

Scene 4: Subalpine

Situated between the upper montane forests and the tree line, the subalpine zone features granite basins carved by glaciers, windblown pine trees, and clear cold lakes. In this scene, visitors experience an immersive vignette about subalpine flora and fauna and learn how this sensitive environment has responded to harsh weather conditions, climate change, and pollution.

Scene Intro

Title: The Subalpine Zone

Text: Stark yet beautiful, the subalpine zone awaits you with windswept pine trees and cold, clear lakes. **(16 words)**

Content Group 4.1 – A Landscape on the Edge

In the subalpine zone, hardy plants and animals withstand cold temperatures, severe wind, and a short growing season. Many species have learned to adapt to the subalpine zone's harsh conditions. In this space, visitors explore a subalpine forest vignette and learn about this unique environment.

Main Text

GL-04.01-100

Title: A Landscape on the Edge

Text: Above 8,500 feet (2,500 meters), the mountain landscape changes. Dense forests thin out and paved roads end. This is the subalpine zone. Here, gnarled trees sprout from bare granite. High-mountain lakes dot the valleys between the peaks.

Harsh winds, frigid temperatures, and heavy snow limit the growing season to a few short months.¹ Yet, climate change jeopardizes this environment's stability.² **(62 words)**

¹ <https://www.nps.gov/seki/learn/nature/subalpine-forests.htm>; <http://snrs.ucmerced.edu/natural-history/life-zones>

² https://www.fs.fed.us/psw/publications/millar/psw_2016_millar002.pdf, pdf p. 5



IM-04.01-101

Filename: E0695B34-7655-408C-A1F1-F161F28EE3F5

Caption: Most of the parks' 3,200 lakes and ponds are located in the subalpine and alpine zones. **(16 words)**

Credit: NPS Photo



IM-04.01-102

Filename: E4E61112-6AF5-4388-AEC0-23EC09D83F8E

Caption: Most of the subalpine zone falls in protected wilderness areas. Venturing out overnight? Don't forget your wilderness permit. **(18 words)**

Credit: NPS Photo

Subalpine Vignette

In this vignette, two windblown pine trees and small subalpine animals stand at the edge of a lake during the summer. Other subalpine flowers and plants bloom between rocks. The ground should feature a texture of grass and rock. An ambient soundscape features the call of a marmot.

Soundscape: EP-04.01-530

Models:

- CE-04.01-400 Whitebark pine model
- CE-04.01-410 Foxtail pine tactile model
- CE-04.01-420 Alpine Shooting Star model
- CE-04.01-430 Yampah model
- CE-04.01-440 Mountain pride model
- CE-04.01-450 Marmot tactile model
- CE-04.01-460 Clark's nutcracker model
- CE-04.01-470 Subalpine CPT Vinyl Flooring
- CE-04.01-480 Subalpine Scenic Ground Cover

Background Image:



IM-04.01-121

Filename: C3928F50-39E7-4C6E-8CDF-6956ACEA4FCD

Credit: NPS Photo

Graphic Rail

GL-04.01-130

Title: At the Tree Line

Text: Severe winds whip through the subalpine zone. As you reach the tree line, the pines are twisted and bent, shaped by wind. Plants and animals that live here must be strong and resilient. **(33 words)**

Callouts:

Text: Find the **marmot** (*marmota flaviventris*), the largest animal of the squirrel family. When they sense danger, marmots whistle to alert others, duck into their homes under rocks or tree roots, and even flatten themselves to hide.³ **(36 words)**

Associated image:

³ *Sierra Nevada Natural History*, 366-367.



IM-04.01-132

Filename: 2FABB143-8193-43A3-A5B7-140E39F1766F

Credit: Donald Quintana/NPS Photo

Text: Foxtail pines (*Pinus balfouriana*) can grow at the upper edge of forest in the southern Sierra. Able to withstand strong winds, they can live for thousands of years.⁴ **(28 words)**

Associated image:



IM-04.01-131

Filename: NPS-FoxtailPine

Credit: NPS Photo

Text: Can you spot the pink and purple flowers? These are **alpine shooting star** (*Dodecatheon alpinum*) and **mountain pride** (*Penstemon newberryi*). These perennial flowers can grow in seemingly impossible places – like crevices in granite rocks.⁵ **(34 words)**

Associated image:

⁴ <https://www.nps.gov/seki/learn/nature/subalpine-forests.htm>; https://www.conifers.org/pi/Pinus_balfouriana.php; <https://www.nps.gov/seki/learn/nature/plants.htm>

⁵ <http://www.fesflowers.com/blog/mountain-pride-spiritual-strength-and-courage/>; [https://calscape.org/Penstemon-newberryi-\(\)](https://calscape.org/Penstemon-newberryi-/); <https://www.yosemitehikes.com/wildflowers/mountain-pride/mountain-pride.htm>; https://www.fs.fed.us/wildflowers/plant-of-the-week/dodecatheon_alpinum.shtml



IM-04.01-133

Filename: Sierra Sunrise, Flickr-Alpine Shooting Star

Credit: TBD

Graphic Rail

GL-04.01-140

Title: On the Rocky Slopes

Text: During warmer summer months, California Native Americans fished, gathered food, and traded in the subalpine slopes. They also climbed the mountains to be closer to the Creator above. Among the clouds, these high slopes inspire retrospection and awe at the world below. **(43 words)**

Callouts:

Text: California Native Americans use branches from the shrubby **Geyer's willows** (*Salix geyeriana*) to weave baskets.⁶ **(15 words)**

Associated image:



IM-04.01-141

Filename: Matt Lavin, Flickr-Geyer's Willow

Credit: Matt Lavin

⁶ Kat Anderson, *Tending the Wild*, pdf p. 188

Text: **Yampah** (*Perideridia spp.*) is an edible wildflower and key staple in California Native Americans' pantries. The roots can be baked or steamed and taste like water chestnuts.⁷ **(27 words)**

Associated image:



IM-04.01-143

Filename: RandomTruth, Flickr-Yampah

Credit: TBD

Text: For centuries, California Native Americans ate the seeds of the **whitebark pine** (*Pinus albicaulis*), competing with Clark's nutcrackers for this nutritious treat. Try to spot the **Clark's nutcracker** (*Nucifraga columbiana*) hiding in the branches. The birds and tree share a mutually beneficial relationship. Clark's nutcracker eats the seeds and spreads them throughout the parks.⁸ **(54 words)**

Associated image:



IM-04.01-142

⁷ Kat Anderson, *Tending the Wild*, pdf p. 188, 291

⁸ <http://whitebarkfound.org/ecology-management/wildlife/>;
https://oregonencyclopedia.org/articles/whitebark_pine/#.W2w8qdJKg2w

Filename: Clarks1
Credit: NPS Photo

Follow the River Graphic

GL-04.01-150

Title: Follow the River

Text: Melting snow fills the high-altitude lakes. These lakes feed the Kaweah River, which flows down the mountain and breathes life into the parks. **(23 words)**



IM-04.01-151

Filename: Siddharth Dedhia-41513981460_7c2ef2d579_o

Caption: At an elevation of around 8,000 feet (2,440 meters), Columbine Lake relies on snow to supply water.⁹ **(15 words)**

Credit: Siddharth Dedhia

Content Group 4.2 – A Vulnerable Environment

Small changes in the climate can have a dramatic impact on plants and animals. At Sequoia National Park, the subalpine zone is particularly vulnerable to the effects of a warming climate and air pollution. In this space, visitors learn about the effects of climate change through graphics and interactive elements.

Main Text

GL-04.02-100

Title: A Vulnerable Environment

Text: Climate change affects us all. In these parks, even small changes in the high Sierra Nevada can have damaging effects down the mountain.

As temperatures rise, precipitation increasingly falls as rain, not snow. In the subalpine zone, some species move up or down the mountain to find stability, changing the

⁹ <https://www.outdoorproject.com/adventures/california/hikes/columbine-lake>

ecosystem.¹⁰ Ozone and other air pollutants stress park plants and affect air quality and visibility. Even Sequoia's starry night sky is in danger.¹¹ **(75 words)**



IM-04.02-101

Filename: CFA991EA-3471-4A96-8764-D3A43034F2B8 -1

Caption: Sequoia and Kings Canyon National Parks are nationally-recognized dark sky parks. On clear nights, hundreds of stars light up the sky. However, air pollution threatens to destroy this view for good. **(30 words)**

Credit: Kirke Wrench/NPS Photo



IM-04.02-102

Filename: 25D75BAB-D178-4F07-A2F4-C554FA079095

Caption: Unfortunately, Sequoia and Kings Canyon National Parks are among the most polluted parks in the country. Smog and air pollutants waft up from California's Central Valley. **(26 words)**

Credit: NPS Photo

Conservation Connection Graphic

GL-04.02-110

Title: Conservation Connection

¹⁰ <https://www.nps.gov/seki/learn/nature/subalpine-forests.htm>; <https://www.sfgate.com/science/article/Sequoia-National-Park-Worst-air-pollution-3591161.php>

¹¹ <https://www.sequoiaparksconservancy.org/darkskyfestival.html>

Text: At first glance, Emerald Lake looks like an average body of water. But this glacier-carved basin has a lot to tell us about our world.

Mountain lakes feed off the surrounding soil and air more than other bodies of water and are therefore sensitive to environmental changes.¹² By monitoring acid deposits, snowmelts, and other pollutants, experts can track environmental variations.¹³ **(72 words)**



IM-04.02-111

Filename: Scott Tostone-Emerald Lake

Caption: Scientists have studied climate change at Emerald Lake since 1983. Their research has contributed to California air quality regulations and federal wilderness management practices.¹⁴ **(24 words)**

Credit: Scott Tostone

Snowpack Element

GL-04.02-120

Title: Snowbound

Text: In Panther Gap, scientists track the snowpack's health by measuring snow depth and water content every winter. As temperatures rise and more precipitation falls as rain, the average annual snowpack begins to shrink. With less snowmelt, this environment is more vulnerable to drought and wildfires.¹⁵

¹² <http://ccb.ucr.edu/emeraldlake/past.html>

¹³ <http://ccb.ucr.edu/emeraldlake/>

¹⁴ <http://ccb.ucr.edu/emeraldlake/programs.html>

¹⁵ California Department of Water Resources, California Cooperative Snow Surveys, Panther Meadow Snow Course, early April 1980-2018, http://cdec.water.ca.gov/cgi-progs/snowQuery?course_num=PTM&month=%28All%29&start_date=&end_date=&data_wish=Retrieve+Data

In cooler decades, the average snowpack in Panther Gap reached over eight feet. How do you measure up?

(88 words)

Decade	Average Snow Depth (in)	Average Snow Water Content (in)
1980-89	103.1	39.2
1990-99	99.8	37.1
2000-09	85.2	35.9
2010-18	79.9	33.3

Associated Image:



IM-04.02-121

Filename: Img1602

Credit: NPS Image

Get Out There! Graphic

GL-04.02-130

Title: Get Out There!

Text: The hills of the subalpine zone present beautiful hikes and views. Please be careful and know your limits: many trails are difficult and meant for experienced hikers.

(27 words)

Subtitle: Lakes Trail

Text: Approximately 14 miles roundtrip, the Lakes Trail starts in Lodgepole and climbs into the subalpine zone, weaving through meadows, mountains, and around serene lakes. **(24 words)**

Associated Image:



IM-04.02-132

Filename: Scott Toste-Twin Lake Panorama

Credit: Scott Toste

Subtitle: Panoramic Point

Text: Want a glimpse of the subalpine zone without an overnight trip? Consider this wheelchair accessible trail in Grant Grove. On clear days, this impressive vista offers views deep into the wilderness. **(31 words)**

Associated Image:



IM-04.02-131

Filename: E89B7506-0C02-4C41-89DB-CA741911EB1E

Credit: Kirke Wrench/NPS

Scene 5: Alpine

The alpine zone makes up a large portion of Sequoia and Kings Canyon National Parks and is home to some of the highest peaks in the United States.¹⁶ With elevations over 10,000 feet, alpine ecosystems must be resistant to the Sierra Nevada's harshest conditions. Through an immersive vignette and interactive elements, visitors experience the High Sierra and learn about the park's efforts to restore these fragile landscapes.

Scene Intro

Title: The Alpine Zone

¹⁶ <https://www.nps.gov/seki/learn/nature/alpine.htm>, Sequoia and Kings Canyon National Parks, *A Climate-Smart Resource Stewardship Strategy for Sequoia and Kings Canyon National Parks*, (2017) 18.

Text: The air is thin, but it's the view that will take your breath away. With spectacular vistas but harsh conditions, the alpine zone is home to some of the highest peaks in the United States. **(35 words)**

Content Group 5.1 – Top of the Park

The highest elevations of Sequoia National Park host a surprising level of biodiversity. In this area, visitors experience an alpine scene in early spring and learn how hardy plants and animals survive at this extreme altitude.

Main Text

GL-05.01-100

Title: The Mountains Are Calling

Text: You have reached the top of the parks. Each year, tens of thousands of travelers brave the elements to explore the vast vistas of this harsh environment. Starting at a dizzying 9,500 feet, this is the alpine zone.

Nearly half of Sequoia and Kings Canyon is above treeline. Here, heavy snow and freezing temperatures limit the growth of trees and other plants.¹⁷ Instead, low-growing vegetation and herbaceous plants fill sheltered cracks and crevices.¹⁸ Despite punishing winds, specialized animals can thrive. **(84 words)**

¹⁷ <https://www.nps.gov/seki/learn/nature/alpine.htm>; <http://snrs.ucmerced.edu/natural-history/life-zones>

¹⁸ <https://www.nps.gov/seki/learn/nature/alpine.htm>; <http://snrs.ucmerced.edu/natural-history/life-zones>



IM-05.01-101

Filename: 1D17D8B7-C85A-42B6-8921-BC8F56A8B4E0

Caption: Mountain peaks and wilderness areas offer opportunities for solitude and wonder. **(11 words)**

Credit: NPS Photo



IM-05.01-102

Filename: 6DAFE1F2-B563-460E-B1C3-64BB3B5A39E5

Caption: Glaciers carved much of these parks millions of years ago, leaving steep canyons and spectacular valleys. **(16 words)**

Credit: NPS Photo

Alpine Vignette

In this vignette, hardy flowers emerge from rugged rocks and the winter snowpack begins to melt into a small pool of water. Alpine animals are perched around and on rugged rocks. The ground should feature a texture of stone. An ambient soundscape features the slow melting of snow and the calls of the Gray-crowned rosy finch and the pika.

Soundscape: EP-05.01-525

Models:

- CE-05.01-400 Sky pilot model
- CE-05.01-410 Oval leaf buckwheat model
- CE-05.01-420 Lemmon's draba model
- CE-05.01-430 Sierra Nevada bighorn sheep model
- CE-05.01-440 Pika model
- CE-05.01-450 Mountain yellow-legged frog model
- CE-05.01-460 Recreated stone tactile wall
- CE-05.01-470 Gray-crowned rosy finch tactile model
- CE-05.01-480 Alpine CPT Vinyl Flooring
- CE-05.01-480 Alpine Scenic Ground Cover

Background Image



IM-05.01-121

Filename: 489B9222-29E1-4CBF-8E22-1F4589B1BAAE

Credit: NPS Photo

Graphic Rail

GL-05.01-130

Title: Life, Elevated

Text: The rocky terrain of the alpine zone may seem barren compared to the rest of the mountain range, but over 200 species of vascular plants live in these hills.¹⁹ These tenacious plants dot the peaks, flowering in the warmer months.²⁰ **(42 words)**

Callouts:

Text: Do you see bright yellow petals emerging from the rocky crevices? These thick, hairy flowers are **Lemmon's draba** (*Draba lemmonii*). They can blossom at elevations up to 13,000 feet.²¹ **(33 words)**

Associated image:



IM-05.01-132

Filename: Berkeley-Lemmon's Draba

Credit: Vernon Smith

Text: **Oval-leaved buckwheat** (*Eriogonum ovalifolium*) grows near the ground to absorb as much sun and warmth as it can.²² **(20 words)**

Associated image:



¹⁹ <https://www.nps.gov/seki/learn/nature/alpine.htm>

²⁰ <https://www.nps.gov/seki/learn/nature/alpinemonitor.htm>

²¹ *Sierra Nevada Natural History*, 76-77.

²² <https://www.nps.gov/seki/learn/nature/alpine.htm>; https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=3336

IM-05.01-133

Filename: NPS-Buckwheat

Credit: NPS Photo

Text: Known for its bright purple petals, **sky pilot** (*Polemonium eximium*) is a common sight in the alpine zone. It can emit a skunk-like smell.²³ **(24 words)**

Associated Image:



IM-05.01-131

Filename: 9397A0F5-2DFB-4CAC-8B6A-C4910832019F

Credit: Nicholas Koukoutsakis/NPS Photo

Graphic Rail

GL-05.01-140

Title: Hardy Survivors

Text: With limited protection and food, the alpine zone is an undesirable home for many animals.²⁴ But look closely for signs of life. The hardy animals who live here have adapted over millennia to survive the conditions here. **(38 words)**

Callout Text:

Text: Listen closely. Do you hear the high-pitched chirping of the **gray-crowned rosy finches** (*Leucosticte tephrocotis*)? Or the short shouts of the **pika** (*Ochotona princeps*)? These small creatures thrive in the harsh mountain environment.²⁵ **(33 words)**

Associated images:

²³ *Sierra Nevada Natural History*, 96; <https://www.mercedsunstar.com/news/local/article3238134.html>

²⁴ <https://www.mercedsunstar.com/news/local/article3238134.html>

²⁵ https://www.allaboutbirds.org/guide/Gray-crowned_Rosy-Finch/overview; *Sierra Nevada Natural History*, 381; <https://www.youtube.com/watch?v=W4U9IxxQSTc>



IM-05.01-143

Filename: NPS-Gray Crowned Finch

Credit: NPS Photo



IM-05.01-142

Filename: NPS-Pika

Credit: Isaac Chellman/NPS Photo

Text: Nimble-footed **Sierra Nevada bighorn sheep** (*Ovis canadensis sierrae*) are endangered, but making a comeback. They make their summer homes on steep rocky slopes and migrate downslope in winter.²⁶ **(28 words)**

Associated image:



IM-05.01-141

Filename: Img0184

Credit: NPS Photo

²⁶ *Sierra Nevada Natural History*, 362.

Text: The endangered **mountain yellow-legged frog** (*Rana muscosa*) lives most of its life in High Sierra lakes. Their croaking has lured backpackers to sleep for generations.²⁷ **(25 words)**

Associated image:



IM-05.01-144

Filename: Img4646

Credit: NPS Photo

Get Out There! Graphic

GL-05.01-150

Title: Get Out There!

Text: Climbing in the alpine zone takes skill and patience. Many treks require permits and overnight camping. Be careful on unmaintained trails and creek crossings, and watch for signs of altitude sickness. **(31 words)**

Subtitle: High Sierra Trail

Text: Starting at Crescent Meadow and crossing over the Kaweah Gap, the High Sierra Trail offers breathtaking views. Those interested and able can continue up to the summit of Mount Whitney.²⁸ **(30 words)**

Associated image:

²⁷ *Sierra Nevada Natural History*, 355.

²⁸ <https://www.nps.gov/seki/planyourvisit/high-sierra-trail.htm>; <https://www.alltrails.com/trail/us/california/high-sierra-trail-crescent-meadow-to-whitney-portal>



IM-05.01-151

Filename: Flickr-High Sierra Trail.jpg

Credit: TBD

Subtitle: Alta Peak Trail

Text: After a steep climb, the Alta Peak Trail offers stunning panoramic views of Great Western Divide, the Kaweah Peaks, the Tablelands, and beyond.²⁹ **(23 words)**

Associated image:



IM-05.01-152

Filename: Joseph Ridgway-Alta Peak Trail

Credit: Joseph Ridgway

Follow the River Graphic

GL-05.01-160

Title: Follow the River

Text: At its highest point, the Kaweah River begins as snowpack. In summer, the snow melts and gradually flows down from the mountains. More than 60 percent of California's water comes from the Sierra Nevada snowpack.³⁰ **(35 words)**

Associated image:

²⁹ <https://www.alltrails.com/trail/us/california/alta-peak-trail>

³⁰ <http://www.sierranevada.ca.gov/our-region/ca-primary-watershed>



IM-05.01-161

Filename: 47D05D4C-2FA5-4A8C-AA6D-FB87845EFC51

Credit: NPS Photo

Content Group 5.2 – Alpine Restoration

The National Park Service has completed extensive restoration programs in the high Sierra. Efforts to reintroduce and track bighorn sheep, remove non-native fish, and monitor alpine conditions have helped restore natural ecosystems. Graphics here explore major projects like the removal of trout from alpine lakes and the Sierra Nevada bighorn sheep restoration project.³¹

Main Text

GL-05.02-100

Title: Alpine Restoration

Text: Can you imagine a pond without leaping frogs? How about a mountain without nimble-footed sheep?

Once common in the alpine zone, the Sierra Nevada bighorn sheep and the mountain yellow-legged frog are now endangered. Losing key animals in an ecosystem disrupts the natural food chain and can have devastating ecological effects. Today, park biologists and veterinarians are relocating bighorn sheep, restoring frog habitats, and closely monitoring animals' health and safety. ³² **(70 words)**

³¹ http://www.dfg.ca.gov/SNBS/SEKI_home.html

³² <https://www.nps.gov/seki/learn/nature/bighorn-sheep.htm>, Sequoia and Kings Canyon National Parks, *A Climate-Smart Resource Stewardship Strategy for Sequoia and Kings Canyon National Parks*, (2017) 19.



IM-05.02-101

Filename: A9CD2325-F993-40EC-B6F3-83C9F8FF9DEA

Caption: To attract anglers, trout were introduced to alpine lakes in the early 1900s. Today, park staff is removing non-native fish from some frog habitats to restore the natural food chain.³³**(29 words)**

Credit: D. Boiano/NPS Photo



IM-05.02-102

Filename: CDFW-SheepSnow_Wheeler

Caption: In 1995, there were only 105 Sierra Nevada bighorn sheep remaining. Today, the species is making its way back from the brink of extinction. **(24 words)**

Credit: California Department of Fish and Wildlife

Conservation Connection Graphic

GL-05.02-110

Title: Conservation Connection

Text: Projects like the Global Observation Research Initiative in Alpine Environments enable scientists to study at-risk plants. By tracking trends in vegetation and temperature, researchers learn more about the effects of climate change on high-elevation environments.³⁴ **(35 words)**

³³ <https://www.nps.gov/seki/learn/nature/mountain-yellow-legged-frogs.htm>

³⁴ <https://www.nps.gov/seki/learn/nature/alpinemonitor.htm>



IM-05.02-111

Filename: NPS-GLORIA

Caption: A researcher studies the soil from a plot frame in the alpine zone. By surveying points on multiple summits, scientists can better understand how alpine plant diversity changes over time. **(31 words)**

Credit: NPS Photo

Touchable Element - CE-05.02-400

GL-05.02-120

Visitors touch the fur of a bighorn sheep and learn how this fur protects the animal from the harsh alpine conditions.

Title: Weathering the Elements

Text: The bighorn sheep's fur can range from dusty tan to a rich brown. The thick, two-layered coat not only protects them from changing temperatures, it also acts as camouflage from enemies.³⁵ The multicolored fur helps sheep blend into the rocks, dirt, and snow.³⁶ **(45 words)**



IM-05.02-121

Filename: 2C0968D0-B719-4BF9-A0AB-688D224634FA

³⁵ <http://www.eduscapes.com/nature/bighorn/index1.htm>;
https://www.nps.gov/romo/learn/nature/bighorn_sheep.htm

³⁶ https://www.nps.gov/romo/learn/nature/bighorn_sheep.htm

Caption: Male bighorn sheep have large, curved horns, while female horns are smaller and straighter.³⁷ **(14 words)**

Credit: NPS Photo

Content Group 5.3 – Reaching for the Peaks

Every year, tens of thousands of visitors travel by foot into the remote wilderness of the alpine zone.³⁸ From early Native American trails that crossed the Sierra’s eastern crest to the first climbers to summit Mt. Whitney, people have always been reaching for the peaks. Here, a large dramatic mural of a mountaintop vista, along with an audio interactive, immerses visitors in the wonders of the alpine world.

Main Text

GL-05.03-100

Title: Reaching for the Peaks

Text: Humans crave exploration. For thousands of years, people climbed the Sierra Nevada Mountains seeking connections to the world around them.

California Native Americans traveled across the mountains to trade and socialize with communities on the other side.³⁹ Geographers and surveyors in the 1800s and 1900s studied the terrain and night sky.⁴⁰ Conservationists like John Muir were inspired to protect these lofty heights. Today, mountaineers and backpackers climb peaks and venture into wilderness spaces for the beauty, solitude, and challenge. **(108 words)**



IM-05.03-101

³⁷ https://www.nps.gov/romo/learn/nature/bighorn_sheep.htm

³⁸ <https://www.nps.gov/seki/learn/nature/alpine.htm>

³⁹ Ron W. Goode and Jared Dahl Aldern, “The Stories Hold Water: Learning and Burning in North Fork Mono Homelands,” pdf p. 5-6

⁴⁰ *Images of Sequoia National Park*,
<https://books.google.com/books?id=2xguFbKRcZ4C&printsec=frontcover&dq=history+of+nps+in+sequoia&hl=en&sa=X&ved=0ahUKEwju9J3OzMHbAhVwxFkKHUR3BB8Q6AEIKTAA#v=onepage&q=history%20of%20nps%20in%20sequoia&f=false>; <https://www.smithsonianmag.com/smithsonian-institution/the-mount-whitney-hut-turns-100-15445725/>

Filename: 7AC70A0F-4EA9-4AAA-BA09-48E3DE74114E

Caption: You don't need to climb a mountain to encounter wilderness. Feel small next to a towering sequoia, marvel at the starry sky, and go experience wilderness on your terms. **(29 words)**

Credit: NPS Photo



IM-05.03-102

Filename: Chellman_MooseLakeSunset

Caption: Exploring the wilderness of the alpine zone offers hikers a chance to reflect on the vast world around them. Here, the sun sets over Moose Lake. **(26 words)**

Credit: Isaac Chellman

Overlook Image and Photo Op



IM-05.03-131

Filename: Scott Toste-Silliman Crest

Credit: Scott Toste

Recreated Boulder CE-05.03-400

Subtext

GL-05.03-110

Title: Over the Mountain

Text: California Native Americans have always crossed these mountains. For thousands of years, the Monache/Mono and Yokuts of the western slopes traded with the Owens Valley Paiute over the mountains. They exchanged shell money, baskets, acorns, and berries for salt, pinyon nuts, bows, and fur.⁴¹ For these communities, the peaks and passes are not a challenge to be conquered, but a way of life. **(66 words)**



IM-05.03-111

Filename: 342BF411-128A-4A1E-B616-60B92C232229

Caption: Every year, local Native Americans traveled familiar mountain trails to visit friends and family across the Sierra. **(17 words)**

Credit: NPS Photo

California Native Americans Map Reference Image:

⁴¹ Manzanar NHS, https://www.nps.gov/museum/tmc/MANZ/handouts/Traveling_Beads_Manzanar.pdf



IM-05.03-112

Filename: National Geographic – Tribal Map

Caption: California Native Americans developed complex trade networks. Each community had their own geographic region, language, and culture. **(17 words)**



IM-05.03-121

Filename: 1FF5491A-96E6-4B0C-80EC-DD395C4AC27A

Credit: NPS Photo

Artifact Case

Object: SEKI 16072

Title: Mt. Whitney Summit Register

Text: Leave no trace, but leave your mark. Countless hikers have trekked up Mt. Whitney, the tallest mountain in the continental United States. They left their names in this register. **(30 words)**

Associated image:



IM-05.03-151

Filename: 157

Caption: People have traveled the alpine zone for hundreds of years. In the 1900s, this family made the long journey into the mountains.

Credit: NPS Photo

Audio Interactive - EP-05.03-530

GL-05.03-160

With a panoramic vista stretching before them, visitors listen to the stories of people who have climbed the park's highest peaks in an audio interactive. Possible stories include:

- *Mountaineers and climbers*
- *Young adventurers*
- *Local Native American community members*
- *Park rangers*

Title: Stories from the Summit

Text: After hours of hiking, you have reached the summit. From atop the steep granite slopes, the vast Sierra Nevada stretches before you. How do you feel? Triumphant? Awestruck? Maybe a little out of breath?

Listen here for the stories of fellow hikers. **(42 words)**

- Mountaineer
- Adventurer
- Local Native American
- Park Ranger



GL-05.03-161

Filename: Julie Vargo_university peak (1)

Credit: Julie Vargo

USGS Benchmark Touchables - CE-05.03-410

Visitors touch replica USGS benchmarks from Mt. Whitney and Moro Rock.

Title: Touching the Summit

Text: Benchmarks like these mark the elevation of peaks throughout the park. Mt. Whitney is the tallest mountain in the continental United States. The much shorter Moro Rock offers a panoramic view of the high Sierra.

Ending Message

GL-05.03-170

Title: Where will your journey take you today?

Text: From low to high and north to south, this extensive landscape has something for everyone. Will you explore Native American cultural sites in the foothills? Stand in the shade of a sequoia? Climb a mountain peak? No matter where you go, remember to respect this landscape and enjoy the adventure. **(50 words)**



IM-05.03-171

Filename: 5C45C614-1676-409B-9B2E-A17535668619

Credit: NPS Photo

Scene 6: Expand Your Horizons

In this room, visitors take what they have learned in the exhibit and prepare to go out into nature. Here, visitors can apply for wilderness permits, learn about Sequoia Journeys trip options, purchase tickets to visit Crystal Cave, plan their own adventures, and browse retail offerings. A theater space at the back of the room gives visitors the opportunity to sit and enjoy different park films.

Throughout the space, wilderness and trip planning information, and graphics of the park's natural beauty and cultural heritage inspire visitors and instill a sense of excitement about the adventures that await them in the park.

Content Group 6.1 – Retail Area and Sequoia Journeys Desk

Visitors can shop for retail items organized by specific themes that can be rotated out to accommodate new retail offerings. At the retail and Sequoia Journeys desk, SPC staff can ring up purchases and share information about booking a Crystal Cave tour or other guided adventures available through the SPC Field Institute. Visitors can also rent bear canisters and learn how to use them. Above the retail desk, a simple system of monitors displays additional information and photographs that can be loaded and changed by park staff.

Graphic Panels

GL-06.01-100A, GL-06.01-100B, GL-06.01-110A, GL-06.01-110B, GL-06.01-120A, GL-06.01-120B, GL-06.01-130A, GL-06.01-130B

Brief changeable graphic panels coordinate with retail items selected by the park and the Sequoia Parks Conservancy.

Topic: Geology



IM-06.01-102

Filename: 6DAFE1F2-B563-460E-B1C3-64BB3B5A39E5

Caption: From the soaring mountains to the deep glacial valleys, the landscape you see today was formed over millions of years. **(20 words)**

Credit: NPS Photo



IM-06.01-101

Filename: 20170308 Red Schist_credit Hal Gamble

Caption: Keep an eye out for metamorphic rocks, like this red schist. Found in small sections of the parks, these rocks likely formed some four million years ago before the Sierra Nevada uplift that created the views you see today. **(39 words)**

Credit: Hal Gamble

Topic: Crystal Cave



IM-06.01-103

Filename: 82FB263A-0722-4E3E-B212-1A20BF7C842A

Caption: Explore Crystal Cave, the only park cave open to the public. Buy tickets online or at the Sequoia Journeys desk. **(20 words)**

Credit: Alison Taggart-Barone/NPS Photo



IM-06.01-104

Filename: D0447F16-F5BA-43A3-ACD5-AB7630C9317E

Caption: Do not be alarmed when you see this giant spider web. It is actually the man-made gate entrance to Crystal Cave.⁴² **(21 words)**

Credit: Alison Taggart-Barone/NPS Photo

Topic: Get Out and Explore!

⁴² <http://www.nationalparksblog.com/spiderweb-gate-crystal-cave-sequoia-national-park/>



IM-06.01-111

Filename: C16E9E6F-B5A7-4A1E-8895-9B6D1AAD4D84

Caption: Almost a mile long, the Big Trees Trail provides stunning views of giant sequoias for visitors of all ages and abilities. **(21 words)**

Credit: NPS Photo

Topic: Junior Rangers



IM-06.01-112

Filename: E4A5C87C-E2BA-473E-9112-C1650CFAF8B9

Caption: Are you a kid five or older? If so, you can join the Junior Ranger Program. Grab a free booklet at any park visitor center!⁴³ **(24 words)**

Credit: NPS Photo

⁴³ <https://www.nps.gov/seki/learn/kidsyouth/beajuniorranger.htm>



IM-06.01-113

Filename: 971F4371-A4C0-4FCC-AD31-92D41CA4786C

Caption: Junior Rangers earn badges by learning about the world around them.⁴⁴ **(11 words)**

Credit: NPS Photo

Topic: Cultural History



IM-06.01-121

Filename: NPS-4dd44da4-9bf3-467a-b981-04bfbfa1b679

Caption: California Native Americans have lived in the Sierra Nevada mountains for thousands of years. **(14 words)**

Credit: Hank Jones/NPS Photo

⁴⁴ <https://www.nps.gov/seki/learn/kidsyouth/beajuniorranger.htm>



IM-06.01-122

Filename: Kaweah Commonwealth-Word Game

Caption: Tribal communities continue to flourish in the area. Here, Jennifer Malone teaches others the Wukchumni language.⁴⁵ **(16 words)**

Credit: Kaweah Commonwealth

Topic: Dark Sky



IM-06.01-123

Filename: BEF4FB92-92B7-43F9-8647-CA158E4B66F1

Caption: People come from all over the world to appreciate the parks' nationally renowned night sky.⁴⁶ **(15 words)**

Credit: NPS Photo



IM-06.01-124

Filename: 01CB20E4-4BE8-4397-A3FB-506B9BE75C1E

Caption: Bring your binoculars and telescope. You will not want to miss counting stars or identifying constellations. **(16 words)**

⁴⁵ <http://www.kaweahcommonwealth.com/news/native-culture-taught-local-students>

⁴⁶ <https://www.sequoiaparksconservancy.org/darkskyfestival.html>

Credit: NPS Photo

Topic: Black Bears



IM-06.01-132

Filename: 1D3D2CB5-C705-4D2D-A6E9-99C0213028D9

Caption: Bears wander throughout Sequoia and Kings Canyon National Parks, often foraging in meadows. Don't get too close!⁴⁷ **(15 words)**

Credit: NPS Photo



IM-06.01-131

Filename: 0A934A2F-545D-4960-8DA0-221FC648593B

Caption: Spot bears when you can, but be especially wary of young cubs. Their protective mothers may be nearby. **(18 words)**

Credit: NPS Photo

Topic: Wildflowers

⁴⁷ https://www.nps.gov/seki/learn/nature/ns_bears.htm



IM-06.01-133

Filename: 2474DCCD-B435-459E-A8E2-F0B928718DC9

Caption: Wildflowers bloom throughout the parks, painting the landscape in vivid color.
(13 words)

Credit: NPS Photo



IM-06.01-134

Filename: 80F953BC-9A96-4CF2-A225-DDD0D788BDCF

Caption: Throughout the year, park staff and volunteers work together to keep habitats healthy and free from invasive species. **(18 words)**

Credit: Kirke Wrench/NPS Photo

Content Group 6.2 – Wilderness Desk

In this space, visitors acquire the tools and knowledge they need to enjoy the park and experience it safely. Visitors learn about Wilderness and how they can explore and respect these protected areas. At the new wilderness desk, visitors can apply for wilderness permits and talk with a wilderness ranger.

To the right of the desk, rangers can hold short talks about wilderness areas in an open multiuse space. During times of high volume, visitors seeking wilderness permits can also access the desk through the back door in this room.

To the left of the wilderness desk, visitors can plan their own trips at a trip planning counter. Binders and books with information on park trails and trip ideas are tethered to the counter. Up to six handout holders along the wall contain pamphlets and information sheets provided by the park. Power outlets and USB ports in the trip-planning counter allow visitors to charge their electronic devices.

Main Text

GL-06.02-100

Title: What is Wilderness?

Text: In 1964, the Wilderness Act created protections for natural, untrammeled, and undeveloped landscapes.⁴⁸ Wilderness is the highest level of protection for federal land.

The idea of wilderness means different things to different people. For Native American communities, wilderness land is not wild or “undeveloped”: it is home. For many, wilderness is about reconnecting with nature or experiencing something new — an opportunity to slow down and feel small in a vast landscape.

What does wilderness mean to you? **(78 words)**



IM-06.02-101

Filename: D8A715D4-7FAC-4BE8-A5D6-EF2E4AF105D6

Caption: In the past, wilderness was something to be feared and controlled. Today, it is something to be preserved and respected. **(20 words)**

Credit: Alison Taggart-Barone/NPS Photo



IM-06.02-103

Filename: 79120D22-1AEF-468C-B92A-A10DA99A0A1B

⁴⁸ <https://www.wilderness.net/NWPS/WhatIsWilderness>

Caption: Sequoia and Kings Canyon National Parks maintain over 800,000 acres of protected wilderness from the chaparral foothills to the tallest alpine peaks.⁴⁹ **(22 words)**

Credit: NPS Photo



IM-06.02-102

Filename: 6298D422-3D96-4F6D-A33B-B6E82F041D93

Caption: In 1964, the United States became the first country in the world to define and protect wilderness areas. The Wilderness Act is one of the country's most successful and enduring environmental laws.⁵⁰ **(32 words)**

Credit: NPS Photo

Subtext

GL-06.02-130

Title: Wilderness in the Parks

Text: From rolling foothills to the high sierra backcountry, you can find wilderness nearly everywhere in Sequoia and Kings Canyon National Parks.

Founded in 1890 to protect giant sequoias, this park has long defended public lands. As the park expanded, so did the need to balance public accessibility with the preservation of natural landscapes. Today, 97 percent of Sequoia and Kings Canyon National Parks is protected as wilderness.⁵¹ **(67 words)**

⁴⁹ <https://www.wilderness.net/NWPS/WhatIsWilderness>

⁵⁰ <https://www.wilderness.net/NWPS/WhatIsWilderness>

⁵¹ <https://www.nps.gov/seki/learn/news/upload/FINAL-SEKI-FACT-SHEET-2016.pdf>



IM-06.02-131

Filename: 2CDD13DA-204E-42ED-959A-0F3552FECD78

Caption: Every year, thousands visit the parks' wilderness spaces. There are hundreds of miles of trails and unlimited opportunities for adventure. **(20 words)**

Credit: NPS photo



IM-06.02-132

Filename: FAE0DAEB-B65A-4F11-94EC-F94E92C36DB5

Caption: Sequoia and Kings Canyon National Parks shares a border with four other wilderness areas.⁵² The Sierra Nevada range contains one of the longest stretches of protected wilderness in the country. **(30 words)**

Credit: NPS Image

⁵² <https://www.wilderness.net/NWPS/wildView?WID=543>

Subtext

GL-06.03-100

Title: Wilderness Dos and Don'ts

Text: Your wilderness adventure awaits, but remember - this public land belongs to all of us. It is our privilege and responsibility to help protect it for future generations. Even small actions repeated thousands of times can have dramatic consequences. **(39 words)**

Please do:

- Plan ahead and prepare
- Pick terrain that matches your skills and abilities
- Pack out all trash, leftover food, and toilet paper
- Use existing fire rings and follow fire restrictions
- Store food and trash in bear canisters
- Be respectful of other visitors

Please do not:

- Camp in meadows
- Move rocks
- Chop trees for firewood
- Feed animals
- Disturb historical or cultural artifacts⁵³



IM-06.03-151

Filename: 7F8C20D4-7B38-4B5D-8256-1DE2597375DF

Caption: Bear-resistant food-storage boxes like this one can be found throughout the park. Wherever they're available, use them to store all scented and food-related items. **(24 words)**

⁵³ <https://www.nps.gov/seki/planyourvisit/minimum-impact-restrictions.htm>;
<https://www.nps.gov/seki/planyourvisit/upload/NoYear-Wilderness-Trip-Planner-Final.pdf>

Credit: NPS Photo

Wilderness Videos - EP-06.02-535

Visitors view a series of looping videos about wilderness spaces in Sequoia and Kings Canyon National Parks and best practices for enjoying wilderness safely.

Backpack Graphic

GL-06.02-120

A custom illustration of an open backpack teaches visitors what they should and should not bring for an overnight hike. Graphics can also provide a stewardship message, reminding visitors about the importance of entering wilderness spaces respectfully and safely.

Title: Pack it up!

Text: Headed out for an overnight hike? Get your wilderness permit, check weather and trail conditions, and pack carefully. Not sure what to bring? Start with these essentials! **(27 words)**

IM-06.02-121

[Custom illustration of backpack with items]

Subtitle: NAVIGATION

Text: You need a map to know where you are going. Unlike cell phones and GPS, maps never run out of batteries. **(21 words)**

Subtitle: SUN PROTECTION

Text: There's less protection from the sun's rays in the mountains. Protect yourself by wearing sunglasses, sunscreen, and a hat. **(19 words)**

Subtitle: CLOTHING

Text: Rain and snow can fall any time of year. Pants and long-sleeved shirts protect you from the sun and wind. **(20 words)**

Subtitle: ILLUMINATION

Text: If you plan to camp overnight or hike after dark, you need a light. Take a headlamp or flashlight and pack extra batteries. **(23 words)**

Subtitle: FIRST-AID KIT

Text: A first aid kit (and the knowledge of how use it) can help you out in some nasty scrapes. Carry your medications with you and take supplies to treat cuts and scratches. **(32 words)**

Subtitle: FIRE

Text: While fires are prohibited in many areas of the parks, fire can be an emergency signal and a heat source. Pack matches and/or a lighter. **(25 words)**

Subtitle: REPAIR KIT AND TOOLS

Text: A basic repair kit can save the day. Items like duct tape and a multi-tool have many uses. **(18 words)**

Subtitle: NUTRITION

Text: Food keeps you going on the trail. Pack more than you need to make sure you have enough energy. **(19 words)**

Subtitle: HYDRATION

Text: Carry at least one liter of water, or more if your plans involve strenuous activities. A filter makes surface water safe to drink on multi-day trips. **(26 words)**

Subtitle: SHELTER

Text: An emergency shelter is a good idea any time of year. In summer, a space blanket is a good backup. For overnight trips, take a tent, tarp, or bivy sack. **(30 words)**

Subtitle: SANITATION

Text: Nature Calls! A good sanitation kit includes a small trowel, toilet paper, and a baggy to carry out used toilet paper. **(21 words)**

Subtitle: STORAGE CANISTER

Text: Protect food, toiletries, and scented items from bears and other animals on overnight trips. **(14 words)**

Content Group 6.3 – A Place of Inspiration

Outside the theater space, an area features brief changeable stories and photographs submitted by visitors through social media. The park can update these graphics periodically to feature new images and stories.

Visitor Experience Graphic

GL-06.03-150, GL-06.03-151, GL-06.03-152, GL-06.03-153, GL-06.03-154, GL-06.03-155, GL-06.03-156, GL-06.03-157, GL-06.03-158

Here graphics show visitor stories and photographs from their recent and past personal experiences on park trails and give visitors ideas for new trips and adventures. These brief changeable stories and photographs are submitted by visitors online.

Header: Susan Thew Wilderness Theater

Title: A Place of Inspiration

Text: Have you hiked a mountain? Toured Crystal Cave? Walked in the shadows of giant sequoias?

People come to these parks from all over the world. Their time here often leaves lasting impressions. How has your trip inspired you? Share your pictures and stories with us!
(45 words)



IM-06.03-151

Filename: A04BF026-5F62-4F02-89DC-AF9C1A69D51F

Credit: NPS Photo

Quotation

Text: "Dark sky, that's what I love about coming here ... If you want to see the wonders of space like the Milky Way, all you have to do here is look up." – Don Thomas⁵⁴

⁵⁴ "Takeaways from the Dark Sky Festival," The Kaweah Commonwealth



IM-06.03-154

Filename: ScottToste-20090826_40D_0151-X2

Credit: Scott Toste

Quotation

Text: “For simply one of the best day hikes in our Golden State, consider tackling Sequoia National Park’s Lake Trail.” – Richie Demaria⁵⁵

⁵⁵ "Sequoia National Park’s Lake Trail to Emerald Lake," Santa Barbara Independent, <https://www.independent.com/news/2016/jul/26/sequoia-national-parks->



IM-06.03-158

Filename: BFED1424-B5A3-4FA6-A0AE-C1AD59DE85FA

Credit: Kirke Wrench/ NPS Photo

Quotation

Text: “The best is seeing the Giant Sequoias reaching skyward out of a white carpet. The already majestic trees stand out even more when everything else is covered in snow.” – Marc Bergreen ⁵⁶



IM-06.03-155

⁵⁶ <https://www.bergreenphotography.com/2016/02/snow-play-sequoia-back-country-skiing>

Filename: 99C13747-C370-4040-82EE-8B927975CB97

Credit: Alison Taggart-Barone / NPS Photo

Quotation

Text: “You turn off your light and you’re kind of thrown into just this mysterious darkness. I remember sitting there thinking how lucky I was to be sitting in a place that I couldn’t actually see...” – Katie Wightman⁵⁷

Film Experience - EP-06.03-540

GL-06.03-130

At the new theater on the far side of the room, up to 15 visitors can sit and choose from six existing videos on different ecosystems, animals, and landmarks in the park. Films can be swapped out as needed. The film experience encourages visitors to go out into the park and expand their horizons.

Title: Susan Thew Wilderness Theater

Text: Select a film below to learn more about park ecosystems, wildlife, and how we can protect them together. **(18 words)**

- Find Your Science
- Species Loss, Precipitation, and Fire at Sequoia-Kings
- Trails to Tomorrow
- SEKI Conservation Corps
- Restoration Series
- Bears of Sequoia



IM-06.03-181

Filename: 415AF5-DE91-420E-9F80-B155AFED6970_1

Credit: NPS Photo

⁵⁷ "Outdoorsy 4: Exploring The Underground World Of Caves," Valley Public Radio