SALMON RUINS MUSEUM AND RESEARCH LIBRARY

PUEBLO RUIN
HERITAGE PARK
PIONEER HOMESTEAD
MUSEUM AND RESEARCH LIBRARY

TRAIL GUIDE

SAN JUAN COUNTY MUSEUM ASSOCIATION
PRESERVATION THROUGH STEWARDSHIP— SINCE 1964

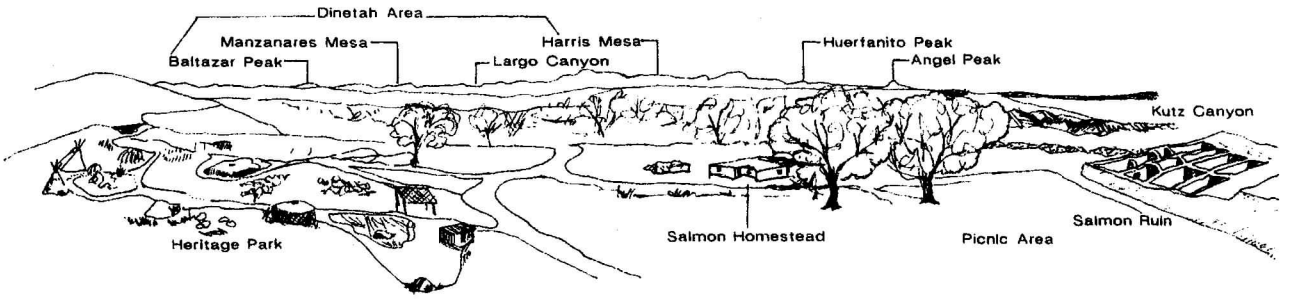
SALMON RUINS . . .

HISTORY AT A GLANCE

The story of human occupation at this San Juan River location spans over nine hundred years. It begins with the 11th century expansion of Chaco Culture into the Middle San Juan region, and extends through today.

- **The earliest known occupants were the Ancestral Puebloans, a culture that flourished in this region until A.D. 1300.**
- **Salmon Pueblo was occupied and changed inhabitants twice over a period of approximately two hundred years. It was permanently abandoned around 1265.**
- **The site was apparently ignored by subsequent Spanish explorers and Athabaskan speaking settlers who moved into the general region.**
- **In 1874, Timothy O'Sullivan photographed the site, providing the first photographic documentation of the Great House.**
- **In 1877, Peter Milton Salmon homesteaded an adjacent parcel and his son, George, later founded his homestead on the land which included the pueblo ruins.**
- **The ruins passed from the Salmon descendents to Charles Dustin. Dustin sold the land to the San Juan County Museum Association in 1969.**
- **The San Juan County Museum Association contacted Dr. Cynthia-Irwin-Williams, who later directed the excavation of the ruin between 1972 to 1978.**
- **The San Juan County Archaeological Research Center and Library at Salmon Ruins opened to the public in 1973.**
- **Heritage Park was built in 1990 to commemorate the lifeways of the region's diverse cultures.**
- **Today, there is much to explore at Salmon— enjoy your tour!!**

- *The Site.* An 11th century outlier of Chaco Canyon, this pueblo was three stories tall and may have contained up to 350 rooms.
- *The Pioneer Homestead Complex.* The Salmon Homestead also includes a bunk house, root cellar, and the carriage house. It is open by appointment only.
- *The Museum.* Permanent exhibits include artifacts from excavations, while other temporary exhibits highlight collections or educational goals.
- *The Library.* Accessions include over 18,000 items and numerous special collections
- *The Gift Shop.* Proceeds from the sale of handcrafted items support the operation of Salmon Ruins.
- *Heritage Park.* A walking tour of reconstructed habitats, these interactive replicas represent architectural styles through time. Ample picnic space is available in the park for your use.
- *Division of Conservation Archaeology.* This consulting firm provides archaeological services, providing operating funds for the Museum.



BEGINNING YOUR WALKING TOUR

You may begin your tour in one of two ways:

- ***You can walk using the asphalt path.*** The path leaves the museum observation deck and leads to Heritage Park and the trail to Salmon Ruins. Please note that the path is steep and use caution.
- ***You can drive and park near trails.*** A driveway leaves the west side of the parking lot, leading to a lower parking area. This parking area is centrally located only a short distance from trails leading to the Homestead, Heritage Park, and the Ruins.

The Trail Guide begins with a discussion of the Salmon Ruins, but you are free to explore the grounds in any order you wish. Enjoy your tour!!

From the Observation Deck

An Overview of Human Occupation in the San Juan River Valley

From here you have a panoramic view of the fertile San Juan River Valley of New Mexico which has supported human populations for thousands of years. You are on a terrace that was formed by the San Juan River about 40,000 years ago during the Pleistocene Epoch. Stone lance tips found in sand dunes across the San Juan River attest to the presence of Paleoindians, hunters of now extinct game. Archaic hunters and gatherers continued this nomadic life style pursuing deer, elk, and small game as well as collecting a variety of wild plants.

Two thousand years ago, the pithouse-dwelling *Basketmakers* lived in the area practicing limited agriculture and hunting. Increased reliance on farming stimulated a sedentary lifestyle and the emergence of Pueblo culture as archaeologists define it today. Colonists from Chaco Canyon directed the primary building of Salmon Pueblo between the years A.D. 1088 and 1094. The area was abandoned by the prehistoric Puebloan inhabitants around A.D. 1300.

The Navajo Indians began to occupy the area sometime before the 1500s. The Weeminuche Utes and Jicarilla Apaches called this land their own for a time long after the Puebloans had ceased to occupy it. Shortly thereafter, in the 1870's, Hispanic and Anglo farmers began to claim the arable land of the valley for their own.

Seen directly to the east are some of the land formations associated with the *Dinétah* area, or Navajo Ancestral Homeland. To the southeast, Angel Peak marks a modern day recreation area and the location of another Chacoan ruin, Twin Angels.

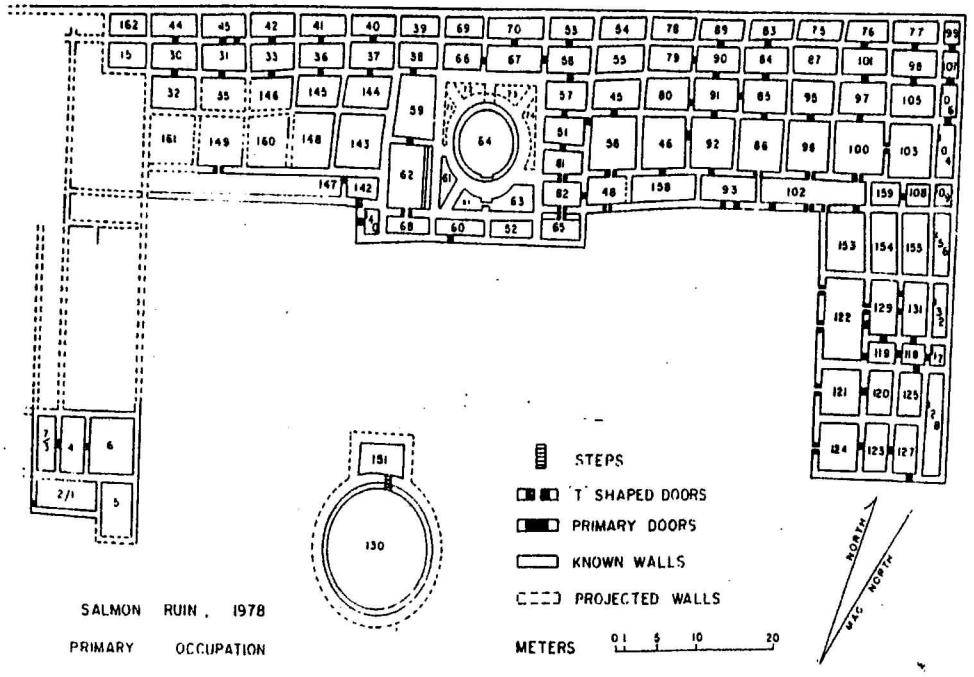
And now... on to the Ruins!!

SALMON RUINS

The Salmon Pueblo lies on the north bank of the San Juan River and appears to have two distinct building components: an early section of the east wing built between A. D. 1068-1072, and major construction of the site occurred between A.D. 1088-1090. The structure contained 150 rooms on the ground floor, 67 rooms on the second, and an unknown number of rooms on the third. It featured a central tower kiva and a great kiva in the plaza. Extensive architectural modification is evident during the Secondary Occupation (after A.D. 1160), as seen in blocked doorways and numerous round rooms (kivas) built within original square rooms. It is estimated that between 200 and 300 people lived at the pueblo.

Expanding our view to a 4 by 4 square mile area around the Salmon Pueblo, we find a total of 28 potentially contemporaneous sites, a low number in comparison to other communities of the time. This possibly indicates that Salmon was large enough to accommodate an extensive local community (so that the need for surrounding sites was not great), or, it may indicate that the Chacoan community at Salmon was so short-lived (relative to other sites) that there was not sufficient time or need to construct an extended community.

At the time of its construction, the Salmon pueblo was the largest Chacoan outlier. With the Chacoans gone from Salmon, the site was later re-occupied and continued as the largest pueblo on the San Juan River until its final abandonment in the late 13th Century.



Please...

- ***Please do not pick up any artifacts*** you may find on the ground. Collecting artifacts is illegal and minimizes what we may learn from the artifact and its location.
- ***Please do not lean against, pick at, or otherwise disturb the structures.*** Even small surface disturbances effect the deterioration of walls. Help us to preserve this architecture by minimizing visitor impact.
- ***Please do not let dogs run on the site.*** Small dogs may be carried onto the site.
- ***Keep a close eye on children.*** Please do not let children climb on the structures or go too near the ropes on the site. Room floors appear to be close, but most are at least 15' deep. Have an enjoyable, but safe, tour.

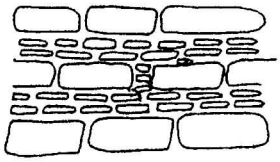
Thank You!

MARKER 1—THE NORTHEAST CORNER OF THE PUEBLO

You are standing at the northeastern corner of the Pueblo. The back wall is 120 meters (394 feet) in length and was three stories high. The exterior eastern wall was approximately 50 meters (164 feet) long and the western exterior wall was approximately 56 meters (183 feet) long. Current research suggests that the pueblo's back wall was laid out in alignment with astronomical observations that were based on a Lunar Standstill.

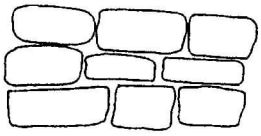
The construction of the wall represents a hallmark of Chacoan wall construction: core and veneer masonry. Using sandstone that was specifically cut to fit, masons used construction methods unique to their culture and exercised great skill at their craft.

The location known to be the source for the majority of stone materials for Salmon is a quarry about three miles north of the site. Exactly where the timbers used to build were harvested is uncertain, but it likely they were procured the Chuska or the La Plata Mountains, nearly 50 miles away. It is possible that the beams were floated down-river, but, more likely, they were carried by hand to the site.



Chaco style veneer masonry

Core and veneer wall and supporting foundation



Mesa Verde style veneer, also called McElmo style masonry

MARKER 2—ROOM 128

Unusually long and narrow, archaeologists nicknamed this room the "Bowling Alley." Its northern dividing wall seems to extend even beyond the limits of the present excavation.

The skeletal remains of a four-to-eight month old infant were found in this room. The child was enclosed in matting and buried with a decorated pitcher. In the Ancestral Puebloan world, burials were not restricted to an area that would act as an equivalent to a modern-day cemetery. In the course of excavation of communities and dwellings, it is commonplace to find a few human burials in rooms and in middens, or trash heaps. Archaeologists infer no signs of disrespect in this practice; there may have been both practical and spiritual reasons for choosing areas close to habitation for interment.

It is not clear what function the Chacoan builders had in mind for this room. Excavators found numerous turkey bones and turkey egg shell fragments, which lends credibility to the theory that the room was eventually used as a turkey pen.

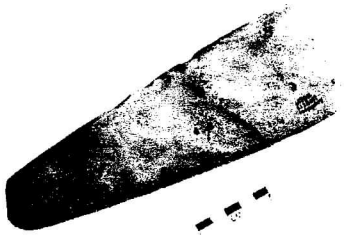
MARKER 3—ROOM 127

An example of a common architectural modification which took place at Salmon—the conversion of a square room into a round room (or kiva) is seen in this room. Kivas, usually interpreted as ceremonial rooms, were probably also secular in nature. Placement of a kiva in preexisting square rooms is typical of the Northern San Juan style of construction and thus dates to a post-Chacoan, or Secondary, occupation of the room.

Continued next page...

MARKER 3—CONTINUED

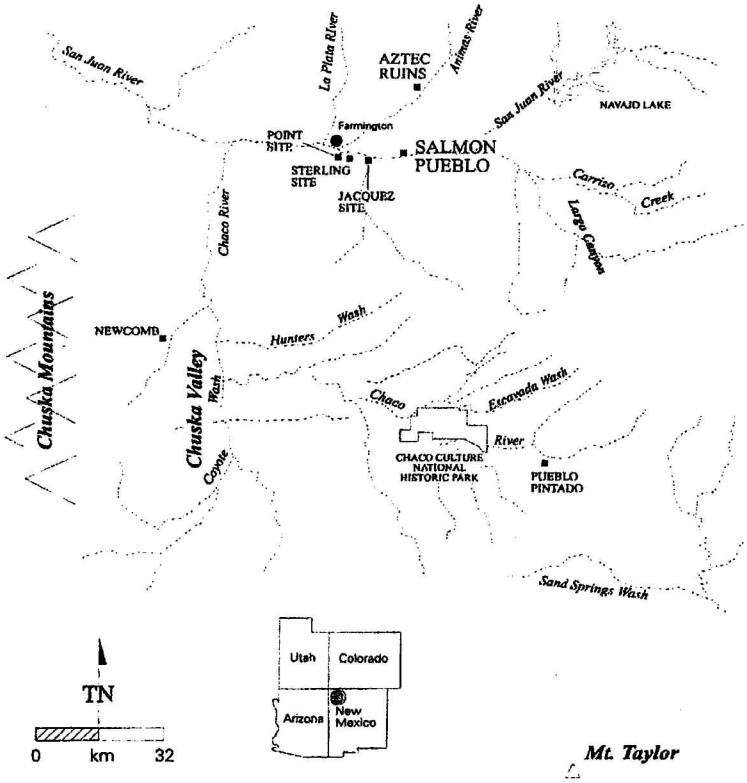
This, too, was a burial site. A number of artifacts were found on the floor, including: six manos, a tchamajilla (aceremonial hoe, pronounced *cha-ma-hee-ah*), the remains of several large corrugated pots, an excellent textile fragment, and the remains of a gruel composed of corn flour and the seeds of a now extinct species of tumbleweed. The gruel was thickly spread over the floor in the southern part of the room.



Ceremonial tchamajilla found at Salmon Pueblo

MARKER 4—ROOM 123

Excavators think this room was used as a living area by the Chacoans because they found no evidence of work tools or ceremonial items on the original floor. Inhabitants during the secondary occupation erected a dividing wall and most likely used this area for trash.



How Close Are We To Chaco Canyon?

Chaco Canyon is located 45 miles to the south and east of its Salmon Pueblo outlier and is a modern road trip of nearly 70 miles, or about one and a half hours. Weather conditions can be quite different at the Canyon than at Salmon (the elevation is nearly 1,000 feet higher), so we suggest calling and planning ahead—the elevation and sun can be brutal!

(Chaco Canyon: 505-786-7014)

Marker 5—Room 124

The large square room was originally constructed by the Chacoan builders and later modified into a kiva. Excavation showed that the Secondary Occupation dwellers may have used the room as it was originally designed for some time before remodeling it. Access to the kiva was through a hole in the center of the roof, which also functioned as a smoke-hole.

This room is called the "Dotted Kiva" because painted white dots encircled one niche and passed over another on the left-hand side of the wall. A corrugated storage jar, which contained a mano and was placed on cedar ....

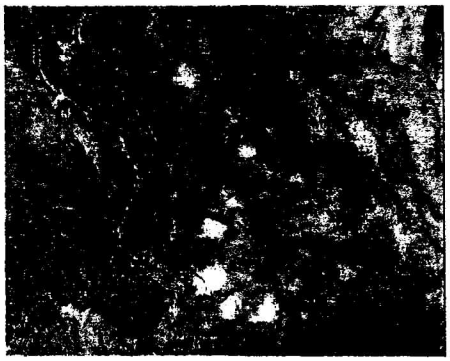
(Continued next page)

MARKER 5– CONTINUED

matting, was sunk to its lip in the floor in the northwest corner.

Sometime after using the kiva, the occupants removed nearly all of the artifacts except for one bone awl. A small amount of debris accumulated on the floor before the overhead roof burned and small chunks of beams and adobe fell into the room. Since scarcely any trash was on top of the burned roof, it is speculated that not much time elapsed before the pueblo was abandoned.

As you look toward the west, you can see the open plaza area which would have been the center of outdoor activity during the pueblo's occupation. The prehistoric surface of the plaza is located approximately one meter below the current surface. As you continue on your tour, veer right on the path.



Dotted Kiva pictograph

MARKER 6—ROOM 121

This kiva, which dates to the Secondary Occupation, contained interesting pictographs of two sets of figures: an abstract hook design and a man with a reverse curve bow were painted in white on the red wall. Archaeologists removed the fragile plaster when it began to deteriorate rapidly after being exposed to air. Miniature pottery, a seed jar, and a ladle were among the artifacts recovered from this room. The logs which are visible in the pilasters are the original timbers. The pilasters served as support for the corbelled roof

MARKER 7—ROOM 129

This large, rectangular room was unique because of the number of small Primary and Secondary trash mounds contained within it. One of the most complex rooms in the Salmon site, it was also one of the most unstable. As a stabilization measure, the room was backfilled in 1985 to protect both the architecture and visitors.

Stabilization of a prehistoric wall can sometimes be achieved by other means than backfilling. If the wall is sturdy enough, a crew may be able to repoint the mortar joints and replace some fallen stones. The current philosophy regarding ruin stabilization is not to reconstruct any section of a ruin, but rather to replace only those parts which will provide structural integrity to a wall, such as mortar and spalls. If exposed, continuous maintenance will be required to keep 900-year old walls in good repair.

As you proceed to Marker 8, you will be walking across mapped, but unexcavated, portions of the ruins. The rebar seen protruding from the ground at various places throughout the ruins are markers for excavational provenience. Please, watch your step.

Macaw

MARKER 8—ROOM 100

This room is part of a series of large, square, ceremonial rooms forming the original front row of rooms which bordered the plaza. This room contained three doorways, controlling access to the adjoining room blocks. Two of the doorways were T-shaped, a characteristic Ancestral Puebloan design. A wall niche excavated on the west wall contained a large quantity of seeds. Trash found in this room indicated that the Post-Chacoan occupants probably did not live in this room.

MARKER 9—ROOM 98

The original function of this room was not at first clear to excavators, but it was finally determined to be a food processing area. The remains of a macaw, a tropical bird traded from Mexico, were found here. Before the Chacoans left, the room was converted to a trash area. During the Secondary Occupation, the room was subdivided and reoccupied. Fire destroyed the roof at some point during this occupation. Pieces of the roof and wall rubble continued to fall into the room well after the the pueblo was abandoned.

Directly to the north are two excavated rooms, which are the lower rooms of a two-story area of the ruin. The Chacoans apparently used the lower rooms for storage, but later inhabitants used only the upper story rooms. Wall sockets indicate that the roof was built from large vigas (wooden cross beams) which spanned the structure north to south, and were then crossed by latillas (smaller wooden cross beams) in seven groups of three poles. Wooden slats covered the latillas and were plastered with layers of clay and shredded bark.

MARKER 10—GALLERY ROOMS AND ROOM 96

Looking west from this point, you see two series of Chacoan rooms which stretched across the front of the ruins to form a plaza-facing, open-air gallery. The gallery was constructed from A.D. 1094-1104 and later subdivided into several individual rooms. The map of this area bears some resemblance to similar galleries seen at Pueblo del Arroyo and Chetro Ketl in Chaco Canyon. In the northwest corner of the room is an adobe-covered cobblestone ventilator built for a kiva in the room just north of it.

Please watch your step as you descend the staircase into the gallery room and then into the kiva. The room was originally constructed between A.D. 1089 and 1090, but in A.D. 1116, it was modified for use as a kiva. Because this type of architectural modification is more in keeping with a local or upper San Juan Ancestral Puebloan style, new research suggests the dispersion of the original Chacoan population may have happened some 15 years earlier than once thought.

The pueblo was one story high in this area. As you walk back into the rectangular room, notice the niches in the room walls. These may have been used for ceremonial offerings or for storage.

As you retrace your steps to continue along the path, you will pass a secondary kiva built out into the plaza area. The white markings you see on the walls are modern "artifacts of stabilization." Archaeologists, interested in finding a means of mimicking the original plaster, marked the stone to differentiate the various mixtures.

MARKER 17—ROOM 64: THE TOWER KIVA

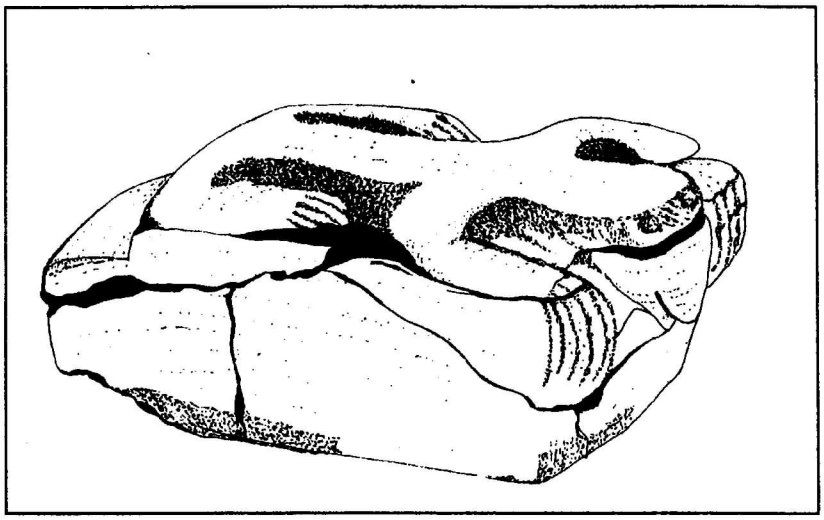
The Tower Kiva, a highly important feature in pueblo life, is unique in that the builders planned an innovative support system for the high structure: cobblestone foundations were used to raise the kiva to its four-meter height and to support the tremendous weight of its two meter thick walls. Six masonry and log buttresses were also used to support the weight of the structure.

It is believed that community leaders were in charge of the ceremonies conducted inside the kivas. Rites in kivas probably required both participants and audience, and may have varied from high religious occasions to social get-togethers. Social secrets may have been passed through the generations via oral traditions. These procedures and stories needed to be learned for the ceremonies to be effective.

Food and ceremonial items, including an important fetish, named by researchers as the *Lizard Woman Effigy*, were found by excavators in the kiva. This fetish is now on display in the Salmon Ruins Museum.

Towards the end of the secondary occupation of the pueblo, there was a devastating and lethal fire that destroyed this kiva. The roof of the structure collapsed as temperatures reached levels hot enough to fuse sand into glass.

The remains of twenty individuals were found in the Kiva: sixteen children and four adults. Current research and reanalysis of the remains indicate that, while there was an initial fire and loss of life at the time of the kiva fire, that there was also a second, ritual burning of the remainder of the kiva. This closely timed event is consistent with events seen at other Ancestral Puebloan sites: kivas are often ritually burned as the pueblo is abandoned.



MARKER 18— ROOMS 33, 36 AND 37

During the secondary occupation of the site, the occupants not only remodeled but redecorated the room to your right, Room 37. The floor and one wall of the room were painted red. The floor was removed in order to reach the lower levels occupied by the Chacoans.

Room 36, directly in front of you, was excavated in order to relieve pressure placed on walls by the earth that filled the ruins. A large amount of trash filled the room and appeared to have been deposited at a rapid rate from several directions. It is possible that burials found here were placed in trash mounds during the winter because they were less compact than the frozen ground. In the back corner of the room, on the right, were a concentration of pounding and polishing tools, a mano, and an axe.

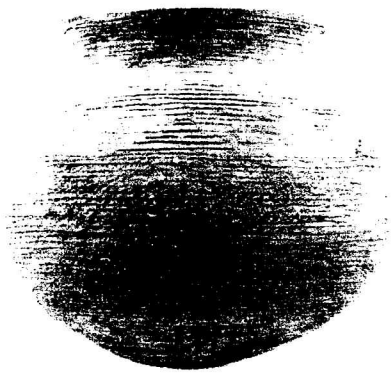
Excavation of Room 33, to your left, was stopped in 1973 when, after a heavy rain, the east wall of the kiva suddenly shifted. Removal of the earth in the space between the kiva and the original Chaco wall was necessary in order to safely continue excavation.

Finally, the discovery of a triple burial and numerous burial offerings were found in this room. Two adults and a child were found with two bows, five arrows, a ladle, a jar and four bowls, indicating a high status burial.

MARKER 19—ROOMS 30 AND 31

Artifacts found in Room 31 indicate that it was used by the Chacoans for tool making. The secondary occupation inhabitants later subdivided the room, using the left-hand side for corn storage and the right-hand side for corn grinding.

This room burned when fire raged through the west wing. The room on your left (Room 30) was allocated for storage of great quantities of corn, but the surplus was lost during a fire.



MARKER 20—THE WEST WING AND ROOM 6

The west wing of Salmon Ruins is largely unexcavated, yet appears to be structured very much like the east wing. The rooms seen at the southern tip of the west wing were among the first on the site to be excavated. A pit containing thousands of burned corn cobs was also found in this area. Chacoan specialists appear to have possessed advanced knowledge of general agriculture—and of corn in particular. Botanical studies of the found corn tell us that the Chacoan corn was notably larger, more uniform, and had more rows of kernels per ear, indicating an advancement in methods and selection.

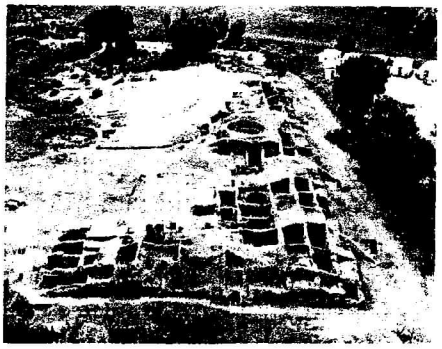
The floor of the kiva in Room 6 reveals one of the clearest divisions between the primary and secondary occupations seen at the ruin. A milling bin lined with angular rocks is seen on the left hand side of the room, while the room later served as a trash depository for a short time. No roof beams were found in this section, so it is assumed that they were removed from the kiva and used at another place in the pueblo.

MARKER 21—ROOM 5

The kiva in this room dates to the secondary occupation, but the room itself is of Chacoan design. Archaeologists found metates and manos in this room. Note the ventilator opening to the south of the kiva.

Intact pottery vessels recovered from Salmon Ruins

MARKER 22—THE GREAT KIVA



The Salmon Great Kiva is one of the two original ceremonial chambers built by the Chacoans. This semi-subterranean structure is encircled by a bench, has foundations for roof support posts, a central firepit, a ventilator shaft for fresh air, and a sipapu, a small hole in the floor symbolizing the entrance to the spirit world below. At the north end is an antechamber, possibly used for storage or ceremonies. At the southern end of the kiva, stone steps leading from the antechamber to the kiva are found.

When seen from a bird's eye view, ones notices that the placement of the Great Kiva is not central in the plaza area. When viewed in relation to the Tower Kiva, however, one finds a remarkable connection: the two kivas are placed on a north/south axis.

The Question of Abandonment at Salmon Ruins

A complex and debated issue, the abandonment of prehistoric sites such as Salmon Pueblo remains one of the greatest unanswered questions in Southwestern archaeology. In the last few years, new research suggests that the Chacoan, or Primary Occupation, period could have been as short as 25-30 years, with varied and complex reasons for abandonment . Later, in the 13th century, the site experienced another kind of abandonment by the Secondary Occupation, reflecting a regional out-migration of the entire population of the Four Corners area.

The significant Chacoan investment of labor and resources involved and the socio-political organization in the construction of the pueblo are both significant pieces of the Salmon abandonment puzzle; such that one may wonder why people who had invested so much would choose to leave it. Two fundamental explanations may be offered for the abandonment: 1) that environmental factors such as drought, resource depletion, or other stress to the environment worked together to make the region inhospitable to occupation; or 2) that cultural factors—including political instability, disease, increased violence, or disruption of trade networks—caused the Chacoans to locate elsewhere. The Chacoan abandonment of Salmon undoubtedly occurred due to a combination of these cultural and environmental factors, while the Secondary abandonment was likely a result of the fire and events occurring in the Tower Kiva.

Heritage Park

Diverse architecture, which represents human occupation of the San Juan Valley over the last 10,000 years, is seen in Heritage Park. Designed to commemorate the contributions of all cultures that have lived here and to demonstrate the continuity and progression of their lives, the architecture starts with the most recent occupation. This guide is presented in reverse chronological order.

Salmon Homestead

This homestead house was built by George P. Salmon around 1900, after George's father, Peter Milton Salmon, had, in 1877, claimed property adjacent to this plot after the area was opened to homesteaders. Peter's two-story home, which burned many years ago, stood west of this house. A painting of the two-story structure, donated by Salmon descendent, Ina May may be seen in the Salmon Ruins Library.

George's four-room house displays a different type of construction than the usual homestead log cabin: it was built with the materials available, such as juniper posts, adobe mud, and stones taken from the ruins. Hewn logs were placed in an upright position and plastered together with mud, a process sometimes called *stake and plaster*, or *jacal*, construction, a building technique similar to that used in the Southwest for at least 1,000 years. Made of cottonwood poles covered with cedar bark, plaster, and loose dirt which hardened quickly in the hot New Mexico sun, the roof worked well in dry weather, but often leaked in wet weather. In addition to the house, the Salmon family built a bunk house, corral, root cellar, and dug a cistern. The remains of a sod carriage house stand to the northeast of the house, while an ore wagon is found outside the Homestead representing the mining activities that brought many settlers from Colorado.

In the late 1800s, an irrigation ditch ran in front of the Salmon homestead. Remnants of the original Bloomfield Ditch may be seen in the trees near the visitor's parking area. A small orchard of apples, pears and apricots is on your right as you walk down the path to the Salmon Pueblo. At one time .... *Continued next page...*

the San Juan Valley was renowned for its abundance and variety of fruit. Hundreds of large orchards dotted the countryside, but most of these orchards were sacrificed to make room for housing development in the oil and gas boom days of the 1950s.

Trading Post

After the Navajo returned from Bosque Redondo in 1868 (after the *Navajo Long Walk*), trading posts began to appear on the reservation. The trading post was the primary contact between the Anglos and the Native Americans as traders exchanged merchandise and food for rugs, jewelry, and other crafts.

Some of the first items traded for by the Navajo were salt, sugar, coffee, vegetables, clothing, and kerosene, using a pawn system developed by the trade post operators. Typically, the front door opened into an area known as the bullpen, where people congregated to trade. A wooden plank counter separated shelved goods from the customers. This counter was high and sloped to prevent customers from reaching across and accessing the stock. This barrier also provided a place for the trader to duck down behind should shooting start. Trading posts carried everything from coal oil lamps and cookware, to baby oil, clothing, candy, blankets and tack.

After the Anglo and Hispanic homesteaders left, many of their buildings were used for storage . The homestead buildings began to disappear as San Juan County changed from an agricultural to an oil and gas industry-based economy, making the Salmon Family homestead one of the few left in the region.

Navajo Dwellings

Navajo tradition says that the Chaco Canyon pueblos were still inhabited when the Diné arrived in this area. Archaeological data does not support this, however it may be that the Navajo acquired a knowledge of agriculture from other Puebloan people. After the Pueblo Revolt against the Spanish in 1680, some Puebloans fled to the canyons of Gobernador and Largo, otherwise known as the *Dinétah* (the Navajo Ancestral Homeland).

During this period, the Navajo adopted some elements of Pueblo culture, including mortared masonry construction. The Navajo began to build fortified, multi-roomed dwellings in remote defensible locations in response to raiding by Ute, Comanche, and Spanish aggressors. These defensive masonry structures are called "pueblitos," or little pueblos, and are found throughout the Dinétah.

By the late 1700s, the Navajo began moving southwest from the Dinétah to their present location. This relocation was due to several factors, including increased herds and steady pressure from the Ute.

Ramada. You are passing by a ramada, which houses manos and metates used for elementary school corn grinding demonstrations. The mano is the hand stone used to grind corn and other grains placed in the metate and is used in a back and forth motion. The metate is the stone slab or trough on which corn and other grains are ground.

Sweat Lodge, Horno and Wagon. This small, adobe-covered, cone-shaped building replicates a sweat lodge. Hot rocks are brought into the lodge and cold water is thrown on them to create steam. Participants often burn sagebrush in ceremony or to add a wonderful aroma to the purifying environment. In the past, men used the lodges to cleanse themselves after battle, fight off illnesses, socialize, or to instruct younger men. Women used their own lodges in much the same way. Some Navajos continue to use sweat lodges as places that offer spiritual and physical renewal.

The horno, a beehive-shaped structure, is an outdoor oven, or used to bake bread and other foods.

Wagons, such as the one alongside the hogan, were used as late as the 1940s for work and daily transport needs. They have since been replaced by pickup trucks.

Female Hogan. Octagonal in shape, the Hogan represents the Historic period (1863 to present), and is a housing style still in use today.

The Navajo acquired steel axes from the Spanish, which enabled them to build large, upright beam hogans up to 50 feet in diameter. The logs, selected from living trees, were placed upright in a trench to form the walls, which are then plastered. Logs from wind-felled or lightning-struck trees were never used, nor were timbers taken from prehistoric ruins. The technique for the corbelled roof, however, was borrowed from the Ancestral Puebloans, who constructed their kiva roofs this way. Juniper bark and mud filled the cracks.

The single doorway of a hogan is always oriented to the east in order to catch the blessing of the sun's first rays. A blanket or canvas cover is used as a door cover. Custom dictates that upon entering the hogan, one walks clockwise with men sitting to the south, or left side, while women continue to the right, or north side, where the loom is erected and kitchen supplies and utensils are maintained. The place of honor is at the rear center of the hogan.

Rock Art Representations. Many tribes have painted and pecked stories and pictures of deities, animals, and humans on the

sheer sandstone cliffs of the Four Corners region. Designs pecked into rock are called *petroglyphs,* while designs painted onto rock are called *pictographs*. The meaning and function of the imagery are uncertain, but it is believed that many are artistic representations of maps, ceremony, or tradition as interpreted by the artist. Authentic rock art is sacred and extremely fragile, so please, never touch the images.

Male Hogan. Conical and having an antechamber, this structure represents the Gobernador/Pueblito time period. The stucco used on the outside of the hogan is a modern preservation method. The original hogan was more likely thatched and mud plastered. This type of conical hogan later became known to the Navajo people as a "male" hogan. It is not traditionally found near the female hogan because of the type of ceremonies conducted here.

Jicarilla Apache Dwellings

The Jicarilla Apache, like the Navajo, are an Athabaskan group that reached the southern limit of present-day Colorado by the sixteenth century. Between 1872 and 1874, the U.S. Government designated a Jicarilla Apache reservation which encompassed present-day San Juan County and this park. Later, in 1877, and after numerous relocations, the U.S. Government moved the Jicarilla Apache to the present reservation at Dulce, New Mexico.

Living in and visiting a tipi required a certain etiquette. If a tipi door flap was open, all were welcome to come in. If the door flap was closed, a visitor was expected to cough or call out and wait to be invited inside. If the door was tied down and two sticks crossed over the entrance, the occupants either did not want to be disturbed or were not home.

Wickiup. A common dwelling used by the early Jicarilla Apache was a dome-shaped, wood-frame wickiup covered with a thatching made of leaves or bark. An example of this type of structure is seen as you follow the path from the tipis to ward the pithouse. The Jicarilla Apache's hunting and gathering lifestyle reflected traits adopted from the Plains Indians, including the use of tipis, bows and arrows, and the travois.

Weeminuche Ute Dwellings

The Ute came to the Southwest between A.D. 1200-1400. Ute oral tradition says their people have lived in the area since time began. Culturally, the Ute are closely related to the Plains Indians.

The earliest Ute people roamed on foot in small bands of five to ten people. The women built wickiups of willow and juniper, which were then covered with branches and grass. As a permanent shelter, the wickiup was covered with hides and earth.

The early Utes were a seminomadic people who followed game animals during their seasonal migrations. As they traveled, large dogs pulled travois's. When the Utes acquired horses, they adopted the use of the tipi from the Plains Indians.

Women erected the tipis in a ring formation. Originally, animal hides were sewn together to cover the frame, but by the 1890s the fur trade and railroad camps contributed to a shortage of the elk and buffalo hides that were normally used as tipi covers. At the same time, the U.S. Government forced the Utes from their land onto reservations in order to homestead and mine the land. It was during this time that the government began supplying the canvas and thread that was used for tipi covers.

The Weeminuche Utes lived in this area for a time, but in 1895, chose to move to the western end of their reservation. The tribe eventually became what is now known as the Ute Mountain Tribe, with their headquarters located at Towaoc, Colorado.

Pueblo

An archaeological classification describing the last phase of Ancestral Puebloan cultural development and a multi-tiered, square type of architecture.

The Pueblo I phase of Ancestral Puebloan culture dates between A.D. 700 and 900. This period is marked by a distinct shift from subterranean dwellings to surface dwellings made of masonry walls. Underground structures became more and more specialized, serving both secular and sacred functions.

Large, multi-storied towns were constructed south of here in Chaco Canyon. The people became expert engineers, architects, and agriculturists. A trade network was developed that stretched across the northern Southwest and numerous outliers, such as Salmon and Aztec Ruins, served as religious, trade and social centers.

A complex system of foot roads connected Chaco Canyon to this extensive outlier system. These roads were generally straight and measured up to 30 feet wide. Small outliers, or satellite communities, were situated at intervals along the roads. The Chacoans did not have the wheel or use domesticated animals for labor, therefore, some archaeologists maintain that the Chacoan road system was ceremonial in nature, having been constructed as a manifestation of their sacred landscape.

Waffle Garden. The Puebloan people employed a number of strategies to irrigate their crops. Plotting a garden in a grid, or waffle pattern, is one method of conserving water. Gardening tools include a digging stick, dibble, and hoe. Examples of these tools may be found in the Salmon Ruins Museum.

Basketmaker

An archaeological classification describing the earliest phase of Ancestral Puebloan cultural development and subterranean architecture.

The introduction of cultivated food crops to augment wild resources began a new, more sedentary way of life for the people of the Southwest. This phase dates from 600 B.C. to A.D. 700. Farmers developed new kinds of tools and ceramic containers to meet new needs and began to build subterranean pithouses, clustering the structures in villages.

Basketmaker Pithouse. Pithouses were very efficient, conserving heat in the winter and remaining cool in the summer. The entrance to this pithouse is gained through an antechamber, a common feature of the earlier structures. Later, the antechambers were converted into ventilators and the passages became above-floor tunnels. It is assumed that rooftop entries to pit structures came into use after that time.

Inside, at the foot of the steps, you will see a suggestion of wing walls which may have served to partition work from living areas. In some pithouses, these partitions were so tall that breaks in the walls were needed for passageways.

The pithouse had a central fire pit for cooking and for warmth in the winter. A flat upright stone, called a deflector, usually was positioned between the doorway and the fire to block gusts of wind. Notice the manos and metates near the entrance for corn grinding. An earthen bench-like feature is built around the main room. It may have been used for storage or possibly for sleeping.

As you return outside, follow the path to the rear of the pithouse to see examples of storage pits, called cists, used for storing surplus food. The pits flared into a bell shape underground, but the openings were narrow and easy to seal with a stone slab. After the pits were excavated with a digging stick, they were burned to form a hardened wall seal and to kill any insects that may have lingered in the soil. Women parched the corn and seeds before storage, removing the moisture and thus making rot less likely.

Some of the cooking was done in pitch-lined, water-tight baskets. Food and water were placed in a basket and hot stones were dropped inside to boil the water and cook the food.

Archaic

The residents of the Archaic Period were nomadic hunter-gatherers who were without permanent architecture and lived in small groups, using rockshelters and campsites across the terrain. The development of people from this phase does not generally include the production or use of ceramics, but lithic technology was available, shared, and widely used.

As you walk the path from the pithouse to the Paleoindian pond, you will find a stabilized sand dune near the path. This dune represents the developing nature of the Archaic Phase people and the extreme conditions of their existence.

Paleoindian

Paleoindians, the earliest Americans, were people of Asian origin. Their ancestors reached this continent by crossing the Bering Strait from Siberia to Alaska when the sea was frozen by glaciations, exposing a land bridge. The climate here was colder and wetter than it is today. Many large animals, such as mammoths, camels, giant sloths, and large forms of bison roamed the northern Southwest. Paleoindians hunted these large animals, leaving their campsites and kill locations as they moved on in pursuit of more game. Now, as winds erode and shift the sand dunes, the ancient camps are sometimes uncovered. Paleoindian butchering tools and distinctive projectile points provide evidence of the lives of ancient people in modern-day San Juan County.

The Flora of Salmon Ruins

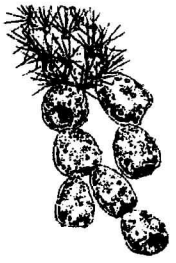
Some of the more common plants in the Four Corners area can be found growing on the grounds of the Salmon Ruins Museum. The following is a brief description of the plants and their uses. The Salmon Ruins Research Library and Gift Shop contain literature with more extensive information.

PIÑON PINE PINACEAE (Pine Family)

Pinus edulis

Piñon Pine

Piñon pine is an evergreen tree with needle-shaped leaves. In the fall the trees produce nuts which are eaten raw or roasted. They are an excellent source of protein, calcium, riboflavin, niacin, iron, and energy. Nut shells were found during the excavation of the Salmon Ruins. The Navajo use piñon pitch is used on pottery to produce a shiny surface. It is also mixed with clay for a skin salve.



Cholla

CHOLLA CACTACEAE (Cactus Family)

Cylindropuntia

Excavators at Salmon Ruins found buds and pollen of the Cholla Cactus in the Tower Kiva. The size of the pollen grain was different from examples of modern species found near the museum. It is thought that perhaps the Salmon pueblo occupants imported and cultivated certain cholla species for ceremonial purposes, much like some modern Pueblo people. Today's Puebloans also eat the tunas (pads) raw or stewed and grind the dried fruits to make flour.

INDIAN RICE GRASS GRAMINAEA (Grass Family)

PONDEROSA PINE PINACEAE (Pine Family)

Pinus ponderosa

The inhabitants of the Salmon pueblo used the Ponderosa Pine as a building material. The logs were either floated down river or carried from what is now Colorado. The wood was also used to make cradleboards. The inner bark is edible and is used to make a red dye.

YUCCA LILIACEAE (Lily Family)

Yucca baccata

Some species of the narrowleaf yucca, or soapweed, were found at the Salmon Ruins. Narrowleaf yucca leaves were used to make rope, sandals, and baskets. The Hopi people soften the leaves in water, then tie them together in knots to make them into ropes, which were found in the course of excavation of the site.

Yucca angustissima

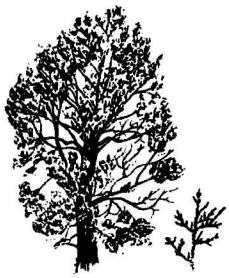
Broadleaf yucca is a perennial shrub which produces large fleshy fruits. The presence of its fruit and seeds at Salmon Ruins indicates it was eaten although not grown naturally here. The fruits are available in late fall and the leaves are used in weaving mats and baskets.

Yucca

JUNIPER CUPRESSACEAE (Cypress Family)

Juniperus

This is an evergreen tree that produces berries in the fall. It grows close to Salmon Ruins and was used as a building material. Juniper has been used as a medicine for aches and bites, and the berries may be eaten when ripe.



Juniper

BEEWEED CAPPARIDACEAE (Capper Family)

Cleome

Beeweed is a herbaceous annual which seldom grows taller than about three feet. The seeds of the beeweed or spiderflower were found at Salmon Ruins in connection with a burial. The seeds, available in the fall, were probably eaten. The exhibit in the museum shows its use as a paint for ceramics.

Beeweed

SALTBUSH CHENOPODIACEAE (Goosefoot)

Ariplex

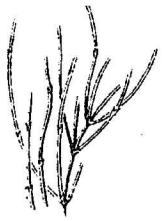
Saltbush is a compact gray-green shrub about two feet tall and is found in the area near Salmon Ruins. In the early spring, it is one of the plants gathered for nourishing greens. Unfortunately, greens, unlike seeds, are generally not preserved, so it is difficult to document if they were used by the Ancestral Puebloans. The Hopi use the young tender leaves cooked and eaten as greens. The Navajo use salt bush leaves and branches to add a salty flavor to pit-roasted corn.

Saltbush

MORMON TEA GNETACEAE (Joint-Fir Family)

Ephedra

Mormon Tea is a shrubby, segment-branched dense green plant which grows close to Salmon Ruins. Stems were found during excavation of the ruins. The early pioneers brewed Mormon Tea as a hot drink. The Navajo and Hopi have used it for medicinal purposes and as a yellow-green dye for wool yarn.

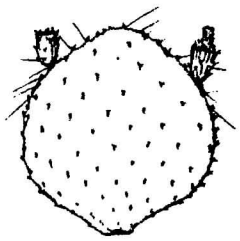


Mormon Tea

PRICKLY PEAR CACTACEAE (Cactus Family)

Platyopuntia

Prickly Pear differs from its close relative, the Cholla cactus, in that its stems are flat instead of round. Many Southwest people eat the fruits of this cactus either raw, dried, or ground with corn meal. Prickly Pear pods were found in the ruin, but not in abundance. The species of Prickly Pear that grows in this area has dry instead of fleshy fruits and thus may not have been an attractive food source.



Prickly Pear

RABBITBRUSH COMPOSITAE (Sunflower Family)

Chrysothamnus

This erect green shrub has yellow blooms in the early summer. It is found all over San Juan County and near Salmon Ruins. The branches are used as wind breaks, and arrows were make from the stems. The flowers are used for a yellow dye and the bark is used to make a green dye for wool yarn.

Rabbitbrush

SAGEBRUSH COMPOSITAE (Sunflower Family)

Artemisia

Sagebrush is an aromatic, compact evergreen shrub with gray-green foliage and very small yellow flower heads. It grows to heights of about 6 feet. Based on the available evidence, it cannot be suggested that it was used by the occupants of the Salmon pueblo. Sagebrush is used by the Hopi, Zuni and Navajo to treat digestive disorders. It can also be used to make a greenish-yellow dye for wool yarn.

WILLOW SALICACEAE (Willow Family)

Populus

There are several species of willow growing in this area. It is a branching, open shrub occasionally obtaining a height of about 10 feet, but usually shorter. Willow is found around washes and rivers where it helps to stabilize sandy shores. It has been used in some roof constructions, for firewood, and is a grazing plant for livestock.

GREASEWOOD CHENOPODIACEAE (Goosefoot Family)

Sacrobatus vermiculatus

Greasewood is a thorny, tall, dark green shrub common in the desert around Salmon Ruins. There is a strong indication from pollen recovered that it was used for rabbit sticks, planting sticks, stirring rods, arrows, and as fuel. The Navajo used it to make poultices and as a grazing plant for sheep.

Greasewood

COTTONWOOD SALICACEAE (Willow Family)

Populus

Cottonwood grows along streams and in other moist climates throughout the area. It is a rapidly growing tree that is planted for shade. The trunks are sometimes used for beams in house construction, such as the ones used in the Salmon homestead. It has a soft wood that is tough but not durable.

Cottonwood

GROUNDCHERRY SOLONACEAE (Potato Family)

Physalis fendleri

Groundcherry is a berry producing herb that grows in moist to medium-dry soil throughout the Western United States. Seeds from the Groundcherry were found in middens at the site, suggesting that the berries were brought in as food. The berries are available mid to late summer.

TAMARISK TAMARICACEAE (Tamarix Family)

Tamarix gallica

Tamarisk is a large, many-stemmed shrub growing sometimes 12 feet tall. The foliage resembles that of a juniper but is finer, with small pink flowers during the summer. It was introduced by the Spanish for shade and erosion control, but is now considered a problem weed in the Southwest.

SUMAC ANACARDIACEAE (Cashew Family)

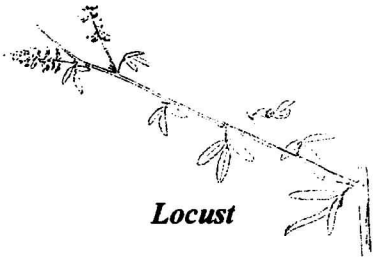
Rhus trilobata

Sumac

Sumac is an irregular branching, woody perennial which produces sticky red berries mid summer to fall. Sumac grows near the Salmon Ruins and berry stones were found in the ruin, indicating that the berries had been eaten by the Ancestral Puebloans. Many Southwest Indian groups such as the Acoma, Zuni, Laguna, and Navajo eat the berries. Some ceremonial baskets are made from branches and the berries are also used for dyes.

LOCUST FABACEAE (Pea Family)

Robinia neomexicana



Locust

Locust is a large shrub or small tree that flowers, and is sometimes cultivated as an ornamental plant. Both cattle and deer eat the foliage and sometimes the flowers are eaten by cattle. However, the bark, roots and seeds are reported to be poisonous.

Salmon Pueblo as photographed by Timothy O'Sullivan in 1874

Thank you visiting Salmon Ruins Museum and Research Library.

We hope to see you again soon!!

The original format and text for this Salmon Ruins Trail Guide was created by former Education Coordinator Tristan Kwiecinski. Revised in April, 2005.

KEY FIGURES IN SALMON RUINS HISTORY

Dr. Cynthia Irwin-Williams

In the short 54 years of Dr. Cynthia Irwin-Williams's life, she left an important professional and personal legacy. Cynthia's involvement in archaeology began in high school, working with H. Marie Wormington and the Colorado Archaeological Society. Her academic training in anthropology began at Radcliffe College in 1953, where she was graduated *magna cum laude* in 1957. At Harvard she encountered considerable resistance to the idea of a female archaeologist, and especially to a female archaeologist doing fieldwork. At that time, laboratory and library research were considered the only appropriate places for women in archaeology, but Cynthia realized that nothing less than full participation in the discipline would satisfy her. Cynthia received her doctorate from Harvard University in 1963, as one of the first three women in any field to receive a doctorate directly from that institution rather than from the associated institution for women, Radcliffe.

In 1970, the San Juan County Museum Association approached Cynthia about excavating a major Chacoan outlier, Salmon Ruins. The Salmon excavations were possible only because of Cynthia's exceptional energy and love of archaeology, accompanied by her amazing ability to obtain grant funding. When she agreed to go out and look at the site, she had no idea how enormous the job would be. However, by the time that she committed herself to the task, she was well aware that she was changing the focus of her research for many years to come, moving from her previous Archaic studies to the investigation of complex Puebloan sites.

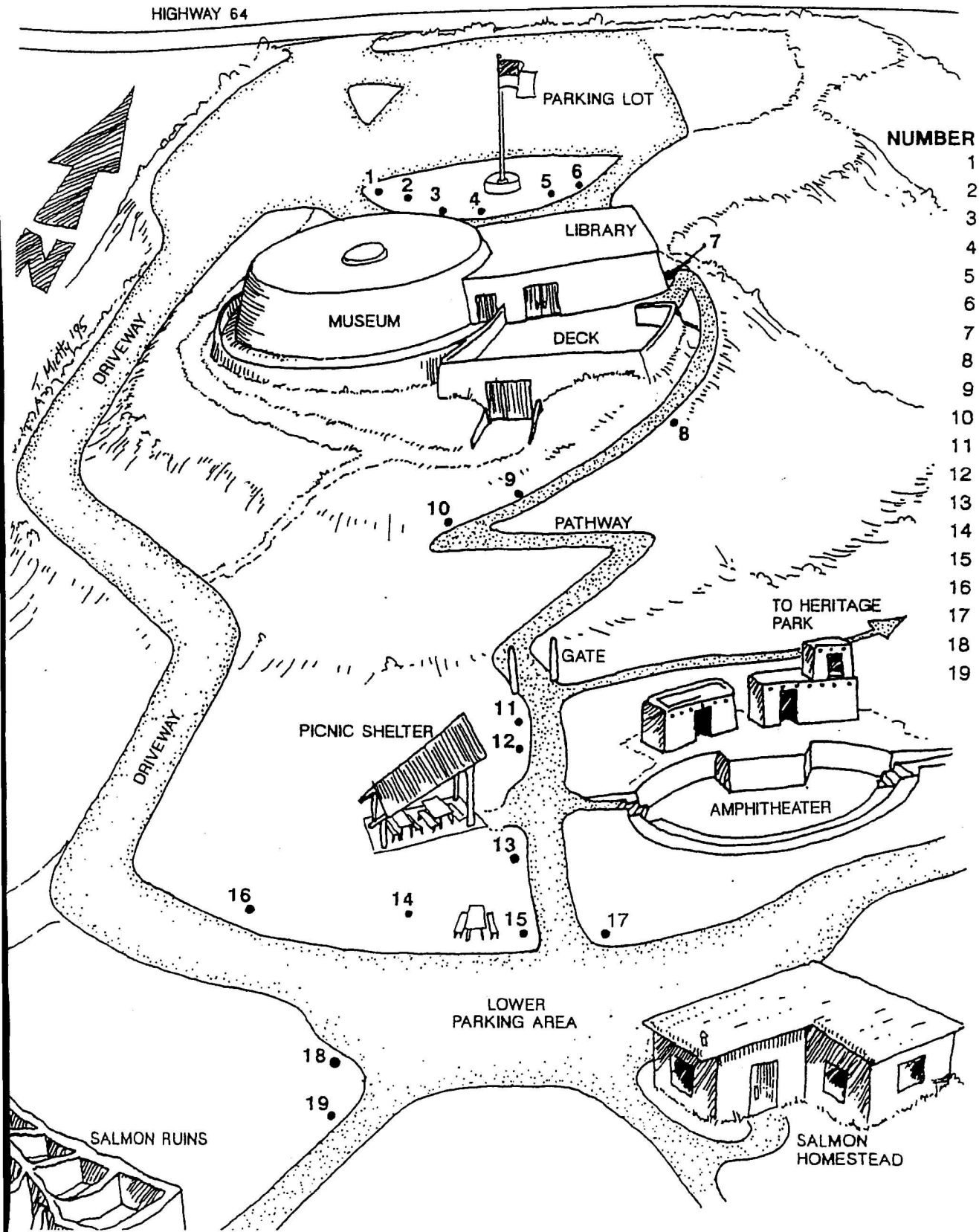
Coming to work at Salmon from her studies of early hunters and gatherers, Cynthia developed methodologies that were very innovative for the time. She emphasized careful control of stratigraphic relationships within and between rooms, and thoroughly integrated ethnobotany, faunal studies, and other specialities into her research. She experimented with computerization of data in the field laboratory, recognizing the great promise of this technology for dealing with enormous bodies of data like that generated by the Salmon excavations.

Throughout her career Cynthia Irwin-Williams displayed an energy and dedication to archaeology that few can equal. She was also a loyal friend, sometimes an extraordinarily generous friend, to people that she met as colleagues and as students.

Contribution by Lynn Teague

SALMON RUINS

Map of Museum, Ruin, and Ethnobotanical Trail



NUMBER	PLANT
1	Pinon Pine
2	Cholla
3	Rice Grass
4	Ponderosa Pine
5	Yucca
6	Juniper
7	Beeweed
8	Saltbush
9	Mormon Tea
10	Prickly Pear
11	Rabbitbrush
12	Sagebrush
13	Greasewood
14	Willow
15	Cottonwood
16	Groundcherry
17	Tamarisk
18	Skunkbush
19	Locust

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