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# WETHERILL MESA

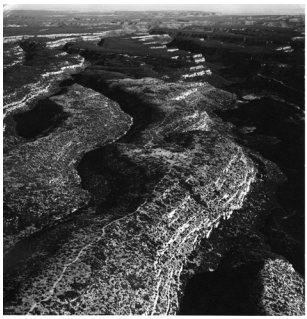
## Long House

## Step House

2016 National Park Service CENTENNIAL

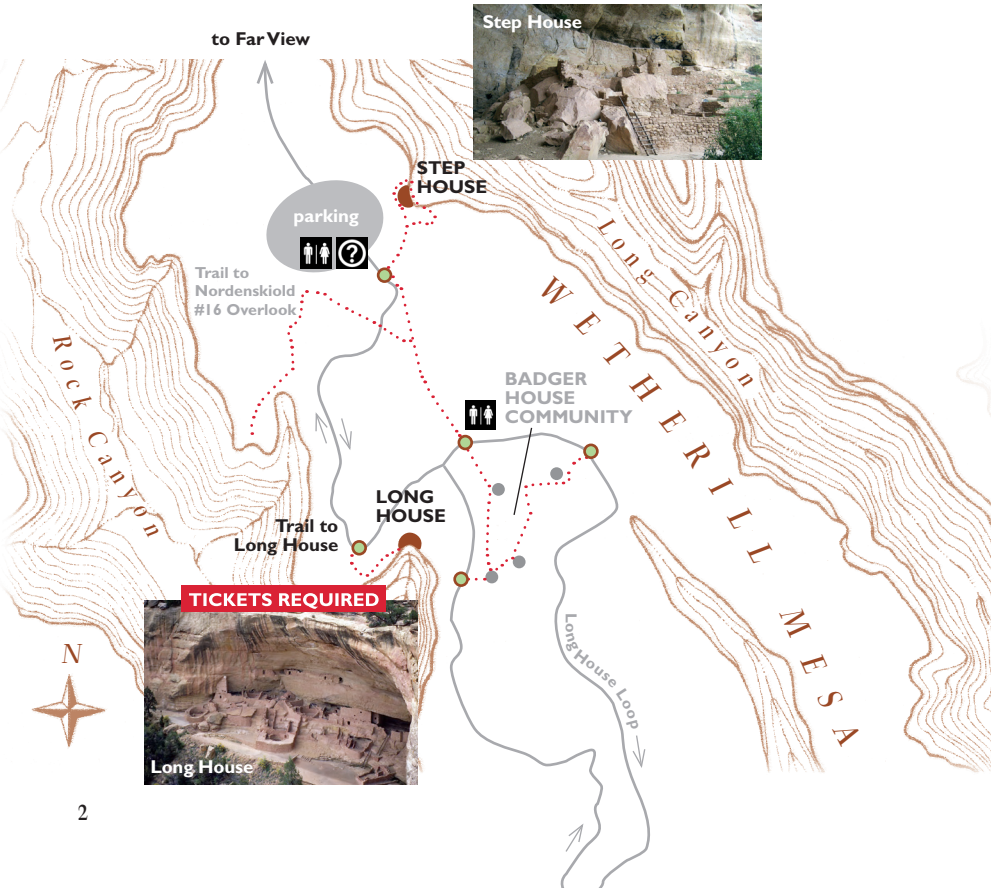
In 2016 the National Park Service celebrates 100 years of caring for America's natural and historic treasures. Join us in our second century of stewardship. Learn, have fun and make memories in our national parks.

Wetherill Mesa, located on the west side of Mesa Verde National Park, is a long, narrow peninsula of land bounded by deep canyons with many natural alcoves in the sandstone cliffs. A visit to Wetherill Mesa allows you to explore a sequence of archeological sites that offer glimpses of nearly 700 years of Ancestral Puebloan life.



**Wetherill Mesa looking south.**

It is a 12-mile (19-km) drive from the road junction at Far View to the Wetherill Mesa parking lot. You may visit Step House on your own without a ticket. Tickets are required for the ranger-guided tour into Long House.



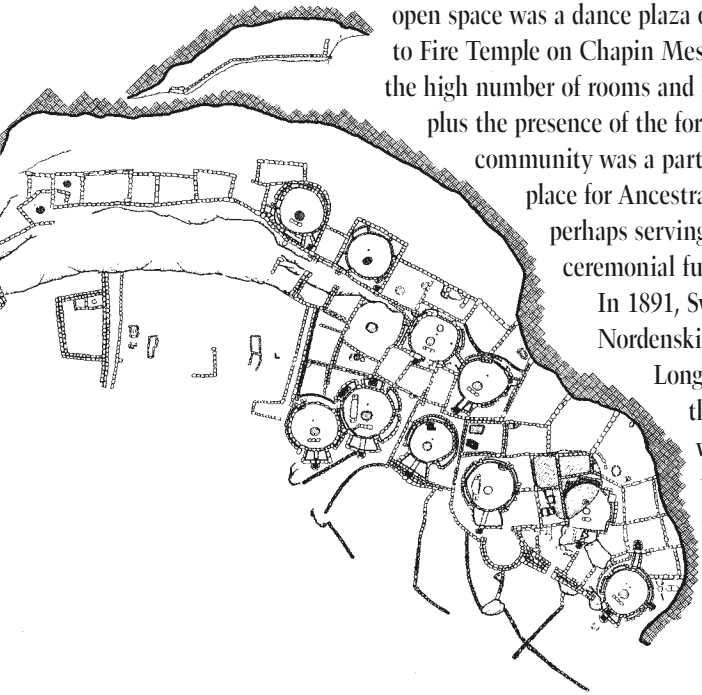
## LONG HOUSE FACTS

- village set in 298' long alcove with a curving back wall
- about 150 rooms and 21 kivas
- beams date from A.D. 1145–1279
- inhabited by 150 to 175 people

# LONG HOUSE

Ranger-led tours of Long House are offered several times each day during summer and are about 90 minutes long. **Tickets are required;** be sure to purchase a tour ticket before you drive to Wetherill Mesa. Round-trip distance of the tour is 0.75 mile (1.2 km), with stairs and switchbacks leading into and out of the dwelling. There is a 130-foot (40-m) change in elevation. Once in Long House, you will climb two 15-foot (4.6-m) ladders and descend an uneven stone staircase.

Long House, approximately equal in size to Cliff Palace, fills an expansive 298-foot-long sandstone alcove from end to end. The village includes about 150 rooms, 21 kivas, and a row of upper storage rooms. It may have been home to as many as 175 people. There are architectural features in Long House which suggest it was also a public place where people from all over Wetherill Mesa gathered to trade or hold community events. A well-preserved four-story triangular tower rises from floor to ceiling at the far west end of the alcove. The formal plaza in the center of the site is larger than in most villages, with unusual features for Mesa Verde archeological sites. The benches, vaults, and raised firebox suggest to some scientists that this large open space was a dance plaza or great kiva, similar to Fire Temple on Chapin Mesa. Additionally, the the high number of rooms and kivas in Long House, plus the presence of the formal plaza, suggest the community was a particularly significant place for Ancestral Pueblo people, perhaps serving both civic and ceremonial functions.



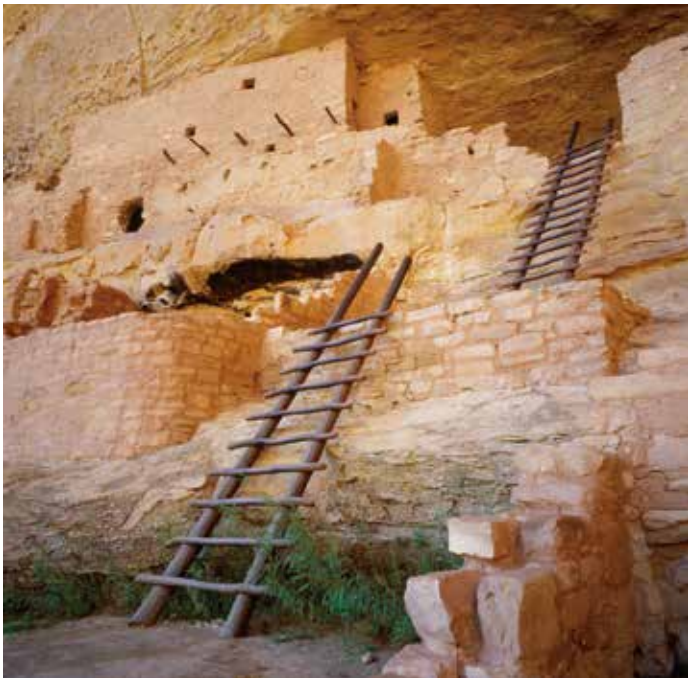
In 1891, Swedish scientist Gustaf Nordenskiöld was guided into Long House by members of the Wetherill family, for whom Wetherill Mesa was named. In his classic publication,

*The Cliff Dwellers of the Mesa Verde*, Nordenskiöld described "a long row of half dilapidated walls in a high-vaulted cave. It is this ruin that has received the name of Long House . . ." He added Long House to his numbering system, and carved "No 15" into bedrock in two places. Nordenskiöld believed the more complex architecture of the tall tower and the kivas in Long House indicated some level of community planning, but in his opinion the "arrangement of the other rooms shows an almost entire want of system." He suggested that the small upper openings were used by archers, with bows and arrows poised, to protect the village from intruders. Today, archeologists think the openings may have served as visual aids to nearby landscape and village features and admitted fresh air and light.

**Long House, as photographed by Gustaf Nordenskiöld in 1891.**

## Home

The earliest masonry rooms from the cliff dwelling period are at the rear of the alcove. As time passed, the residents frequently added, abandoned, reoccupied, and remodeled rooms. The spaces were simple and functional: a room with a small corner hearth, a workspace against a cooler back wall, a terraced garden plot or a turkey pen. As in other alcove sites, the builders of



**All the wooden beams in place at Long House are original, and were cut between A.D. 1145 and 1279. The ladders pictured here are modern and for the visitors' convenience.**

Long House built stone retaining walls which they filled with soil to level the naturally sloping floor. The residents also repaired and reinforced lower walls as upper stories were added.

Although village lay-out evolved over time, construction techniques were sophisticated. The sandstone blocks often were finely dressed, laid in mortar, and carefully chinked with small stones, creating structures of great beauty that sometimes were covered with earthen plaster and finished with painted embellishments.

# Food

Mesa Verde's semiarid climate and moderately high elevation posed challenges to Ancestral Pueblo farmers. The growing season is short, and total precipitation, including rain and snowfall, averages about 18 inches (45.72 cm) annually. But 'average' precipitation statistics don't reveal yearly weather extremes. In years of above average summer rainfall, fields could have produced abundantly. In drought years, crops likely shriveled and died.

The many symbolic images of turkeys found at Mesa Verde may attest to the importance of this bird in the Ancestral Puebloan way of life.

The ancient farmers found and used the fertile deeper soils on the mesa top above Long House. They may have also farmed in smaller plots formed by check dams or farming terraces on the canyon slopes. They successfully grew corn, beans, and squash as staple food items. In years with favorable growing conditions, three or four acres may have yielded 30 to 40 bushels of corn.

The Ancestral Pueblo people were also skilled hunters and gatherers. They augmented their crops by encouraging native edible plants like amaranth, and knew how to use all kinds of wild foods: mule deer, rabbits, rock squirrels, wood rats, ricegrass, chokecherries, Utah serviceberries, pinyon nuts, wild onions, and lambsquarter. They also domesticated turkeys, and raised them for meat, bones, and feathers, making turkey bone tools and tubes and turkey feather blankets and clothing. Turkeys may have become even more important for food as deer populations declined in the 1200s.

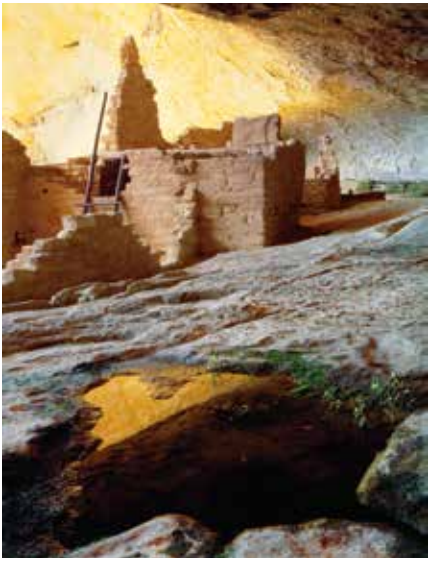
## Tools

Long House yielded a remarkable abundance of artifacts that reflect the skill of these people: pottery bowls, coiled baskets, cane and wood arrows, stone projectile points, pot scrapers made of pumpkin rind, turkey bone awls, embroidered cotton cloth, corncobs, carved prayer sticks, travertine pendants, and all kinds of stone tools, including crushers, choppers, hammers, drills, knives, anvils, ax heads, and polishers. An astounding array of fiber items was finely preserved in the dry alcove, especially goods made from the versatile yucca plant: sandals, baskets, rope, twine, binding, netting, and needles. Made by

human hands for many uses, these artifacts give us insights into the daily labor and ritual of this community.

## Water

Where rain or melting snow percolates down through sandstone and meets an impermeable layer like shale, it emerges as a spring. A lush line of moss and other greenery marks such a spring in the back of the Long House alcove. Residents developed this critical water source by pecking small channels and catch basins into the bedrock so they could dip a ladle into the pooled water, then transfer it into a pot for drinking or cooking. Look for the colorful rock paintings on the rock face above the spring; they may speak of the special regard people had for this essential resource.



**This seep spring in the Long House alcove provided a critical water source for residents.**

## Adaptation

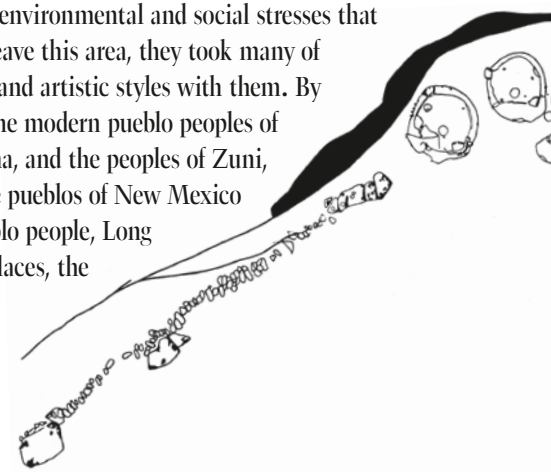
Through the nearly seven centuries Ancestral Pueblo people lived on Wetherill Mesa, they were constantly adapting to changing circumstances. They relocated when necessary to take advantage of water sources, farmland, firewood, living space, or better hunting and gathering opportunities. Over many generations, they first built pithouses on the mesa top and in some alcoves, later constructed multi-story pueblos on the mesa tops, and then moved into and built in the alcoves again. While some people continued living in mesa top pueblos, such as nearby Badger House Community, the impressive construction of Long House and the other cliff dwellings marked the last period of Ancestral Puebloan occupation of Mesa Verde. When, in the A.D. 1200s, they decided to move into the alcoves again and build villages

**Tree-ring dating, or dendrochronology, is a boon to archeologists for accurately dating sites. A core sample is taken from a wooden beam used in a dwelling. Patterns in the annual growth rings in the sample are matched to samples from other beams to establish a sequence of dates. Wooden beams from archeological sites in Mesa Verde were important in establishing a master chronology for the entire Southwest, which now reaches back about 8,500 years.**

like Long House, it may have been to open up farmland on the mesas, to be closer to water sources, for security, or for other reasons we don't yet understand.

The latest tree-ring date from Long House is A.D. 1279. Archeological evidence suggests that soon after, nearly everyone moved from this site, and from the entire Mesa Verde region. The causes behind this widespread migration have long been debated. Recent evidence paints a picture of a general rise in population, some of it from immigration, in the years before A.D. 1200. During that time, growing conditions were favorable and food was abundant. But in the mid to late 1200s, a long-term drought, colder temperatures, changes in the precipitation pattern, and depleted resources may have stressed individuals and whole communities. Social or religious motivations may have been equally compelling. Eventually, the people began to move on. They may have left their homes individually, as families, or in village groups. Taking only what they could carry, they left tools, pottery, and personal items behind. By the year A.D. 1300, nearly everyone was gone.

Whatever the combination of environmental and social stresses that led the Ancestral Pueblo people to leave this area, they took many of their traditions, architectural skills, and artistic styles with them. By all evidence, their descendants are the modern pueblo peoples of the Hopi villages in northern Arizona, and the peoples of Zuni, Acoma, Laguna, and the Rio Grande pueblos of New Mexico and Texas. For many of today's pueblo people, Long House and Mesa Verde are special places, the homes of their ancestors.



# STEP HOUSE

Step House sits in a shallow, northeast-facing alcove on Wetherill Mesa. It offers a unique opportunity to see architecture from two separate time periods of the Ancestral Pueblo people's occupation here: a reconstructed pithouse originally built about A.D. 620 alongside a small multi-story pueblo built centuries later.

The Step House trail is a self-guided walk. It begins near the Wetherill Mesa Information kiosk. The paved loop trail descending into the alcove includes several stairways. The return trail is on the opposite side of the alcove, for a total 0.8-mile (1.3-km) walk. Elevation change is about 100 feet (30 m).

Early life in Step House as conceived by Civilian Conservation Corps artists who created this diorama.

**STEP HOUSE FACTS**

- two villages from different time periods in 300' wide alcove
- occupied during the late A.D. 500–600s and again in the A.D. 1200s
- cliff dwelling probably home to 30 to 40 people

In the late 1800s, the Wetherill family of Mancos, Colorado; Swedish scientist Gustaf Nordenskiöld; and others explored and dug in the Step House alcove. In 1926, Jesse Nusbaum, Mesa Verde National Park's superintendent and first park archeologist, re-excavated the site. He was particularly interested in evidence of Basketmaker occupation of the alcove. He and a work crew and six pack horses loaded with equipment and camp supplies hiked to the site in February, breaking through chest-high snow in spots. They camped on the rim above Step House while completing their work.

Because of the stunningly crafted baskets found with their pithouses, the people who lived in the area from about A.D. 550 to 750 were called 'Basketmakers' by early archeologists. Today, archeologists refer to "Basketmaker" and "Pueblo" time periods, but recognize the people as different generations of the same cultural group now known as the Ancestral Pueblo people. At Mesa Verde, the Pueblo period spans the years from about A.D. 750 to 1300.

**Although residents painstakingly built these steps, it is not difficult to walk up the slope without them.**

1 On first entering the alcove, notice the large sandstone boulders stepping up the slope to your left. In most Mesa Verde cliff dwellings, access into the alcoves looks difficult to our eyes, and the many hand-and-toe hold trails they chipped into the rock seem nearly impossible to navigate. But here, in addition to other access routes, they constructed a stone stairway. These stairs later gave Step House its name. Without beasts of burden, the Ancestral Pueblo people walked everywhere, from their homes in this alcove up onto the rim to work their fields, gather plants, hunt, and visit their neighbors, and back again.

2 Jesse Nusbaum excavated three pithouses here in 1926, and confirmed what he had suspected: Ancestral Pueblo people were living here during the Basketmaker era, centuries before their descendants built the nearby cliff dwelling. Around A.D. 625, this village

**1960 pithouse reconstruction by the Wetherill Mesa Archeological Project.**

**Stabilization and preparation of pithouse for exhibit during the Wetherill Mesa Archeological Project.**

was made up of about six circular, semi-subterranean structures like these. Pithouses served as standard housing for centuries in the Southwest, and could have offered comfortable living quarters to a family of four or five. Using this estimate, approximately 25 to 30 people may have lived in this alcove at that time. Charred beams and charcoal indicate these pithouses burned at some point. But enough intact wood remained to provide tree-ring dates for this Basketmaker era site, placing construction between A.D. 616 and A.D. 627.

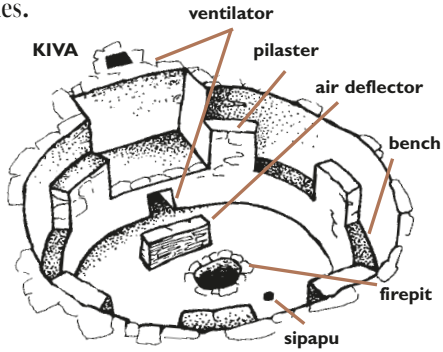
The fourth pithouse was excavated and reconstructed during the Wetherill Mesa Archeological Project, to provide an example of a typical, complete structure as the earlier people might have used it. Pithouses were usually 12 to 16 feet in diameter with four upright support posts at each corner. Horizontal beams rested on the posts and supported diagonal stringer poles which slanted on to the bench to make the upper walls. The structure was covered with layers of juniper bark, limbs, twigs, and an outer layer of mud. People entered by descending a ladder through an opening in the center of the flat roof. The size of the pithouse, the central hearth in the floor, food storage vessels, and food processing areas all indicate this was someone's home.

3 In 1891, Gustaf Nordenskiöld inscribed "No 21" into the rock here, his site number for Step House. Also look for deep grooves worn into the same rockface. The grooves were made by residents who repeatedly sharpened and shaped their stone tools. These people were experts at making tools of all kinds from local stone: axes, knives, spear points and arrow points, choppers, hammers, scrapers, grinders, and more.

4 After climbing the short ladder to Stop 4, you will see a set of petroglyphs chipped into the boulder in front of you. The images of animals, plants, human figures, and geometric designs are familiar, but it's impossible to know exactly what meaning the artists had in mind. Modern Pueblo people recognize some of them as clan and migration symbols.

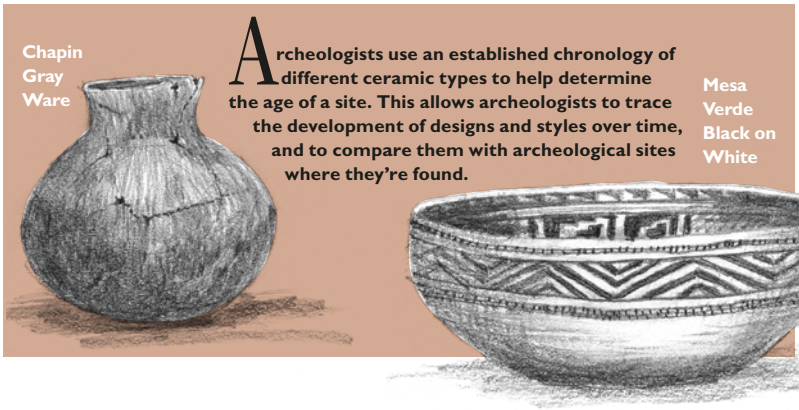
Although the people lived in this alcove for many generations, it wasn't until about A.D. 1226 that they built the Step House pueblo. The rooms, up to two stories high, were built to fit beside, between, under and around the sandstone boulders and natural obstacles.

5 When archeologists compare clues in the style and construction of pithouses and kivas, they see similarities that imply that pithouses gradually developed architecturally into the circular underground rooms now called kivas. Most Pueblo-era villages included kivas, likely used for both social and religious functions.




6 The walls of this kiva were once fully plastered, a practice still followed in some Pueblo villages today. Modern residents refresh the interior plaster every year and often paint murals on the walls. This kiva was once decorated with a painted panel of bighorn sheep bounding across the wall. The panel was removed in 1989 and placed in the park's curation facility to protect it. Now, using less invasive methods, preservationists treat such panels in place.

Above you and to your left you can see a hand-and-toe hold trail chipped into the face of the boulder. It led to small storage rooms on the




**Archeologists use an established chronology of different ceramic types to help determine the age of a site. This allows archeologists to trace the development of designs and styles over time, and to compare them with archeological sites where they're found.**

upper ledge. The residents sealed these rooms with stone slabs, likely in an attempt to rodent-proof them. When filled with surplus corn, they would have contained the wealth of the village: food to carry them through lean times and seeds to plant in another spring.

7 For the 30 or 40 people who lived here, this large flat area provided a useful space for daily chores. More than 1,600 corncobs were found in the floor debris here. In today's pueblos, corn is still a very important food. After harvest, it's sorted by color and carefully stacked and stored for later consumption. Modern practices like these, carried down through the centuries, offer hints of how the ancient Puebloans lived.

Artifacts from Step House offer more intriguing clues to how people lived here. A bowl with browned cornmeal in the bottom; a corrugated jar containing seeds of ten native plants; five pairs of scallop-toed sandals; skin moccasins; willow baskets; yucca cord; reed bundles; feather and fur blankets; a turkey bone awl; a pumpkin container holding feathers; oak and mountain mahogany digging sticks; a pouch of prairie dog skin filled with salt that came from some distance away . . . all personal property of the people who lived here.

Yucca fiber snare

Like nearly everyone else in the entire northern San Juan region, the residents of Step House moved away by A.D. 1300.

**Retrace your steps back to the dirt path, exit to your left and follow the trail up to the rim.**

# To Our Visitors

Mesa Verde National Park offers a spectacular look into the lives of the Ancestral Pueblo people who made this land their home for over 700 years. Today, the park protects over 4,500 known archeological sites, including 600 cliff dwellings. These are some of the most notable and best preserved in the United States. Please do your part to protect them for all to visit and enjoy.

Most of the sites you see at Mesa Verde are over 750 years old.

- Please do not touch, sit, stand, or lean on their fragile walls.
- Since archeologists need to see everything in context to understand a site, do not disturb artifacts. Removing them is illegal.

Treat cliff dwellings and other archeological sites as you would a museum.

- No smoking or eating is permitted in the sites.
- Do carry and drink water.
- Only leashed service animals are allowed in sites or on trails.

Always stay on marked trails.

- Since people may be on trails below you, do not throw rocks or other objects into the canyons.
- Remember that the park is at a higher elevation than you may be used to; move slowly and drink plenty of water.
- If you have heart or respiratory conditions, be especially careful of your health.

We appreciate your help in preserving these priceless treasures for future generations.

**This guide is Dedicated to George S. Cattanach (1926–2011), career National Park Service archeologist. He directed the excavation at Long House during the Wetherill Mesa Archeological Project in the 1960s.**



**Written by Rose Houk. Special thanks to Sandy Groves, Julie Bell, Sally Cole, and Patricia Lacey.**

**Illustration Credits: George H.H. Huey: cover, pages 4,7,8 (both), 9, 13 (top), 15; National Park Service: pages 2 (all), 6, 11, 12, 13 (bottom); Christina Watkins: pages 8 (turkey), 15 (pottery); Wetherill Mesa Archaeological Project: pages 3 (all), 10.**

**Cover—background: ring basket detail; inset; Long House interior view.**