1915 (p. 52, 53)
			Infusion of plant taken and applied to neck for swollen throat.										Stevenson 1915 (p. 52, 53)
			x	x								name means "leaf seeds make"	Stevenson 1915:18-19
Grindelia nuda	Curlytop Gumweed		Poultice of flower applied to ant bites.										Camazine and Bye 1980 (p. 375)
			Fresh or dried root chewed by medicine man before sucking snakebite and poultice applied to wound.										Camazine and Bye 1980 (p. 374)
Gutierrezia sarothrae	Broom Snakeweed		Infusion of whole plant used for muscle aches.										Camazine and Bye 1980 (p. 375)
			Infusion of blossoms taken as a diaphoretic.										Stevenson 1915 (p. 53)
			Infusion of blossoms taken as a diuretic for "obstinate cases."										Stevenson 1915 (p. 53)
			Infusion of blossoms taken to "make one strong in the limbs and muscles."										Stevenson 1915 (p. 53)
			Infusion of whole plant taken to increase strength for urinary retention.										Camazine and Bye 1980 (p. 375)
			x										Dunmire and Tierney 1995:146
			x	x								name means "waters gathered together"	Stevenson 1915:19
Hymenopappus filifolius	Ragweed, Fineleaf Hymenopappus	x	x	x								name means "leaf cotton-wool"	Stevenson 1915:21
			Root used as chewing gum.										Stevenson 1915 (p. 68)
			Poultice of chewed root with lard applied to swellings.										Stevenson 1915 (p. 54, 55)
			Warm decoction of root taken as an emetic.										Stevenson 1915 (p. 54, 55)
Ipomopsis longiflora	Blue Trumpet Gilia		x										Dunmire and Tierney 1995:199
Ipomopsis longiflora ssp. longiflora	Flaxflowered Gilia		Poultice of dried, powdered flowers and water applied to remove hair on newborns and children.										Camazine and Bye 1980 (p. 378)
			Poultice of dried, powdered flowers and water applied to remove hair on newborns and children.										Camazine and Bye 1980 (p. 378)
Ipomopsis multiflora	Manyflowered Gilia		Powdered, whole plant applied to face for headache.										Stevenson 1915 (p. 52)
			Powdered plant applied to wounds.										Stevenson 1915 (p. 52)
			Crushed blossoms smoked in corn husks to "relieve strangulation."										Stevenson 1915 (p. 52)
Iris missouriensis	Rocky Mountain Iris		Poultice of chewed root applied to increase strength of newborns and infants.										Camazine and Bye 1980 (p. 373)
			Poultice of chewed root used for newborns and infants to increase strength.										Camazine and Bye 1980 (p. 373)
Juniperus monosperma	One-seed Juniper		x									name means "cedar"	Stevenson 1915:21
												x	Underhill 1991:55
			Infusion of leaves used for muscle aches.										Camazine and Bye 1980 (p. 373)
			Infusion of leaves taken to prevent conception.										Camazine and Bye 1980 (p. 373)
			Simple or compound infusion of twigs used to promote muscular relaxation at birth.										Stevenson 1915 (p. 55)
			Simple or compound infusion of twigs taken after childbirth to stop blood flow.										Stevenson 1915 (p. 55)
			Infusion of leaves taken postpartum to prevent uterine cramps and stop vaginal bleeding.										Camazine and Bye 1980 (p. 373)
			Simple or compound infusion of twigs taken after childbirth to stop blood flow.										Stevenson 1915 (p. 55)
			Wood used as a favorite firewood, but more importantly in ceremonies.										Stevenson 1915 (p. 93)
			Shredded, fibrous bark used as tinder to ignite the fire sticks used for the New Year fire.										Stevenson 1915 (p. 93)

Zuni Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
<i>Krascheninnikovia lanata</i>	Winterfat		Poultice of ground root applied to burns and bound with cotton cloth.										Stevenson 1915 (p. 51)	
<i>Lactuca pulchella</i>	Chicory Lettuce	x											Stevenson 1915:34	
<i>Lactuca tatarica</i>	Blue Lettuce	Gummy substance from the root used for chewing gum. Dried root gum used as chewing gum.										Reagan 1929 (p. 158) Stevenson 1915 (p. 68)		
<i>Leucelene ericoides</i>	Sand Aster		x									name means "suds making"	Stevenson 1915:21	
<i>Linum puberulum</i>	Plains Flax		Berry juice squeezed into eye for inflammation.										Stevenson 1915 (p. 56)	
<i>Lithospermum incisum</i>	Narrowleaf Gromwell	Salve of powdered root applied ceremonially to swelling of any body part.										Stevenson 1915 (p. 56)		
		Powdered root mixed with bum branch resin and used for abrasions and skin infections.										Camazine and Bye 1980 (p. 374)		
		Poultice of root used and decoction of plant taken for swelling.										Stevenson 1915 (p. 56)		
		Infusion of root taken for stomachache.										Camazine and Bye 1980 (p. 374)		
		Infusion of root taken for kidney problems.										Camazine and Bye 1980 (p. 374)		
		Poultice of root used and decoction of plant taken for sore throat.										Stevenson 1915 (p. 56)		
											Leaves bound to arrow shafts, close to the point, obscured by sinew wrapping and used in wartime.		Stevenson 1915 (p. 93)	
<i>Lotus wrightii</i>	Wright's Deervetch		Poultice of chewed root applied to swellings caused by being witched by a bullsnake.										Camazine and Bye 1980 (p. 376)	
<i>Lycium pallidum</i>	Pale Wolfberry	Berries eaten raw when perfectly ripe or boiled and sometimes sweetened.										Stevenson 1915 (p. 68)		
												Ground leaves, twigs and flowers given to warriors for protection during war.		Stevenson 1915 (p. 94)
		x									x		Dunmire and Tierney 1995:144	
<i>Machaeranthera canescens</i> ssp. <i>canescens</i>	Cutleaf Goldenweed		Infusion of whole plant taken and rubbed on abdomen as an emetic.										Underhill 1991:55	
<i>Machaeranthera</i> spp.	Aster		x									name means "hail leaf"	Stevenson 1915:22	
<i>Mahonia fremontii</i>	Fremont's Mahonia		Crushed berries used as purple coloring for the skin and for objects employed in ceremonies.										Stevenson 1915 (p. 88)	
<i>Mentzelia pumila</i>	Golden Blazing Star, Dwarf Mentzelia											name means "sacred embroidered cotton blanket holdfast."	Stevenson 1915:23	
		x	Powdered root inserted into rectum as a suppository for constipation.										Stevenson 1915 (p. 57)	
		Plant used to whip children to make them strong so they could hold on to a horse without falling.										Stevenson 1915 (p. 84)		
<i>Mirabilis linearis</i>	Narrowleaf Four O'clock	Root eaten to induce urination.										Camazine and Bye 1980 (p. 377)		
		Root eaten to induce vomiting.										Camazine and Bye 1980 (p. 377)		
		Infusion of root taken for stomachache.										Camazine and Bye 1980 (p. 377)		
<i>Mirabilis multiflora</i>	Showy Four-o'clock	x											Dunmire and Tierney 1995:177	
			x										Stevenson 1915:24-25	
		Powdered root mixed with flour, made into a bread and used to decrease appetite.										Camazine and Bye 1980 (p. 377)		
		Infusion of root taken and rubbed on abdomen of hungry adults and children.										Stevenson 1915 (p. 58, 59)		
		Infusion of powdered root taken by adults or children after overeating.										Stevenson 1915 (p. 58)		
<i>Monarda menthaefolia</i>	Horsemint	x											Dunmire and Tierney 1995:203	
<i>Muhlenbergia rigens</i>	Deergrass		Grass attached to sticks of plume offerings to anthropic gods.										Stevenson 1915 (p. 91)	
<i>Nicotiana attenuata</i>	Coyote Tobacco	Smoke blown over body for throbbing from rattlesnake bite.										Stevenson 1915 (p. 54)		
		Leaves smoked ceremonially.										Stevenson 1915 (p. 95)		
<i>Oenothera coronopifolia</i>	Crownleaf Eveningprimrose		Poultice of powdered flower and saliva applied at night to swellings.										Camazine and Bye 1980 (p. 377)	
<i>Oenothera elata</i> ssp. <i>hookeri</i>	Hooker's Eveningprimrose		Poultice of powdered flower and saliva applied at night to swellings.										Camazine and Bye 1980 (p. 377)	
<i>Opuntia phaeacantha</i>	Prickly Pear								x			decorative	Dunmire and Tierney 1995:190	
<i>Opuntia whipplei</i>	Whipple Cholla	Fruit, with the spines rubbed off, dried for winter use.										Stevenson 1915 (p. 69)		
		Spineless fruits eaten raw or stewed.										Castetter 1935(p. 36)		
		Dried fruit ground into a flour, mixed with parched corn meal and made into a mush.										Stevenson 1915 (p. 69)		
<i>Orobanche fasciculata</i>	Clustered Broomrape,		Powdered plant inserted into rectum as a specific for hemorrhoids.										Stevenson 1915 (p. 61)	

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
	Cancer Root		x										Stevenson 1915:27	
Oryzopsis hymenoides	Indian Ricegrass	x											Dunmire and Tierney 1995:157	
		x											Stevenson 1915:33 Underhill 1991	
Parryella filifolia	Common Dunebroom				Pleasantly fragrant plant used for weaving baskets.							x	Stevenson 1915 (p. 81)	
Penstemon barbatus ssp. torreyi	Torrey's Penstemon				Chewed root rubbed over the rabbit stick to insure success in the hunt.								Stevenson 1915 (p. 95)	
Phacelia spp.	Scorpionweed		x										Dunmire and Tierney 1995:201	
Phaseolus angustissimus	Slimleaf Bean		Crushed leaves, blossoms and powdered root rubbed on a child's body as a strengthener.										Stevenson 1915 (p. 85)	
Phoradendron juniperinum	Juniper Mistletoe		x										Dunmire and Tierney 1995:107	
			x										Stevenson 1915:21	
					Infusion of whole plant taken as an emetic for stomachaches.									Camazine and Bye 1980 (p. 377)
					Compound infusion of plant taken to promote muscular relaxation at birth.									Stevenson 1915 (p. 55)
					Simple or compound infusion of twigs taken after childbirth to stop blood flow.									Stevenson 1915 (p. 55)
			Simple or compound infusion of twigs taken after childbirth to stop blood flow.									Stevenson 1915 (p. 55)		
Phragmites communis	Common Reed										x	games	Dunmire and Tierney 1995:159	
Physalis hederifolia	Groundcherry										x	x	Underhill 1991:55	
Physalis spp.	Groundcherry	x					x			x			Dunmire and Tierney 1995:207	
Pinus edulis	Twoneedle Pinyon	Nuts gathered in great quantities, toasted and stored for winter use.											Stevenson 1915 (p. 70)	
			Powdered resin sprinkled in opened abscess or mixed with lard or Vaseline and placed in abscess.											Camazine and Bye 1980 (p. 373)
			Powdered resin used for skin infections.											Camazine and Bye 1980 (p. 373)
			Needles chewed and swallowed as a diaphoretic.											Stevenson 1915 (p. 57, 58)
			Powdered gum sprinkled on lanced groin swellings as an antiseptic.											Stevenson 1915 (p. 57, 58)
			Needles eaten and infusion of twigs used as a diuretic and diaphoretic for syphilis.											Stevenson 1915 (p. 57, 58)
			Needles eaten and infusion of twigs used as a diuretic and diaphoretic for syphilis.											Stevenson 1915 (p. 57, 58)
			Powdered gum sprinkled on scraped syphilitic ulcers.											Stevenson 1915 (p. 57, 58)
			x									name means "gum branch"	Stevenson 1915:23-24	
Polanisia dodecandra ssp. trachysperma	Sandyseed Clammyweed			Switches, roots and blossoms used ceremonially.									Stevenson 1915 (p. 96)	
Populus angustifolia	Narrowleaf Cottonwood	Buds used as chewing gum.											Reagan 1929 (p. 159)	
		Buds used for food.											Reagan 1929 (p. 159)	
Portulaca oleracea	Common Purslane	x											Dunmire and Tierney 1995:179	
Psilostrophe tagetina	Woolly Paperflower		Compound poultice of root applied with much ceremony to rattlesnake bite.										Stevenson 1915 (p. 53)	
			Blossoms used by personators of anthropic gods for painting masks and for coloring bodies yellow.										Stevenson 1915 (p. 97)	
Rhus trilobata	Skunkbush Sumac			Stems, with the bark removed, used in making fine "Apache" and other baskets.									Stevenson 1915 (p. 81)	
Ribes cereum	Wax Currant, Whisky Currant		Highly relished berries used for food.									x	Underhill 1991:54-55	
			Leaves eaten with uncooked mutton fat or deer fat.										Stevenson 1915 (p. 70)	
			Fresh leaves eaten with uncooked mutton fat or with deer fat.										Castetter 1935(p. 49)	
												Stevenson 1915 (p. 70)		
Rumex crispus	Curly Dock		Poultice of powdered root applied to sores, rashes and skin infections.										Camazine and Bye 1980 (p. 378)	
			Infusion of root used for athlete's foot infection.										Camazine and Bye 1980 (p. 378)	
			x										Dunmire and Tierney 1995:170	
Senecio multicapitatus	Many-headed Ragwort											name means "grind leaf"	Stevenson 1915:25-26	
Senecio spartioides	Ragwort Groundsel		x	x										
			Cold infusion of pulverized root rubbed over limbs for "aching bones."										Stevenson 1915 (p. 59, 60)	
			Infusion of powdered root ceremonially rubbed on limbs for "aching bones."										Stevenson 1915 (p. 59)	
			Infusion of blossoms used as drops for inflamed eyes.										Stevenson 1915 (p. 59, 60)	
	Infusion of powdered root ceremonially rubbed on limbs for "aching bones."											Stevenson 1915 (p. 59)		
Solanum elaeagnifolium	White Horse-nettle, Silverleaf Nightshade		x										Dunmire and Tierney 1995:209	
			x										name means "prickly leaf"	Stevenson 1915:26
			Berries mixed with curdled goat milk and considered a delicious beverage.											Stevenson 1915 (p. 70)
			Fresh or dried root chewed by medicine man before sucking snakebite and poultice applied to wound.											Camazine and Bye 1980 (p. 378)
			Fruit chewed over sore tooth.											Camazine and Bye 1980 (p. 378)
	Chewed root placed in cavity of aching tooth.											Stevenson 1915 (p. 60)		

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
Solanumii	Wildpotato	x								x			Dunmire and Tierney 1995:211
Solanum triflorum	Cutleaf Nightshade	Ripe fruit boiled, ground, mixed with ground chile											Stevenson 1915 (p. 71)
		x											Underhill 1991:55
Sporobolus contractus	Spike Dropseed				Grass bunches fastened together and used to construct shelters in or near the distant fields.								Stevenson 1915 (p. 81)
					Grass bunches fastened together to make mats for covering hatchways and other openings in the house.								Stevenson 1915 (p. 81)
Sporobolus spp.	Dropseed				x								Dunmire and Tierney 1995:161
Stanleya pinnata	Desert Princesplume				Poultice of fresh, chewed pods used for itching.								Camazine and Bye 1980 (p. 375)
					Powdered plant applied, as a specific, to scraped syphilitic sores.								Stevenson 1915 (p. 60)
Stephanomeria minor	Narrowleaf Wirelettuce				Poultice of pulverized plant applied and infusion taken for rattlesnake bite.								Stevenson 1915 (p. 58)
Thelypodium wrightii	Wright's Thelypody										Seeds crushed by women and planted with beans to ensure a proliferative crop.		Stevenson 1915 (p. 85)
Verbascum thapsus	Common Mullein				Poultice of powdered root applied to sores, rashes and skin infections.								Camazine and Bye 1980 (p. 378)
					Infusion of root used for athlete's foot infection.								Camazine and Bye 1980 (p. 378)
Verbesina encelioides	Golden Crownbeard		x		x								Stevenson 1915:29
Verbesina encelioides ssp.	Golden Crownbeard				Blossoms chewed and swallowed with water as an emetic for stomach cramps.								Stevenson 1915 (p. 63)
					Compound poultice of root applied with much ceremony to rattlesnake bite.								Stevenson 1915 (p. 53, 54)
Xanthium strumarium	Cocklebur	x	x										Dunmire and Tierney 1995:217-218
			x	x									Stevenson 1915:29
												x	Underhill 1991:56
Xanthium strumarium	Canada Cocklebur				Seeds ground, mixed with corn meal, made into pats and steamed.								Castetter 1935(p. 54)
					Seeds ground with corn meal, made into cakes or balls, steamed and used for food.								Stevenson 1915 (p. 71)
					Chewed seeds rubbed on body prior to cactus ceremony to protect from spines.								Stevenson 1915 (p. 62, 63)
					Compound poultice of seeds applied to wounds or used to remove splinters.								Stevenson 1915 (p. 62, 63)
Yucca baccata	Banana Yucca				Fruit eaten fresh or boiled, cooled and the skin peeled off with a knife.								Stevenson 1915 (p. 72)
					Fruits pared and eaten raw or boiled and skinned.								Castetter 1935(p. 54)
					Fruit made into conserves and used for food.								Stevenson 1915 (p. 72)
					Flesh cooked, made into pats, sun dried and eaten as a conserve.								Castetter 1935(p. 54)
					Flesh cooked, made into pats, sun dried and mixed with water to form a syrup.								Castetter 1935(p. 54)
					Fruit made into conserves and used as a sweetener before the introduction of coffee and sugar.								Stevenson 1915 (p. 72)
					Split leaves used to make winnowing baskets, baskets for serving food								Stevenson 1915 (p. 78)
					Interlaced leaves used to make baskets.								Stevenson 1915 (p. 81)
												Leaves boiled, chewed and fiber woven into skirts and kilts.	Bell and Castetter 1941 (p. 45)
												Leaf fibers used in weaving fabrics.	Stevenson 1915 (p. 78)
					Leaves boiled, chewed and made into a double-stranded cord.								Bell and Castetter 1941 (p. 40)
					Leaf fibers made into cords used to tie prayer plume offerings together								Stevenson 1915 (p. 78)
					Split leaves used in place of cords or rope.								Stevenson 1915 (p. 78)
					Leaves split and plaited into mats to cover various vessels.								Bell and Castetter 1941 (p. 36)
					Dried leaves split, plaited and made into water-carrying head pads.								Bell and Castetter 1941 (p. 47)
					Leaf fibers made into cords used to tie prayer plume offerings together								Stevenson 1915 (p. 78)
					Split leaves plaited into mats for covering hatchways, grain vases and other vessels.								Stevenson 1915 (p. 78)
					Plant used ceremonially for a great variety of purposes.								Stevenson 1915 (p. 99)
					Narrow leaf bands worn around the head by personators of anthropic gods.								Stevenson 1915 (p. 99)
												Roots pounded, made into suds in cold water and used for washing.	Bell and Castetter 1941 (p. 55)
					Leaves used to make cincture pads for supporting water vases upon the head.								Stevenson 1915 (p. 78)
			x		x							decorative	Robbins, Harrington, and Freire-Marreco 1916:51
												x	Underhill 1991:55
Yucca spp.	Yucca			x				x					Dunmire and Tierney 1995:126
Zinnia grandiflora	Rocky Mountain Zinnia				Poultice of powdered plant applied to bruises.								Stevenson 1915 (p. 45)
					Plant used in a sweatbath for fever.								Stevenson 1915 (p. 45)
					Cold infusion of blossoms used as an eyewash.								Stevenson 1915 (p. 45)
					Smoke from powdered plant inhaled in sweatbath for fever.								Stevenson 1915 (p. 45)
			x									name means "put into eyes"	Stevenson 1915:11

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
	cactus	x											Ferguson and Hart 1990
	cocklebur thistle	x											Ibid.
	grasses	x											Ibid.
	juniper berries	x											Ibid.
	milkweed	x											Ibid.
	nightshade	x											Ibid.
	pine nuts	x											Ibid.
	puffball fungus	x											Ibid.
	soapweed	x											Ibid.
	sunflowers	x											Ibid.
	tumbleweed	x											Ibid.
	water parsnips	x											Ibid.
	watercress	x											Ibid.
	wild beans	x											Ibid.
	wild rice	x											Ibid.
	wildpeas	x											Ibid.
	wormwood	x											Ibid.
	yucca	x											Ibid.
	cedar bark		x										Ibid.
	gourd		x										Ibid.
	pine gum		x										Ibid.
	willowroot		x										Ibid.
	beeweed												Ibid.
	coreopsis flowers												Ibid.
	dropseed grass for mats and shelters												Ibid.
	longleaf yucca												Ibid.
	milkweed												Ibid.
	rabbit weed												Ibid.
	rabbitbrush												Ibid.
	sumac root												Ibid.
	thistle												Ibid.

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APPENDIX F:
HOPI ETHNOBOTANY

Hopi Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
<i>Abronia elliptica</i>	Fragrant White Sand Verbena				Plant placed on child's head to induce sleep.								Whiting 1939 (p36, 75)
<i>Achnatherum hymenoides</i>	Indian Ricegrass	Seeds ground with corn into fine meal and used to make tortilla bread.											Nequatewa 1943 (p20)
		Ground seeds used to make meal.											Vestal 1940 (p158)
		Plants formerly used for food during famines.											Jones 1938 (p43)
		Seeds eaten, especially in time of famine.											Colton 1974. (p338)
		Seeds used during famines.											Whiting 1939 (p65)
<i>Amaranthus blitoides</i>	Mat Amaranth	Plants formerly used for food during famines.											Jones 1938 (p43)
		Ground seeds used to make mush.											Vestal 1940 (p162)
		Seeds used as food.											Castetter 1935 (p22)
		Seeds eaten for food.											Whiting 1939 (p74)
		Seeds formerly prized as a food.											Fewkes 1896 (p18)
<i>Amaranthus powellii</i>	Powell's Amaranth	Cooked and eaten as greens.											Whiting 1939 (p74)
		Seeds used for food.											Colton 1974. (p283)
<i>Amelanchier utahensis</i>	Utah Serviceberry	Leaves used as greens.											Colton 1974. (p283)
		Plant used to make pahos (prayer sticks).											Colton 1974. (p284)
		Plant used to make bows and arrows.											Colton 1974. (p284)
<i>Arenaria eastwoodiae</i>	Eastwood's Sandwort	Plant used as an emetic for the stomach.											Whiting 1939 (p34, 75-76)
<i>Aristida purpurea</i> var. <i>longiseta</i>	Fendler Threewain	Plant used for broom material.											Colton 1974. (p286)
		Plant used in ceremonials.											Colton 1974. (p286)
		Plant used to decorate the faces of the female kachina.											Colton 1974. (p286)
<i>Artemisia dracuncululus</i>	Wormwood	Leaves boiled or roasted between hot, flat stones and eaten.											Castetter 1935 (p25)
		Leaves baked between hot stones, dipped in salted water and eaten.											Fewkes 1896 (p19)
<i>Artemisia filifolia</i>	Sand Sagebrush	Plant used for boils.											Colton 1974. (p288)
		Plant used for boils.											Whiting 1939 (p32, 94)
		Plant used for ritualistic purposes.											Colton 1974. (p288)
		Infusion of plant and juniper branches taken for indigestion.											Colton 1974. (p288)
		Simple or compound decoction of plant taken for indigestion.											Whiting 1939 (p33, 94)
<i>Artemisia frigida</i>	Fringed Sagewort	Plant used to make pahos (prayer sticks).											Colton 1974. (p289)
		Sprig attached to the prayer emblem and regarded as efficacious in petitions for water.											Fewkes 1896 (p21)
		Attached to prayer sticks.											Whiting 1939 (p94)
		Used on prayersticks.											Vestal 1940 (p167)
		Used with sweet corn when roasting.											Vestal 1940 (p167)
<i>Artemisia tridentata</i>	Big Sagebrush	Plant used for digestive disorders.											Whiting 1939 (p34, 94)
		Infusion of leaves taken for ailing ilium.											Fewkes 1896 (p17)
<i>Asclepias subverticillata</i>	Whorled Milkweed	Plant used to increase mother's milk flow.											Whiting 1939 (p36, 87)
		Used by the mother to produce a flow of milk.											Vestal 1940 (p164)
<i>Astragalus</i> sp.		Plant used as a ceremonial emetic.											Whiting 1939 (p80)
<i>Atriplex canescens</i>	Fourwing Saltbush	Plant used to make pahos (prayer sticks).											Colton 1974. (p292)
		Ashes used instead of baking soda.											Vestal 1940 (p160)
		Plant used for kiva fires.											Fewkes 1896 (p21)
<i>Atriplex confertifolia</i>	Shadscale Saltbush	Leaves boiled in water, the water mixed with corn meal and baked into a pudding.											Fewkes 1896 (p20)
		Scented leaves boiled and water mixed with cornmeal to make a pudding.											Castetter 1935 (p17)
		Plant burned and smoke inhaled for epileptic medicine.											Colton 1974. (p293)
		Plant used as flavoring with meat or other vegetables.											Colton 1974. (p293)
		Boiled with meat.											Vestal 1940 (p160)
		Young, tender leaves cooked and eaten as greens.											Whiting 1939 (p73)
		Plant used for greens.											Colton 1974. (p293)

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Atriplex obovata	Mound Saltbush				Plant burned and smoke inhaled for epileptic medicine.								Colton 1974. (p293)	
					Plant used as flavoring with meat or other vegetables.								Colton 1974. (p293)	
					Plant used for greens.									Colton 1974. (p293)
					Young, tender leaves cooked and eaten as greens.									Whiting 1939 (p73)
Bouteloua gracilis	Blue Grama				Used as the fill of coiled basketry.								Whiting 1939 (p64)	
					Used as an important forage grass.								Whiting 1939 (p64)	
Castilleja linariifolia	Wyoming Indian Paintbrush				Used ceremonially as the "Red Flower" associated with the southeast direction.								Colton 1974. (p297)	
					Used ceremonially as the Red Flower associated with the southeast direction.								Whiting 1939 (p91)	
												Used by maidens to deck their hair on holiday occasions.		Fewkes 1896 (p19)
														Colton 1974. (p297)
														Whiting 1939 (p91)
							Root and juniper bark chewed, mixed with white clay and used as ceremonial paint.							Colton 1974. (p297)
							Root chewed, mixed with white clay and the juice used to decorate artificial squash blossoms.							Whiting 1939 (p91)
							Decoction of plant used to prevent conception.							Colton 1974. (p297)
							Decoction of plant used as a contraceptive.							Whiting 1939 (p35, 91)
							Decoction of plant used for excessive menstrual discharge.							Colton 1974. (p297)
					Decoction of plant used to ease menstrual difficulties.							Whiting 1939 (p35, 91)		
					Flowers eaten as food.								Vestal 1940 (p166)	
Cercocarpus montanus var. glaber	Birchleaf Mountain Mahogany				Wood used to make pahos (prayersticks).								Colton 1974. (p298)	
					Wood used to make implements.								Colton 1974. (p298)	
Chenopodium album	Lambsquarters				Boiled and eaten with other foods.								Whiting 1939 (p73)	
					Ground seeds used to make mush.								Vestal 1940 (p160)	
					Leaves cooked with meat.									Castetter 1935 (p16)
					Leaves boiled and eaten with fat.									Fewkes 1896 (p18)
					Boiled and eaten with other foods.							Whiting 1939 (p73)		
Chenopodium fremontii	Fremont's Goosefoot											Leaves packed around yucca fruit when baked in earth oven.	Colton 1974. (p300)	
					Ground seeds used to make mush.								Vestal 1940 (p161)	
					Leaves used as flavoring with meat or other vegetables.								Colton 1974. (p300)	
					Leaves cooked alone as greens or boiled and eaten with a number of other foods.								Colton 1974. (p300)	
Chenopodium graveolens	Fetid Goosefoot				Seeds ground, mixed with corn meal and made into small dumplings wrapped in corn husks.							Fewkes 1896 (p18)		
Chenopodium leptophyllum	Narrowleaf Goosefoot				Ground seeds used to make mush.							Vestal 1940 (p161)		
Chrysothamnus depressus	Longflower Rabbitbrush				Used as prayer stick decorations.							Whiting 1939 (p96)		
Chrysothamnus viscidiflorus	Green Rabbitbrush											Used as a sand break to protect young corn and melons.	Vestal 1940 (p167)	
					Plant used for ceremonies.								Colton 1974. (p302)	
					Poultice of chewed plant tips applied to boils.									Fewkes 1896 (p20)
													Plant used for roasting corn.	Colton 1974. (p302)
					Plant used as a herb.									Colton 1974. (p302)
													Used as a sand break to protect young corn and melons.	Vestal 1940 (p167)
					Used as prayer stick decorations.							Whiting 1939 (p96)		
Cirsium calcaureum	Cainville Thistle				Plant used as a worm remedy.								Whiting 1939 (p34, 95-96)	
					Plant used for itching.								Whiting 1939 (p32,95,96)	
					Plant used as a laxative.								Whiting 1939 (p34, 95-96)	
					Decoction of plant used for tickling throat caused by a cold.									Whiting 1939 (p34, 95-96)

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Citrullus lanatus var. lanatus	Watermelon	Seeds ground and used to oil the "piki" stones.											Whiting 1939 (p92)
		Eaten and considered to be almost a staple food.											Whiting 1939 (p92)
		Seeds parched and eaten with parched corn and "piki."											Whiting 1939 (p92)
Cleome serrulata	Rocky Mountain Beeplant	Leaves and flowers boiled and used for food.											Fewkes 1896 (p16)
		Young plants boiled for food.											Whiting 1939 (p77)
		Plants boiled and eaten like spinach.											Castetter 1935 (p24)
Conyza canadensis var. canadensis	Canadian Horseweed	Poultice of rubbed plant applied to temples for headache.											Whiting 1939 (p33, 96)
Coriandrum sativum	Chinese Parsley	Plant dipped into a stew and eaten as a condiment.											Fewkes 1896 (p20)
		Used as flavoring in cooking.											Whiting 1939 (p86)
		Dipped into water, eaten raw and green.											Vestal 1940 (p164)
Croton texensis	Texas Croton	Plant used as an emetic to "relieve the stomach."											Whiting 1939 (p34, 84)
		Plant used in a very strong eyewash.											Whiting 1939 (p33, 84)
		Used as food for wild doves.											Whiting 1939 (p84)
Cryptantha cinerea var. jamesii	James' Catseye	Poultice of pounded plant applied for body pains.											Whiting 1939 (p32, 88)
Cryptantha crassisejala	Thicksepal Catseye	Plant used for boils or any swelling.											Whiting 1939 (p32, 33, 88)
Cucumis melo	Cantaloupe	Rind removed, meat pressed flat or stripped, wrapped into bundles and dried.											Whiting 1939 (p93)
		Eaten fresh.											Whiting 1939 (p93)
Cucurbita maxima	Winter Squash	Species used for food.											Whiting 1939 (p93)
Cucurbita moschata	Crookneck Squash	Seeds used to oil the "piki" stones.											Whiting 1939 (p93)
		Meat cut spirally, wound into long bundles, tied in pairs and dried for winter use.											Whiting 1939 (p93)
		Flowers used to make special foods.											Whiting 1939 (p93)
		Meat boiled or baked.											Whiting 1939 (p93)
		Seeds roasted and eaten.											Whiting 1939 (p93)
Cycloloma atriplicifolium	Winged Pigweed	Ground seeds used to make mush.											Vestal 1940 (p161)
Cycloloma cornutum		Seeds and flowers used as food.											Castetter 1935 (p22)
Cymopterus multinervatus	Purplenerve Springparsley	Roots eaten in spring.											Colton 1974. (p305)
Cymopterus newberryi	Sweetroot Springparsley	Sweet roots peeled and eaten by children.											Whiting 1939 (p86)
Dalea lanata	Woolly Prairieclover	Scraped roots eaten as a sweet.											Fewkes 1896 (p16)
		Root eaten and regarded as sugar.											Vestal 1940 (p163)
Datura wrightii	Sacred Thornapple	Root chewed to induce visions by medicine man while making a diagnosis.											Colton 1974. (p306)
		Roots chewed by doctor to induce visions while making diagnosis.											Whiting 1939 (p31, 89)
		Plant used as a narcotic.											Colton 1974. (p306)
		Plant well known for the narcotic properties.											Whiting 1939 (p89)
		Plant sometimes fatal and given to a person "who is mean" to cure "meanness."											Whiting 1939 (p89)
		Plant used as a cure for "meanness."											Colton 1974. (p306)
		Plant rarely used as a stimulant as it was sometimes fatal.											Whiting 1939 (p31, 89)
Used to cure meanness.											Whiting 1939 (p37)		
Delphinium scaposum	Tall Mountain Larkspur	Plant used ceremonially.											Colton 1974. (p308)
		Petals and seeds ground into a very fine blue meal prescribed for the Flute altar.											Fewkes 1896 (p16)
													Boys holding handfuls of this and mariposa lily above their heads chased by girls on occasions.
		Plant taken as an emetic in Po-wa-mu ceremony.											Colton 1974. (p308)
		Plant used as a ceremonial emetic.											Whiting 1939 (p34, 76)
Decoction of plant and juniper used to bathe mother during the lying-in period.											Colton 1974. (p308)		

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		Compound decoction of plant used as a wash for mother after childbirth.											Whiting 1939 (p36, 76)
Descurainia obtusa	Blunt Tansymustard	Plant used as greens.											Colton 1974. (p309)
Descurainia pinnata	Western Tansymustard	Plant used as flavoring with meat or other vegetables.											Colton 1974. (p310)
		Greens pit baked, cooled and served in salted water with corn dumplings, boiled bread or piki bread.											Nequatewa 1943 (p19)
		Plant cooked alone as greens.											Colton 1974. (p310)
		Flowers mixed with dark iron pigment used as a black color for pottery decoration.											Fewkes 1896 (p15)
		Plant used in the preparation of pottery paint.											Colton 1974. (p310)
		Leaves boiled or roasted between hot, flat stones and eaten.											Castetter 1935 (p25)
		Leaves boiled or roasted and eaten.											Fewkes 1896 (p15)
		Plant, salty in flavor, eaten as greens in the spring.											Colton 1974. (p310)
		Eaten as greens in the spring.											Whiting 1939 (p77)
Digitaria cognata	Carolina Crabgrass	Seeds ground into meal.											Vestal 1940 (p158)
Digitaria cognata var. cognata	Fall Witchgrass	Seeds ground into meal.											Vestal 1940 (p158)
Dimorphocarpa wislizeni	Touristplant	Plant, a powerful irritant, placed in armpit as a practical joke.											Colton 1974. (p311)
		Ground stalk used as a salve for all kinds of sores.											Vestal 1940 (p163)
		Dried, powdered leaves sprinkled on abrasions.											Fewkes 1896 (p15)
		Ground stalk used as a salve for all kinds of sores.											Vestal 1940 (p163)
		Pods ground and sprinkled on wounds.											Colton 1974. (p311)
		Powdered plant sprinkled on wounds.											Whiting 1939 (p32, 77)
Echinocereus fendleri	Pinkflower Hedgehog Cactus	Fruits dried and used as a source of sweetening.											Whiting 1939 (p85)
Ephedra torreyana	Torrey's Jointfir	Plant used for syphilis.											Whiting 1939 (p35, 63)
Ephedra viridis	Mormon Tea	Dried flowers and stems taken as a tonic.											Colton 1974. (p312)
		Plant used for syphilis.											Colton 1974. (p312)
		Plant used for syphilis.											Whiting 1939 (p64)
Equisetum laevigatum	Smooth Horsetail	Dried, ground with corn meal and used to make a ceremonial bread.											Fewkes 1896 (p17)
		Dried, ground plant used for ceremonial bread.											Fewkes 1896 (p17)
Ericameria parryi var. howardii	Howard's Rabbitbrush	Plant used in initiatory ceremonies.											Fewkes 1896 (p20)
Eriogonum corymbosum	Crispleaf Buckwheat	Leaves boiled, mixed with water and cornmeal and baked into a bread.											Fewkes 1896 (p21)
		Boiled stalks pressed into cakes, dried and eaten with salt.											Vestal 1940 (p159)
Eriogonum hookeri	Hooker's Buckwheat	Boiled with mush for flavor.											Vestal 1940 (p160)
Eriogonum sp.	Wild Buckwheat	Plant used for severe pain in hips and back, especially in pregnant state.											Colton 1974. (p314)
		Plant used for hemorrhage.											Colton 1974. (p314)
		Plant used as menstruation medicine.											Colton 1974. (p314)
		Plant used to expedite childbirth.											Colton 1974. (p314)
		Plant used for pain in hips and back, especially during pregnancy.											Whiting 1939 (p35)
		Plant used to ease menstrual difficulties and ease childbirth.											Whiting 1939 (p35, 73)
Erodium cicutarium	Redstem Stork's Bill	Roots chewed by children, sometimes as gum.											Colton 1974. (p313)
Erysimum capitatum	Sanddune Wallflower	Plant used for advanced cases of tuberculosis.											Colton 1974. (p315)
Erysimum inconspicuuum	Shy Wallflower	Plant used for tuberculosis.											Colton 1974. (p316)
Fallugia paradoxa	Apacheplume	Stems used for arrows.											Whiting 1939 (p78)
Forestiera pubescens var. pubescens	Stretchberry	Used to make pahos (prayer sticks).											Colton 1974. (p319)
		Used for digging stick.											Colton 1974. (p319)
		Wood used for digging sticks.											Whiting 1939 (p87)
Gaillardia pinnatifida	Red Dome Blanketflower	Plant used as a diuretic for painful urination.											Whiting 1939 (p96)
		Taken as a diuretic.											Colton 1974. (p320)
		Plant used as a diuretic for painful urination.											Whiting 1939 (p35, 96)

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Gutierrezia microcephala	Threadleaf Snakeweed		Used for "gastric disturbances."										Colton 1974. (p323)	
												Used in roasting sweet corn.	Colton 1974. (p323)	
					Used as prayer stick decorations.									Whiting 1939 (p96)
					Used as paho (prayer stick) decorations.									Colton 1974. (p323)
Gutierrezia sarothrae	Broom Snakeweed				Sprig attached to the paho (prayer emblem).								Fewkes 1896 (p15)	
					Tied onto the prayer stick.								Vestal 1940 (p168)	
							Sprigs tied on prayer sticks during the December ceremonies.							Robbins, Harrington, and Freire-Marreco 1916 (p56)
							Tied onto the prayer stick.							Vestal 1940 (p168)
Gutierrezia sp.	Snakeweed				Used as prayer stick decorations.								Whiting 1939 (p96)	
					Plant used for disorders of the digestive system.								Whiting 1939 (p34)	
Helianthus annuus	Common Sunflower		Used as an important food for summer birds.										Whiting 1939 (p96)	
Helianthus anomalous	Western Sunflower		Used as an important food for summer birds.										Whiting 1939 (p96)	
Helianthus petiolaris	Prairie Sunflower		Plant used as a "spider bite medicine."										Whiting 1939 (p32, 96)	
			Used as a spider medicine.										Colton 1974. (p324)	
			Used as an important food for summer birds.											Whiting 1939 (p96)
					Dried petals ground and mixed with corn meal to make yellow face powder for women's basket dance.									Colton 1974. (p324)
					Whole plant used in the decoration of flute priests in the Flute ceremony.									Colton 1974. (p324)
					Petals dried, ground, mixed with yellow corn meal and used as a face powder in women's basket dance.									Whiting 1939 (p96)
Helianthus sp.	Hopi Sunflower		Seeds dried, cracked and eaten like nuts after dyes were obtained from them.										Whiting 1939 (p97)	
					Seeds used to make a ceremonial body paint.								Whiting 1939 (p97)	
Helianthus tuberosus	Jerusalem Artichoke		Tubers eaten in the spring.										Whiting 1939 (p97)	
Heterotheca villosa var. villosa	Hairy Goldenaster				Infusion of leaves and flowers used for chest pain.								Whiting 1939 (p95)	
Hymenopappus filifolius	Fineleaf Hymenopappus		Leaves boiled, rubbed with cornmeal and baked into bread.										Castetter 1935 (p29)	
Hymenopappus filifolius var. lugens	Idaho Hymenopappus				Compound containing plant used as a ceremonial emetic.								Whiting 1939 (p97)	
					Root chewed for decaying teeth.								Whiting 1939 (p33, 97)	
Hymenopappus filifolius var. pauciflorus	Fineleaf Hymenopappus		Used to make tea and coffee.										Colton 1974. (p326)	
Hymenoxys bigelovii	Bigelow's Rubberweed		Used for severe pains in hips and back.										Colton 1974. (p328)	
			Used as a purge.										Colton 1974. (p328)	
			Used for severe pains in hips and back, especially in pregnant state.										Colton 1974. (p328)	
			Infusion of plant used for medicinal tea.										Colton 1974. (p328)	
Hymenoxys cooperi	Cooper's Hymenoxys		Used to make tea.										Colton 1974. (p328)	
													Colton 1974. (p329)	
Ipomopsis aggregata ssp. aggregata	Skyrocket Gilia				Plant used after birth when the mother lied in bed for 15 or 20 days.								Colton 1974. (p321)	
					Boiled for a drink.								Colton 1974. (p321)	
							Plant used for decoration.						Colton 1974. (p321)	
Ipomopsis longiflora ssp. longiflora	Flaxflowered Gilia		Decoction of leaves used for stomachache.									Whiting 1939 (p33, 87)		
Juniperus monosperma	Oneseed Juniper				Used for construction.								Colton 1974. (p330)	
					Poultice of heated twigs bound over a bruise or sprain for swelling.								Colton 1974. (p330)	
					Decoction of plant and sagebrush taken for indigestion.								Colton 1974. (p330)	
					Infusion of leaves taken and used for many purposes.								Colton 1974. (p330)	
					Decoction of leaves taken as a laxative.									Colton 1974. (p330)
			Plant ashes rubbed on newborn baby.									Colton 1974. (p330)		

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													Decoction of leaves taken by women who desire a female child.	Colton 1974. (p330)
													Berries eaten with piki or cooked with stew.	Colton 1974. (p330)
													Charcoal of plant, chewed melon seeds and water used to make a ceremonial body paint.	Colton 1974. (p330)
													Branches used in the kachina dances.	Colton 1974. (p330)
													Boiled branch used as wash by men returning from burying a corpse.	Colton 1974. (p330)
													Twigs used to separate corn dumplings while boiling.	Colton 1974. (p330)
													Seeds strung for beads.	Colton 1974. (p330)
													Wood used for firewood and tinder.	Colton 1974. (p330)
													Plant used to do away with evil spirits after a death.	Colton 1974. (p330)
													Used as a rake for clearing brush from the fields.	Colton 1974. (p330)
													Berries used in rattles.	Colton 1974. (p330)
Juniperus osteosperma	Utah Juniper												Decoction of branches used especially by women during confinement.	Vestal 1940 (p157)
													Misbehaving youngsters held in a blanket over a smoldering fire of plant.	Whiting 1939 (p37)
													Berries eaten with piki bread.	Nequatewa 1943 (p18)
													Berries used for food.	Whiting 1939 (p63)
													Used for firewood.	Whiting 1939 (p62)
													Seeds pierced and strung for beads in ancient times.	Whiting 1939 (p63)
Juniperus sp.	Juniper												Poultice of heated twigs applied to bruise or sprain for swelling.	Whiting 1939 (p62, 63)
													Decoction of branch used as wash to disinfect persons after corpse burial.	Whiting 1939 (p62, 63)
													Compound decoction of plant taken for indigestion.	Whiting 1939 (p33, 62)
													Plant used several ways to ease pregnancy and childbirth.	Whiting 1939 (p35, 36, 62)
													Poultice of heated twigs bound on bruise or sprain for swelling.	Whiting 1939 (p32, 62)
													Plant ashes rubbed on newborn baby.	Whiting 1939 (p62, 63)
													Plant smoke used to make child behave by holding the child over the fire.	Whiting 1939 (p62, 63)
Krascheninnikovia lanata	Winterfat												Powdered root used for burns.	Colton 1974. (p317)
													Decoction of leaves used for fever.	Colton 1974. (p317)
													Compound containing plant used for fever.	Whiting 1939 (p32, 74)
													Plant used for sore muscles.	Whiting 1939 (p32)
													Used in ceremonials to produce steam.	Colton 1974. (p317)
Lesquerella intermedia	Mid Bladderpod												Infusion of root taken as a ceremonial emetic.	Whiting 1939 (p77)
													Root rubbed on abdomen when uterus failed to contract after childbirth.	Whiting 1939 (p36, 77)
													Root eaten and poultice of chewed root used for snakebite.	Whiting 1939 (p32, 77)
Lithospermum incisum	Narrowleaf Gromwell												Plant used for hemorrhages.	Colton 1974. (p331)
													Plant used for building up the blood.	Colton 1974. (p331)
													Used as a medicinal plant.	Vestal 1940 (p165)
Lupinus kingii	King's Lupine												Plant used as an eye medicine.	Whiting 1939 (p33, 80)
Lupinus pusillus	Rusty Lupine												Plant used as an ear medicine.	Colton 1974. (p333)
													Plant used as an eye medicine.	Colton 1974. (p333)
													Juice used as holy water in the Po-wa-mu ceremony.	Colton 1974. (p333)
Lycium pallidum Miers	Pale Wolfberry												Plant used at the annual "Niman-kacina" ceremony.	Fewkes 1896 (p19)
													Berries eaten fresh from the shrub.	Fewkes 1896 (p19)
													Berries eaten.	Robbins, Harrington, and Freire-Marreco 1916 (p47)
													Ground berries mixed with "potato clay" and eaten.	Colton 1974. (p332)

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		Berries cooked to make a jam-like food and served with fresh piki bread.											Nequatewa 1943 (p19)
		Berries boiled, ground, mixed with "potato clay" and eaten during past famines											Whiting 1939 (p89)
		Seeds eaten.											Vestal 1940 (p166)
				Whole shrub used in Niman kachina dance.									Colton 1974. (p332)
<i>Lygodesmia grandiflora</i>	Largeflower Skeletonplant	Boiled with a certain kind of mush for flavor.											Vestal 1940 (p168)
		Leaves boiled with meats and eaten.											Fewkes 1896 (p19)
		Leaves boiled with meat.											Whiting 1939 (p97)
<i>Machaeranthera canescens</i> ssp. <i>glabra</i> var. <i>aristata</i>	Hoary Tansyaster		Decoction of plant taken by parturient women for any disorder.										Whiting 1939 (p36, 94)
			Decoction of plant taken as a strong stimulant.										Whiting 1939 (p31, 94)
<i>Macromeria viridiflora</i>	Gianttrumpets		Dried plant and mullein smoked for "fits," craziness and witchcraft.										Whiting 1939 (p33, 88)
			Compound of plant smoked by persons not in their "right mind."										Whiting 1939 (p88)
			Compound of plant smoked as a cure for persons with "power to charm."										Whiting 1939 (p88)
<i>Mahonia fremontii</i>	Fremont's Mahonia		Plant used for gums.										Whiting 1939 (p33, 76)
				Wood used to make various tools.									Whiting 1939 (p76)
<i>Mahonia repens</i>	Oregongrape			Yellow root and leaves used for ceremonial purposes in the Home Dance.									Colton 1974. (p294)
<i>Malus pumila</i>	Apple	Species used for food.											Whiting 1939 (p79)
<i>Marrubium vulgare</i>	Horehound		Used as a medicinal plant.										Vestal 1940 (p165)
<i>Mentha arvensis</i>	Canadian Mint	Plant eaten as a relish.											Fewkes 1896 (p19)
		Boiled with mush for flavor.											Vestal 1940 (p165)
<i>Mentzelia albicaulis</i>	Whitestem Blazingstar		Plant used as toothache medicine.										Colton 1974. (p335)
			Seeds parched, ground into a fine, sweet meal and eaten in pinches.										Fewkes 1896 (p20)
			Mashed seeds rolled into sticks and eaten.										Vestal 1940 (p164)
			Plant used as substitute for tobacco.										Colton 1974. (p335)
<i>Mentzelia pumila</i>	Dwarf Mentzelia		Plant used as "a toothache medicine."										Whiting 1939 (p85)
			Plant used as a substitute for tobacco.										Whiting 1939 (p85)
<i>Mirabilis multiflora</i>	Colorado Four O'clock		Used to push up the blood in the woman during the pregnant stage.										Colton 1974. (p334)
			Root chewed by medicine man to induce visions while making a diagnosis.										Colton 1974. (p334)
			Used as antiseptic to wash out wounds in horses.										Colton 1974. (p334)
											Heavy root used to anchor the bird trap string.		Colton 1974. (p334)
			Roots chewed by doctor to induce visions while making diagnosis.										Whiting 1939 (p31, 75)
<i>Monarda citriodora</i>	Lemon Beebalm	Plant boiled and eaten only with hares.											Fewkes 1896 (p19)
<i>Monarda fistulosa</i> ssp. <i>fistulosa</i> var. <i>menthifolia</i>	Mintleaf Beebalm		Dried in bundles for winter use.										Whiting 1939 (p91)
<i>Monolepis nuttalliana</i>	Nuttall's Povertyweed		Ground seeds used to make mush.										Vestal 1940 (p161)
<i>Muhlenbergia rigens</i>	Deergrass		Ground seed meal used to make bread.										Vestal 1940 (p158)
<i>Nicotiana attenuata</i>	Coyote Tobacco		Plant smoked for all ceremonial occasions.										Fewkes 1896 (p19)
			Plant smoked in pipes for ceremonial purposes only.										Whiting 1939 (p90)
			Used for smoking.										Castetter and Bell 1942 (p109)
<i>Oenothera pallida</i> ssp. <i>pallida</i>	Pale Eveningprimrose		Used ceremonially as the White Flower associated with the northeast direction.										Whiting 1939 (p86)
<i>Oenothera pallida</i> ssp. <i>runcinata</i>	Pale Eveningprimrose		Used ceremonially as the White Flower associated with the northeast direction.										Whiting 1939 (p86)
<i>Opuntia erinacea</i> var. <i>hystricina</i>	Grizzlybear Pricklypear	Fruits cooked, freed from thorns and served with cornmeal boiled bread.											Nequatewa 1943 (p18)
		Joints boiled, dipped into syrup and eaten after thorn removal.											Whiting 1939 (p85)
<i>Opuntia polyacantha</i>	Plains Pricklypear	Fruits cooked, freed from thorns and served with cornmeal boiled bread.											Nequatewa 1943 (p18)
		Joints boiled, dipped into syrup and eaten after thorn removal.											Whiting 1939 (p85)
<i>Opuntia</i> sp.		Stems, with spines removed, boiled and eaten.											Fewkes 1896 (p17)
<i>Opuntia whipplei</i>	Whipple Cholla		Root chewed or compound decoction taken for diarrhea.										Whiting 1939 (p34, 86)

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
		Buds boiled and eaten with cornmeal boiled bread.											Nequatewa 1943 (p19)
<i>Oxytropis lambertii</i>	Lambert's Crazyweed		Plant poisonous to cattle.										Whiting 1939 (p80)
<i>Panicum capillare</i>	Witchgrass	Ground seed meal used to make bread.											Vestal 1940 (p159)
		Seeds ground and mixed with corn meal.											Fewkes 1896 (p17)
<i>Parryella filifolia</i>	Common Dunebroom				Plant used as basketry material.								Colton 1974. (p339)
					Used as an important basketry material.								Whiting 1939 (p80)
			Beans used for toothaches.										Colton 1974. (p339)
			Beans used for toothaches.										Whiting 1939 (p33, 80)
					Plant used to weave kachina masks.								Colton 1974. (p339)
					Roots made into hooks and used to secure packs on burros during salt expeditions.								Colton 1974. (p339)
<i>Pectis angustifolia</i>	Narrowleaf Pectis	Plants dried and eaten with fresh roasted corn, dried parched corn or corn dumplings.											Nequatewa 1943 (p20)
		Dried, stored and used for food.											Whiting 1939 (p97)
		Used as a flavoring.											Whiting 1939 (p97)
		Eagerly eaten raw.											Whiting 1939 (p97)
<i>Penstemon ambiguus</i>	Gilia Beardtongue			Plant, associated with east direction, used in the Po-wa-mu ceremony.									Colton 1974. (p340)
										Flowers used to indicate when watermelon planting was over.			Colton 1974. (p340)
<i>Phacelia crenulata</i>	Cleftleaf Wildheliotrope		Plant used for injury in animals, especially horses.										Colton 1974. (p343-344)
<i>Phoradendron juniperinum</i>	Juniper Mistletoe		Plant used as "medicine for the stomach."										Whiting 1939 (p34, 72)
			Plant used medicinally.										Colton 1974. (p345)
			Plant used as "medicine for the stomach and bad medicine of wizards."										Whiting 1939 (p72)
<i>Phoradendron sp.</i>	Mistletoe		Plant growing on cottonwood used medicinally for unspecified purpose.										Whiting 1939 (p72)
<i>Phragmites australis</i>	Common Reed			Used for roofing, tubular pipes, pipe stems and weaving rods.									Whiting 1939 (p66)
				Associated ceremonially with the bow and arrow.									Whiting 1939 (p66)
<i>Physaria newberryi</i>	Newberry's Twinpod		Plant taken as an antidote after the snake dance.										Fewkes 1896 (p16)
<i>Pinus edulis</i>	Twoneedle Pinyon		Poultice of gum used to exclude air from cuts and sores.										Whiting 1939 (p32)
			Gum smoke used as disinfectant for family of dead person.										Whiting 1939 (p63)
			Plant used for "consumption."										Whiting 1939 (p35, 63)
			Gum applied to forehead as a protection from sorcery.										Whiting 1939 (p63)
		Nuts roasted and eaten as an after supper luxury.											Nequatewa 1943 (p18)
		Nuts used for food.											Colton 1974. (p347)
		Nuts eaten for food.											Whiting 1939 (p63)
				Gum put on hot coals and fumes used to smoke people and their clothes after a funeral.									Colton 1974. (p347)
			Pollen used for the Snake Ceremonial.										Colton 1974. (p347)
			Gum used in making turquoise mosaics.										Colton 1974. (p347)
			Gum used in making turquoise mosaics.										Whiting 1939 (p63)
		Gum put on forehead when going outside of house as protection against sorcery.											Colton 1974. (p347)
		Gum used to waterproof and repair pottery vessels.											Colton 1974. (p347)
		Gum used to prevent absorption of moisture and warping.											Colton 1974. (p347)
		Gum used in waterproofing and repairing pottery vessels.											Whiting 1939 (p63)
<i>Pinus monophylla</i>	Singleleaf Pinyon	Nuts eaten for food.											Whiting 1939 (p63)
<i>Pinus ponderosa</i>	Ponderosa Pine		Used for large roof timbers.										Whiting 1939 (p63)
			Plant parts smoked ceremonially.										Whiting 1939 (p63)
			Used to make ladders.										Whiting 1939 (p63)
			Plant smoked ceremonially.										Colton 1974. (p348)
			Plant used in the Su-ya-lung ceremony.										Colton 1974. (p348)
			Needles attached to prayer sticks to bring cold.										Colton 1974. (p348)
			Wood used to make kiva ladders.										Colton 1974. (p348)

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<i>Poa fendleriana</i>	Muttongrass			Pollen used in prayer medicine.									Colton 1974. (p350)		
<i>Poliomintha incana</i>	Hoary Rosemarymint			Plant used for rheumatism.									Colton 1974. (p351)		
				Plant used for ear trouble.										Colton 1974. (p351)	
				Dried plant stored for winter use.											Colton 1974. (p351)
				Dried for winter use.											Whiting 1939 (p91)
				Flowers used as flavoring.											Whiting 1939 (p91)
				Flowers boiled with a certain mush to give it a flavor.											Vestal 1940 (p165)
				Flowers eaten.											Vestal 1940 (p165)
				Plant eaten raw or boiled.											Colton 1974. (p351)
				Plant dipped in salted water and eaten.											Fewkes 1896 (p19)
				Eaten raw or boiled.											Whiting 1939 (p91)
				Flowers eaten and also boiled with a certain mush to give it a flavor.											Vestal 1940 (p165)
<i>Populus sp.</i>	Cottonwood				Trunks used as beams in construction of houses.								Whiting 1939 (p71)		
				"Berries" chewed as gum, particularly with chili.									Colton 1974. (p346)		
				Berries chewed as gum with chili.										Whiting 1939 (p71)	
					Peeled shoots used to make pahos (prayer sticks).									Colton 1974. (p346)	
					Leafy branches used during Snake Dance and related ceremonies.										Colton 1974. (p346)
					Peeled shoots used to make prayer-sticks.										Whiting 1939 (p71)
					Leafy branches used in the Snake Dance and related ceremonies.										Whiting 1939 (p71)
					Roots carved into boxes for sacred feathers and various ceremonial objects.										Colton 1974. (p346)
					Roots carved into boxes for sacred feathers and other ceremonial objects.										Whiting 1939 (p71)
													Hollowed, rotten logs used to make drums.	Colton 1974. (p346)	
													Hollowed sections of rotten logs made into drums.	Whiting 1939 (p71)	
					Wood used to make fire spindle and sometimes the hearth.							Colton 1974. (p346)			
												Roots carved into kachina dolls for children.	Colton 1974. (p346)		
												Roots carved into kachina dolls for children and tourists.	Whiting 1939 (p71)		
<i>Populus tremuloides</i>	Quaking Aspen			Plant smoked ceremonially.									Whiting 1939 (p71)		
<i>Portulaca oleracea</i>	Little Hogweed			Cooked in a gravy.									Whiting 1939 (p75)		
				Plant boiled with meats and eaten.									Fewkes 1896 (p15)		
				Plant formerly cut up fine and eaten in gravy.									Robbins, Harrington, and Freire-Marreco 1916 (p60)		
<i>Pseudocymopterus montanus</i>	Alpine False Springparsley			Plant used for greens.								Colton 1974. (p352)			
<i>Pseudotsuga menziesii</i>	Douglas Fir			Branches considered important in many of the ceremonies.									Whiting 1939 (p63)		
				Plant used for the Ni-man and Po-wa-me ceremony.									Colton 1974. (p353)		
<i>Psilostrophe sparsiflora</i>	Greenstem Paperflower			Plant used with other plants to make medicine stronger.									Colton 1974. (p354)		
				Plant used in the Snake Dance ceremonies.									Colton 1974. (p354)		
<i>Purshia stansburiana</i>	Stansbury Cliffrose			Bark spun and woven into kilts worn by the snake priests.									Colton 1974. (p304)		
				Bark spun and woven into kilts worn by the snake priests.									Whiting 1939 (p78)		
					Bark used as padding for the cradle board.								Colton 1974. (p304)		
					Bark from large stems used as the padding for cradle boards.									Whiting 1939 (p78)	
					Plant used in a wash for wounds.									Colton 1974. (p304)	
					Plant used in a wash for wounds.									Whiting 1939 (p32, 78)	

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				Plant used as an emetic.									Colton 1974. (p304)
				Bark used as an emetic.									Whiting 1939 (p34, 78)
				Plant used ceremonially on the Po-wa-mu altar.									Colton 1974. (p304)
											Used for arrows.		Whiting 1939 (p78)
Quercus gambelii	Gambel's Oak			Plant used in Oaqol ceremony.									Colton 1974. (p355)
Rhus trilobata	Skunkbush Sumac				Twigs used in basketry.								Colton 1974. (p356)
					Twigs used for coarse basketry.								Fewkes 1896 (p16)
					Twigs used to make cradles.								Colton 1974. (p356)
				Twigs used for ceremonial purposes.									Fewkes 1896 (p16)
				Roots used as deodorant.									Colton 1974. (p356)
				Buds used on the body as a medicinal deodorant or perfume.									Whiting 1939 (p84)
				Compound containing root used for "consumption."									Whiting 1939 (p35, 84)
				Roots used medicinally for unspecified purpose.									Colton 1974. (p356)
				Berries used to make "lemonade."									Colton 1974. (p356)
				Berries pounded, soaked in water and used to make a refreshing drink.									Nequatewa 1943 (p20)
				Berries made into lemonade.									Whiting 1939 (p84)
				Berries eaten by young people.									Fewkes 1896 (p16)
					Plant used for ceremonial equipment and prayer sticks.								Colton 1974. (p356)
					Twigs used for many ceremonial purposes.								Fewkes 1896 (p16)
					Used for ceremonial equipment.								Whiting 1939 (p84)
					Used to make prayersticks.								Whiting 1939 (p84)
													Fewkes 1896 (p16)
													Colton 1974. (p356)
Ribes cereum	Wax Currant			Used for stomach pains.									Vestal 1940 (p163)
				Berries used for food.									Fewkes 1896 (p16)
Ribes cereum var. pedicellare	Whisky Currant			Berries eaten with fresh piki bread.									Nequatewa 1943 (p18)
											Wood used for arrows.		Whiting 1939 (p78)
Robinia neomexicana	New Mexico Locust			Used as an emetic to purify the stomach.									Whiting 1939 (p83)
Salix sp.	Willow				Used in roof construction.								Whiting 1939 (p72)
					Used to make prayersticks.								Whiting 1939 (p72)
					Occasionally used in ceremonies.								Whiting 1939 (p72)
Sarcobatus vermiculatus	Greasewood				Wood used for construction.								Colton 1974. (p358)
					Strong wood used in general construction.								Whiting 1939 (p74)
					Wood used for clothes hooks in houses.								Colton 1974. (p358)
				Plant used for kiva fuel.									Fewkes 1896 (p18)
					Wood used for stirring rods.								Colton 1974. (p358)
					Strong wood used to make stirring rods.								Whiting 1939 (p74)
				Shrub used as one of the four prescribed fuels for the kivas.									Fewkes 1896 (p18)
													Colton 1974. (p358)
					Wood used for fuel.								Whiting 1939 (p74)
					Strong wood used as the chief kiva fuel.								Whiting 1939 (p74)
													Colton 1974. (p358)
													Whiting 1939 (p74)
													Colton 1974. (p358)
													Whiting 1939 (p74)
													Vestal 1940 (p162)

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					Wood used for planting and lease rods.								Colton 1974. (p358)
					Strong wood used for rabbit sticks, planting sticks, lease rods and clothes hooks.								Whiting 1939 (p74)
					Used to make planting sticks and poorer boomerangs.								Vestal 1940 (p162)
Senecio spartioides	Broom Groundsel		Poultice of flowers and leaves used for sore muscles.										Colton 1974. (p360)
			Poultice of ground leaf used for pimples and skin diseases.										Colton 1974. (p360)
Solanum elaeagnifolium	Silverleaf Nightshade											Yellow fruits made into necklaces for clowns.	Whiting 1939 (p90)
Solanum jamesii	Wild Potato	Small potatoes used to make yeast.											Vestal 1940 (p166)
		Plant boiled and eaten.											Fewkes 1896 (p19)
		Tubers boiled and eaten with magnesia clay.											Nequatewa 1943 (p20)
Sphaeralcea grossulariifolia	Gooseberryleaf Globemallow		Roots chewed or boiled with cactus root and used for difficult defecation.										Colton 1974. (p362)
			Plant used for babies with bowel trouble.										Colton 1974. (p362)
			Root chewed or boiled for broken bones.										Colton 1974. (p362)
			Plant used for babies with bowel trouble.										Colton 1974. (p362)
Sphaeralcea parvifolia	Smallflower Globemallow		Root chewed or boiled with cactus root and used for difficult defecation.										Colton 1974. (p363)
			Plant used for sores, cuts and wounds.										Colton 1974. (p363)
			Plant used for babies with bowel trouble.										Colton 1974. (p363)
			Chewed or boiled root used for broken bones.										Colton 1974. (p363)
			Plant used for babies with bowel trouble.										Colton 1974. (p363)
			Plant used for mid-winter ceremonials.										Colton 1974. (p363)
Sphaeralcea sp.	Globe Mallow		Root chewed or compound decoction taken for diarrhea.										Whiting 1939 (p34, 85)
			Root used for babies with bowel trouble.										Whiting 1939 (p85)
			Root chewed or decoction used for broken bones, as "there's gristle in the root."										Whiting 1939 (p31, 85)
			Root used for babies with bowel troubles.										Whiting 1939 (p34, 85)
Sporobolus airoides	Alkali Sacaton	Grain occasionally used for food during famines.											Whiting 1939 (p66)
Sporobolus cryptandrus	Sand Dropseed	Plant used to make bread.											Colton 1974. (p364)
		Plant used to make pudding.											Colton 1974. (p364)
Sporobolus flexuosus	Mesa Dropseed	Grain occasionally used for food during famines.											Whiting 1939 (p66)
Sporobolus giganteus	Giant Dropseed	Seeds threshed, ground with corn into fine meal and used to make a mush.											Nequatewa 1943 (p20)
		Seeds used as flavoring for corn meal.											Colton 1974. (p365)
			Stems used to make pahos (prayer sticks).										Colton 1974. (p365)
			Bundles of plant used to cover kiva entrance during Bean Ceremonial.										Colton 1974. (p365)
			Pollen used in the hunting ceremony.										Colton 1974. (p365)
Stanleya pinnata	Desert Princesplume	Boiled plant used for greens in the spring.											Colton 1974. (p366)
		Eaten as greens in the spring.											Whiting 1939 (p77)
Stephanomeria pauciflora	Brownplume Wirelettuce		Root used in various ways to increase mother's milk supply.										Whiting 1939 (p36, 98)
Suaeda moquinii	Mojave Seablite		Poultice of dried leaves used on sore places.										Vestal 1940 (p161)
			Plant used to bathe the doctor before administering to patients.										Whiting 1939 (p31, 74)
Tetradymia canescens	Spineless Horsebrush		Decoction of leaf and root taken after birth to shrink uterus and stop discharge.										Whiting 1939 (p35, 98)
			Plant used as a tonic.										Whiting 1939 (p98)
Thelesperma megapotamicum	Hopi Tea Greenthread		Flowers used to make a beverage.										Fewkes 1896 (p15)
			Flowers and tips of young leaves dried, boiled and used to make tea.										Whiting 1939 (p98)
			Used to make coffee.										Vestal 1940 (p168)
Townsendia incana	Hoary Townsendia		Plant taken to induce pregnancy and insure male child.										Whiting 1939 (p35, 99)
			Plant used to clear the throat.										Whiting 1939 (p35, 99)
Verbascum thapsus	Common Mullein		Leaves smoked with onosmodium for "fits," craziness and witchcraft.										Whiting 1939 (p33, 92)
			Compound of plant smoked by persons not in their "right mind."										Whiting 1939 (p92)
			Compound of plant smoked as cure for persons "with power to charm."										Whiting 1939 (p92)

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Verbesina encelioides	Golden Crownbeard		Infusion of plant used as a wash for fever or itch from spider bites.										Whiting 1939 (p32, 99)		
			Infusion of plant said to remove fever and itch from a spider bite.											Whiting 1939 (p99)	
									Plant soaked in bath water.					Whiting 1939 (p99)	
Wislizenia refracta ssp. refracta	Spectacle Fruit	Young plants boiled for food.											Whiting 1939 (p78)		
Yucca angustissima	Narrowleaf Yucca				Leaves used in many types of basketry.								Whiting 1939 (p71)		
					Leaf splints used as brushes to apply color to pottery.								Bell and Castetter 1941 (p50)		
					Narrow, split leaf strips used as sewing material for coiled plaques.									Bell and Castetter 1941 (p33)	
				Crushed root used in purification ceremony.										Whiting 1939 (p71)	
				Crushed root used as shampoo for baldness.										Whiting 1939 (p71)	
				Root used as a strong laxative.										Whiting 1939 (p34, 71)	
				Fruit sometimes used for food.											Bell and Castetter 1941 (p64)
				Fruits pit baked with lambsquarter leaves and eaten with corn dumplings in salted water.											Nequatewa 1943 (p18)
					Roots crushed to make soap, used ceremonially as a purification rite & suds associated with clouds.										Whiting 1939 (p71)
					Used as a whip during ceremonies.										Whiting 1939 (p71)
					Shredded leaves used to make the packing for the spirals of a plaque.										Bell and Castetter 1941 (p34)
					Juice used as a varnish on certain kachinas.										Whiting 1939 (p71)
										Roots crushed with stones and used as soap.					Whiting 1939 (p71)
Yucca baccata	Banana Yucca				Leaves used in basketry.								Colton 1974. (p371)		
					Used for basketry.								Fewkes 1896 (p17)		
					Leaves occasionally used in basketry.								Whiting 1939 (p71)		
				Baked fruits used for food.										Colton 1974. (p371)	
				Fruit used for food.										Fewkes 1896 (p17)	
				Fruits eaten for food.										Robbins, Harrington, and Freire-Marreco 1916 (p51)	
				Large fruits oven baked.										Whiting 1939 (p71)	
				Fruits sun dried, boiled into jam and eaten with corn dumplings or boiled bread.											Nequatewa 1943 (p18)
										Roots used for soap.					Colton 1974. (p371)
										Root used for soap.					Fewkes 1896 (p17)
								Roots used as soap.					Whiting 1939 (p71)		
Yucca baileyi var. navajoa	Navajo Yucca				Leaves used in basketry.								Colton 1974. (p370)		
					Twigs used to make snow brooms.								Colton 1974. (p370)		
					Plant used for paint brushes.								Colton 1974. (p370)		
				Plant used as a laxative.									Colton 1974. (p370)		
					Twigs used to make the masks for the kachinas.									Colton 1974. (p370)	
					Plant used as whips in ceremonies.									Colton 1974. (p370)	
					Plant used as an anchor for bird traps.									Colton 1974. (p370)	
					Juice used as a varnish for sacred kachinas.									Colton 1974. (p370)	
								Crushed roots used for soap.					Colton 1974. (p370)		

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APPENDIX G:
WESTERN APACHE ETHNOBOTANY

Western Apache Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
<i>Acer negundo</i>	Boxelder	Inner bark scrapings dried and kept for winter use. Inner bark boiled until sugar crystallizes out of it.											Castetter and Opler 1936 (p. 44) Ibid.
<i>Achnatherum hymenoides</i>	Indian Ricegrass	Seeds ground, mixed with corn meal and water and made into a mush.											Buskirk 1986 (p. 189)
		Seeds ground and used to make bread and ponies.											Reagan 1929 (p. 149)
		Plant used for hay.											Ibid. (p. 157)
		Seeds ground, mixed with meal and water and eaten as mush.											Ibid. (p. 149)
		Seeds used for food.											Ibid. (p. 157)
<i>Agave parryi</i>	Parry's Agave	Plant gathered and sold.											Ibid. (p. 149)
		Heads and young leaves roasted, sun dried and used immediately or stored.											Castetter 1935 (p. 10)
		Roots baked and eaten.											Ibid. (p. 13)
		Used as one of the most important foods.											Ibid. (p. 10)
		Bulbous crowns baked in pits, pulpy centers released, pounded into thin sheets and eaten.											Castetter and Opler 1936 (p. 35)
		Stalks roasted, boiled or eaten raw.											Ibid. (p. 38)
		Stalks boiled, dried and stored to be used as vegetables.											Ibid.
		Leaf bases pit cooked, made into cakes, dried and used for food.											Basehart 1974 (p. 30)
		Juice fermented into a drink.											Buskirk 1986 (p. 169)
		Crowns cooked, fermented in a vessel, ground, boiled and the liquor again fermented.											Ibid.
		Juice strained and mixed with "tiswin water," a liquor of fermented maize.											Ibid.
		Juice fermented into a drink.											Ibid.
		Crowns cooked, fermented in a vessel, ground, boiled and the liquor again fermented.											Ibid.
		Juice strained and mixed with "tiswin water," a liquor of fermented maize.											Ibid.
		Heart of the crown eaten by children as candy.											Ibid.
		Plant eaten dried.											Ibid.
		Used in absence of other foods.											Ibid.
		Crowns used for food.											Ibid.
		Crowns used for food.											Ibid.
		Flower stalk baked and chewed for juice.											Ibid.
Thorn used as needle and thread.											Ibid.		
Used in absence of other foods.											Ibid.		
											Juice used by young girls to daub on their cheeks.		
											Ibid.		
											Juice covering pit stones after baking used to paint stripes on buckskin.		
											Ibid.		
											Stalk fashioned into hoe handles.		
											Ibid.		
											Stalk used for a lance shaft.		
											Ibid.		
<i>Agave sp.</i>	Mescal	Pit baked and used for food.											Hrdlicka 1908 (p. 257)
<i>Amaranthus albus</i>	Prostrate Pigweed	Seeds winnowed, ground into flour and used to make bread.											Castetter and Opler 1936 (p. 48)
		Eaten without preparation or cooked with green chile and meat or animal bones.											Ibid. (p. 46)
		Seeds used for food.											Reagan 1929 (p. 155)
<i>Amaranthus blitoides</i>	Mat Amaranth	Seeds used for food.											Ibid.
<i>Amaranthus retroflexus</i>	Redroot Amaranth	Seeds winnowed, ground into flour and used to make bread.											Castetter and Opler 1936 (p. 48)
		Leaves eaten without preparation or cooked with green chile and meat or animal bones.											Ibid. (p. 46)
<i>Andropogon gerardii</i>	Big Bluestem	Moist grass laid onto hot stones to prevent steam from escaping.											Ibid. (p. 36)
		Used to cover fruit and allow ripening.											Ibid. (p. 39)
		Grass used under fruit when drying.											Ibid. (p. 40)
<i>Artemisia dracuncululus</i>	Wormwood	Leaves and young stems boiled to make a non-intoxicating beverage.											Ibid. (p. 53)
<i>Artemisia ludoviciana</i>	Louisiana Sagewort	Sage used to flavor meats.											Ibid. (p. 47)
<i>Artemisia sp.</i>	Sage	Plant used in ceremonial contexts.											Ibid. (p. 24)
<i>Artemisia tridentata</i>	Big Sagebrush	Used to make tea.											Reagan 1929 (p. 155)
		Used as a seasoning.											Ibid.
<i>Asclepias subverticillata</i>	Whorled Milkweed	First buds eaten by children.											Ibid.
<i>Astragalus lentiginosus</i>	Speckledpod Milkvetch	Pea fruit eaten raw and cooked.											Ibid.
<i>Bouteloua curtipendula</i>	Sideoats Grama	Moist grass laid onto hot stones to prevent steam from escaping.											Castetter and Opler 1936 (p. 36)
<i>Bouteloua gracilis</i>	Blue Grama	Seeds ground, mixed with corn meal and water and made into a mush.											Buskirk 1986 (p. 189)
		Seeds ground and used to make bread and ponies.											Reagan 1929 (p. 149)
		Seeds ground, mixed with meal and water and eaten as mush.											Ibid.

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
					Stem used as comb and broom material.								Buskirk 1986 (p. 189)
					Blades bundled by a cord, the stiff end used as a hair comb and the other end used as a broom.								Reagan 1929 (p. 149)
							Plant gathered and sold.						Ibid.
Bouteloua sp.	Grama Grass			Plant used in ceremonial contexts.									Castetter and Opler 1936 (p. 24)
Calylophus lavandulifolius	Lavenderleaf Sundrops	Pods cooked and eaten by children.											Ibid. (p. 45)
Castilleja integra	Wholeleaf Indian Paintbrush				Root bark used with other substances to color various kinds of skins, especially deer skin.								Reagan 1929 (p. 156)
Celtis laevigata	Netleaf Hackberry	Fruit ground, caked and dried for winter use.											Castetter and Opler 1936 (p. 46)
		Fruit eaten fresh.											Ibid.
		Fruit used to make jelly.											Ibid.
Cercocarpus montanus	Birchleaf Mountain Mahogany		Wood burned, the charcoal powdered and applied to burns.								Wood used to make bows.		Ibid. (p. 156)
													Ibid.
Cheilanthes fendleri	Fendler's Lipfern	Leaves and young stems boiled to make a non-intoxicating beverage.											Castetter and Opler 1936 (p. 53)
Chenopodium album	Lambsquarters	Young plants cooked as greens.											Castetter 1935 (p. 16)
		Eaten without preparation or cooked with green chile and meat or animal bones.											Castetter and Opler 1936 (p. 46)
Chenopodium leptophyllum	Narrowleaf Goosefoot	Young plants cooked as greens.											Castetter 1935 (p. 16)
		Species used for food.											Buskirk 1986 (p. 192)
		Seeds ground and used for food.											Reagan 1929 (p. 156)
		Young sprouts boiled with meat and eaten.											Ibid.
Cleome serrulata	Rocky Mountain Beeplant	Leaves and whole, young plants used as greens.											Buskirk 1986 (p. 192)
Cornus sericea ssp. sericea	Redosier Dogwood	Plant used in medicine ceremonies.											Reagan 1929 (p. 161)
Croton texensis	Texas Croton	Infusion of plant taken as a purgative.											Ibid. (p. 156)
		Infusion of plant taken for stomach troubles.											Ibid.
Cucurbita foetidissima	Missouri Gourd	Poultice of mashed stems, leaves and roots soaked in hot water & applied to sores on horses' backs.											Buskirk 1986 (p. 192)
		Leaves ground and used as "green paint" in making sand paintings.											Reagan 1929 (p. 156)
Cyperus fendlerianus	Fendler's Flatsedge	Flowers salted and fed to horses.											Castetter and Opler 1936 (p. 47)
		Seeds salted and fed to horses.											Ibid.
		Tubers eaten raw or peeled and cooked.											Ibid.
Datura wrightii	Sacred Thornapple	Juice or powdered roots used to make a fermented, intoxicating drink.											Reagan 1929 (p. 151)
		Powdered roots used in the religious-medicine ceremonies.											Ibid. (p. 156)
		Plant juice or ground flowers and roots used as a disinfectant.											Ibid.
		Powdered roots used as a narcotic.											Ibid.
Descurainia incana ssp. incisa	Mountain Tansymustard	Seeds threshed, winnowed, ground and the flour used to make bread.											Castetter and Opler 1936 (p. 49)
		Seeds boiled and eaten.											Ibid.
Dimorphocarpa wislizeni	Touristplant	Infusion of plant taken at medicine ceremonies.											Reagan 1929 (p. 157)
		Infusion of plant used as wash for swellings.											Ibid.
		Infusion of plant used as wash for throat troubles.											Ibid.
Echinocereus coccineus	Scarlet Hedgehog Cactus	Raw fruit used for food.											Castetter and Opler 1936 (p. 41)
Echinocereus fendleri	Pinkflower Hedgehog Cactus	Raw fruit used for food.											Ibid.
Echinocereus sp.	Cactus	Fruits eaten for food.											Basehart 1974 (p. 45)
Eriogonumii	James' Buckwheat	Plant used in medicine ceremonies.											Reagan 1929 (p. 157)
		Plant chewed to sweeten the saliva.											Ibid.
		Plant used for medicinal purposes.											Ibid.
Forestiera pubescens	Stretchberry	Raw fruits occasionally eaten as food.											Castetter and Opler 1936 (p. 44)
Gutierrezia sp.	Snakeweed			Plant used in ceremonial contexts.									Ibid. (p. 24)
Hedeoma nana	Falsepennyroyal	Leaves and young stems boiled to make a non-intoxicating beverage.											Ibid. (p. 53)
		Leaves used as flavoring.											Ibid. (p. 47)
Helianthus sp.	Wild Sunflower	Seeds ground, mixed with corn meal, put into hot water and eaten as a pasty bread.											Buskirk 1986 (p. 184)
		Seeds parched and ground with mescal to taste like candy.											Ibid.
		Seeds made into meal, mixed with corn meal and boiled with salt into a cereal.											Ibid.
		Seeds ground and used by army scouts as rations.											Ibid.
Humulus lupulus	Common Hop	Hops boiled and used to flavor wheat flour and potatoes.											Castetter and Opler 1936 (p. 47)
		Flower used to flavor drinks and make them stronger.											Ibid. (p. 51)
Juglans major	Arizona Walnut	Nut meats eaten raw.											Ibid. (p. 42)
		Nut meats mixed with mesquite gravy or ground with roasted mescal and stored.											Ibid.
		Nut meats mixed with mescal, datil, sotol or mesquite and used for food.											Basehart 1974 (p. 46)

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
					Trees used to construct dome shaped lodges when away from home. Outer shell coverings soaked in water to make a black paint.								Ibid. Ibid.
Juglans sp.	Walnut				Walnuts pulverized, mixed with mescal juice and used as dip for corn bread. Nuts parched with corn, ground and eaten by the pinch. Juice used to clear maggots from wounds. Juice given to dogs for worms.								Buskirk 1986 (p. 187) Ibid. Ibid. Ibid.
Juniperus deppeana	Alligator Juniper				Berries boiled for food. Raw fruit eaten fresh. Berries boiled and made into jelly or preserves.								Castetter 1935 (p. 32) Castetter and Opler 1936 (p. 45) Ibid.
Juniperus monosperma	Oneseed Juniper				Fruit roasted, water added and the mixture made into a gravy. Berries boiled and eaten. Scorched twigs rubbed on body for fits. Infusion of leaves taken for colds. Infusion of leaves taken for coughs. Infusion of leaves taken by women previous to childbirth to relax muscles.								Ibid. Reagan 1929 (p. 158) Ibid. Ibid. Ibid. Ibid.
Juniperus osteosperma	Utah Juniper				Berries boiled and eaten.								Ibid.
Juniperus scopulorum	Rocky Mountain Juniper				Berries mixed with mescal and eaten.								Castetter and Opler 1936 (p. 37)
Juniperus sp.	Juniper				Berries boiled, ground or mashed and used with other foods. Berries soaked, pounded with yucca fruit, mixed with water and drained to make a drink. Unseasoned berries dried and boiled. Berries pounded with yucca fruit to make a gravy. Ashes mixed with corn mush for color and flavor. Poultice of heated, wrapped branches applied to pneumonia patients' backs. Used for tipi poles. Berries boiled, ground or mashed and used with other foods. Wood used to heat cooking stones. Bark used as tinder for fire drills. Used to make handles for scrapers. Dried bark made into a torch.						Used to make bows.		Basehart 1974 (p. 43) Buskirk 1986 (p. 187) Ibid. Ibid. Ibid. Ibid. Basehart 1974 (p. 43) Ibid. Castetter and Opler 1936 (p. 36) Basehart 1974 (p. 43) Ibid. Buskirk 1986 (p. 187) Reagan 1929 (p. 158)
Lactuca tatarica	Blue Lettuce				Gummy substance from the root used for chewing gum.								Reagan 1929 (p. 158)
Linum puberulum	Plains Flax				Berry juice used as an eye medicine.								Ibid.
Mahonia fremontii	Fremont's Mahonia				Plant used for ceremonial purposes.								Ibid. (p. 155)
Mentzelia pumila	Dwarf Mentzelia				Powdered roots used for constipation.								Ibid. (p. 158)
Monarda fistulosa ssp. fistulosa	Mintleaf Beebalm				Leaves and young stems boiled to make a non-intoxicating beverage. Leaves used as flavoring.								Castetter and Opler 1936 (p. 53) Ibid. (p. 47)
Muhlenbergia pauciflora	New Mexico Muhly				Moist grass laid onto hot stones to prevent steam from escaping.								Ibid. (p. 36)
Muhlenbergia rigens	Deergrass				Seeds ground, mixed with corn meal and water and made into a mush. Seeds ground and used to make bread and ponies. Plant used for hay. Seeds ground, mixed with meal and water and eaten as mush. Seeds used for food. Plant gathered and sold.								Buskirk 1986 (p. 189) Reagan 1929 (p. 149) Ibid. (p. 157) Ibid. (p. 149) Ibid. (p. 157) Ibid. (p. 149)
Muhlenbergia sp.					Seeds threshed, winnowed, ground and the flour used to make bread.								Castetter and Opler 1936 (p. 48)
Muhlenbergia wrightii	Spike Muhly				Moist grass laid onto hot stones to prevent steam from escaping.								Ibid. (p. 36)
Nicotiana attenuata	Coyote Tobacco				Plant smoked in the medicine ceremonies.								Reagan 1929 (p. 158)
Opuntia sp.	Prickly Pear				Unpeeled fruits split, covered with juice, sun dried and stored for future food use. Tunas eaten fresh. Stems scorched, split and used for infections and cuts. Stems scorched, split and used for infections and cuts. Needles used for scraping infected eyelids and tattoos. Needles used for scraping infected eyelids.								Basehart 1974 (p. 38) Ibid. Ibid. Ibid. Ibid. Ibid.
Opuntia sp.	Cholla				Liquid extract of boiled roots used for thin and frequent bowel movements. Poultice of peeled stalks applied to burns. Boiled roots used as laxative for babies and small children. Boiled roots used as laxative for babies and small children. Seeds roasted, mixed with corn and meal moistened with water and salt before eating.								Buskirk 1986 (p. 180) Ibid. Ibid. Ibid. Ibid.

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
		Fruit pit baked, dried and boiled with fat or in soups.											Ibid.
Opuntia sp.		Seeds parched, ground, boiled and eaten as mush.											Hrdlicka 1908 (p. 257)
		Seeds parched, ground and flour eaten with drafts of water.											Ibid.
Opuntia whipplei	Whipple Cholla	Fruit dried for winter use.											Reagan 1929 (p. 159)
		Fruit eaten raw or stewed.											Ibid.
Panicum bulbosum	Bulb Panicgrass	Seeds threshed, winnowed, ground and the flour used to make bread.											Castetter and Opler 1936 (p. 48)
		Seeds ground, made into gravy and mixed with meat.											Ibid.
Penstemon barbatus ssp. torreyi	Torrey's Penstemon	Plant used as a magic medicine.											Reagan 1929 (p. 159)
Phragmites australis	Common Reed	Root used for diarrhea and kindred diseases.											Ibid.
		Root used for stomach troubles and kindred diseases.											Ibid.
													Reeds used as an arrow shaft for hunting small birds with arrows.
													Ibid.
		Reeds filled with tobacco and used as a cigarette.											Ibid.
		Reeds used to make pipe stems.											Ibid.
Physalis hederifolia	Fendler's Groundcherry	Fruit eaten raw and cooked.											Ibid.
Pinus edulis	Twoneedle Pinyon	Seeds mixed with yucca fruit pulp to make a pudding.											Castetter and Opler 1936 (p. 43)
		Seeds ground, rolled into balls and eaten as a delicacy.											Ibid.
		Secretion from the trunk chewed.											Ibid. (p. 45)
		Nuts parched, ground, mixed with datil fruit, mescal, mesquite beans or sotol and used for food.											Basehart 1974 (p. 35)
		Nuts used as an essential food during girls' puberty ceremonies.											Ibid.
		Pitch used as chewing gum.											Buskirk 1986 (p. 185)
		Pinon and corn flour mixed and cooked into a mush.											Ibid.
		Used as a staple food.											Ibid.
		Nuts eaten raw, roasted or ground into flour.											Ibid.
		Nuts stored in baskets or pottery jars.											Ibid.
		Nuts eaten raw.											Reagan 1929 (p. 159)
		Needles burned and smoke inhaled for colds.											Basehart 1974 (p. 35)
		Heated pitch applied to the face to remove facial hair.											Buskirk 1986 (p. 185)
		Leaves chewed for venereal diseases.											Reagan 1929 (p. 159)
		Young trees used for the main hoop of infant cradleboards.											Basehart 1974 (p. 35)
		Pollen used instead of cattail pollen in ceremonies.											Ibid.
		Resin used for waterproofing woven water jugs.											Ibid.
		Pitch used to waterproof baskets.											Buskirk 1986 (p. 185)
		Pitch warmed and applied inside and out to waterproof water jugs.											Reagan 1929 (p. 150)
Pinus flexilis	Limber Pine	Seeds roasted and hulled or sometimes the seeds ground, shell and all and eaten.											Castetter and Opler 1936 (p. 43)
Pinus ponderosa	Ponderosa Pine	Inner bark scraped off and baked in the form of cakes.											Ibid.
		Seeds ground, rolled into balls and eaten raw only in times of food scarcity.											Ibid.
		Bark boiled or eaten raw.											Ibid.
Pinus sp.		Inner bark used for food.											Buskirk 1986 (p. 192)
Populus angustifolia	Narrowleaf Cottonwood	Buds used as chewing gum.											Reagan 1929 (p. 159)
		Buds used for food.											Ibid.
Populus tremuloides	Quaking Aspen	Inner bark scraped off and baked in the form of cakes.											Castetter and Opler 1936 (p. 43)
		Bark boiled or eaten raw.											Ibid.
		Sap used as flavoring for wild strawberries.											Basehart 1974 (p. 50)
Portulaca oleracea	Little Hogweed	Eaten without preparation or cooked with green chile and meat or animal bones.											Castetter and Opler 1936 (p. 46)
Pseudotsuga menziesii	Douglas Fir	Pitch used as gum.											Reagan 1929 (p. 159)
		Pitch used for coughs.											Ibid.
		Pitch used as gum.											Ibid.
Purshia mexicana	Mexican Cliffrose	Leaves used for medicinal purposes.											Ibid. (p. 156)
Quercus xpauciloba	Wavyleaf Oak	Acorns eaten whole and raw, ground on a metate or boiled.											Buskirk 1986 (p. 174)
		Acorns used to make "coffee."											Reagan 1929 (p. 148)
		Acorns ground into flour and used to make bread.											Ibid.
		Acorns eaten raw.											Ibid.
		Bark used to tan skins.											Ibid. (p. 160)
Quercus gambelii	Gambel's Oak	Raw fruit used for food.											Castetter and Opler 1936 (p. 42)
		Acorns roasted slightly, pounded, mixed with dried meat and stored away in hide containers.											Ibid.

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		Acorns eaten whole and raw, ground on a metate or boiled.											Buskirk 1986 (p. 174)			
		Acorns used for food.											Reagan 1929 (p. 160)			
					Bark used to tan skins.											Ibid.
Quercus grisea	Gray Oak	Raw fruit used for food.											Castetter and Opler 1936 (p. 42)			
		Shaved root chips used to flavor drinks.											Ibid. (p. 51)			
		Ripe acorns roasted slightly, pounded and mixed with dried meat and stored.											Ibid. (p. 42)			
Quercus sp.	Oak	Acorns boiled, pounded and mixed with mescal.											Basehart 1974 (p. 41)			
		Acorns eaten raw.											Ibid.			
					Used for poles in dome shaped lodges and as tipi stakes.											Ibid.
					Used as footrests for cradleboards.											Ibid.
					Wood used on fire to heat cooking stones.											Castetter and Opler 1936 (p. 36)
		Branches used to dig out crowns of the mescal plants.											Ibid. (p. 35)			
					Used to make platters and shelves for mescal cakes.											Basehart 1974 (p. 41)
					Used to make stirrups.											Ibid.
					Used to make digging sticks and wooden tweezers.											Ibid.
					Used to make toy bows.											Ibid.
Rhus trilobata	Skunkbush Sumac	Fruits eaten fresh.											Castetter 1935 (p. 48)			
		Fruits ground into meal.											Ibid.			
		Fruits ground with mescal, dried and stored.											Castetter and Opler 1936 (p. 37)			
		Dried fruits ground, pulp mixed with water and sugar and cooked to make jam.											Ibid. (p. 46)			
		Fruits formerly used to make jam.											Ibid. (p. 49)			
		Berries stirred in warm water to make a nonintoxicating drink.											Buskirk 1986 (p. 190)			
		Berries ground or chewed raw for the juice.											Ibid.			
		Berries used for food.											Reagan 1929 (p. 160)			
					Stalks split or peeled off the bark and used to make pitched water baskets.											Buskirk 1986 (p. 190)
					Used in basket weaving.											Reagan 1929 (p. 160)
Ribes cereum	Whisky Currant	Fruit eaten raw and cooked.											Ibid.			
Ribes pinetorum	Orange Gooseberry	Fruit ground and compressed into cakes for winter use.											Castetter and Opler 1936 (p. 44)			
Robinia neomexicana	New Mexico Locust	Raw pods eaten as food.											Ibid. (p. 42)			
		Pods cooked and stored.											Ibid.			
		Flowers boiled, dried and stored for winter food use.											Basehart 1974 (p. 47)			
		Fresh flowers cooked with meat or bones and used for food.											Ibid.			
		Beans and pods used for food.											Reagan 1929 (p. 160)			
												Wood used to make high quality bows.	Basehart 1974 (p. 47)			
Rosa woodsii	Woods' Rose	Rose hips eaten fresh.											Castetter and Opler 1936 (p. 46)			
		Rose pulps squeezed into water and boiled to make jelly.											Ibid.			
Solanum elaeagnifolium	Silverleaf Nightshade	Plant used for medicinal purposes.											Reagan 1929 (p. 160)			
Solanumii	Wild Potato	Unpeeled potatoes boiled and eaten.											Castetter and Opler 1936 (p. 42)			
Sporobolus airoides	Alkali Sacaton	Moist grass laid onto hot stones to prevent steam from escaping.											Ibid. (p. 36)			
Sporobolus contractus	Spike Dropseed	Seeds ground, mixed with corn meal and water and made into a mush.											Buskirk 1986 (p. 189)			
		Seeds ground and used to make bread and ponies.											Reagan 1929 (p. 149)			
		Seeds ground, mixed with meal and water and eaten as mush.											Ibid.			
					Plant gathered and sold.											Ibid.
Sporobolus cryptandrus	Sand Dropseed	Seeds threshed, winnowed, ground and the flour used to make bread.											Castetter and Opler 1936 (p. 48)			
		Seeds boiled and eaten as porridge.											Ibid.			
Stephanomeria minor	Narrowleaf Wirelettuce	Poultice of powdered plants applied to rattlesnake bites.											Reagan 1929 (p. 160)			
Taraxacum officinale	Common Dandelion	Flower used to flavor drinks and make them stronger.											Castetter and Opler 1936 (p. 51)			
Vitis arizonica	Canyon Grape	Fruit dried and eaten like raisins.											Ibid. (p. 44)			
		Raw fruit eaten fresh.											Ibid.			
		Fruits eaten fresh.											Basehart 1974 (p. 50)			
		Juice boiled to make wine.											Buskirk 1986 (p. 190)			
		Berries pounded, dried and stored in sacks.											Ibid.			
		Ripe berries eaten raw.											Ibid.			
Xanthium strumarium	Canada Cocklebur	Seeds ground and used to make bread.											Reagan 1929 (p. 161)			
		Roots and leaves used as a blood medicine.											Ibid.			
Yucca angustissima	Narrowleaf Yucca	Emulsion used in cases of snake or insect bites.											Bell and Castetter 1941 (p. 51)			

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					Leaves split and used as string.								Ibid. (p. 40)
								Roots pounded and placed in water to form suds used in bathing and shampooing.					Ibid. (p. 57)
Yucca baccata	Banana Yucca	Baked fruit pounded to a pulp, drained and juice drunk.											Ibid. (p. 18)
		Fruit roasted, pulp made into cakes and stored.											Ibid.
		Baked fruit pounded to a pulp, drained and juice poured over cakes											Ibid.
		Young leaves cooked in soups or with meat.											Castetter 1935 (p. 56)
		Flowers eaten as food only if obtained at the proper time.											Ibid.
		Flowers eaten as a vegetable only if obtained before the summer rains.											Bell and Castetter 1941 (p. 19)
		Fruit roasted, split, seeds removed and pulp ground into large cakes.											Castetter and Opler 1936 (p. 39)
		Fruit pulp ground, made into large cakes and stored indefinitely.											Ibid.
		Leaves cooked in soups.											Ibid.
		Leaves boiled with meat.											Ibid.
		Flowers eaten if obtained before the summer rain; otherwise they taste bitter.											Ibid.
		Fruits used to make a drink.											Basehart 1974 (p. 33)
		Ripe fruits cooked, split, cleaned of seeds, dried and used for food.											Ibid.
		Fruits made into a syrup and placed on fruits before drying.											Ibid.
		Fruit roasted, dried, wrapped and stored indefinitely.											Buskirk 1986 (p. 181)
		Fruit pounded together to make gravy.											Ibid. (p. 182)
		Pods dried for future use.											Reagan 1929 (p. 147)
		Pods roasted and used for food.											Ibid.
					Leaves used for the main portion of the baskets.								Bell and Castetter 1941 (p. 35)
					Leaves split and used as string.								Ibid. (p. 40)
					Small roots used for basket work.								Basehart 1974 (p. 33)
					Leaves used to make twine or rope.								Ibid.
					Leaves split and sections tied together by square knots to make cordage.								Buskirk 1986 (p. 182)
					Leaves reduced to fiber and made into cloth.								Reagan 1929 (p. 147)
					Leaves used to make string.								Ibid.
					Thick portion of stalk used as hearth when making fire.								Bell and Castetter 1941 (p. 51)
					Roots used to produce a red pattern in baskets.								Ibid. (p. 35)
								Roots pounded and placed in water to form suds used in bathing and shampooing.					Ibid. (p. 57)
					Stalk used to make fire drills.								Ibid. (p. 51)
								Large roots used to make soap.					Basehart 1974 (p. 33)
								Roots used as soap.					Buskirk 1986 (p. 182)
								Roots used for soap.					Reagan 1929 (p. 148)

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APPENDIX H:
NAVAJO ETHNOBOTANY

Navajo Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source		
<i>Acer negundo</i>	Boxelder				Wood used to make tubes for bellows.								Elmore 1944 (p. 62)		
<i>Achillea millefolium</i>	Western Yarrow		Plant used for headaches caused by weak or sore eyes.										Wyman and Harris 1951 (p. 44)		
			Infusion of plant used as a wash for cuts and saddle sores.										Elmore 1944 (p. 79)		
			Plant used in lotion for sore eyes caused from wearing ceremonial masks.											Wyman and Harris 1951 (p. 44)	
			Plant used as a fever medicine.											Wyman and Harris 1951 (p. 44)	
			Plant used in a "life medicine for impaired vitality."											Elmore 1944 (p. 79)	
			Plant used in a tonic.											Elmore 1944 (p. 79)	
<i>Achnatherum hymenoides</i>	Indian Ricegrass		Seeds ground and made into bread and dumplings.										Steggerda 1941 (p. 223)		
			Ground seeds made into cakes.										Elmore 1944 (p. 26)		
			Plant used as a fodder for both wild and domesticated animals.										Hocking 1956 (p. 154)		
			Plant used as a forage for both wild and domesticated animals.										Hocking 1956 (p. 154)		
			Seeds ground and made into gruel.											Steggerda 1941 (p. 223)	
			Ground seeds used for food.											Hocking 1956 (p. 154)	
			Seeds used for food.											Castetter 1935 (p. 27)	
<i>Agave sp.</i>	Mescal				Plant fibers used to make rope.								Brugge 1965 (p. 94)		
			Juice squeezed from baked fibers and drunk.										Brugge 1965 (p. 94)		
			Heads baked or boiled, pounded into flat sheets, sun dried and stored for future use.											Brugge 1965 (p. 94)	
			Dried, baked heads boiled and made into a "paste."											Brugge 1965 (p. 94)	
			Dried, baked heads boiled and made into soup.											Brugge 1965 (p. 94)	
			Heads baked and eaten.											Brugge 1965 (p. 94)	
			Leaves boiled and eaten.											Brugge 1965 (p. 94)	
			Young and tender flowering stalks and shoots roasted and eaten.											Brugge 1965 (p. 94)	
					Leaves used to line the baking pits.										Brugge 1965 (p. 91)
					Sharp pointed leaf tips used to make basketry awls.										Brugge 1965 (p. 94)
<i>Amaranthus albus</i>	Prostrate Pigweed				Used, with many different plants, to smoke for lewdness, which was performed at the Coyote Chant.								Elmore 1944 (p. 45)		
<i>Amaranthus blitoides</i>	Mat Amaranth		Plant used as sheep forage.										Elmore 1944 (p. 45)		
			Seeds ground into meal and made into stiff porridge or mixed with goat's milk and made into gruel.										Elmore 1944 (p. 45)		
			Seeds ground into a meal and used for food.										Elmore 1944 (p. 45)		
			Boiled and eaten like spinach, boiled and fried in lard or canned.											Castetter 1935 (p. 15)	
<i>Amaranthus retroflexus</i>	Redroot Amaranth		Seeds ground, boiled, mixed with corn flour and made into dumplings.										Steggerda 1941 (p. 222)		
			Seeds ground, boiled and mixed with corn flour into a gruel.										Steggerda 1941 (p. 222)		
			Seeds used for food.										Elmore 1944 (p. 46)		
			Leaves and seeds mixed with grease and eaten.										Elmore 1944 (p. 46)		
			Boiled and eaten like spinach, boiled and fried in lard or canned.											Castetter 1935 (p. 15)	
			Leaves boiled and eaten like spinach.											Elmore 1944 (p. 46)	
<i>Amaranthus sp.</i>			Seeds ground into meal and used as food.										Castetter 1935 (p. 23)		
			Seeds ground into meal and chewed by the handful to obtain sugar.										Castetter 1935 (p. 23)		
<i>Ambrosia acanthicarpa</i>	Flatspine Burr Ragweed				Leaf ash used as Evilway blackening.								Vestal 1952 (p. 51)		
<i>Amelanchier sp.</i>	Serviceberry				Plant used as an emetic.								Hocking 1956 (p. 148)		
<i>Amelanchier utahensis</i>	Utah Serviceberry		Plant used during labor and delivery.										Hocking 1956 (p. 148)		
			Berries dried for winter use.										Hocking 1956 (p. 148)		
			Fruits eaten fresh.										Elmore 1944 (p. 52)		
			Berries eaten fresh.										Hocking 1956 (p. 148)		
			Fruits dried and preserved for winter use.											Elmore 1944 (p. 52)	
			Stem used to make Evilway hoop.									Vestal 1952 (p. 30)			
<i>Antennaria parvifolia</i>	Smallleaf Pussytoes				Plant chewed with deer or sheep tallow as a blood purifier.								Wyman and Harris 1951 (p. 44)		
			Used for greens in foods.										Wyman and Harris 1951 (p. 44)		
<i>Arabis perennans</i>	Perennial Rockcross		Plant used for hiccoughs caused by dry throat.										Wyman and Harris 1951 (p. 23)		
			Plant used for effects of a bad dream.										Wyman and Harris 1951 (p. 23)		
<i>Aristida purpurea var. longiseta</i>	Fendler Threeawn				Stems used to make hair brushes.								Vestal 1952 (p. 15)		
<i>Artemisia filifolia</i>	Sand Sagebrush		Used as stock feed.										Elmore 1944 (p. 81)		
												Very soft leaves used as a convenient substitute for toilet paper.	Elmore 1944 (p. 81)		
<i>Artemisia frigida</i>	Fringed Sagewort				Plant ash applied before painting Witcheryway prayer sticks.								Vestal 1952 (p. 48)		

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
								Very soft leaves used as a convenient substitute for toilet paper.					Elmore 1944 (p. 81)
<i>Artemisia ludoviciana</i>	Louisiana Sagewort		Used by the medicine men.										Elmore 1944 (p. 81)
				Plant ash used as Evilway and Hand Tremblingway blackenings.									Vestal 1952 (p. 48)
				Applied to unraveler strings (a woman's hair cord or buckskin string from her moccasins).									Vestal 1952 (p. 48)
<i>Artemisia ludoviciana</i> ssp. <i>mexicana</i>	Mexican White Sagebrush			Plant ash used in blackening ceremonies.									Vestal 1952 (p. 48)
<i>Artemisia</i> sp.	Sagebrush		Used as a wand when practicing for the Night Chant.										Elmore 1944 (p. 81)
				Bunches of plant, with other plants, tied to corners of hoops used in unraveling ceremonial objects.									Elmore 1944 (p. 81)
<i>Artemisia tridentata</i>	Big Sagebrush		Compound of plants used for headaches.										Elmore 1944 (p. 81)
				Plant used for religious and medicinal ceremonies.									Hocking 1956 (p. 158)
				Plant used for colds.									Elmore 1944 (p. 81)
				Plant used for fevers.									Elmore 1944 (p. 81)
				Decoction of plants taken for stomachaches.									Elmore 1944 (p. 81)
				Infusion of plants taken by women as an aid for deliverance.									Elmore 1944 (p. 81)
				Plant used for constipation.									Wyman and Harris 1951 (p. 45)
				Infusion of plant taken and used as a lotion for water snake bites.									Wyman and Harris 1951 (p. 45)
				Plant taken before long hikes & athletic contests to rid the body of lingering, undesirable things.									Elmore 1944 (p. 81)
				Leafy stems tied together with wire and used for brooms.									Vestal 1952 (p. 48)
				Used between the poles of the sweathouse to prevent the sand from sifting through.									Elmore 1944 (p. 82)
				Wood used in the end of the fire drill.									Elmore 1944 (p. 81)
<i>Asclepias asperula</i> ssp. <i>Capricornus</i>	Antelopehorns		Plant used as a snuff for catarrh.										Wyman and Harris 1951 (p. 37)
<i>Asclepias involucrata</i>	Dwarf Milkweed		Poultice of heated roots applied for toothaches.										Wyman and Harris 1951 (p. 36)
<i>Asclepias</i> sp.	Milkweed		Infusion of crushed, dried leaves taken for stomach troubles.										Elmore 1944 (p. 69)
			Plant eaten raw or boiled.										Elmore 1944 (p. 69)
<i>Asclepias subverticillata</i>	Whorled Milkweed			Spun seed hair made into string used in prayer sticks.									Vestal 1952 (p. 39)
<i>Aster</i> sp.	Aster			Used, with other plants, as a liniment for the Bead Chant.									Elmore 1944 (p. 82)
				Used, with other plants, as the Bead Chant tobacco.									Elmore 1944 (p. 82)
<i>Astragalus allochrous</i>	Halfmoon Milkvetch			Used in the Night Chant.									Elmore 1944 (p. 55)
<i>Astragalus lentiginosus</i> var. <i>palans</i>	Speckledpod Milkvetch			Plant used as a charm in some prayers.									Wyman and Harris 1951 (p. 27)
<i>Astragalus</i> sp.	Locoweed		Plant used for stomach disorders.										Wyman and Harris 1951 (p. 27)
			Poultice of crushed leaves applied to lame back.										Wyman and Harris 1951 (p. 27)
			Plant considered poisonous.										Elmore 1944 (p. 55)
			Plant used as a gargle for sore throats.										Wyman and Harris 1951 (p. 27)
<i>Atriplex canescens</i>	Fourwing Saltbush		Plant used for ant bites.										Hocking 1956 (p. 148)
			Plant used as an emetic.										Wyman and Harris 1951 (p. 20)
			Plant used for stomach disease.										Wyman and Harris 1951 (p. 20)
			Plant used in the winter to provide salt for the sheep.										Elmore 1944 (p. 43)
			Plant used as forage for cattle, sheep and goats, especially when other forage was scarce.										Elmore 1944 (p. 43)
			Flowers used to make puddings.										Hocking 1956 (p. 148)
<i>Atriplex confertifolia</i>	Shadscale Saltbush		Plant rubbed on horses to repel gnats.										Hocking 1956 (p. 149)
<i>Atriplex</i> sp.	Saltbush		Poultice of chewed plants applied to ant, bee and wasp sting swellings.										Elmore 1944 (p. 43)
<i>Bouteloua gracilis</i>	Blue Grama			Tied to the end of the wand carried by the girl in the Squaw Dance.									Elmore 1944 (p. 25)
<i>Bouteloua</i> sp.	Grama Grass	Used for sheep and horse feed.											Elmore 1944 (p. 25)
<i>Brickellia californica</i>	California Brickellbush			Plant used as a ceremonial emetic following clan incest.									Wyman and Harris 1951 (p. 45)
				Plant used as a lotion on infant sores caused by prenatal infection.									Wyman and Harris 1951 (p. 45)
				Plant used as a ceremonial emetic following clan incest.									Wyman and Harris 1951 (p. 45)
				Plant used as a lotion on infant sores caused by prenatal infection.									Wyman and Harris 1951 (p. 45)
<i>Brickellia grandiflora</i>	Tasseflower Brickellbush			Plant and other plants used as a ceremonial liniment for the Female Shooting Life Chant.									Elmore 1944 (p. 83)
<i>Brickellia oblongifolia</i> var. <i>linifolia</i>	Narrowleaf Brickellbush		Plant lotion used on infant ear and finger sores caused by prenatal infection.										Wyman and Harris 1951 (p. 46)
			Plant lotion used on infant ear and finger sores caused by prenatal infection.										Wyman and Harris 1951 (p. 46)
<i>Bromus tectorum</i>	Cheatgrass			Infusion of plant used as a face wash for God-Impersonators.									Wyman and Harris 1951 (p. 15)
<i>Carex</i> sp.			Seeds ground, cooked into a mush and eaten.										Wyman and Harris 1951 (p. 16)
<i>Castilleja applegatei</i> ssp. <i>martinii</i>	Northwestern Indian Paintbrush		Plant used for spider bites.										Wyman and Harris 1951 (p. 41)
<i>Castilleja integra</i>	Wholeleaf Indian Paintbrush		Plant used for burns.										Hocking 1956 (p. 159)

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source		
Celtis laevigata var. reticulata	Netleaf Hackberry		Infusion of crushed leaves taken for stomach troubles.										Elmore 1944 (p. 76)		
			Plant used for indigestion.										Wyman and Harris 1951 (p. 18)		
			Berries ground and eaten.											Elmore 1944 (p. 41)	
Cercocarpus montanus	True Mountain Mahogany		Wood used to make tubes for bellows.										Elmore 1944 (p. 41)		
			Roots and bark used for stomach troubles.											Elmore 1944 (p. 53)	
			Wood used to make the handle of the weaving distaff, dice and the sweathouse for ceremonies.											Elmore 1944 (p. 53)	
			Whole plant used by sheep for forage.											Elmore 1944 (p. 53)	
			Wood used to make the sweathouse and male prayersticks for ceremonies.												Elmore 1944 (p. 53)
			Wood made into stirring sticks for Chiricahua Windway mixed decoction.												Vestal 1952 (p. 30)
			Wood used to make the handle of the weaving distaff.												Elmore 1944 (p. 53)
	Wood used to make tool handles and weaving combs.												Vestal 1952 (p. 30)		
	Wood used to make dice and the sweathouse for ceremonies.												Elmore 1944 (p. 53)		
Chaenactis stevioides	Steve's Dustymaiden		Juice used as glue to mend broken ceremonial items.										Wyman and Harris 1951 (p. 46)		
Chamaesaracha coronopus	Greenleaf Five Eyes		Plant used for swellings.										Wyman and Harris 1951 (p. 41)		
			Compound containing plant used in cases of drowning.											Wyman and Harris 1951 (p. 41)	
			Compound containing plant used in cases of drowning.											Wyman and Harris 1951 (p. 41)	
Chenopodium album	Lambsquarters		Poultice of plant applied to burns.										Wyman and Harris 1951 (p. 20)		
			Plant used as a nutrient.											Hocking 1956 (p. 149)	
			Seeds dried and used like corn.											Elmore 1944 (p. 43)	
			Seeds ground and eaten as a nutrient.											Hocking 1956 (p. 149)	
			Young, tender plants eaten raw, boiled as herbs alone or with other foods.												Elmore 1944 (p. 43)
Chenopodium fremontii	Fremont's Goosefoot		Seeds used to make tortillas and bread.										Elmore 1944 (p. 44)		
Chenopodium graveolens	Fetid Goosefoot		Used, with other herbs, in the liniment for the Mountain Chant.										Elmore 1944 (p. 44)		
			Cold infusion taken to give protection in warfare.											Vestal 1952 (p. 25)	
Chenopodium sp.	Goosefoot		Seeds used to make bread.										Elmore 1944 (p. 44)		
			Seeds used to make a stiff porridge.											Elmore 1944 (p. 44)	
			Seeds of several species ground and used like corn.											Elmore 1944 (p. 44)	
			Used, with other plants, as a liniment in the Mountain Chant.											Elmore 1944 (p. 44)	
			Finely chopped plant used on the face and arms to keep the flies and mosquitoes from biting.												Elmore 1944 (p. 44)
Chrysothamnus viscidiflorus	Green Rabbitbrush		Plant used as thatch to prevent the sand on top of the sweathouse from sifting through.										Elmore 1944 (p. 84)		
			Plant used to make a sick person vomit.											Elmore 1944 (p. 84)	
Cirsium vulgare	Bull Thistle		Decoction of plant taken to induce vomiting.										Elmore 1944 (p. 84)		
Clematis ligusticifolia	Western White Clematis		Plant used for pain.										Elmore 1944 (p. 47)		
			Plant used for spider or sand cricket bites.											Wyman and Harris 1951 (p. 22)	
			Plant used as tonic after deliverance.											Elmore 1944 (p. 47)	
			Plant used as tonic after deliverance.											Elmore 1944 (p. 47)	
Cleome serrulata	Rocky Mountain Beeplant		Dried leaves and meat or tallow used to make dumplings.										Elmore 1944 (p. 50)		
			Young shoots boiled, rolled into small balls and dried for winter use.											Steggerda 1941 (p. 223)	
			Young plants boiled, pressed, rolled into balls, dried and stored for winter use.											Castetter 1935 (p. 24)	
			Leaves dried and stored for winter use.											Lynch 1986 (p. 13)	
			Plant made into stew with wild onions, wild celery, tallow or bits of meat.												Castetter 1935 (p. 24)
			Dried leaves used to make stew.												Lynch 1986 (p. 13)
			Leaves, onions, wild celery and tallow or meat used to make stew.												Elmore 1944 (p. 50)
			Used as a seasoning.												Hocking 1956 (p. 149)
			Young plants boiled, pressed, rolled into balls and eaten.												Castetter 1935 (p. 24)
			Pods used for food.												Elmore 1944 (p. 50)
			Young shoots eaten as greens.												Steggerda 1941 (p. 223)
			Young shoots boiled, rolled into small balls and eaten fresh with or without mutton.												Steggerda 1941 (p. 223)
			Young plants boiled with a pinch of salt and eaten as greens.												Castetter 1935 (p. 24)
			Leaves boiled like spinach.												Elmore 1944 (p. 50)
			Young plants boiled and rolled into balls and eaten.												Elmore 1944 (p. 50)
	Young plants boiled, rolled into balls, dried and stored for the winter.												Elmore 1944 (p. 50)		

Navajo Ethnobotany

Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
Conyza canadensis var. canadensis	Canadian Horseweed		Plant used as a lotion for pimples.										Wyman and Harris 1951 (p. 47)	
			Hot poultice of plant applied to infants with prenatal infection.											Wyman and Harris 1951 (p. 47)
			Hot poultice of plant applied for earaches.											Wyman and Harris 1951 (p. 47)
			Plant used for stomachaches.											Wyman and Harris 1951 (p. 47)
			Hot poultice of plant applied to infants with prenatal infection.											Wyman and Harris 1951 (p. 47)
Corallorrhiza maculata	Summer Coralroot		Infusion of plant used as a lotion for ringworm or skin disease.										Wyman and Harris 1951 (p. 17)	
Cordylanthus wrightii	Wright's Bird's Beak		Plant used for ceremonial purposes.										Wyman and Harris 1951 (p. 42)	
			Plant used for prolapses of the uterus.											Wyman and Harris 1951 (p. 42)
			Decoction of plant used for syphilis.											Elmore 1944 (p. 76)
Cornus sericea ssp. sericea	Redosier Dogwood		Plant used as a Mountain-top-way emetic.										Wyman and Harris 1951 (p. 35)	
			Plant used as a Mountain-top-way emetic.											Wyman and Harris 1951 (p. 35)
Corydalis aurea	Scrambledeggs		Plant used for diarrhea.										Wyman and Harris 1951 (p. 23)	
			Plant used for hand sores.											Wyman and Harris 1951 (p. 23)
			Plant used for puerperal infection.											Wyman and Harris 1951 (p. 23)
			Plant used for puerperal infection.											Wyman and Harris 1951 (p. 23)
			Plant sprinkled on livestock for snakebites.											Wyman and Harris 1951 (p. 23)
											Cold infusion used to soak watermelon seeds to increase production.	Vestal 1952 (p. 28)		
Croton texensis	Texas Croton							Used on large fire to smoke clothes and remove skunk smell.					Vestal 1952 (p. 35)	
Cryptantha cinerea var. cinerea	James' Catseye		Plant given to newborn infant for prenatal snake or toad infection.										Wyman and Harris 1951 (p. 40)	
			Plant given to newborn infant for prenatal snake or toad infection.											Wyman and Harris 1951 (p. 40)
			Poultice of plant applied or plant used as lotion for snakebites.											Wyman and Harris 1951 (p. 40)
			Poultice of plant applied or plant used as lotion for livestock with snakebites.											Wyman and Harris 1951 (p. 40)
Cryptantha crassisejala	Thicksepal Catseye		Plant used as a lotion for itching.										Wyman and Harris 1951 (p. 39)	
Cryptantha sp.	Hollowstomach		Infusion of plant taken to stay slender.										Lynch 1986 (p. 18)	
			Plant used for coyote infection.											Wyman and Harris 1951 (p. 39)
Cymopterus purpurascens	Widewing Springparsley		Plant used for backache.										Wyman and Harris 1951 (p. 34)	
			Plant used to settle stomach after vomiting from swallowing a fly.											Wyman and Harris 1951 (p. 34)
			Plant used to settle stomach after vomiting from swallowing a fly.											Wyman and Harris 1951 (p. 34)
			Plant used for backache.											Wyman and Harris 1951 (p. 34)
			Used in paint for prayersticks.											Wyman and Harris 1951 (p. 34)
Datura sp.	Jimson Weed		Plant used as pain killer for headaches.										Elmore 1944 (p. 73)	
			Raw, dried roots chewed in a ceremony for chills and fevers.											Elmore 1944 (p. 73)
			Plant used for trachoma.											Elmore 1944 (p. 73)
			Raw, dried roots chewed in a ceremony for chills and fevers.											Elmore 1944 (p. 73)
			Plant used as pain killer for toothaches.											Elmore 1944 (p. 73)
			Infusion of leaves used as a wash on castration wounds of sheep.											Elmore 1944 (p. 73)
Delphinium scaposum	Tall Mountain Larkspur		Plant eaten by women to become prolific.										Wyman and Harris 1951 (p. 22)	
			Powdered petals used by the medicine man.											Elmore 1944 (p. 47)
			Plant eaten by goats to become prolific.											Wyman and Harris 1951 (p. 22)
			Pollen used extensively in many ceremonies.											Elmore 1944 (p. 47)
			Petals and other blue flowers ground and used ceremonially.											Vestal 1952 (p. 27)
Dimorphocarpa wislizeni	Touristplant		Infusion of plant taken and used as lotion for centipede or sand cricket bites.										Wyman and Harris 1951 (p. 24)	
			Poultice of plant applied to hemorrhoids.											Wyman and Harris 1951 (p. 24)
			Plant chewed by children to strengthen teeth.											Wyman and Harris 1951 (p. 24)
			Plant chewed by children to strengthen teeth.											Wyman and Harris 1951 (p. 24)
			Plant used by sheep for forage.											Elmore 1944 (p. 49)
	Mixed with paint and used on prayersticks or ceremonial figurines of water animals.											Wyman and Harris 1951 (p. 24)		
Echinocereus coccineus	Scarlet Hedgehog Cactus		Plant used as a heart stimulant.										Elmore 1944 (p. 64)	
			Plant considered poisonous.											Elmore 1944 (p. 64)
Echinocereus sp.	Hedgehog Cactus	Fruits eaten for food.											Elmore 1944 (p. 64)	
Encelia frutescens var. resinosa	Button Brittlebush		Plant used for shingles.										Wyman and Harris 1951 (p. 47)	
			Used as a seasoning for broth.											Wyman and Harris 1951 (p. 47)
Ephedra torreyana	Torrey's Jointfir	Branches used to make tea.											Elmore 1944 (p. 24)	

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Ephedra viridis	Mormon Tea		Decoction of plant tops taken as a cough medicine.										Elmore 1944 (p. 24)	
			Strong infusion of plant used for syphilis.										Lynch 1986 (p. 19)	
			Roasted stems used to make tea.											Lynch 1986 (p. 19)
			Stems chewed to relieve thirst when on the move and away from water supplies.											Lynch 1986 (p. 19)
Epilobium ciliatum ssp. ciliatum	Coast Willowweed		Infusion used as lotion and poultice of roots applied to muscular cramps.										Wyman and Harris 1951 (p. 32)	
Equisetum laevigatum	Smooth Horsetail		Infusion of plant taken or cold infusion used as a lotion for backaches.										Wyman and Harris 1951 (p. 15)	
Erigeron concinnus var. condensatus	Navajo Fleabane		Plant used as a lotion for headaches.										Wyman and Harris 1951 (p. 47)	
			Plant used for difficult labor.										Wyman and Harris 1951 (p. 47)	
Erigeron divergens	Spreading Fleabane		Plant used as a snuff for headaches.										Wyman and Harris 1951 (p. 47)	
			Infusion of plant taken by women as an aid for deliverance.										Elmore 1944 (p. 85)	
Erigeron neomexicanus	New Mexico Fleabane		Powdered plant applied to dog or bear bite sores.										Wyman and Harris 1951 (p. 47)	
			Plant used for stomachaches caused by eating unripe fruit.										Wyman and Harris 1951 (p. 47)	
Eriogonum alatum	Winged Buckwheat		Plant used for pain.										Elmore 1944 (p. 42)	
			Plant used as a lotion for rashes.										Wyman and Harris 1951 (p. 19)	
			Plant used as a life medicine.										Wyman and Harris 1951 (p. 19)	
			Roots used for food.										Elmore 1944 (p. 42)	
Eriogonum divaricatum	Divergent Buckwheat		Plant used in the Life or Knife Chant.										Elmore 1944 (p. 42)	
			Plant used for "Big Snake chant."										Wyman and Harris 1951 (p. 19)	
Eriogonum racemosum	Redroot Buckwheat		Poultice of plant applied to back for leg paralysis.										Wyman and Harris 1951 (p. 19)	
			Plant smoked for snakebites.										Wyman and Harris 1951 (p. 19)	
Eriogonum sp.	Wild Buckwheat		Plant used for backaches and sideaches.										Wyman and Harris 1951 (p. 19)	
			Leaves and stems eaten raw.										Wyman and Harris 1951 (p. 19)	
Eriogonum umbellatum	Sulphur Wildbuckwheat		Cold infusion of roots taken for diarrhea.										Elmore 1944 (p. 42)	
			Plant used for stomach disease.										Wyman and Harris 1951 (p. 18)	
			Plant used during confinement after childbirth.										Hocking 1956 (p. 150)	
Eriogonum jamesii	James' Buckwheat		Plant used as a fumigant for biliousness.										Wyman and Harris 1951 (p. 20)	
			Plant used as an emetic for biliousness.										Wyman and Harris 1951 (p. 20)	
Eriogonum jamesii	James' Buckwheat		Plant smoked when disturbed by dreaming of tobacco worms.										Wyman and Harris 1951 (p. 19)	
			Plant used for wildcat, bobcat or mountain lion bites.										Wyman and Harris 1951 (p. 29)	
Eriogonum jamesii	James' Buckwheat		Plant used for infections.										Wyman and Harris 1951 (p. 29)	
			Used on prayersticks.										Wyman and Harris 1951 (p. 29)	
			Plant used for bewitchment.										Wyman and Harris 1951 (p. 30)	
Euphorbia brachycera	Rocky Mountain Spurge, San Francisco Mountain Spurge		Plant used for injuries and pain.										Wyman and Harris 1951 (p. 30)	
			Compound infusion of plants taken for purging.										Elmore 1944 (p. 60)	
			Plant rubbed as a liniment or poultice of plant applied to boils and pimples.										Elmore 1944 (p. 60)	
			Compound infusion of plants taken for confinement.										Elmore 1944 (p. 60)	
			Plant used for bewitchment.										Wyman and Harris 1951 (p. 30)	
Evolvulus nuttallianus	Shaggy Dwarf Morningglory		Root tasted, rubbed on the clothing so that opponents smell it and used for good luck in gambling.										Vestal 1952 (p. 35)	
			Plant used as a snuff for itching in the nose and sneezing.										Wyman and Harris 1951 (p. 37)	
Forestiera pubescens var. pubescens	Stretchberry		Used to make prayersticks.										Elmore 1944 (p. 68)	
			Stem used to make Evilway big hoop.										Vestal 1952 (p. 39)	
Gaillardia pinnatifida	Red Dome Blanketflower		Infusion of leaves taken and poultice of leaves applied for gout.										Elmore 1944 (p. 86)	
			Plant used for the effects of immersion.										Wyman and Harris 1951 (p. 48)	
			Plant used for bewitchment.										Wyman and Harris 1951 (p. 48)	
Gilia leptomeria	Sand Gilia		Poultice of plant applied to scorpion stings or worm bites.										Wyman and Harris 1951 (p. 38)	
			Plant used as a soporific.										Wyman and Harris 1951 (p. 38)	
			Infusion of plant taken or plant smoked as a tonic.										Wyman and Harris 1951 (p. 38)	
Grindelia nuda var. aphanactis	Curlytop Gumweed										Strong infusion of plant poured on ant hill to kill ants.	Vestal 1952 (p. 51)		
Gutierrezia microcephala	Threadleaf Snakeweed		Poultice of plant applied to the back and legs of horses.									Hocking 1956 (p. 151)		
Gutierrezia sarothrae	Broom Snakeweed		Plant used for headaches.										Hocking 1956 (p. 151)	
			Plant ashes rubbed on the body for headaches.										Elmore 1944 (p. 86)	
			Plant used for bloody diarrhea.										Wyman and Harris 1951 (p. 48)	
			Wood made into charcoal used in the medicines applied to the ailing gods.									Elmore 1944 (p. 86)		

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				Plant used as a ceremonial fumigant ingredient.									Wyman and Harris 1951 (p. 48)
				Plant used for wounds.									Elmore 1944 (p. 97)
				Poultice of chewed plant applied to ant, bee and wasp stings swellings.									Elmore 1944 (p. 86)
				Plant used as a ceremonial fumigant ingredient.									Wyman and Harris 1951 (p. 48)
				Plant used for gastro-intestinal disease.									Wyman and Harris 1951 (p. 48)
				Plant used for "nervousness."									Hocking 1956 (p. 151)
				Plant used for snakebites.									Elmore 1944 (p. 86)
				Decoction of ground plant applied as poultice to sheep bitten by a snake.									Elmore 1944 (p. 86)
				Leaves, grama grass, sagebrush and unidentified leaves burned to charcoal for blackening ceremony.									Elmore 1944 (p. 86)
				Wood ash and pitch used to cover the oak bull-roarer for the Female Shooting Life Chant.									Elmore 1944 (p. 86)
				Plant placed on top of most ceremonial prayersticks and figurines.									Wyman and Harris 1951 (p. 48)
				Plant ash used as Evilway, Holyway and Hand Tremblingway blackenings.									Vestal 1952 (p. 51)
				Fresh branches used to make Evilway unravelers.									Vestal 1952 (p. 51)
				Fresh branches used to make cactus prayer sticks for Chiricahua Windway and Enemyway prayer sticks.									Vestal 1952 (p. 51)
				Stems used for whirls when making fire by friction.									Elmore 1944 (p. 86)
Hackelia floribunda	Manyflower Stickseed			Leaves and pollen used various ways for good luck in gambling and trading.									Vestal 1952 (p. 40, 41)
Hedeoma drummondii	Drummond's Falsepennyroyal			Plant used for pain.									Elmore 1944 (p. 72)
Hedeoma nana	Falsepennyroyal			Used by assistant during the War Dance.									Elmore 1944 (p. 72)
Humulus lupulus var. neomexicanus	Common Hop			Hops used for cooking.									Elmore 1944 (p. 41)
Hymenopappus filifolius var. lugens	Idaho Hymenopappus			Decoction of whole plant taken for blood poisoning.									Elmore 1944 (p. 88)
				Poultice of plant applied to sores caused by bird infections.									Wyman and Harris 1951 (p. 48)
				Plant used for illness caused by lunar eclipse.									Wyman and Harris 1951 (p. 48)
				Plant used for illness caused by lunar eclipse.									Wyman and Harris 1951 (p. 48)
Ipomopsis aggregata ssp. aggregata	Skyrocket Gilia			Plant used as a cathartic.									Wyman and Harris 1951 (p. 37)
				Plant used for spider bites.									Wyman and Harris 1951 (p. 37)
				Plant used as an emetic.									Wyman and Harris 1951 (p. 37)
				Plant used for stomach disease.									Wyman and Harris 1951 (p. 37)
Ipomopsis aggregata ssp. attenuata	Scarlet Skyrocket			Infusion of crushed, dried leaves taken for stomach troubles.									Elmore 1944 (p. 70)
				Used as a browse plant.									Hocking 1956 (p. 160)
				Cultivated as an ornamental flower.									Hocking 1956 (p. 160)
Ipomopsis gunnisonii	Sanddune Skyrocket			Plant used as a blood purifier.									Wyman and Harris 1951 (p. 37)
				Poultice of plant applied to sores.									Wyman and Harris 1951 (p. 37)
Ipomopsis longiflora ssp. longiflora	Flaxflowered Gilia			Plant used for postpartum septicaemia.									Wyman and Harris 1951 (p. 38)
				Plant used as medicine in the Wind and Female Shooting Chants.									Elmore 1944 (p. 70)
				Decoction of pounded plant taken to vomit.									Elmore 1944 (p. 70)
				Decoction of pounded plant taken for the bowels.									Elmore 1944 (p. 70)
				Plant used for postpartum septicaemia.									Wyman and Harris 1951 (p. 38)
				Infusion of flowers mixed with feed and given to sheep for stomach troubles.									Elmore 1944 (p. 70)
				Used to make prebreakfast drink and taken to make the person "bark" or sing loudly for Squaw Dance.									Elmore 1944 (p. 70)
Ipomopsis polycladon	Manybranched Gilia			Plant used as a soporific.									Wyman and Harris 1951 (p. 38)
				Plant used as a tonic.									Wyman and Harris 1951 (p. 38)
Isocoma pluriflora	Southern Jimmyweed			Plant used as a lotion to heal infant's navel.									Wyman and Harris 1951 (p. 44)
Juglans major	Arizona Walnut			Nuts gathered and eaten on a fairly large scale.									Elmore 1944 (p. 39)
Juniperus monosperma	Oneseed Juniper			Wood used to make fence posts and hogan roofs.									Elmore 1944 (p. 19)
				Wood used to make a canopy to protect a new born child from the sparks of the fire.									Elmore 1944 (p. 19)
				Wood used for fence posts and hogan poles.									Vestal 1952 (p. 11)
				Boughs used for the sides and roofs of shade houses or special hogans for the Enemyway ceremonial.									Vestal 1952 (p. 11)
				Bark used as lining in sweat houses.									Vestal 1952 (p. 11)
												Bark used in the winter as a lining for moccasins to absorb moisture.	Vestal 1952 (p. 11)
				Sticks used as frame for baby cradles.									Vestal 1952 (p. 11)
				Branches cut off and given to the sheep to eat when the snow was deep.									Elmore 1944 (p. 19)
				Berries eaten ripe.									Elmore 1944 (p. 19)
				Inner bark chewed in times of food shortage to obtain the juice.									Castetter 1935 (p. 31)

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				Inner bark chewed in times of food shortage.									Elmore 1944 (p. 19)
				Wood used to make prayersticks.									Elmore 1944 (p. 19)
				Bark used as platform for sun drying roasted corn.									Vestal 1952 (p. 11)
				Bark used as lining in corn storage pits.									Vestal 1952 (p. 11)
				Used to make bows for the canopy of the baby's cradle.									Elmore 1944 (p. 19)
				Wood used for firewood.									Elmore 1944 (p. 19)
				Wood made into charcoal and used for smelting silver.									Elmore 1944 (p. 19)
				Wood used as one of the main sources of fuel.									Vestal 1952 (p. 11)
				Bark used as tinder for making ceremonial fire with fire drill.									Vestal 1952 (p. 11)
				Leaves chewed and spat out for better luck.									Elmore 1944 (p. 19)
											Wood used to make hunting bows.		Vestal 1952 (p. 11)
											Bark used as a torch in the "Fire Dance."		Vestal 1952 (p. 11)
											Wood used to make bows, formerly carried in war.		Elmore 1944 (p. 19)
Juniperus osteosperma	Utah Juniper		Seeds eaten for headaches.										Hocking 1956 (p. 152)
			Used to wash the hair.										Hocking 1956 (p. 152)
				Green timber used to make corrals.									Whiting 1939 (p. 62)
Juniperus scopulorum	Rocky Mountain Juniper		Plant used for pain.										Wyman and Harris 1951 (p. 15)
				Plant taken as a "War Dance medicine."									Elmore 1944 (p. 20)
			Plant rubbed on the hair for dandruff.										Elmore 1944 (p. 20)
				Pounded mixture of herbs given to patient during the blackening ceremony of the War Dance.									Elmore 1944 (p. 20)
Juniperus sp.	Juniper		Decoction of berries taken for influenza.										Elmore 1944 (p. 17)
			Boughs used to build the corral for public exhibitions at the close of a ceremony.										Elmore 1944 (p. 17)
			Boughs used to make the summer shelters where the women weave.										Elmore 1944 (p. 17)
			Bark used in the construction of hogans.										Elmore 1944 (p. 17)
											Bark woven into garments and used to make sandals.		Elmore 1944 (p. 17)
											Dry bark mixed with mud and worn as clothing during hard times.		Elmore 1944 (p. 17)
											Bark used to make blankets and passageway curtains.		Elmore 1944 (p. 17)
			Plant eaten by sheep during droughts.										Elmore 1944 (p. 17)
			Wood, struck by lightning, used as the two parts of the fire drill for the Night Chant.										Elmore 1944 (p. 17)
			Branches made into a fagot and used by the personator of the Black God, owner of all fire.										Elmore 1944 (p. 17)
			Shredded bark carried by the dancers in the Fire Dance during the last night of the Mountain Chant.										Elmore 1944 (p. 17)
			Wood burned into charcoal, ground and used for black in sandpaintings.										Elmore 1944 (p. 17)
			Branches made into wands and used in certain ceremonies.										Elmore 1944 (p. 17)
			Wood used to make prayersticks.										Elmore 1944 (p. 17)
				Concave bark used to make improvised trays for the sandpainting powders.									Elmore 1944 (p. 17)
				Light bark used as tinder to catch the spark from the fire drill.									Elmore 1944 (p. 17)
				Wood burned into charcoal and used as a fuel.									Elmore 1944 (p. 17)
												Seeds used to make anklets, necklaces, bracelets, and wristlets.	Elmore 1944 (p. 17)
												Wood used to make dice.	Elmore 1944 (p. 17)
Koeleria macrantha	Prairie Junegrass				Bunch about a foot long, tied with string or yucca fiber, used as a brush for cleaning metates.								Vestal 1952 (p. 16)
Krascheninnikovia lanata	Winterfat		Decoction of leaves taken for blood spitting.										Elmore 1944 (p. 44)
			Plant used for sores and boils.										Hocking 1956 (p. 151)
			Plant used for smallpox.										Hocking 1956 (p. 151)
			Plant used as winter forage for the sheep.										Elmore 1944 (p. 44)
				Armful of stems with leaves used on heated stones in the sweathouse for the Mountain Chant.									Elmore 1944 (p. 44)
Lappula occidentalis var. cupulata	Flatspine Stickseed		Plant used as a lotion for itching.										Wyman and Harris 1951 (p. 40)
			Parts of the plant used at confinement.										Hocking 1956 (p. 153)
			Parts of the plant used for nosebleeds.										Hocking 1956 (p. 153)
Lappula occidentalis var. occidentalis	Desert Stickseed		Poultice of plant applied to sores caused by insects.										Wyman and Harris 1951 (p. 40)
Lesquerella intermedia	Mid Bladderpod		Plant used as a Nightway medicine.										Wyman and Harris 1951 (p. 24)

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Linum lewisii	Prairie Flax		Poultice of roots applied to sore eyes.										Wyman and Harris 1951 (p. 24)		
			Plant used for headaches.										Wyman and Harris 1951 (p. 30)		
			Plant used as a fumigant.											Wyman and Harris 1951 (p. 30)	
Lithospermum incisum	Narrowleaf Gromwell		Plant used for colds.										Hocking 1956 (p. 161)		
			Plant chewed for colds.											Elmore 1944 (p. 71)	
			Plant used as an oral contraceptive.											Hocking 1956 (p. 161)	
			Plant used for coughs.											Hocking 1956 (p. 161)	
			Plant chewed for coughs.												Elmore 1944 (p. 71)
			Roots used for soreness at the attachment of the umbilical cord.												Elmore 1944 (p. 71)
			Used in the Life or Knife Chant.												Elmore 1944 (p. 71)
Lupinus kingii	King's Lupine		Poultice of crushed leaves used for poison ivy blisters and other skin irritations.										Vestal 1952 (p. 32)		
Lupinus pusillus ssp. intermontanus	Intermountain Lupine		Plant used as a fumigant ingredient.										Wyman and Harris 1951 (p. 28)		
			Plant used for earaches.										Wyman and Harris 1951 (p. 28)		
			Plant used for nosebleeds.										Wyman and Harris 1951 (p. 28)		
Lupinus sp.	Lupine		Used in the Male Shooting Chant.									Elmore 1944 (p. 56)			
Lycium pallidum	Pale Wolfberry		Ground root placed in cavity for toothaches.										Wyman and Harris 1951 (p. 41)		
			Berries mashed in water and used as a beverage.											Lynch 1986 (p. 32)	
			Sun dried berries used for food.											Lynch 1986 (p. 32)	
			Fruits boiled, dried, stored for winter use and eaten dry.												Elmore 1944 (p. 74)
			Fresh, mashed berries mixed with powdered clay to counteract astringency and used for food.												Steggerda 1941 (p. 222)
			Berries eaten fresh off the bush.												Lynch 1986 (p. 32)
			Fruits eaten fresh.												Elmore 1944 (p. 74)
			Berries used for food.												Hocking 1956 (p. 153)
			Berries used to make soup and stew.												Lynch 1986 (p. 32)
			Fruits boiled, dried, stored for winter use and made into a soup.												Elmore 1944 (p. 74)
			Fruit sacrificed to the gods.												Elmore 1944 (p. 74)
	Fresh berries soaked, boiled until tender, ground with clay and stored for winter use.												Steggerda 1941 (p. 222)		
	Thorn ash used for Evilway blackening.												Vestal 1952 (p. 42)		
	Stem used to make Evilway big hoop.												Vestal 1952 (p. 42)		
	Plant considered to be a sacred plant.												Fewkes 1896 (p. 19)		
Machaeranthera canescens ssp. canescens var. canescens	Cutleaf Goldenweed		Dried and pulverized plant used as a snuff for nose troubles.										Elmore 1944 (p. 82)		
			Dried and pulverized plant used as a snuff for throat troubles.										Elmore 1944 (p. 82)		
Mahonia repens	Oregongrape		Decoction of leaves and twigs taken for rheumatic stiffness.										Elmore 1944 (p. 48)		
			Infusion of plant taken and poultice of plant applied as a cure all.										Wyman and Harris 1951 (p. 23)		
			Sprinkled on grass where lightning struck near livestock.											Wyman and Harris 1951 (p. 23)	
Malacothrix sonchoides	Sowthistle Desertdandelion		Plant used for vomiting.										Wyman and Harris 1951 (p. 49)		
Marrubium vulgare	Horehound		Infusion of plant taken for sore throats.										Elmore 1944 (p. 73)		
Mirabilis linearis	Narrowleaf Four O'clock		Root used for stomach disorders.										Wyman and Harris 1951 (p. 21)		
			Infusion of roots used for postpartum treatment.											Wyman and Harris 1951 (p. 21)	
			Plant used as a life medicine.											Wyman and Harris 1951 (p. 21)	
			Berries stewed and used for food.											Wyman and Harris 1951 (p. 21)	
	Seeds roasted and used for food.												Wyman and Harris 1951 (p. 21)		
Mirabilis multiflora	Colorado Four O'clock		Plant used for rheumatism.										Hocking 1956 (p. 161)		
			Plant used for "swellings."											Hocking 1956 (p. 161)	
			Plant used for various mouth disorders.											Hocking 1956 (p. 161)	
Mirabilis oxybaphoides	Smooth Spreading Four O'clock		Plant used for spider bites or as a hair lotion for dandruff.										Wyman and Harris 1951 (p. 21)		
			Used for greens in foods.											Wyman and Harris 1951 (p. 21)	
Monarda pectinata	Pony Beebalm		Plant used for headaches.										Hocking 1956 (p. 153)		
			Plant used for stomach disease.											Wyman and Harris 1951 (p. 41)	
Monroa squarrosa	False Buffalograss		Pollen mixed with corn pollen and mineral pigments and painted on masks of the God Impersonators.										Wyman and Harris 1951 (p. 16)		
Muhlenbergia sp.	Muhly		Used in the making of brushes and brooms.										Elmore 1944 (p. 25)		
Nama hispidum	Bristly Nama		Plant used as a lotion for spider or tarantula bites.										Wyman and Harris 1951 (p. 39)		
Nicotiana attenuata	Coyote Tobacco		Plant used for nosebleed.										Wyman and Harris 1951 (p. 41)		
			Plant used as a narcotic.										Wyman and Harris 1951 (p. 41)		

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				Smoked after the feast following the completion of the masks for the Night Chant.									Elmore 1944 (p. 75)
				Used for filling ceremonial prayersticks in the Night Chant.									Elmore 1944 (p. 75)
				Plant used as substitute for commercial tobacco.									Vestal 1952 (p. 43)
Nicotiana sp.	Wild Tobacco			Infusion of leaves given to the patient in a painted turtle shell during the Raven Chant.									Elmore 1944 (p. 74)
				Plant used for sores caused by the handling or burning a raven's nest.									Elmore 1944 (p. 74)
Oenothera elata ssp. hookeri	Hooker's Eveningprimrose			Plant used as a Plumeway emetic.									Wyman and Harris 1951 (p. 33)
				Plant used for colds.									Wyman and Harris 1951 (p. 33)
				Poultice of plant applied to sores.									Wyman and Harris 1951 (p. 33)
				Plant used as a Plumeway emetic.									Wyman and Harris 1951 (p. 33)
				Hot poultice of plant applied for mumps.									Wyman and Harris 1951 (p. 33)
Oenothera pallida	Pale Eveningprimrose			Plant used as a Beadway emetic.									Wyman and Harris 1951 (p. 34)
				Plant used as dusting powder for venereal disease sores.									Wyman and Harris 1951 (p. 34)
				Poultice of plant applied to spider bites.									Wyman and Harris 1951 (p. 34)
				Plant used as a Beadway emetic.									Wyman and Harris 1951 (p. 34)
				Infusion of plant used for kidney disease.									Wyman and Harris 1951 (p. 34)
				Plant used as dusting powder for venereal disease sores.									Wyman and Harris 1951 (p. 34)
				Plant used for livestock with colic.									Wyman and Harris 1951 (p. 34)
Oenothera sp.	Evening Primrose			Compound infusion of plants used as a wash for sore skin.									Elmore 1944 (p. 66)
Opuntia phaeacantha	Tulip Pricklypear			Plant used to make fruit juice.									Lynch 1986 (p. 14)
				Pad pulp formed into cakes, dried, stored for later use and fried or roasted.									Lynch 1986 (p. 14)
				Pads peeled, sliced, roasted, boiled in sugar water, dried and eaten like candy.									Lynch 1986 (p. 14)
				Pad strips peeled, parboiled, boiled and used as chewing gum.									Lynch 1986 (p. 14)
				Seed flour used to thicken soups, puddings or fruit dishes.									Lynch 1986 (p. 14)
				Plant eaten dried.									Lynch 1986 (p. 14)
				Fruit eaten raw.									Lynch 1986 (p. 14)
				Plant used to make jelly.									Lynch 1986 (p. 14)
				Pads peeled, sliced, roasted, boiled in sugar water until dissolved into a syrup & eaten like jelly.									Lynch 1986 (p. 14)
				Dried seeds ground into flour.									Lynch 1986 (p. 14)
				Plant eaten fresh.									Lynch 1986 (p. 14)
				Pads parboiled, peeled, sliced, boiled in salted water and eaten.									Lynch 1986 (p. 14)
Opuntia sp.	Cane Cactus			Fruits split, sun dried and used for food.									Elmore 1944 (p. 64)
				Plant shape used as form for figures in the sandpainting of the Cactus People for the Wind Chant.									Elmore 1944 (p. 64)
Opuntia sp.	Prickly Pear			Plant used for boils.									Hocking 1956 (p. 161)
				Fruit with thorns rubbed off, dried and used for food.									Steggerda 1941 (p. 222)
				Fruit boiled and eaten plain or boiled with dried peaches.									Steggerda 1941 (p. 222)
				Juice mixed with sugar and used to make syrup.									Steggerda 1941 (p. 222)
Opuntia sp.				Tunas stewed with dried peaches and eaten.									Castetter 1935 (p. 37)
Opuntia whipplei	Whipple Cholla			Used to make cactus prayer stick, Chiricahua Windway.									Vestal 1952 (p. 37)
				Branches made into a wand and used in Red Antway.									Vestal 1952 (p. 37)
Oxytropis lambertii	Lambert's Crazyweed			Plant used for constipation.									Wyman and Harris 1951 (p. 28)
				Used to make a mush or parched and used for food.									Wyman and Harris 1951 (p. 28)
				Plant offered to the bighorn at the Night Chant.									Elmore 1944 (p. 57)
Panicum capillare	Witchgrass			Seeds used for food.									Elmore 1944 (p. 26)
Parryella filifolia	Common Dunebroom				Stems used as material for small baskets.								Vestal 1952 (p. 33)
Parthenocissus vitacea	Woodbine				Used as part of the medicine the patient takes in the Mountain Chant Ceremony.								Elmore 1944 (p. 62)
					Used on ramadas for shade.								Elmore 1944 (p. 62)
Penstemon ambiguus	Gilia Beardtongue			Plant used for solpugid bites or poultice of plant applied to eagle bites.									Wyman and Harris 1951 (p. 42)
				Plant used as a fumigant for livestock with snakebites.									Wyman and Harris 1951 (p. 42)
Penstemon barbatus ssp. torreyi	Torrey's Penstemon			Infusion of plants taken as a diuretic.									Elmore 1944 (p. 77)
Penstemon sp.	Penstemon, Beard Tongue			Infusion taken and poultice of pounded leaves applied to rattlesnake bites.									Elmore 1944 (p. 77)
				Used to make tea.									Elmore 1944 (p. 77)
				Used to make beverages.									Hocking 1956 (p. 162)
				Plant browsed by animals.									Hocking 1956 (p. 162)
Penstemon jamesii	James' Beardtongue			Plant used as an emetic and lotion to purify a newborn infant before nursing.									Wyman and Harris 1951 (p. 43)

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Petrophyton caespitosum var. caespitosum	Rocky Mountain Rockspirea			Plant used as a charm or prayer in the "Pleiades rite."									Wyman and Harris 1951 (p. 27)		
				Plant used as a narcotic.									Wyman and Harris 1951 (p. 27)		
Phlox austromontana	Desert Phlox			Crushed plant placed in cavity for toothaches.									Wyman and Harris 1951 (p. 38)		
Phoradendron juniperinum	Juniper Mistletoe			Plant used for warts.									Hocking 1956 (p. 162)		
				Stems used to make tea.									Elmore 1944 (p. 42)		
				Berries used for food.									Elmore 1944 (p. 42)		
Phragmites australis	Common Reed			Reeds used to make prayersticks for the Mountain Chant Ceremony.									Elmore 1944 (p. 26)		
				Reeds made into frames, like kite frames, and carried by dancers on last night of Mountain Chant.									Elmore 1944 (p. 26)		
											Stems used to make arrow shafts.		Elmore 1944 (p. 26)		
Physaria newberryi	Newberry's Twinpod			Plant used as a snuff for catarrh.								Elmore 1944 (p. 49)			
Pinus edulis	Twoneedle Pinyon			Needles used in the medicine for the "War Dance."									Elmore 1944 (p. 21)		
				Pitch painted all over the patient in the War Dance.									Elmore 1944 (p. 21)		
				Plant used for cuts and sores.										Elmore 1944 (p. 97)	
				Gum with tallow and red clay and used as a salve on open cuts and sores.										Elmore 1944 (p. 21)	
				Resin used as an emetic.										Hocking 1956 (p. 162)	
				Compound containing inner bark used for injuries.										Vestal 1952 (p. 12, 13)	
						Resin used in pottery and basketry making.								Vestal 1952 (p. 12)	
						Logs used to make hogans for ordinary and ceremonial purposes.								Elmore 1944 (p. 21)	
						Boughs used to build the corral for public exhibitions at the close of a ceremony.								Elmore 1944 (p. 21)	
						Rot and wood-eating beetle resistant logs used as the chief building material for hogans.								Vestal 1952 (p. 12)	
						Wood used to make summer shade houses.									Vestal 1952 (p. 12)
						Branches used to cover a sweathouse.									Vestal 1952 (p. 12)
						Wood used for fence posts and corral construction.									Vestal 1952 (p. 12)
						Wood used to make various parts of the cradle.									Elmore 1944 (p. 21)
						Ground nuts formed into cakes.									Lynch 1986 (p. 21)
						Sap used as a chewing gum.									Elmore 1944 (p. 21)
						Nuts boiled into a gruel.									Lynch 1986 (p. 21)
						Nuts roasted, cracked and shelled on a metate, ground fine, made into butter and used with bread.									Steggerda 1941 (p. 222)
						Roasted nuts mashed into a butter.									Elmore 1944 (p. 21)
						Ground nuts rolled into balls and eaten as a delicacy.									Lynch 1986 (p. 21)
						Nuts hulled, parched and ground with corn meal to make a flour.									Castetter 1935 (p. 40)
						Hardened resinous secretions chewed.									Castetter 1935 (p. 32)
						Nuts hulled, roasted and eaten without further preparation.									Castetter 1935 (p. 40)
						Nuts eaten raw or roasted directly from the shell.									Lynch 1986 (p. 21)
						Seeds used for food.									Hocking 1956 (p. 162)
															Castetter 1935 (p. 40)
															Seeds gathered in large quantities and sold or traded.
															Nuts sold to the Hano, Jemez and the Keresan Pueblos.
															1916 (p. 41)
															Seeds gathered in large quantities and sold or traded.
															Castetter 1935 (p. 40)
															Nuts gathered and sold or traded.
															Elmore 1944 (p. 21)
															Seeds used as a commercial crop.
															Hocking 1956 (p. 162)
															Nuts gathered and sold to make up a considerable portion of the cash income of many families.
															Vestal 1952 (p. 12)
															Pitch smeared on burier's body before burying person & on forehead & under the eyes during mourning.
															Elmore 1944 (p. 21)
															Wood used to make ceremonial pokers and wands.
															Elmore 1944 (p. 21)
															Wood charcoal used to make the best black for sandpaintings.
															Elmore 1944 (p. 21)
															Sapling, stripped of its branches, carried by the Talking God on the fourth day of the Night Chant.
															Elmore 1944 (p. 21)
															Tree used for ceremonial purposes.
															Elmore 1944 (p. 21)
													Branches used to make the circle of branches for the Mountain Chant.		
													Elmore 1944 (p. 21)		
													Bunches of needles carried in each hand by dancers on the last night of the Mountain Chant.		
													Elmore 1944 (p. 21)		
													Branches, preferably one broken from a lightning struck tree, used in Evilway ceremonials as pokers.		
													Vestal 1952 (p. 12)		
													Needles used in Evilway ceremonials as pokers.		
													Vestal 1952 (p. 12)		
													Resin used in pottery and basketry making.		
													Vestal 1952 (p. 12)		
													Resin used to cement turquoise in jewelry.		
													Hocking 1956 (p. 162)		
													Wood used for firewood.		
													Elmore 1944 (p. 21)		
													Wood used for fires because it throws fewer sparks.		
													Vestal 1952 (p. 12)		

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					Dried gum, together with parts of different birds, used as an incense for ceremonial fumigation.								Elmore 1944 (p. 21)
												Dried seeds used to make necklaces, bracelets, anklets and wristlets.	Elmore 1944 (p. 21)
					Wood used to make saddle horns.								Vestal 1952 (p. 12)
					Wood used to make loom poles, beams and uprights used in the construction of looms.								Elmore 1944 (p. 21)
					Wood used to make sharp sticks for perforating buckskin and various other tools.								Vestal 1952 (p. 12)
												Wood used to make tops for spinning and sticks used in the moccasin game.	Vestal 1952 (p. 12)
					Gum used to make water bottles water tight.								Elmore 1944 (p. 21)
					Resin used to waterproof containers.								Hocking 1956 (p. 162)
<i>Pinus flexilis</i>	Limber Pine				Wood used to make the small bow and arrow used in the Witch and Shooting Chants.								Elmore 1944 (p. 23)
<i>Pinus ponderosa</i>	Ponderosa Pine				Pollen used in the "Night Chant" medicine.								Elmore 1944 (p. 23)
					Wood used for hogans, fence posts and corral construction.								Vestal 1952 (p. 13)
					Branches often used to cover a sweathouse.								Vestal 1952 (p. 13)
					Wood used to make boards and cradle bow of the two board type of baby cradle.								Vestal 1952 (p. 13)
					Wood slabs tied together with yucca fiber used as snowshoes.								Vestal 1952 (p. 13)
					Bark used to make containers for sand painting pigments.								Vestal 1952 (p. 13)
					Wood used for firewood.								Vestal 1952 (p. 13)
					Wood used to make saddle horns, pommel and back.								Vestal 1952 (p. 13)
<i>Pinus sp.</i>	Pine				Needles, in water, used ceremonially.								Elmore 1944 (p. 23)
					Bark used as a covering for summer shelters.								Elmore 1944 (p. 23)
					Gum mixed with gypsum and used as a white paste on the "spirits of the fire" in the Fire Dance.								Elmore 1944 (p. 23)
					Wood used to make the bull roarer for some ceremonies.								Elmore 1944 (p. 23)
					Wood used to make a tinderbox for fire by friction.								Elmore 1944 (p. 23)
					Bark used to make the trays for the colored powders used in the sandpaintings.								Elmore 1944 (p. 23)
					Wood used extensively for firewood.								Elmore 1944 (p. 23)
												Wood used to make the ball for the game, shinny.	Elmore 1944 (p. 23)
													Elmore 1944 (p. 23)
					Gum used to make water bottles water tight.								Elmore 1944 (p. 23)
<i>Poliomnitha incana</i>	Hoary Rosemarymint				Plant used for sores.								Wyman and Harris 1951 (p. 41)
<i>Populus angustifolia</i>	Narrowleaf Cottonwood				Soft wood used for parts of the cradle.								Elmore 1944 (p. 37)
<i>Populus sp.</i>	Cottonwood				Boughs used to make the circular or oval summer shelter.								Elmore 1944 (p. 37)
					Wood used to make prayersticks.								Elmore 1944 (p. 37)
					Wood used to carve the image of a duck for the Water Chant.								Elmore 1944 (p. 37)
					Wood used to make tinderboxes.								Elmore 1944 (p. 37)
					Sticks used in making fire by friction and fiber used for tinder.								Elmore 1944 (p. 37)
					Wood used to make the frame of the loom.								Elmore 1944 (p. 37)
												Wood used to make dice.	Elmore 1944 (p. 37)
												Wood used to make clubs for the moccasin game.	Elmore 1944 (p. 37)
<i>Populus tremuloides</i>	Quaking Aspen				Tree important to the Sun's House Chant.								Elmore 1944 (p. 38)
					Stem used to make Evilway hoop.								Vestal 1952 (p. 22)
					Knots used to make wooden cups.								Vestal 1952 (p. 22)
<i>Portulaca oleracea</i>	Little Hogweed				Plant used for pain.								Elmore 1944 (p. 97)
					Plant taken for stomachaches.								Elmore 1944 (p. 47)
					Plant used as a lotion for scarlet fever.								Wyman and Harris 1951 (p. 22)
					Plant used to "cure sick people."								Elmore 1944 (p. 47)
					Plant used as a good sheep forage.								Elmore 1944 (p. 47)
					Seeds used for food.								Elmore 1944 (p. 47)
					Plants used for food.								Hocking 1956 (p. 154)
<i>Pseudocymopterus montanus</i>	Alpine False Springparsley				Plant used as a ceremonial emetic.								Wyman and Harris 1951 (p. 35)
					Plant used as a ceremonial emetic.								Wyman and Harris 1951 (p. 35)

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Pseudotsuga menziesii	Douglas Fir							Bartered with the Hano for corn and meal.					1916 (p. 42)	
			Plant used for headaches.											Wyman and Harris 1951 (p. 15)
			Plant used for fumigation.											Wyman and Harris 1951 (p. 15)
			Plant used for stomach disease.											Wyman and Harris 1951 (p. 15)
					Branches used in the Shooting Chant.									Elmore 1944 (p. 23)
					Used to make garment for garment ceremony of Evilway.									Vestal 1952 (p. 14)
					Used to make bow and chant arrow for overshooting ceremony of Evilway.									Vestal 1952 (p. 14)
					Branches used to make Holyway big hoop.									Vestal 1952 (p. 14)
					Used to make unravelers for several ceremonials.									Vestal 1952 (p. 14)
			Branches attached to masks and carried in hands by god impersonators in Nightway.									Vestal 1952 (p. 14)		
Psilostrophe sparsiflora	Greenstem Paperflower		Plant used as a diarrhea medicine.										Wyman and Harris 1951 (p. 49)	
			Plant used as a postpartum blood purifier.										Wyman and Harris 1951 (p. 49)	
			Poultice of plant applied to wounds.										Wyman and Harris 1951 (p. 49)	
			Plant used as a life medicine.										Wyman and Harris 1951 (p. 49)	
Purshia stansburiana	Stansbury Cliffrose											Shredded bark used for bedding or diaper for cradleboard.	Vestal 1952 (p. 30)	
					Softened bark used as backing for cradle boards and as stuffing for pillows.								Elmore 1944 (p. 53)	
					Shredded bark used for bedding or stuffed into a sack for pillows.								Vestal 1952 (p. 30)	
			Plant used for deer and livestock forage.											Hocking 1956 (p. 159)
					Wood used to make female prayersticks for the Night Chant.									Elmore 1944 (p. 53)
					Wood used to make arrows for the Mountain Chant Ceremony.									Elmore 1944 (p. 53)
													Softened bark used to stuff baseballs.	Elmore 1944 (p. 53)
Quercus xpauciloba	Wavyleaf Oak		Plant used for nervousness.										Wyman and Harris 1951 (p. 18)	
					Wood used to make batten sticks and bows for the baby's cradle.								Elmore 1944 (p. 41)	
					Wood sticks notched by sheepherders to keep track of the days they have worked.								Vestal 1952 (p. 22)	
Quercus gambelii	Gambel's Oak				Whole trees used for shade house construction.								Vestal 1952 (p. 22)	
					Wood used to make frames for baby cradles.								Vestal 1952 (p. 22)	
			Acorns seldom used for food.										Steggerda 1941 (p. 222)	
Quercus sp.	Oak				Twigs used as the framework of a temporary carrying basket.								Elmore 1944 (p. 40)	
			Dried acorns ground into flour.										Elmore 1944 (p. 40)	
			Acorns boiled like beans and roasted over coals.										Elmore 1944 (p. 40)	
					Used to make digging sticks for the Female Shooting Life Chant for digging medicinal roots.									Elmore 1944 (p. 40)
					Sticks inserted in crevice above door during the dedication and purification of the hogan.									Elmore 1944 (p. 40)
					Curled twig used as a drum stick in the War Dance Ceremony.									Elmore 1944 (p. 40)
					Wood used, because of it's hardness and great resisting power, in nearly all of the ceremonies.									Elmore 1944 (p. 40)
					Acorn shells used to hold medicine and a humming bird was made to sip from each shell.									Elmore 1944 (p. 40)
													Used to make throwing sticks.	Elmore 1944 (p. 40)
					Used to make batten stick for weaving.									Elmore 1944 (p. 40)
					Concave hole in wood used as a die to make metallic hemispheres for beads and sunflower blossoms.									Elmore 1944 (p. 40)
					Used to make hoes and digging sticks.									Elmore 1944 (p. 40)
													Sticks kicked out of the ground while playing "football."	Elmore 1944 (p. 40)
													Stick curved in hot ashes to make a "j" shaped stick or bat for shinny and other games.	Elmore 1944 (p. 40)
													Wood used to make the bow carried into war.	Elmore 1944 (p. 40)
											Branches used to make clubs.	Elmore 1944 (p. 40)		
Rhus trilobata	Skunkbush Sumac		Plant used as a lotion for poison ivy dermatitis.										Wyman and Harris 1951 (p. 31)	
			Plant used for bowel troubles.										Wyman and Harris 1951 (p. 31)	
					Split stems used to make baskets.								Elmore 1944 (p. 60)	
					Used to make carrying baskets.								Elmore 1944 (p. 60)	

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					Used as basket material.								Wyman and Harris 1951 (p. 31)
					Split stems used to make baskets, water bottles and basket sacks.								Vestal 1952 (p. 35)
									Small stems used to make sun shades or hats.				Vestal 1952 (p. 35)
					Used to sew water bottles.								Elmore 1944 (p. 60)
					Berries ground, washed, mixed with water and used as a beverage.								Steggerda 1941 (p. 222)
					Berries used to make juice.								Lynch 1986 (p. 26)
					Berries used to make cakes.								Steggerda 1941 (p. 222)
					Berries dried for future use.								Lynch 1986 (p. 26)
					Berries boiled with meat.								Steggerda 1941 (p. 222)
					Fruits eaten fresh.								Castetter 1935 (p. 48)
					Fruits eaten as they come off the bush.								Elmore 1944 (p. 60)
					Fruits ground with sugar in a little water and eaten.								Elmore 1944 (p. 60)
					Fruit eaten raw, with sugar, sometimes ground and used with other foods, especially roasted corn.								Vestal 1952 (p. 35)
					Berries ground, mixed with flour and sugar and made into a mush.								Steggerda 1941 (p. 222)
					Fruits cooked into a gruel with corn meal.								Castetter 1935 (p. 48)
					Fruits ground into a meal, cooked with cornmeal and eaten as a gruel.								Elmore 1944 (p. 60)
					Berries ground into a flour.								Lynch 1986 (p. 26)
					Fruits ground into a meal and eaten.								Elmore 1944 (p. 60)
					Twigs used to make a light frame for the bag carried by the Hunchback in the Night Chant.								Elmore 1944 (p. 60)
					Branch, with eagle down attached, carried by the dancers on the last night of the Mountain Chant.								Elmore 1944 (p. 60)
					Pollen used in some ceremonies.								Elmore 1944 (p. 60)
					Wood tied with yucca and used to make circle prayersticks.								Elmore 1944 (p. 60)
					Used to make small hoops on cactus prayerstick of Chiricahua Windway.								Vestal 1952 (p. 35)
					Used to make water bottles.								Elmore 1944 (p. 60)
					Used to make "bugaboos" to subdue insubordinate children.								Elmore 1944 (p. 60)
					Split stems used to make baskets, water bottles and basket sacks.								Vestal 1952 (p. 35)
					Twigs painted white and used to decorate masks for the Fringe Mouths in the Night Chant.								Elmore 1944 (p. 60)
											Small, sharpened stick driven into the reed shaft of an arrow and fastened with sinew.		Elmore 1944 (p. 60)
											Wood used to make bows.		Elmore 1944 (p. 60)
											Large stems used to make bows.		Vestal 1952 (p. 35)
											Used to make sacred baskets to hold sacred meal for rites.		Elmore 1944 (p. 60)
											Six foot stems made into spear shafts used for thrusting in warfare, not thrown or used in		Vestal 1952 (p. 35)
Ribes cereum var. pedicellare	Whisky Currant				Plant used as an Evilway, Nightway and Mountain-top-way emetic.								Wyman and Harris 1951 (p. 26)
					Poultice of plant applied to sores.								Wyman and Harris 1951 (p. 26)
					Plant used as an Evilway, Nightway and Mountain-top-way emetic.								Wyman and Harris 1951 (p. 26)
					Plant used to purify a child who has seen a forbidden sand painting.								Wyman and Harris 1951 (p. 26)
					Fruits eaten for food.								Elmore 1944 (p. 52)
											Wood used to make arrow shafts.		Elmore 1944 (p. 52)
											Stems used to make arrow shafts.		Vestal 1952 (p. 30)
											Green plant indicated time for plowing and leafy plant indicated time to plant maize.		Vestal 1952 (p. 30)
					Wood used to make the distaff used in spinning.								Elmore 1944 (p. 52)
Ribes pinetorum	Orange Gooseberry										Stems used to make arrow shafts.		Vestal 1952 (p. 30)
											Thorns used to make arrow points.		Vestal 1952 (p. 30)
Rosa woodsii var. woodsii	Woods' Rose	Fruits eaten for food.											Elmore 1944 (p. 55)
					Used as a medicine in the Sun's House Chant.								Elmore 1944 (p. 55)
					Stem used to make Holyway big hoop.								Vestal 1952 (p. 31)
					Wood used to make needles for leather work.								Elmore 1944 (p. 55)
Rumex crispus	Curly Dock			Plant used for fainting.									Hocking 1956 (p. 155)
Salix sp.	Willow				Branches used to make permanent carrying baskets.								Elmore 1944 (p. 38)
					Branches used to make a braided strap worn across the forehead to support a water bottle.								Elmore 1944 (p. 38)
					Branches used to make cradle canopies.								Elmore 1944 (p. 38)

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					Sticks used for the Night Chant and Mountain Chant.								Elmore 1944 (p. 38)
					Branches used to make prayersticks, prayerstick foundations and plumed wands.								Elmore 1944 (p. 38)
					Peeled sticks made into the talisman used in the Night Chant.								Elmore 1944 (p. 38)
					Branches used to make or sew water bottles.								Elmore 1944 (p. 38)
											Branches hardened by pounding with a stone and used to make lances.		Elmore 1944 (p. 38)
											Branches used to make arrowshafts.		Elmore 1944 (p. 38)
					Branches made into hoops and used inside the buckskin sack of a bellows.								Elmore 1944 (p. 38)
					Branches made into heddle sticks and used in weaving.								Elmore 1944 (p. 38)
Salsola tragus	Prickly Russian Thistle				Poultice of chewed plants applied to ant, bee and wasp stings.								Elmore 1944 (p. 44)
					Sprouts boiled and eaten with butter or small pieces of mutton fat.								Lynch 1986 (p. 27)
					Roasted seeds used for food.								Hocking 1956 (p. 155)
					Very young, raw sprouts chopped into salads.								Lynch 1986 (p. 27)
Sanvitalia abertii	Albert's Creeping Zinnia				Plant used to increase perspiration.								Elmore 1944 (p. 88)
					Plant chewed for mouth sores.								Elmore 1944 (p. 88)
Sarcobatus vermiculatus	Greasewood				Plant used for insect bites.								Elmore 1944 (p. 97)
					Used as forage by sheep and eaten for the salt.								Elmore 1944 (p. 44)
					"Seeds" (actually fruits) used for food.								Hocking 1956 (p. 155)
					Roots carved into an image of a snake for the Lightning Chant, Beauty Chant and Mountain Chant.								Elmore 1944 (p. 44)
					Stems tied together with buckskin and used for mush stirring sticks.								Vestal 1952 (p. 25)
					Used as firewood.								Elmore 1944 (p. 44)
					Wood used to make planting sticks, knitting needles, heddle sticks, distaff handles used in weaving.								Elmore 1944 (p. 44)
											Wood used to make dice.		Elmore 1944 (p. 44)
											Wood used to make war bows.		Elmore 1944 (p. 44)
Senecio flaccidus var. flaccidus	Threadleaf Groundsel				Poultice of plant applied to boils.								Wyman and Harris 1951 (p. 49)
Senecio spartioides var. multicapitatus	Ragwort Groundsel				Decoction of plants used as a steam bath for sores.								Hocking 1956 (p. 156)
Sisymbrium altissimum	Tall Tumblemustard				Seeds used, with goat's milk, to make a mush.								Elmore 1944 (p. 50)
Solanum elaeagnifolium	Silverleaf Nightshade				Plant used for sore eyes.								Elmore 1944 (p. 75)
					Plant used for nose troubles.								Elmore 1944 (p. 97)
					Plant used for throat troubles.								Elmore 1944 (p. 97)
					Dried or fresh berries added to goat's milk to make it curdle for cheese.								Steggerda 1941 (p. 222)
Solanum jamesii	Wild Potato				Potatoes mixed with white clay to remove the astringent effect on the mouth and eaten like mush.								Steggerda 1941 (p. 221)
					Tubers eaten raw, boiled or baked.								Elmore 1944 (p. 75)
Solanum triflorum	Cutleaf Nightshade										Dried berries soaked in water and planted with watermelon seed to increase productivity.		Vestal 1952 (p. 43)
Solidago velutina	Threeneerve Goldenrod				Plant used as a lotion to bathe an infant hermaphrodite to become sensible.								Wyman and Harris 1951 (p. 50)
Sphaeralcea fendleri	Fendler's Globemallow				Plant used for sand cricket bites.								Wyman and Harris 1951 (p. 32)
					Infusion of plant taken for sore mouth.								Wyman and Harris 1951 (p. 32)
Sporobolus contractus	Spike Dropseed				Seeds used to make bread.								Steggerda 1941 (p. 223)
Sporobolus cryptandrus	Sand Dropseed				Bunch about a foot long, tied with string or yucca fiber, used as a brush for cleaning metates.								Vestal 1952 (p. 17)
					Seeds ground to make dumplings, rolls, griddle cakes and tortillas.								Elmore 1944 (p. 26)
					Used as forage by animals.								Hocking 1956 (p. 163)
Stanleya pinnata	Desert Princesplume				Poultice of plants applied to glandular swellings.								Elmore 1944 (p. 50)
Stephanomeria pauciflora	Brownplume Wirelettuce				Roots used as a narcotic.								Wyman and Harris 1951 (p. 50)
					Used as chewing gum.								Wyman and Harris 1951 (p. 50)
					Used as a paint ingredient for chant arrows used in various ceremonies.								Wyman and Harris 1951 (p. 50)
Suaeda moquinii	Mojave Seablite				Plant used for bleeding bowels.								Wyman and Harris 1951 (p. 21)
					Seeds boiled into a gruel.								Elmore 1944 (p. 45)
Tetradymia canescens	Spineless Horsebrush				Infusion of plant used as bath for (inducing?) menstruation.								Hocking 1956 (p. 156)
					Flowers with two other plants used as a yellow dye for wool.								Vestal 1952 (p. 53)
					Plant ash used for Evilway blackening.								Vestal 1952 (p. 53)
					Cold infusion of plant used as a bath by undertakers to prevent the ghost from following.								Vestal 1952 (p. 53)
					Burning leaf smoke used by undertakers after a burial to prevent the ghost from following.								Vestal 1952 (p. 53)

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source	
<i>Thalictrum fendleri</i>	Fendler's Meadowrue			Used to make tea to drink and bathe in on fifth night after blackening ceremony of War Dance.									Elmore 1944 (p. 48)	
<i>Thelypodium wrightii</i>	Wright's Thelypody		Plant used for swellings.										Elmore 1944 (p. 97)	
			Ashes rubbed on lids for eye disease.										Wyman and Harris 1951 (p. 25)	
			Plant tied to cradle bow to make baby sleep.										Wyman and Harris 1951 (p. 25)	
<i>Townsendia exscapa</i>	Stemless Townsendia			Chewed and spit upon ceremonial knots to unravel them, "untying medicine."									Elmore 1944 (p. 89)	
				Pollen shaken from a horned toad pollen to unraveler string and used in unraveling ceremony.									Vestal 1952 (p. 54)	
<i>Townsendia incana</i>	Hoary Townsendia		Plant used in labor to facilitate delivery of the baby.										Hocking 1956 (p. 156)	
			Plant used to expedite labor.										Wyman and Harris 1951 (p. 50)	
			Plant used as a strong medicine.										Wyman and Harris 1951 (p. 50)	
<i>Townsendia sp.</i>			Plant used to accelerate deliverance.									Elmore 1944 (p. 89)		
<i>Tragia nepetifolia</i>	Catnip Noseburn		Plant used as a lotion to keep snakes away.										Wyman and Harris 1951 (p. 31)	
			Plant sprinkled on hogan during rain storm for protection from lightning.										Wyman and Harris 1951 (p. 31)	
				Plant used as a traditional ceremonial medicine.									Hocking 1956 (p. 163)	
<i>Tribulus terrestris</i>	Puncturevine			Plant used as a traditional ceremonial medicine.								Hocking 1956 (p. 163)		
<i>Verbascum thapsus</i>	Common Mullein			Plants "lighted and smoked for worms in sheep's nose."								Hocking 1956 (p. 156)		
<i>Vicia americana</i>	American Vetch			Plant smoked by horse to increase the horse's endurance.								Wyman and Harris 1951 (p. 29)		
<i>Vitis arizonica</i>	Canyon Grape			Vine used to make a cross & put on top of the basket of cornmeal & paper bread offered in courtship.								Elmore 1944 (p. 62)		
<i>Xanthium strumarium var. canadense</i>	Canada Cockleburr		Plant used to decrease perspiration.										Hocking 1956 (p. 164)	
			Plant used as a liniment for the armpit to remove excessive perspiration.										Elmore 1944 (p. 90)	
			Leaf ash used as ceremonial blackening.										Vestal 1952 (p. 54)	
<i>Yucca baccata</i>	Banana Yucca		Infusion of pulverized leaves taken for vomiting.										Elmore 1944 (p. 32)	
			Plant used for heartburn.										Elmore 1944 (p. 32)	
				Leaves used to make ceremonial and utilitarian baskets.									Vestal 1952 (p. 21)	
				Leaves made into brushes used for cleaning baskets.									Vestal 1952 (p. 21)	
				Leaf slivers made into paint brushes.									Vestal 1952 (p. 21)	
				Leaf fiber made into string or rope and used for temporary or emergency purposes.									Vestal 1952 (p. 21)	
				Fiber used to tie snowshoes to the feet.									Vestal 1952 (p. 21)	
				Leaves made into a ball thrown into the air for archery target practice.									Vestal 1952 (p. 21)	
				Roots made into ball for shinny game, played at night.									Vestal 1952 (p. 21)	
				Pulp made into cakes, dried and stored for winter use.										Bell and Castetter 1941 (p. 20)
				Ripe fruits dried, ground, kneaded into small cakes and slightly roasted.										Castetter 1935 (p. 54)
				Baked or dried fruits ground, made into small cakes and roasted again.										Elmore 1944 (p. 32)
				Fruit boiled in water with or without sugar and eaten as a dessert.										Steggerda 1941 (p. 221)
				Ripe fruit, with seeds removed, boiled down like jam, made into rolls and dried for winter use.										Steggerda 1941 (p. 221)
				Fruits dried and stored for winter use.										Castetter 1935 (p. 54)
				Fruit dried for winter use.										Lynch 1986 (p. 31)
				Fruit dried and carried, when at war, with grass seeds and jerked venison.										Elmore 1944 (p. 32)
				Dried fruit rolls soaked in hot water and eaten with corn mush.										Steggerda 1941 (p. 221)
				Fruits eaten ripe or cooked.										Bell and Castetter 1941 (p. 20)
				Fruit eaten raw or cooked.										Castetter 1935 (p. 54)
				Fruit eaten raw or baked in hot coals.										Lynch 1986 (p. 31)
				Fruit eaten when picked or cooked.										Elmore 1944 (p. 32)
				Ripe fruits dried, ground, kneaded into small cakes and boiled with cornmeal into a mush.										Castetter 1935 (p. 54)
				Dried fruit cakes boiled with cornmeal into a gruel.										Lynch 1986 (p. 31)
				Baked or dried fruits ground, made into cakes, roasted again, mixed with cornmeal & made into gruel.										Elmore 1944 (p. 32)
				Fruit used to make jelly.										Elmore 1944 (p. 32)
				Fruit pulp made into cakes and mixed with water to make a syrup eaten with meat or bread.										Bell and Castetter 1941 (p. 20)
				Dried fruit cakes mixed with water to make a syrup and eaten with meat and bread.										Lynch 1986 (p. 31)
				Dried fruit eaten by warriors at war.										Bell and Castetter 1941 (p. 20)
				Fruit cut in half, dried and stored for winter use.										Elmore 1944 (p. 32)
		Baked or dried fruits ground, made into small cakes, roasted again and stored for winter use.										Elmore 1944 (p. 32)		
				Roots used ceremonially.									Lynch 1986 (p. 31)	
				Leaves used to make ceremonial drumstick.									Vestal 1952 (p. 21)	
				Leaves stuck into snowballs, mixed with red clay and used to stop the snow and rain.									Vestal 1952 (p. 21)	
				Leaf juice mixed with pottery paste.									Vestal 1952 (p. 21)	

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Scientific Name	Common Name	Food	Medicine	Ritual, Ceremony	Construction, Manufacture	Fuel	Economic	Bathing, Cleaning	Clothing	Farming	Weaponry	Other (unspecified)	Source
					Stout leaves used as drumsticks.								Bell and Castetter 1941 (p. 36)
								Roots used to wash hair and garments.					Lynch 1986 (p. 31)
								Root made into soap used for washing wool or clothing, shampooing the hair and bathing the body.					Vestal 1952 (p. 21)
Yucca sp.	Soaproot		Plant considered poisonous.										Elmore 1944 (p. 34)
			Poultice of plants applied to the head for sore throats.										Elmore 1944 (p. 34)
					Fiber used to secure the butts of the first twigs around a small stick at the bottom of the basket.								Elmore 1944 (p. 34)
					Leaf pith braid woven into a basket.								Elmore 1944 (p. 34)
					Pith twisted with mountain grass and used for roofing.								Elmore 1944 (p. 34)
								Fiber used to make knitted leggings.					Elmore 1944 (p. 34)
								Yucca fiber and grass fiber used to make the earliest costume.					Elmore 1944 (p. 34)
												Pith twisted with mountain grass; used to make leggings and shoes.	Elmore 1944 (p. 34)
								Used to make moccasin uppers and dresses.					Elmore 1944 (p. 34)
					Strands used to tie rolled skins into a rabbit skin blanket.								Elmore 1944 (p. 34)
					Fiber used to tie butt and tip of corn husks filled with dough.								Elmore 1944 (p. 34)
					Pith twisted with mountain grass and used to make mats for bedding and blankets.								Elmore 1944 (p. 34)
					Fiber and grass used to make sleeping mats.								Elmore 1944 (p. 34)
			Buds eaten by sheep.										Elmore 1944 (p. 34)
					Fiber used to string cakes baked for Fire God & attached to his right arm on 9th day of Night Chant.								Elmore 1944 (p. 34)
					Leaves used for ceremonial purposes.								Elmore 1944 (p. 32)
					Roots, pollen and leaves used during many different ceremonies.								Elmore 1944 (p. 34)
					Pith used to cover bullroarers for some of the ceremonies.								Elmore 1944 (p. 34)
					Fiber used to string cakes baked for Fire God & attached to his right arm on 9th day of Night Chant.								Elmore 1944 (p. 34)
					Leaf strips intertwined with sprigs of fir and used to make necklaces and wristbands for ceremonies.								Elmore 1944 (p. 34)
					Wood tied to stalk with shallow holes and used at the hearth to hold a fireset.								Elmore 1944 (p. 34)
												Leaves used to make bracelets worn by scouts.	Elmore 1944 (p. 34)
					Folded leaves used as drumsticks to beat basket drums.								Elmore 1944 (p. 34)
					Leaf juice mixed with powders and applied to shields.								Elmore 1944 (p. 34)
								Used for cleansing purposes.					Elmore 1944 (p. 32)
								Roots used to wash wool and hides.					Elmore 1944 (p. 34)
								Suds and ashes used to wash new born babies.					Elmore 1944 (p. 34)
								Used to make a brush to apply colored clays to pottery.					Elmore 1944 (p. 34)
												Leaves made into a ball and used to play "shooting the yucca."	Elmore 1944 (p. 34)
												Fiber used to make ring for game similar to "ring toss."	Elmore 1944 (p. 34)
					Leaf pith used for waterproofing baskets.								Elmore 1944 (p. 34)
Zinnia grandiflora	Rocky Mountain Zinnia		Plant used for nose troubles.										Elmore 1944 (p. 97)
			Plant used for throat troubles.										Elmore 1944 (p. 97)

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