FLASHFEED STUDY GUIDE

U.S. National Parks

Study guide by FlashFeed

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flashfeedlearningapp.com

U.S. National Parks: study guide

All 64 U.S. national parks — the people who saved them, how the landscapes formed, the wildlife and records, and a vivid profile of every park from Acadia to Zion. America's best idea, one card at a time.

Edition	November 2026 (2026-11-21)
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Contents	27 lessons · 1781 cards in the app · 589 self-test questions · 122 pictures
In the app	flashfeedlearningapp.com/packs/national-parks

How to use this guide

Take one lesson at a time: read the study guide, then go over any key facts. Where a lesson has a self-test, try it from memory before you check the answer key at the back. Follow the Go deeper links when you want more.

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LESSON 1 OF 27

Lesson 1: America's Best Idea

Part 1: How the Parks Came to Be · Part 2: The System by the Numbers

WHAT YOU'LL BE ABLE TO DO

- Identify when and by whom Yellowstone and the National Park Service were founded.
- Recognize the writer and artists who gave the national-park idea its language and proof.
- Explain how the Antiquities Act let presidents create monuments, and state how many national parks exist today.
- Compare the largest and smallest national parks and where the giants cluster.
- Identify the most-visited park and the system's highest point.

Part 1: How the Parks Came to Be

The national park is a genuinely radical invention — and an American one. This part traces the idea from a single 1872 signature to the agency that now safeguards 64 of them.

Americas best idea

The phrase comes from the writer Wallace Stegner, who called the national parks **"the best idea we ever had. Absolutely American, absolutely democratic, they reflect us at our best rather than our worst."** What made it radical was the premise: that a nation would set aside its most spectacular wild land **for everyone, in perpetuity** — not for a monarch, a army, or a private estate, but for the public and for the future. Before 1872 there was no such thing anywhere on Earth. Within a few decades the idea had crossed every ocean; today more than 100 countries protect national parks of their own, every one of them a descendant of that first experiment in the American West.

The first national park

On **March 1, 1872**, President **Ulysses S. Grant** signed the act establishing **Yellowstone** as the world's first national park. Congress acted in part because of art: the painter **Thomas Moran** and photographer **William Henry Jackson**, traveling with the 1871 Hayden Survey, brought back the first images proving that the tales of geysers and rainbow springs were real. Lawmakers, convinced, protected the place sight unseen by most of them — a leap of faith that defined the model.

The national park service is born

Here's the strange gap: for **44 years**, the parks existed with no agency to run them. Yellowstone, Yosemite, and Sequoia were patrolled by the **U.S. Cavalry** — including the African American **Buffalo Soldiers**, among the first park rangers. That ended on **August 25, 1916**, when President **Woodrow Wilson** signed the **Organic Act**, creating the **National Park Service** and charging it with a famous, almost paradoxical mandate: to conserve the parks' scenery and wildlife **"unimpaired for the enjoyment of future generations"** — to leave them untouched *and* welcome the crowds. Balancing those two halves is the Park Service's defining tension to this day. (August 25 is still celebrated as the NPS birthday.)

The antiquities act

Not every park began with an act of Congress. The **Antiquities Act of 1906** let presidents protect a place **instantly**, by proclamation, as a **national monument**. **Theodore Roosevelt** — the "Conservation President" — used it first on **Devils Tower**, then on the **Grand Canyon**, sidestepping Congress to save land before developers could reach it. Many of today's crown jewels (Grand Canyon, Zion, Acadia, Arches, and more) started as monuments and were later upgraded to national parks.

Sixty four and counting

Of the 400-plus units the Park Service manages — monuments, seashores, battlefields, historic sites — only **64** carry the full **"national park"** title, the most protected designation. The list still grows: the most recent addition is **Chiricahua** in Arizona, redesignated from a national monument as the **64th national park in October 2026**, after **New River Gorge** in West Virginia became the **63rd in December 2020**. Knowing the difference between a "national park" and the broader "park system" is the first step to reading the whole map.

Part 2: The System by the Numbers

The 64 parks are wildly unequal — in size, in height, and in how many people walk through them. A handful of numbers gives you the whole sweep, and they make great trivia.

From the tiniest to the titanic

The range of **size** is almost comic. The smallest national park, **Gateway Arch** in St. Louis, is essentially a monument and its grounds — only **about 193 acres** within its boundary. The largest, **Wrangell–St. Elias** in Alaska, covers **13.2 million acres** — bigger than Switzerland, and larger than Yellowstone, Yosemite, Grand Canyon, and several other marquee parks *combined*. In fact the four biggest parks are all in Alaska, where the scale of the land dwarfs anything in the Lower 48. That extreme spread is worth carrying in your head: when someone pictures "a national park," they might be imagining a postage stamp or a wilderness the size of a small country.

Two more extremes round out the picture. The **highest point** in any U.S. national park is **Denali** in Alaska at **20,310 feet** — the tallest peak in all of North America, with a base-to-summit rise a mile greater than Everest's, according to the National Park Service. And the **deepest, oldest, and most geologically extreme** features tend to cluster in the West and Alaska, where tectonics and ice have had the most dramatic say. The numbers aren't just trivia; they map directly onto *why* each park was worth protecting.

The most visited park

Size and fame don't line up with crowds the way you'd expect. The single **most-visited** national park isn't Yellowstone or the Grand Canyon — it's **Great Smoky Mountains**, on the Tennessee–North Carolina border, with about **12.2 million visits in 2024**, more than double its nearest rival. Two things drive that: location (it sits within a day's drive of a huge share of the U.S. population, right off a major interstate), and price — **the Smokies charge no entrance fee at all**, because of a toll ban in Tennessee's 1951 road deed and a federal law (parking more than 15 minutes now needs a parking tag, but entry is free). Compare that with the **least-visited** parks, the remote Alaskan giants like **Gates of the Arctic** (around

11,900 visits in a year — fewer in twelve months than the Smokies see before lunch on a busy day), and you've captured the paradox of the system: a few accessible parks absorb most of the people, while the vast, wild majority see almost no one. Knowing the busiest and the loneliest parks is the key to planning a trip that matches the experience you actually want.

Key concepts

Wallace Stegner

- This figure was a writer, not a politician or explorer, yet he shaped how Americans think about the parks.
- He described them as 'absolutely American, absolutely democratic,' reflecting us at our best rather than our worst.
- He coined the celebrated line that the national parks are 'the best idea we ever had.'

Ulysses S. Grant

- As U.S. president, this man signed a genuinely radical, first-of-its-kind law into being.
- On March 1, 1872, his signature set aside wild land for everyone, in perpetuity.
- He established the world's very first national park, at Yellowstone.

Thomas Moran

- Art, as much as science, convinced Congress to protect the first park — and this man supplied it.
- Traveling with the 1871 Hayden Survey, he brought back images proving the tales of geysers were real.
- This painter's canvases, beside a photographer's plates, helped protect a place lawmakers had never seen.

William Henry Jackson

- He also joined the 1871 Hayden Survey, but he worked with a lens rather than a brush.
- His pictures of geysers and rainbow springs helped prove the wild tales were true.
- This photographer's plates, beside a painter's canvases, won protection for the world's first national park.

Woodrow Wilson

- Another U.S. president put his name to a landmark conservation law — but decades after the first park.
- On August 25, 1916, he signed the Organic Act, a date still marked as an agency's birthday.
- He created the National Park Service, charged with keeping the parks 'unimpaired for future generations.'

Key facts



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The first national park

On March 1, 1872, President Ulysses S. Grant signed Yellowstone into being — the world's first national park. The idea spread across the globe; today more than 100 nations have national parks of their own, all tracing back to that one signature.



Wikimedia Commons · Unknown author · Public domain

The National Park Service is born

For 44 years the parks had no agency to run them — the U.S. Cavalry even guarded Yellowstone. That changed on August 25, 1916, when the Organic Act, signed by President Woodrow Wilson, created the National Park Service to conserve the parks "unimpaired for the enjoyment of future generations."

> ### Sixty-four and counting
>
> There are 64 national parks in the United States — the most protected tier in the park system. The newest is Chiricahua in Arizona, redesignated from a national monument in October 2026; New River Gorge in West Virginia became the 63rd in December 2020. (The Park Service manages 400-plus units in all, but only 64 carry the full "national park" title.)



Wikimedia Commons · James St. John · CC BY 4.0

The Antiquities Act

In 1906, the Antiquities Act gave presidents the power to protect special places instantly by proclaiming them national monuments. Theodore Roosevelt used it first on Devils Tower, then on the Grand Canyon — many of today's national parks began life as monuments saved this way.



AI-generated (gpt-image-1.5)

The most visited park

Great Smoky Mountains, straddling Tennessee and North Carolina, is by far the most-visited national park — about 12.2 million visits in 2024, more than double its nearest rival. It charges no entrance fee, which helps explain the crowds.



Wikimedia Commons · Denali National Park and Preserve · Public domain

Denali

Denali in Alaska is the highest point found in any U.S. national park — and the tallest peak on the entire North American continent.

> **Alaska's big four**
>
> The four largest national parks in the U.S. system are all located in Alaska, where the sheer scale of the land dwarfs the Lower 48 states.



Wikimedia Commons · AppalachianCentrist · CC BY-SA 4.0

The Smokies in 2024

Great Smoky Mountains National Park logged about 12.2 million visits in 2024 — more than double the visitor count of the next-busiest national park.

By the numbers

In what year was Yellowstone — the world's first national park — established?

1872 year

In what year was the National Park Service created by the Organic Act?

1916 year

How many national parks are there in the United States?

64 parks

How many acres does the largest national park, Wrangell–St. Elias, cover?
13175799 acres

How high is Denali, the highest peak in any U.S. national park (and in North America)?
20310 ft

Matched pairs

Each item on the left goes with the one on the right.

World's first national park → Yellowstone (1872)

Largest national park → Wrangell–St. Elias, Alaska (13.2 million acres)

Smallest national park → Gateway Arch, Missouri (193 acres)

Most-visited national park → Great Smoky Mountains (12.2 million in 2024)

Self-test

Answer each question from memory, then check your work against the answer key.

1. In what year was Yellowstone established as the world's first national park?

A 1890
B 1906
C 1872
D 1916

2. Which U.S. president signed the act establishing Yellowstone in 1872?

A Abraham Lincoln
B Woodrow Wilson
C Theodore Roosevelt
D Ulysses S. Grant

3. Which 1916 law created the National Park Service?

A The Organic Act
B The Homestead Act
C The Wilderness Act
D The Antiquities Act

4. For how many years did the national parks exist before an agency was created to run them?

A 100 years
B 44 years
C 63 years
D 20 years

5. Which U.S. president signed the 1916 Organic Act, creating the National Park Service?

A Ulysses S. Grant
B Woodrow Wilson
C Theodore Roosevelt
D Franklin D. Roosevelt

6. Which writer called the national parks 'the best idea we ever had'?

A Henry David Thoreau
B John Muir
C Wallace Stegner
D Ansel Adams

7. Whose paintings from the 1871 Hayden Survey helped convince Congress to protect Yellowstone?

A Thomas Moran
B Thomas Cole
C Frederic Church
D Albert Bierstadt

8. Which photographer traveled with the 1871 Hayden Survey and captured the first photos of Yellowstone?

A Ansel Adams
B Carleton Watkins
C Edward Weston
D William Henry Jackson

9. What did Thomas Moran and William Henry Jackson provide that convinced Congress to protect Yellowstone?

A Detailed survey maps of park boundaries
B The first images proving its geysers and springs were real
C A written petition signed by settlers
D Financial backing for the new park

10. Which figure gave the national-park idea its language rather than its visual proof?

A Wallace Stegner
B Ferdinand Hayden
C Thomas Moran
D William Henry Jackson

11. In what year was the Antiquities Act passed?

A 1872
B 1916
C 1890
D 1906

12. The Antiquities Act let presidents instantly protect a place by proclaiming it as what?

A A national park
B A wildlife refuge
C A national monument
D A state park

13. Which president first used the Antiquities Act, protecting Devils Tower?

A Franklin D. Roosevelt
B Theodore Roosevelt
C Ulysses S. Grant
D Woodrow Wilson

14. How many national parks are there in the United States today?

A 64
B 100
C 400
D 50

15. Which of these was redesignated as the 63rd national park in December 2020?

A Gateway Arch
B Indiana Dunes
C White Sands
D New River Gorge

16. What is the largest U.S. national park?

A Denali
B Yellowstone
C Wrangell–St. Elias
D Death Valley

17. What is the smallest U.S. national park?

A Acadia
B Hot Springs
C Gateway Arch
D Congaree

18. How many acres does the smallest national park, Gateway Arch, cover?

A 193 acres
B 5,000 acres
C 50,000 acres
D 13.2 million acres

19. Wrangell–St. Elias is so vast that it is larger than which of these countries?

A Iceland
B Portugal
C Ireland
D Switzerland

20. The four largest U.S. national parks are all located in which state?

A Wyoming
B Alaska
C California
D Montana

21. Which region's vast scale explains why the four largest national parks cluster there?

A the Desert Southwest
B Alaska
C the Rocky Mountains
D the Pacific Northwest

22. What do the four largest national parks in the U.S. system have in common?

A the Gulf Coast
B New England
C Alaska
D the Great Lakes region

23. Which is the most-visited U.S. national park?

A Grand Canyon
B Yosemite
C Yellowstone
D Great Smoky Mountains

24. About how many visits did Great Smoky Mountains receive in 2024?

A 12.2 million
B 5 million
C 50 million
D 800,000

25. What is the highest point in any U.S. national park (and in North America)?

A Denali
B Grand Teton
C Mount Whitney
D Mount Rainier

26. How tall is Denali, the highest peak in any U.S. national park?

A 29,032 feet
B 13,175 feet
C 14,505 feet
D 20,310 feet

27. Besides its location, what helps explain the huge crowds at Great Smoky Mountains?

A It is the largest park
B It has the tallest peak
C It charges no entrance fee
D It was the first national park

Go deeper

WATCH No Park Anywhere Before 1872 0:31 · YouTube
Before 1872, no country on Earth had a national park. Then Yellowstone became the first.

WATCH From 193 Acres to 13 Million 0:29 · YouTube
The smallest national park is Gateway Arch in St. Louis: just 193 acres.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-1-america-s-best-idea

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LESSON 2 OF 27

Lesson 2: The Story of the Parks

Guardians of the Parks · Milestones

WHAT YOU'LL BE ABLE TO DO

- Identify the naturalists, presidents, and administrators who fought to establish the parks.
- Recognize the writers and photographers whose words and images shifted public opinion.
- Recognize the donors, lawmakers, scientists, and soldiers behind the parks.
- Order the early legal milestones of land protection from Hot Springs to the Antiquities Act.
- Identify the modern conservation laws and events, from the Wilderness Act to New River Gorge.

Guardians of the Parks

The national parks did not protect themselves. They exist because a handful of stubborn, visionary people — naturalists, presidents, scientists, photographers, and soldiers — fought for them, often against their own era. Here are the guardians worth knowing.

The First Rangers

Before the National Park Service was born in 1916, who guarded the parks? In Yosemite and Sequoia, the answer was the U.S. Army — and specifically the **Buffalo Soldiers**, African American cavalry regiments who rode in during the early 1900s. They chased poachers, stopped illegal grazing and logging, built roads and trails, and even planted an arboretum. **Captain Charles Young** led the Sequoia detachment in 1903 and became the first Black acting superintendent of any national park. For decades their role was nearly forgotten; today they are honored as among the very first park rangers.

Three Nights in Yosemite

In May 1903, **John Muir** — the Scottish-born "Father of the National Parks," founder of the Sierra Club (1892) — slipped President **Theodore Roosevelt** away from his official entourage for three nights of backcountry camping. Just the two of them and a few packers slept beneath the giant sequoias and woke under fresh snow at Glacier Point. Roosevelt, the "Conservation President," came away resolved to expand federal protection. Over his presidency he signed the Antiquities Act of 1906, proclaimed 18 national monuments, and safeguarded some 230 million acres. It remains the most consequential camping trip in American history.

The builders and the scientists

Vision needs administrators. **Stephen Mather**, a borax millionaire, became the first NPS Director (1917–1929), professionalizing the parks and paying ranger salaries from his own pocket. **George Bird Grinnell**, editor of *Forest and Stream*, founded the first Audubon Society (1886) and championed Glacier National Park. Geologist **Ferdinand Hayden** led the 1871 survey of Yellowstone; his report — illustrated by painter Thomas Moran and photographer William Henry Jackson — gave Congress the visual proof that birthed the world's first national park in 1872.

The voices that changed minds

Some guardians wielded words and images. **Rachel Carson**'s *Silent Spring* (1962) launched the modern environmental movement and the DDT ban that brought back bald eagles and peregrine falcons. **Aldo Leopold** gave us the "land ethic" in *A Sand County Almanac* (1949), recanting his youthful war on wolves after watching "the green fire" fade in a dying wolf's eyes. **Marjory Stoneman Douglas** reframed the Everglades as a "River of Grass" (1947). **Ansel Adams** made Yosemite immortal in black and white.

The givers and the lawmakers

John D. Rockefeller Jr. quietly bought and donated land for Grand Teton, Acadia, Great Smoky Mountains, and more — his gifts doubled Grand Teton. And **Jimmy Carter**, signing ANILCA in 1980, more than doubled the entire park system in a single act of the pen.

Milestones

The American idea of protecting wild land for everyone unfolded over nearly two centuries, in fits and leaps. Trace the arc and the parks stop being a list of places and become a story.

The day the parks doubled

The single largest leap came on December 2, 1980, when President Jimmy Carter signed the **Alaska National Interest Lands Conservation Act**, or **ANILCA**. In one stroke it created or expanded a constellation of Alaskan parks — Gates of the Arctic, Kobuk Valley, Lake Clark, Wrangell–St. Elias, Kenai Fjords — and added vast acreage to Katmai, Glacier Bay, and Denali. The act **more than doubled the acreage of the entire National Park System**, the biggest expansion of protected land in American history. It is why so much of Alaska is, in effect, one enormous park.

The wolves come home

In 1995 and 1996, gray wolves were trucked down from Canada and released into Yellowstone after roughly 70 years of absence. What happened next is now textbook ecology: a **trophic cascade**. Wolves thinned and reshaped the elk herds; relieved of constant browsing, willows and aspen rebounded along the streams; beavers and songbirds returned; stabilized banks even changed how rivers ran. The return of one predator rippled outward through the whole ecosystem — proof that a park is a living web, not a postcard.

The long climb to protection

Before either of those, a slow climb. In **1832** Congress reserved Hot Springs, Arkansas to protect its thermal waters — an early instance of the federal government holding land for the public. In **1864**, mid–Civil War, Lincoln signed the **Yosemite Grant Act**, the first time scenic land was protected for the people's use. Then in **1872** came the keystone: Yellowstone, the world's first national park.

But for 44 years there was no agency to run the growing system — which is why the Army administered the early parks. The **Antiquities Act of 1906** let presidents proclaim national monuments on the spot, and the **Organic Act of 1916** finally created the National Park Service, charged to keep the parks "unimpaired for the enjoyment of future generations."

The legal backbone

The modern era added the laws that gave parks teeth. The **Wilderness Act of 1964** created the National Wilderness Preservation System, locking the wildest backcountry away from roads and machines. The **Endangered Species Act of 1973** became the legal backbone for restoring wolves, grizzlies, and condors — the very recoveries visitors now celebrate. And the timeline keeps growing: in 2020, **New River Gorge** in West Virginia became the **63rd national park**, and in October 2026 **Chiricahua** in Arizona became the **64th** — the newest chapter in a two-century story still being written.

Key concepts

John Muir

- A Scottish-born naturalist and writer often called the Father of the National Parks
- He founded the Sierra Club in 1892 and served as its first president until his death
- He camped with President Theodore Roosevelt at Yosemite in 1903, a trip that shaped federal conservation policy

Theodore Roosevelt

- The 26th U.S. President, remembered as the Conservation President
- He signed the Antiquities Act of 1906 and used it to proclaim 18 national monuments, including Devils Tower
- During his presidency he protected roughly 230 million acres of public land through parks, forests, monuments, and bird reserves

Stephen Mather

- A wealthy borax businessman who turned his fortune toward the parks
- He became the first Director of the National Park Service, serving from 1917 to 1929
- He professionalized the parks and even funded ranger salaries from his own pocket; plaques honor him with the words, There will never come an end to the good that he has done

George Bird Grinnell

- A naturalist and editor of the magazine Forest and Stream
- He founded the first Audubon Society in 1886 and was an early voice against the slaughter of the Plains bison
- He championed Glacier National Park, where a famous glacier is named in his honor

Ferdinand Hayden

- A geologist who led a famous 1871 government survey of a thermal wonderland
- His report was illustrated by painter Thomas Moran and photographer William Henry Jackson
- Their images persuaded Congress to establish the world's first national park in 1872

Rachel Carson

- A marine biologist and nature writer of the mid-20th century
- Her 1962 book Silent Spring catalyzed the modern environmental movement and the banning of DDT
- Her work is tied to the recovery of bald eagles, brown pelicans, and peregrine falcons now seen in many parks

Aldo Leopold

- A forester and ecologist who originated the idea of a land ethic
- He wrote A Sand County Almanac, published in 1949
- He recanted his early support for wolf eradication after watching the green fire die in a dying wolf's eyes

Marjory Stoneman Douglas

- A journalist and activist who campaigned for a vast subtropical wetland into her 100s
- Her 1947 book River of Grass reframed a so-called worthless swamp as a vital flowing ecosystem
- The national park she defended, Everglades, was dedicated the very same year her book appeared

Ansel Adams

- A 20th-century photographer whose work became synonymous with the national park ideal
- His black-and-white images of Yosemite and the Sierra bolstered the conservation movement
- A Sierra wilderness area now bears his name

John D. Rockefeller Jr.

- A philanthropist who quietly bought and donated land for many national parks
- His gifts shaped Grand Teton, Acadia, Great Smoky Mountains, Shenandoah, and Virgin Islands
- He funded the carriage roads of Acadia and donated land that doubled Grand Teton

Jimmy Carter

- A U.S. president from the late 1970s
- He signed the Alaska National Interest Lands Conservation Act of 1980
- That single act created or expanded vast Alaskan parklands and more than doubled the size of the entire National Park System

Captain Charles Young

- A U.S. Army officer who led troops patrolling parks before the Park Service existed
- He served with the Buffalo Soldiers, African American regiments among the first park rangers
- In 1903 he became the first Black acting superintendent of a national park, at Sequoia

Key facts

The First Rangers

Long before the National Park Service existed, the Buffalo Soldiers — African American U.S. Army regiments — served as some of the first park rangers in Yosemite and Sequoia in the early 1900s. They patrolled against poachers and illegal grazing, built trails and roads, and even constructed an arboretum. Captain Charles Young led them at Sequoia in 1903, becoming the first Black acting superintendent of a national park.

Three Nights in Yosemite

In May 1903, John Muir guided President Theodore Roosevelt away from his official tour to camp three nights in the Yosemite backcountry — just the two of them and a few packers. They slept under the sequoias and woke beneath snow at Glacier Point. The trip helped convince Roosevelt to expand federal protection of Yosemite, and it became the most famous camping trip in American conservation history.

The Green Fire

Aldo Leopold watched 'the green fire' fade from a dying wolf's eyes and renounced his youthful war on wolves, articulating the 'land ethic' in his 1949 book A Sand County Almanac.



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Forest and Stream's Editor

George Bird Grinnell edited the magazine Forest and Stream, founded the first Audubon Society in 1886, and championed the creation of Glacier National Park.



USDAgov (Openverse) · pdm 1.0

Silent Spring, 1962

Rachel Carson's 1962 book Silent Spring launched the modern environmental movement and directly led to the banning of the pesticide DDT.

The Wolves Come Home

In 1995 and 1996, gray wolves were trucked from Canada and released into Yellowstone after roughly 70 years of absence. What followed became a textbook case of a trophic cascade: wolves thinned and moved the elk herds, willows and aspen recovered along streams, beavers and songbirds returned, and even riverbanks stabilized. The return of a single predator rippled through an entire ecosystem.

Off Limits Forever

The Wilderness Act of 1964 created the National Wilderness Preservation System, closing the wildest backcountry areas to roads and machines for good.



Ken Lund (Openverse) · by-sa 2.0

Before Yellowstone

In 1832, decades before Yellowstone existed, Congress reserved Hot Springs, Arkansas as a federal reservation to protect its thermal waters — an early instance of the government holding land for the public.



JaGa (Openverse) · by-sa 4.0

The 63rd National Park

New River Gorge in West Virginia became the National Park System's 63rd national park in 2020 — West Virginia's first.

By the numbers

In what year did Congress first set aside Hot Springs, Arkansas as a federal reservation to protect its thermal waters?

1832 year

In what year did President Lincoln sign the Yosemite Grant Act, protecting scenic land for the people for the first time?

1864 year

In what year was the Antiquities Act passed, giving presidents the power to proclaim national monuments?

1906 year

In what year did the Wilderness Act create the National Wilderness Preservation System?

1964 year

In what year did the Endangered Species Act become law, the legal backbone for restoring wolves, grizzlies, and condors?
1973 year

In what year was ANILCA signed, doubling the National Park System's acreage with vast Alaskan parklands?
1980 year

In what year did gray wolves return to Yellowstone after a roughly 70-year absence?
1995 year

In what year did New River Gorge become the 63rd national park, West Virginia's first?
2020 year

Step by step

Place the great milestones of American park protection in chronological order, from the first reservation to the 63rd park

1. 1832 — Congress reserves Hot Springs, Arkansas to protect its thermal waters, an early act of federal land protection
2. 1864 — Lincoln signs the Yosemite Grant Act, protecting scenic land for the people for the first time
3. 1872 — Yellowstone is established as the world's first national park
4. 1906 — The Antiquities Act lets presidents proclaim national monuments
5. 1916 — The Organic Act creates the National Park Service to manage the growing system
6. 1964 — The Wilderness Act creates the National Wilderness Preservation System
7. 1973 — The Endangered Species Act becomes the legal backbone for restoring park wildlife
8. 1980 — ANILCA doubles the park system with vast Alaskan parklands
9. 1995 — Gray wolves are reintroduced to Yellowstone after a 70-year absence
10. 2020 — New River Gorge becomes the 63rd national park

The 44-year gap between Yellowstone (1872) and the Park Service (1916) meant the U.S. Army administered the early parks.

Self-test

Answer each question from memory, then check your work against the answer key.

1. Who founded the Sierra Club in 1892 and is called the 'Father of the National Parks'?

A Stephen Mather
B John Muir
C Theodore Roosevelt
D George Bird Grinnell

2. Which president camped three nights in the Yosemite backcountry with John Muir in May 1903 and later signed the Antiquities Act?

A Franklin Roosevelt
B Abraham Lincoln
C Jimmy Carter
D Theodore Roosevelt

3. Who became the first Director of the National Park Service in 1917, even paying ranger salaries from his own pocket?

A Stephen Mather
B Ferdinand Hayden
C George Bird Grinnell
D John D. Rockefeller Jr.

4. Who edited Forest and Stream, founded the first Audubon Society in 1886, and championed Glacier National Park?

A John Muir
B Stephen Mather
C George Bird Grinnell
D Aldo Leopold

5. Which was NOT one of Theodore Roosevelt's conservation achievements during his presidency?

A Signing the Antiquities Act of 1906
B Founding the National Park Service
C Safeguarding some 230 million acres
D Proclaiming 18 national monuments

6. Whose 1949 book A Sand County Almanac introduced the 'land ethic,' written after he watched 'the green fire' fade from a dying wolf's eyes?

A Aldo Leopold
B Rachel Carson
C Marjory Stoneman Douglas
D John Muir

7. Whose 1962 book Silent Spring launched the modern environmental movement and led to the DDT ban?

A Aldo Leopold
B Marjory Stoneman Douglas
C Rachel Carson
D Ansel Adams

8. Who reframed the Everglades as a 'River of Grass' in her 1947 book?

A Rachel Carson
B John Muir
C Aldo Leopold
D Marjory Stoneman Douglas

9. Which photographer made Yosemite immortal in black-and-white images?

A William Henry Jackson
B Thomas Moran
C George Bird Grinnell
D Ansel Adams

10. Which writer-and-work pairing is correct?

A Marjory Stoneman Douglas — 'River of Grass'
B Rachel Carson — 'A Sand County Almanac'
C John Muir — 'River of Grass'
D Aldo Leopold — 'Silent Spring'

11. Who quietly bought and donated land for Grand Teton, Acadia, and Great Smoky Mountains, doubling Grand Teton?

A Jimmy Carter
B John D. Rockefeller Jr.
C George Bird Grinnell
D Stephen Mather

12. Which president more than doubled the entire park system in 1980 by signing ANILCA?

A Theodore Roosevelt
B Franklin Roosevelt
C Jimmy Carter
D Abraham Lincoln

13. Which geologist led the 1871 survey of Yellowstone that gave Congress the proof to create the first national park?

A Ferdinand Hayden
B John Muir
C Stephen Mather
D George Bird Grinnell

14. Who led the Buffalo Soldiers' Sequoia detachment in 1903 and became the first Black acting superintendent of a national park?

A Ferdinand Hayden
B Captain Charles Young
C Stephen Mather
D George Bird Grinnell

15. Before the National Park Service existed, which group served as some of the first rangers in Yosemite and Sequoia?

A The Civilian Conservation Corps
B The Sierra Club
C The Audubon Society
D The Buffalo Soldiers

16. In what year did Congress reserve Hot Springs, Arkansas as a federal reservation to protect its thermal waters?

A 1872
B 1906
C 1832
D 1864

17. In what year did Lincoln sign the Yosemite Grant Act, the first time scenic land was protected for the people's use?

A 1916
B 1864
C 1872
D 1832

18. In what year was the Antiquities Act passed, letting presidents proclaim national monuments on the spot?

A 1872
B 1916
C 1906
D 1864

19. Which sequence correctly orders these milestones from earliest to latest?

- A Hot Springs reservation → Antiquities Act → Yosemite Grant Act
- B Yosemite Grant Act → Hot Springs reservation → Antiquities Act
- C Antiquities Act → Hot Springs reservation → Yosemite Grant Act
- D Hot Springs reservation → Yosemite Grant Act → Antiquities Act

20. Which of these federal land-protection milestones came first?

- A The Hot Springs reservation
- B Yellowstone national park
- C The Antiquities Act
- D The Yosemite Grant Act

21. What did the Wilderness Act of 1964 accomplish?

- A More than doubled the park system with new Alaskan parklands
- B Gave presidents the power to proclaim national monuments
- C Created the National Wilderness Preservation System, closing the wildest backcountry to roads and machines
- D Created the National Park Service to run the parks

22. Which 1973 law became the legal backbone for restoring wolves, grizzlies, and condors?

- A The Wilderness Act
- B The Endangered Species Act
- C The Antiquities Act
- D The Organic Act

23. Which West Virginia site became the 63rd national park in 2020?

- A Kenai Fjords
- B Kobuk Valley
- C Gates of the Arctic
- D New River Gorge

24. Which 1980 act more than doubled the entire National Park System with vast Alaskan parklands?

- A ANILCA (Alaska National Interest Lands Conservation Act)
- B The Wilderness Act
- C The Endangered Species Act
- D The Organic Act

25. The 1995 return of gray wolves to Yellowstone triggered what textbook ecological phenomenon?

- A An invasive collapse
- B A keystone extinction
- C A trophic cascade
- D A population bottleneck

Go deeper

WATCH Three Nights in Yosemite 0:29 · YouTube
In May 1903, John Muir took President Theodore Roosevelt camping in Yosemite, away from his official entourage.

WATCH The Day the Parks Doubled 0:28 · YouTube
On December 2, 1980, President Jimmy Carter signed one law: the Alaska National Interest Lands Conservation Act.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-2-the-story-of-the-parks

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 3 OF 27

Lesson 3: How the Landscapes Formed

The Forces That Shape the Land · Reading the Rock

WHAT YOU'LL BE ABLE TO DO

- Match the tectonic and erosional forces to the parks they built.
- Define shield volcanoes and geothermal features.
- Explain how calderas and canyons form.
- Define the vocabulary of sculpted rock and uplifted mountains (hoodoo, arch, fault-block, batholith, natural bridge).
- Recognize iconic formations and cave records on sight.

The Forces That Shape the Land

Nearly every wonder in the national parks is the slow handwriting of a few patient forces: heat rising from the deep earth, plates grinding against one another, ice and water carving stone away, and wind piling it back up. Learn these six processes and the parks stop being a list of pretty places and become a single, legible story.

The Yellowstone Hotspot

A hotspot is a plume of hot mantle rock that stays fixed in place while the tectonic plate above it drifts. As North America slides southwest, the plume burns a "track" of progressively older volcanic centers across the continent. Beneath Yellowstone, that plume has driven three cataclysmic caldera eruptions — 2.1 million, 1.3 million, and 640,000 years ago. The youngest left the Yellowstone Caldera, a depression roughly 30 by 45 miles across. The same shallow heat still powers the park's geothermal show today.

How a Caldera Is Born

A caldera is not a crater blasted outward; it is the opposite — a collapse inward. When a magma chamber empties in a massive eruption, the ground above loses its support and caves into the void. Crater Lake fills exactly such a basin, formed when Mount Mazama collapsed about 7,700 years ago. Rain and snowmelt slowly filled the bowl to a depth of **1,943 feet**, making it the deepest lake in the United States and famous for its almost unreal blue.

Rivers of Ice

Glaciers move like rivers in slow motion, and they reshape mountains as they go. They grind valleys from a sharp V into a broad U, scoop out bowl-shaped cirques, and whittle ridges into knife-edged arêtes and pointed horns; the rubble they shove ahead piles into moraines. Yosemite Valley is the textbook U-shaped trough, with Half Dome and El Capitan standing as granite that ice scoured and polished. Glacier National Park's horns and hanging valleys were carved the same way — though it has lost most of its ice. Of an estimated **150 glaciers in 1850, only about 25** named glaciers remain, each shrinking as the climate warms.

The River That Cut Through Time

A canyon forms when a river cuts downward faster than its walls erode back — a process most dramatic where rock has been uplifted in a dry climate. The Colorado River has carved the Grand Canyon over the past 5–6 million years, exposing rock layers that span nearly 2 billion years of Earth history, down to the 1.8-billion-year-old Vishnu Schist at the bottom.

Two more forces round out the toolkit. **Subduction** — one plate diving beneath another — builds volcanic arcs like the Cascade Range (Rainier, Lassen, North Cascades). **Fault-block uplift**, where stretching crust breaks and tilts upward, raised the foothill-less Teton Range. **Karst**, the slow dissolving of limestone by acidic water, hollowed out Mammoth Cave, the longest on Earth. And **wind**, trapping sand against a barrier, built the Great Sand Dunes, the tallest in North America. Shaping these landscapes also leaves features like **shield volcanoes** — broad domes of fluid basaltic lava, such as Mauna Loa — and **geothermal features**, where shallow magma heats groundwater into the roughly 500 geysers that give Yellowstone about half of Earth's total. Even the ancient, eroded Appalachians, once Himalayan in scale, are part of the same long story of building up and wearing down.

Reading the Rock

Once you know the forces, you can read the result. Every park has its own vocabulary of stone — words that tell you exactly how a feature was made and what made it. Master a handful of these terms and a canyon rim becomes a sentence you can parse on sight.

A **caldera** is a basin that forms when a magma chamber empties in a huge eruption and the overlying ground collapses into the void — the inward cousin of a crater. Crater Lake fills one left by Mount Mazama. A **hoodoo** is a tall, thin spire left standing as frost-wedging and rain dissolve the softer rock around it; Bryce Canyon has the densest concentration of them on Earth. An **arch** opens where water and ice widen cracks in a sandstone fin until a hole breaks clean through — Arches NP catalogs more than 2,000, including the slender 290-foot Landscape span.

The mountains have their own terms. A **fault-block mountain** is a range lifted when stretching crust breaks and tilts upward along a fracture; the Tetons rose this way over 10 million years, leaping 7,000 feet from the valley floor with no foothills to ease the climb. A **batholith** is a vast mass of granite that cooled slowly deep underground before being uplifted and exposed — the tilted Sierra Nevada is one, carrying Yosemite and Sequoia on its back. And the difference between a **natural bridge** and an arch comes down to the sculptor: a natural bridge is cut by a flowing stream gnawing through the base of a fin (Rainbow Bridge), while an arch is shaped by seepage and frost.

Petrified Dunes of Zion

Zion's soaring walls were once a desert. The Navajo Sandstone is a layer of ancient sand dunes turned to stone, and it forms sheer cliffs that rise as much as 2,000 feet. The hardening of that long-buried dune field gave Zion its smooth, towering faces. The Virgin River is still carving — deepening Zion Canyon and squeezing through the slot-canyon corridor called The Narrows, where the walls close in within arm's reach.

The Honeycomb of Wind Cave

Some of the rarest cave decoration on Earth hangs from the ceilings of Wind Cave in South Dakota. Boxwork is a delicate honeycomb of thin calcite fins, left jutting out after the softer rock around them dissolved away. It is so unusual that Wind Cave is thought to contain about **95% of all the boxwork known in the world** — a single cave holding nearly the planet's entire supply of a geological oddity.

These terms come alive in famous formations worth recognizing on sight. **Delicate Arch** is the freestanding span on Utah's license plate, carved by frost and seepage. **Half Dome** is the glacially sliced granite landmark over Yosemite Valley. **Old Faithful** is the clockwork geyser of Yellowstone, driven by magma-heated groundwater. **Mammoth Cave** is the karst labyrinth of Kentucky, longest on Earth with over 426 miles mapped. And **Petrified Forest** preserves logs turned to silica stone some 225 million years ago — proof that even wood, given time and the right chemistry, becomes rock to be read.

Key terms

Shield volcano

A broad, gently sloping dome built from fluid basaltic lava that spreads far before cooling; Mauna Loa, the world's largest active example by volume, rises in Hawaii Volcanoes NP.

Geothermal feature

A geyser, hot spring, mudpot, or fumarole produced where groundwater is heated by shallow magma; Yellowstone holds about half of Earth's active geysers, roughly 500 of them.

Caldera

A large basin-shaped depression that forms when a magma chamber empties in a huge eruption and the overlying ground collapses into the void; Crater Lake fills one left by Mount Mazama.

Hoodoo

A tall, thin spire of rock left standing as frost-wedging and rain dissolve softer limestone around it; Bryce Canyon has the densest concentration of them on Earth.

Arch

An opening formed where water and ice widen cracks in a sandstone fin until a hole breaks clean through; over 2,000 dot a single Utah park, including the 290-foot Landscape span.

Fault-block mountain

A range raised when stretching crust breaks and tilts upward along a fracture; the Tetons rose this way over 10 million years, leaping 7,000 feet from the valley with no foothills.

Batholith

A vast mass of granite that cooled slowly deep underground before being uplifted and exposed; the tilted Sierra Nevada is one, carrying Yosemite and Sequoia on its back.

Natural bridge

A rock span carved by a flowing stream that cuts through the base of a fin — the key difference from a seepage-and-frost arch; Rainbow Bridge was sculpted this way by running water.

Key concepts

Delicate Arch

- It is a freestanding sandstone formation in a Utah park that catalogs more than 2,000 such openings.
- Frost and seepage widened cracks in a sandstone fin until this graceful, leg-like span was left standing alone.
- It is the most photographed feature in its park and appears on Utah's license plate.

Half Dome

- It is a granite landmark rising above a glacially carved U-shaped valley in California's Sierra Nevada.
- Ice Age glaciers scoured and steepened its rounded back, while its sheer face drops nearly vertically.
- Its distinctive sliced-off profile towers over Yosemite Valley and draws cable-route hikers to its summit.

Old Faithful

- It is a geothermal feature in the world's first national park, which holds about half of Earth's active geysers.
- Groundwater heated by shallow magma drives it to erupt on a famously regular schedule, roughly every 60 to 90 minutes.
- Crowds gather on a boardwalk to watch its predictable column of boiling water and steam burst skyward.

Mammoth Cave

- It is a karst landscape in Kentucky where slightly acidic water dissolved soluble limestone over eons.
- With over 426 miles mapped, it is the longest known cave system on Earth — more than twice any other.
- Its name reflects the sheer scale of its passages, not any connection to the Ice Age animal.

Petrified Forest

- It is an Arizona park preserving one of the world's largest concentrations of fossilized logs.
- Buried wood here had its organic matter replaced molecule-by-molecule with silica, turning trees to stone about 225 million years ago.
- Its rainbow-banded ancient logs lie scattered across the Late Triassic badlands of the Painted Desert.

El Capitan

- A sheer granite monolith guarding one side of Yosemite Valley, among the largest exposed granite faces on Earth
- It rises roughly 3,000 feet straight up from the valley floor
- Climbers regard its Dawn Wall and the Nose among the hardest big-wall free climbs in the world

Key facts



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Rivers of Ice

Glaciers are rivers of ice that grind valleys from V-shaped to U-shaped, scoop bowl-like cirques from mountainsides, and sharpen ridges into knife-edged arêtes and horns. Yosemite Valley is the textbook example — Half Dome and El Capitan are granite scoured and polished by Ice Age ice. In Glacier National Park, those same forces carved horns and hanging valleys, though the ice that made them is now nearly gone.

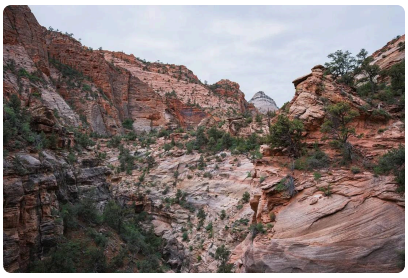


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The River That Cut Through Time

A canyon forms when a river slices downward faster than its walls can crumble back — a process that runs deepest through uplifted rock in dry country. The Colorado River has carved the Grand Canyon over the past 5–6 million years, peeling back layers that span nearly 2 billion years of Earth history, all the way down to the 1.8-billion-year-old Vishnu Schist at the bottom.

> **No Foothills**
>
> The Teton Range was thrust upward by fault-block uplift, where stretching crust breaks and tilts — a process abrupt enough that the mountains rise straight from the valley floor with no foothills.



Christian David · CC BY-SA 4.0

Petrified Dunes of Zion

Zion's soaring walls are ancient sand dunes turned to stone. The Navajo Sandstone — hardened from a sea of prehistoric desert dunes — forms sheer cliffs up to about 2,000 feet tall. The Virgin River is still at work, slicing ever deeper into Zion Canyon and squeezing through the slot-canyon corridor known as The Narrows.



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The Honeycomb of Wind Cave

Some of the rarest cave decoration on Earth hangs from the ceilings of Wind Cave in South Dakota. Boxwork — a delicate honeycomb of thin calcite fins left behind after the surrounding rock dissolved away — is so unusual that Wind Cave contains an estimated 95% of all the boxwork known in the world.



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Landscape Arch's 290 Feet

Arches National Park in Utah has catalogued more than 2,000 natural stone arches, openings formed as water and ice widen cracks in a sandstone fin until a hole breaks clean through. Its slender Landscape Arch spans 290 feet.



James St. John · CC BY 2.0

Ten Million Years of Uplift

The Tetons are a classic fault-block mountain range, raised where stretching crust broke and tilted upward over 10 million years. They leap 7,000 feet above the valley floor with no foothills in between.



YellowstoneNPS (Openverse) · pdm 1.0

Heated From Below

Old Faithful, Yellowstone's clockwork landmark, is a geyser — a geothermal feature driven by groundwater heated by shallow magma, unlike erosional rock features such as arches and hoodoos.

By the numbers

How deep is Crater Lake, the deepest lake in the United States?

1943 ft

How many miles of passage have been mapped in Mammoth Cave, the world's longest cave system?

426 miles

Matched pairs

Each item on the left goes with the one on the right.

Subduction (one plate diving under another) → Cascade Range — Rainier, Lassen, North Cascades

Fault-block uplift (crust breaks and tilts up) → Teton Range — Grand Teton NP

Karst (acidic water dissolving limestone) → Mammoth Cave — longest cave on Earth

Wind piling sand trapped by a barrier → Great Sand Dunes — tallest dunes in North America

Self-test

Answer each question from memory, then check your work against the answer key.

1. Which force built the volcanic arc of the Cascade Range — Rainier, Lassen, and North Cascades?

A) Wind deposition
B) Fault-block uplift
C) Karst dissolution
D) Subduction, one plate diving beneath another

2. The foothill-less Teton Range was raised by which process?

A) Karst dissolution
B) Subduction
C) Fault-block uplift
D) Hotspot volcanism

3. Which park was hollowed out by karst — acidic water slowly dissolving limestone?

A) Grand Teton
B) Mammoth Cave
C) Great Sand Dunes
D) North Cascades

4. Great Sand Dunes, the tallest dunes in North America, were built by which force?

A) Wind trapping sand against a barrier
B) Karst dissolution
C) Glacial deposition
D) Subduction

5. Which force-and-park pairing is INCORRECT?

A) Wind — Great Sand Dunes
B) Fault-block uplift — Teton Range
C) Karst — Mammoth Cave
D) Subduction — Great Sand Dunes

6. What best defines a shield volcano?

A) A steep cone built from explosive ash
B) A thin spire left standing by frost-wedging
C) A broad, gently sloping dome built from fluid basaltic lava
D) A basin left when a magma chamber empties and collapses

7. Which peak is the world's largest active shield volcano by volume?

A) Mauna Loa
B) Mount Mazama
C) Mount Rainier
D) Lassen Peak

8. A geyser, hot spring, mudpot, or fumarole is an example of what?

A) A caldera
B) A geothermal feature
C) A hoodoo
D) A shield volcano

9. Yellowstone holds about half of Earth's active geysers — roughly how many?

A About 5,000
B About 50
C About 500
D About 100

10. Geothermal features form where groundwater is heated by what?

A Glacial ice
B Shallow magma
C Dissolving limestone
D Wind friction

11. How does a caldera form?

A Wind piles sand against a barrier
B A river cuts downward through uplifted rock
C Ice grinds a V-shaped valley into a U
D The ground collapses into the void after a magma chamber empties

12. How deep is Crater Lake, the deepest lake in the United States?

A 1,943 feet
B 2,943 feet
C 1,493 feet
D 1,150 feet

13. How do glaciers reshape mountain valleys as they move?

A They collapse the ground into a basin
B They dissolve limestone into a honeycomb
C They grind a sharp V-shaped valley into a broad U
D They pile sand into towering dunes

14. The Grand Canyon exists because the Colorado River did what?

A Dissolved limestone with acidic water
B Deposited sand against a barrier
C Collapsed after a magma chamber emptied
D Cut downward faster than its walls could erode back

15. Of an estimated 150 glaciers in Glacier National Park in 1850, roughly how many named glaciers remain today?

A About 50
B About 25
C About 75
D About 100

16. What is a hoodoo?

A A tall, thin spire left standing as softer rock dissolves around it
B A granite mass cooled deep underground
C An opening broken clean through a sandstone fin
D A range tilted upward along a fault

17. What distinguishes a natural bridge from an arch?

A A natural bridge forms underground; an arch above ground
B A natural bridge is cut by a flowing stream; an arch by seepage and frost
C A natural bridge is granite; an arch is limestone
D A natural bridge is always larger than any arch

18. What is a batholith?

(A) A range lifted and tilted along a fracture
(B) A basin left by a collapsed magma chamber
(C) A honeycomb of thin calcite fins
(D) A vast granite mass that cooled slowly deep underground before being uplifted

19. The Tetons, which rose 7,000 feet with no foothills, are a classic example of which landform?

(A) Fault-block mountain
(B) Hoodoo field
(C) Batholith
(D) Shield volcano

20. Which of these terms is defined INCORRECTLY?

(A) Fault-block mountain — a range broken and tilted upward along a fracture
(B) Arch — an opening where water and ice widen cracks in a sandstone fin
(C) Hoodoo — a rock span cut by a flowing stream through a fin
(D) Batholith — a vast granite mass cooled deep underground then uplifted

21. Which formation is the glacially sliced granite landmark rising over Yosemite Valley?

(A) Delicate Arch
(B) Landscape Arch
(C) Half Dome
(D) Old Faithful

22. Old Faithful, Yellowstone's clockwork landmark, is what kind of feature?

(A) A glacial horn
(B) A geyser driven by magma-heated groundwater
(C) A freestanding sandstone arch
(D) A limestone hoodoo

23. Mammoth Cave in Kentucky holds which record?

(A) Longest known passage network on Earth
(B) Densest hoodoos on Earth
(C) Deepest lake in the United States
(D) Tallest dunes in North America

24. Wind Cave in South Dakota holds an estimated 95% of the world's supply of which rare cave decoration?

(A) Stalactites
(B) Petrified logs
(C) Hoodoos
(D) Boxwork

25. Roughly how many natural stone arches has Arches National Park in Utah catalogued?

(A) Around 50
(B) More than 2,000
(C) Roughly 200
(D) Close to 20,000

Go deeper

WATCH Two Billion Years in One Canyon 0:28 · YouTube
Read the Grand Canyon from rim to river, and you read time.

WATCH The Cave With the World's Boxwork 0:29 · YouTube
Every park has its own vocabulary of stone. One of the rarest words is boxwork.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-3-how-the-landscapes-formed

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 4 OF 27

Lesson 4: Wildlife of the Parks

Icons of the Wild · Keystones & Comebacks

WHAT YOU'LL BE ABLE TO DO

- Match the marquee mammals to their signature parks.
- Recognize iconic park animals and the field marks of a grizzly.
- Explain what makes a species a keystone and identify examples.
- Match recovery and coexistence species to the parks that shelter them.

Icons of the Wild

The great parks of the American West are, above all, theaters of wildlife. Standing in a Yellowstone meadow at dawn, you can watch the same cast of animals that shaped the continent for millennia — and several that came within a whisker of vanishing. These are the marquee mammals, the ones people drive thousands of miles to glimpse.

American bison

The bison is the living symbol of the American wilderness, and its story is the parks' story in miniature: catastrophe, then rescue. Once 30 to 60 million animals thundered across the continent in herds so vast they took days to pass. By the 1880s, relentless hunting had reduced them to fewer than 1,000. Yellowstone became their refuge — it is the only place in the United States where bison have lived continuously since prehistoric times, and today it holds the largest wild, free-ranging herd on Earth, roughly 4,000 to 6,000 strong. Wind Cave and Theodore Roosevelt protect smaller but genetically important herds.

Grizzly bear

The grizzly is unmistakable once you know the marks: a muscular shoulder hump, a dished, concave face, and long front claws built for digging. Its recovery rivals the bison's. In 1975, when it was listed as threatened, only about 136 grizzlies survived in the Greater Yellowstone Ecosystem. Today that ecosystem holds roughly 1,000, with about 1,000 more around Glacier in the Northern Continental Divide Ecosystem.

Gray wolf and the trophic cascade

When wolves were reintroduced to Yellowstone in 1995–96, they did far more than fill an empty niche. Today about 100 to 125 wolves in 8 to 10 packs hunt the park, and their return is the textbook example of a trophic cascade. By thinning and constantly moving elk herds, wolves let willows and aspen recover along the rivers. That brought back beavers, whose dams created wetlands; songbirds returned; even streambanks stabilized. One predator rippled outward through the whole web of life.

Elk and moose

Each autumn, Rocky Mountain National Park's elk rut becomes one of the parks' great spectacles, as bull elk bugle their eerie, carrying calls across the meadows. The moose, meanwhile, is the largest deer of all. On Isle Royale, the interplay between moose and wolves has been studied without interruption since 1958 — the longest-running predator-prey study in the world.

Mountain goat vs bighorn sheep

These high-country look-alikes confuse many visitors, but the tells are simple. Mountain goats are pure white with short black horns — and despite the name, they are not true goats at all. Bighorn sheep are brown, with the massive curling horns that give them their name. Both range through Glacier and Rocky Mountain, though the mountain goats in the Tetons and Olympic are partly introduced.

Pronghorn

The pronghorn is the fastest land animal in the Western Hemisphere, sprinting around 55 mph across the sagebrush of Yellowstone and Grand Teton. Its speed is a beautiful evolutionary ghost story: no living predator can come close to catching it, because it was built to outrun the American cheetah — a hunter that went extinct thousands of years ago.

Keystones & Comebacks

Some animals matter out of all proportion to their numbers, and some have clawed back from the very edge of extinction. This part is about both — the species that hold whole ecosystems together, and the recovery stories that prove protection works.

What is a keystone species

The name comes from architecture. A keystone is the wedge-shaped stone at the top of an arch; remove it, and the whole arch collapses. A keystone species plays the same role in an ecosystem — its influence vastly outweighs its abundance. The Yellowstone wolf is the celebrated example, but it is far from alone. The beaver is a keystone engineer: its dams flood meadows into wetlands that shelter fish, amphibians, birds, and moose. The prairie dog shapes entire grasslands through its burrowing and grazing, feeding predators and aerating soil. Lose the keystone, and the system unravels.

California condor

North America's largest land bird spreads its wings nearly 9.5 feet from tip to tip. Its rescue is one of conservation's boldest gambles. By 1982, only 22 California condors remained alive anywhere on Earth, and biologists made the wrenching decision to capture every last wild bird for a captive breeding program. The gamble paid off. Wild flocks now soar again over Pinnacles, the Grand Canyon and Zion country of Arizona and Utah, and Big Sur, and the total population — wild and captive — exceeds 560.

Bald eagle

America's national bird nearly disappeared in the mid-20th century, poisoned by the pesticide DDT, which thinned its eggshells until they broke under the weight of the nesting parent. After DDT was banned and the eagle won federal protection, it rebounded dramatically. Today it is a common and

thrilling sight fishing the waters of Voyageurs, Olympic, Katmai, and dozens of other parks — a quiet triumph hiding in plain sight.

Where alligators meet crocodiles

The Everglades holds a distinction found nowhere else: it is the only place on Earth where American alligators and American crocodiles live side by side. Telling them apart comes down to color and snout. Alligators are dark, with broad, rounded snouts; crocodiles are grayish, with narrow, tapered ones. The alligator is itself a keystone species — the "gator holes" it digs hold water and life through the dry season. The same wetlands shelter wintering West Indian manatees.

Roosevelt elk

The Roosevelt elk is the largest of all elk subspecies, thriving in the misty temperate rainforests of Olympic and Redwood. The herds were so central to Olympic's founding that the park was first proposed under the name "Elk National Park," explicitly to protect them. They remain one of the great sights of the Pacific Northwest's old-growth forests, moving like shadows through the moss and ferns.

Key concepts

American bison

- This shaggy, humped mammal once roamed the continent in herds tens of millions strong.
- Hunting crashed its numbers to fewer than 1,000 by the 1880s before it was saved.
- Yellowstone holds its largest wild, free-ranging herd.

gray wolf

- This pack-hunting predator was absent from Yellowstone for decades before its 1995–96 return.
- Its comeback triggered a famous trophic cascade, reviving willows, beavers, and songbirds.
- About 100–125 of them now live in 8–10 packs in the park.

California condor

- This is North America's largest land bird, with a wingspan near 9.5 feet.
- By 1982 only 22 of them remained alive anywhere on Earth.
- Recovering flocks now soar over Pinnacles, the Grand Canyon, and Big Sur.

pronghorn

- This tan-and-white grazer is the fastest land animal in the Western Hemisphere.
- It can run about 55 mph across the sagebrush of Yellowstone and Grand Teton.
- It evolved that speed to escape a cheetah that went extinct long ago.

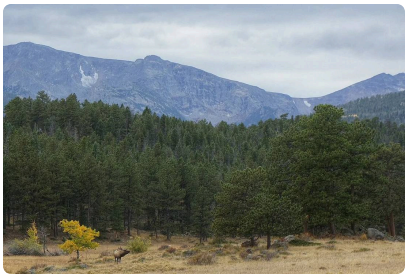
grizzly bear

- You can recognize this large bear by its shoulder hump, dished face, and long claws.
- It rebounded from about 136 animals in 1975 to roughly 1,000 around Yellowstone.
- Glacier's Northern Continental Divide Ecosystem holds about 1,000 more.

American alligator

- This dark reptile has a broad, rounded snout, unlike its narrow-snouted relative.
- The Everglades is the only place it shares waters with the American crocodile.
- It is itself a keystone species, its gator holes sheltering wildlife through the dry season.

Key facts



Los Paseos from Earth · CC BY-SA 2.0

Elk and Moose

Each autumn, Rocky Mountain National Park's elk rut draws crowds to hear bull elk bugling across the meadows. The moose is the largest deer of all — and on Isle Royale, the moose–wolf predator-prey system has been studied continuously since 1958, the longest-running study of its kind in the world.



Wikimedia Commons · Robert M. Russell · CC BY-SA 4.0

Mountain Goat vs. Bighorn Sheep

These high-country look-alikes are easy to tell apart. Mountain goats are all white with short black horns — and despite the name, they aren't true goats. Bighorn sheep are brown with massive curling horns. Both roam Glacier and Rocky Mountain; the mountain goats in the Tetons and Olympic are partly introduced.



Mr. Satterly · CC0

Pronghorn

The pronghorn is the fastest land animal in the Western Hemisphere, clocking around 55 mph across the sagebrush of Yellowstone and Grand Teton. Why so fast, with no predator that can keep up? It evolved its speed to outrun the American cheetah — a predator that went extinct thousands of years ago.



U.S. Fish and Wildlife Service - Midwest Region · Public domain

What Is a Keystone Species?

A keystone species holds an ecosystem together far out of proportion to its numbers — remove it, and the whole system unravels. The Yellowstone wolf is the famous example, but so are the beaver, whose dams create wetlands for countless other species, and the prairie dog, whose burrows and grazing shape entire grasslands. Lose the keystone and the arch collapses.



Wikimedia Commons · Andy Morffew · CC BY 2.0

Bald Eagle

America's national bird nearly vanished in the mid-20th century, its eggshells thinned to breaking by the pesticide DDT. After DDT was banned and the eagle was protected, it roared back — and is now a common sight fishing the waters of Voyageurs, Olympic, Katmai, and dozens of other parks.



USFWS Pacific · Public domain

Roosevelt Elk

The Roosevelt elk is the largest elk subspecies, at home in the rainforests of Olympic and Redwood. Olympic's elk were so central to its creation that the park was originally proposed under the name 'Elk National Park' to protect the herds.

Matched pairs

Each item on the left goes with the one on the right.

American bison → Yellowstone (largest wild herd)

Moose (and wolves) → Isle Royale

Bugling elk rut → Rocky Mountain

Mountain goat & bighorn sheep → Glacier

California condor → Pinnacles

Alligators and crocodiles together → Everglades

Roosevelt elk → Olympic & Redwood

Step by step

Trace the trophic cascade that followed wolves' return to Yellowstone.

1. Wolves are reintroduced to the park
2. Wolves thin and constantly move the elk herds
3. Willows and aspen recover along the rivers
4. Beavers return and build dams
5. The dams create wetlands that shelter more wildlife

Each link follows from the one before: wolves move elk, plants recover, beavers return, and their dams make wetlands.

Self-test

Answer each question from memory, then check your work against the answer key.

1. Which park holds the largest wild, free-ranging bison herd on Earth?

A Theodore Roosevelt
B Rocky Mountain
C Wind Cave
D Yellowstone

2. At which park has the moose-wolf predator-prey system been studied continuously since 1958?

A Olympic
B Glacier
C Isle Royale
D Yellowstone

3. At which park is the autumn elk rut, with bull elk bugling across the meadows, a famous spectacle?

A Rocky Mountain
B Katmai
C Voyageurs
D Everglades

4. The mountain goat and bighorn sheep, two high-country look-alikes, both roam which park?

A Everglades
B Glacier
C Isle Royale
D Voyageurs

5. Which mammal-to-park pairing is INCORRECT?

A Bugling elk rut - Rocky Mountain
B Mountain goat & bighorn sheep - Glacier
C American bison - Yellowstone
D Grizzly bears - Great Smoky Mountains

6. Which physical feature is a key field mark for identifying a grizzly bear?

A A straight facial profile
B Tall, prominent ears
C A muscular shoulder hump
D Short, curved claws

7. Which trait is NOT a field mark of a grizzly bear?

A Tall, prominent ears
B A muscular shoulder hump
C Long front claws
D A dished, concave face

8. Which animal is the fastest land animal in the Western Hemisphere, sprinting around 55 mph?

A Elk
B Pronghorn
C Gray wolf
D Bighorn sheep

9. Once 30 to 60 million strong but hunted to fewer than 1,000 by the 1880s, which animal is the living symbol of the American wilderness?

A Grizzly bear
B Roosevelt elk
C American bison
D Gray wolf

10. Whose reintroduction to Yellowstone in 1995-96 became the textbook example of a trophic cascade?

A Grizzly bear
B Gray wolf
C American bison
D Pronghorn

11. In ecology, what makes a species a "keystone species"?

A It is always the apex predator at the top of the food chain
B It is simply the most numerous species in its habitat
C It lives only inside protected national park boundaries
D Its influence on the whole ecosystem far outweighs its abundance

12. The term "keystone species" borrows its name from what?

A The wedge stone at the top of an arch
B A stone used to grind grain
C The largest stone in a building's foundation
D The first cornerstone laid in construction

13. Which keystone engineer builds dams that flood meadows into wetlands sheltering fish, birds, and moose?

A Bighorn sheep
B Beaver
C Pronghorn
D California condor

14. In the Everglades, which keystone species digs "gator holes" that hold water and life through the dry season?

A American alligator
B Gray wolf
C West Indian manatee
D American crocodile

15. Which animal is NOT considered a keystone species?

A Gray wolf
B Beaver
C Pronghorn
D Prairie dog

16. Wild California condor flocks now soar over which of these parks?

A Voyageurs
B Katmai
C Isle Royale
D Pinnacles

17. Which park is the only place on Earth where American alligators and American crocodiles live side by side?

A Yellowstone
B Grand Canyon
C Olympic
D Everglades

18. The Roosevelt elk, largest of all elk subspecies, thrives in the temperate rainforests of which parks?

A Glacier and Rocky Mountain
B Olympic and Redwood
C Yellowstone and Grand Teton
D Everglades and Big Cypress

19. Olympic National Park was originally proposed under what name, to protect its wapiti herds?

A Rainforest National Park
B Cascade National Park
C Elk National Park
D Roosevelt National Park

20. By 1982, how many California condors remained alive, prompting biologists to capture every wild bird?

A 22
B 560
C 87
D 136

Go deeper

WATCH From 60 Million Bison to 1,000 0:30 · YouTube
Once, 30 to 60 million bison roamed North America, in herds that took days to pass.

WATCH 22 Condors Left 0:31 · YouTube
North America's largest land bird has wings nearly 9.5 feet across. By 1982, only 22 California condors were left alive anywhere on Earth.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-4-wildlife-of-the-parks

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 5 OF 27

Lesson 5: Flora & Ecosystems

Record-Breaking Plants · Life Zones & Ecosystems

WHAT YOU'LL BE ABLE TO DO

- Identify the record-breaking trees by their superlative and size.
- Match record-breaking plants to the parks that protect them.
- Explain life zones and how elevation stacks ecosystems on a single mountain.
- Match signature ecosystems to their parks and define a temperate rainforest.

Record-Breaking Plants

Some of the most superlative living things on Earth grow inside America's national parks — the biggest tree, the tallest tree, the oldest tree, and the strange green giants of the deserts. This part introduces five of them and ties each to the park that protects it.

General Sherman the Giant Sequoia

Giant sequoias (*Sequoiadendron giganteum*) are the largest trees on Earth measured by sheer volume of wood — not the tallest, but the most massive. The champion is **General Sherman** in Sequoia NP, the largest single-stem living tree on the planet: roughly **52,500 cubic feet** of wood, about **275 feet** tall, with a base around **36 feet** across. It is estimated to be **2,200–2,700 years old**, meaning it was already a mature tree when Rome was founded. Giant sequoias grow naturally in only one place on Earth — scattered groves on the **western slope of the Sierra Nevada** — and they are famously dependent on **fire**. The heat of a wildfire dries and opens their cones to release seeds, and clears away competing brush so seedlings get light. Decades of fire suppression actually hurt the species, a lesson that reshaped how parks manage fire.

The Tallest Trees on Earth

If sequoias win on bulk, their cousins the **coast redwoods** (*Sequoia sempervirens*) win on height — they are the tallest living things on the planet. The record holder, **Hyperion** in Redwood NP, reaches about **380 feet**, taller than the Statue of Liberty stacked nearly twice. Redwoods grow tall and slender rather than massive, and they survive by drinking **coastal fog**, combing moisture directly out of the marine air that rolls over California's far north coast. That fog belt is why redwoods cluster in a narrow coastal strip rather than spreading inland.

Bristlecone Pine the Ancient One

For sheer age, nothing non-clonal beats the **Great Basin bristlecone pine** (*Pinus longaeva*). A tree named **Methuselah** is about **4,850 years old**, and an even older bristlecone in the Great Basin / White Mountains region has been dated near **5,070 years** — older than the Egyptian pyramids. Their secret is hardship: they grow excruciatingly slowly in cold, dry, windswept high country, producing dense, resin-

rich wood that resists rot, insects, and weather. **Great Basin NP** in Nevada protects ancient groves of them on the flanks of Wheeler Peak.

The Saguaro Cactus

The giant columnar **saguaro** is the living emblem of **Saguaro NP** in Arizona and grows wild only in the **Sonoran Desert**. A saguaro can live **150–200 years** and rise **over 40 feet**, but it is in no hurry — it may not sprout its first arm until it is **50–75 years old**. Mature saguaros become desert high-rises, their cavities hollowed out and nested in by gila woodpeckers, elf owls, and other wildlife.

The Joshua Tree

The **Joshua tree** (*Yucca brevifolia*) is a giant yucca and the spiky symbol of the **Mojave Desert**. **Joshua Tree NP** sits right where two deserts meet — the higher, cooler Mojave and the lower, hotter Colorado. The tree depends entirely on one partner, the **yucca moth**, the only animal that pollinates it: the moth deliberately packs pollen into the flowers and lays its eggs inside. No moth, no Joshua trees — a tidy example of how tightly park species can be bound together.

Life Zones & Ecosystems

Plants don't grow at random — they sort themselves by climate. This part covers the single most useful idea in park ecology, the way elevation stacks ecosystems, and then tours four signature systems: alpine tundra, subtropical wetland, temperate rainforest, and one of the last great intact ecosystems on Earth.

Climbing Through Climate Zones

As you climb a mountain, the air cools by about **3–5°F for every 1,000 feet** of elevation. The classic rule of thumb is that **climbing 1,000 feet up is roughly like traveling 600 miles north**. Because climate changes so fast with height, a single tall park can stack whole **life zones** on top of one another — **desert** at the base, then **montane forest**, then **subalpine**, then **alpine tundra** near the summit. This banding, formalized as the **Merriam life zones**, is dramatic in **Grand Canyon**, **Rocky Mountain**, and **Sequoia**, where a day's drive or hike passes through ecosystems that would otherwise take a continental road trip to see. A **life zone** is exactly that: a band of plant and animal communities tied to a particular elevation and climate. The same logic produces **alpine tundra** — a treeless zone of low, hardy cushion plants above the point where trees can survive, famously crossed by Rocky Mountain NP's Trail Ridge Road.

The River of Grass

The **Everglades** is the great surprise of American ecosystems: it is not a swamp but a **river** — a sheet of water up to **60 miles wide** and only inches deep, flowing imperceptibly south across Florida. The writer **Marjory Stoneman Douglas** named it the **"river of grass,"** and the phrase stuck because it's literally true: the water moves through endless **sawgrass**. This subtropical wetland braids sawgrass marsh, **mangrove** forests, and **cypress** stands into a system found nowhere else in the United States, and the slow flow of clean water is what keeps the whole thing alive.

Olympics Temperate Rainforest

A **temperate rainforest** is a cool, extremely wet forest of the middle latitudes — not a tropical jungle, but just as lush. The signature American example is **Olympic NP's Hoh Rain Forest**, which receives

roughly **12–14 feet of rain a year**, among the wettest places in the contiguous United States. The downpour produces a dripping green world: towering spruce and hemlock with trunks and branches **draped in moss and ferns**, and fallen **"nurse logs"** that sprout whole straight rows of seedlings as they decay. It's the visual opposite of the desert parks — and a reminder that "rainforest" is about rainfall, not latitude.

The Greater Yellowstone Ecosystem

Beyond single zones, some regions function as one connected whole. The **Greater Yellowstone Ecosystem** — spanning Yellowstone, Grand Teton, and the surrounding national forests across **Wyoming, Montana, and Idaho** — is **one of the largest nearly intact temperate-zone ecosystems left on Earth**. Its scale is the point: it is big enough to sustain **free-roaming grizzlies, wolves, and bison** across their natural ranges, something almost no other place in the lower 48 can still do. It shows why conservation increasingly thinks beyond park boundaries to whole ecosystems.

Key terms

Life zone

A band of plant and animal communities set by elevation and climate, so a single mountain stacks several from base to summit — the idea behind Merriam's classic elevation bands.

Temperate rainforest

A cool, very wet forest of the middle latitudes, fed by heavy rain or coastal fog, lush with mosses and ferns — as seen in Olympic's Hoh, not in the tropics.

Key concepts

General Sherman

- This living giant is the most massive single tree on Earth, measured by sheer volume of wood.
- It holds roughly 52,500 cubic feet of wood, stands about 275 feet tall, and is 2,200–2,700 years old.
- It is the champion giant sequoia, protected in Sequoia National Park.

Hyperion

- This is the single tallest living thing on the entire planet.
- A coast redwood, it survives by combing moisture straight out of the coastal fog.
- Rising about 380 feet in Redwood National Park, it stands nearly twice as tall as the Statue of Liberty.

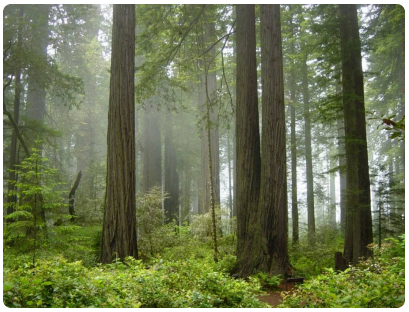
Methuselah

- For sheer age, no non-clonal tree on Earth outlasts this one.
- A Great Basin bristlecone pine, it endures by growing painfully slowly in cold, windswept heights.
- Dated near 4,850 years old, it was already ancient long before the pyramids rose.

Joshua tree

- This spiky desert plant is a giant yucca and the living symbol of the Mojave.
- It depends entirely on one partner — the yucca moth, the only creature that pollinates it.
- Its namesake park sits where the higher, cooler Mojave meets the lower, hotter Colorado desert.

Key facts



Michael Schweppe · CC BY-SA 2.0

The Tallest Trees on Earth

Coast redwoods are the tallest living things on the planet. Hyperion, a redwood in Redwood NP, reaches about 380 feet — taller than a 35-story building and the Statue of Liberty stacked nearly twice. Unlike their bulkier sequoia cousins, redwoods grow tall and slender, and they drink from coastal fog, combing moisture straight out of the air along California's foggy north coast.



Z3lvs · CC0

Bristlecone Pine, the Ancient One

Great Basin bristlecone pines are the oldest known non-clonal living organisms on Earth. One tree named Methuselah is about 4,850 years old, and an even older bristlecone in the Great Basin / White Mountains region has been dated near 5,070 years — alive before the pyramids were finished. They survive by growing slowly in harsh, windswept high country, their gnarled wood dense and weather-hardened. Great Basin NP protects ancient groves of them.



Library of Congress · Sunset silhouettes a saguaro cactus in the Sonoran Desert, n · No known restrictions (verify at source)

The Saguaro Cactus

The giant columnar saguaro, emblem of Saguaro NP in Arizona, grows only in the Sonoran Desert. A saguaro can live 150–200 years and stand over 40 feet tall, but it grows agonizingly slowly — it may not sprout its first arm until it is 50–75 years old. Those arms, and the cactus itself, become high-rise homes for desert birds like the gila woodpecker and elf owl.



Wikimedia Commons · Jarek Tuszyński · CC BY-SA 3.0

The Joshua Tree

The Joshua tree is a giant yucca and the spiky emblem of the Mojave Desert. Joshua Tree NP sits exactly where two deserts meet — the higher, cooler Mojave and the lower, hotter Colorado. The tree has one indispensable partner: the yucca moth, the only creature that pollinates it, deliberately packing pollen into its flowers and laying eggs inside. No moth, no Joshua trees.



Wikimedia Commons · Everglades NPS from Homestead, Florida, United States · Public domain

The River of Grass

The Everglades is not a swamp but a river — a sheet of water up to 60 miles wide and only inches deep, flowing imperceptibly south across Florida through endless sawgrass. Writer Marjory Stoneman Douglas named it the "river of grass." This subtropical wetland weaves sawgrass marsh, mangrove forests, and cypress stands into one of the most distinctive ecosystems in North America.

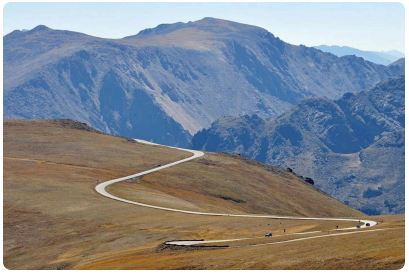


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Olympic's Temperate Rainforest

Olympic NP's Hoh Rain Forest is a true temperate rainforest, receiving roughly 12–14 feet of rain a year — among the wettest places in the contiguous United States. The result is a green, dripping world: towering spruce and hemlock, trunks and branches draped in thick moss and ferns, and fallen "nurse logs" sprouting whole rows of new trees.

> **Merriam's Bands**
>
> In park ecology, a life zone is a band of plant and animal communities tied to a particular elevation and climate. The concept, based on Merriam's classic bands, explains why a single tall mountain can stack several distinct zones.



NPS Photo · Public domain

Trail Ridge Road

Alpine tundra is a treeless life zone of low, hardy cushion plants found above the tree line. Rocky Mountain National Park's Trail Ridge Road is famous for crossing straight through it.

By the numbers

About how tall is General Sherman, the giant sequoia, in feet?

275 ft

About how tall is Hyperion, the tallest coast redwood, in feet?

380 ft

About how old is Methuselah, the famous bristlecone pine, in years?

4850 years

A mature saguaro cactus can grow to over how many feet tall?

40 ft

About how many feet of rain does Olympic's Hoh Rain Forest receive per year (upper end)?

14 ft

Matched pairs

Each item on the left goes with the one on the right.

Giant sequoia (General Sherman) → Sequoia NP

Coast redwood (Hyperion) → Redwood NP

Ancient bristlecone pine → Great Basin NP

Saguaro cactus → Saguaro NP

Joshua tree (giant yucca) → Joshua Tree NP

Subtropical sawgrass wetland ("river of grass") → Everglades NP

Temperate rainforest (Hoh) → Olympic NP

Alpine tundra (Trail Ridge Road) → Rocky Mountain NP

Self-test

Answer each question from memory, then check your work against the answer key.

1. General Sherman, a giant sequoia in Sequoia NP, holds the record as the largest tree on Earth measured by what?

A Total volume of wood
B Age
C Height
D Width of its trunk at the very base

2. About how tall is General Sherman, the giant sequoia and largest single-stem tree on Earth?

A About 500 feet
B About 180 feet
C About 275 feet
D About 380 feet

3. Hyperion, the tallest living tree on Earth, reaches about how tall?

A About 250 feet
B About 450 feet
C About 275 feet
D About 380 feet

4. About how old is Methuselah, the famous Great Basin bristlecone pine?

A About 8,000 years
B About 4,850 years
C About 2,700 years
D About 1,500 years

5. Among the record-breaking trees, which is celebrated as the tallest living thing on Earth?

A) Coast redwood (Hyperion)
B) Giant sequoia (General Sherman)
C) Joshua tree
D) Great Basin bristlecone pine (Methuselah)

6. Which national park protects General Sherman, the giant sequoia?

A) Redwood NP
B) Great Basin NP
C) Sequoia NP
D) Yosemite NP

7. Hyperion, the record-holding coast redwood, is found in which national park?

A) Sequoia NP
B) Redwood NP
C) Olympic NP
D) Kings Canyon NP

8. Ancient bristlecone pines like Methuselah are protected in which national park?

A) Rocky Mountain NP
B) Joshua Tree NP
C) Saguaro NP
D) Great Basin NP

9. The giant saguaro cactus, emblem of Saguaro NP, grows wild only in which desert?

A) Sonoran Desert
B) Mojave Desert
C) Chihuahuan Desert
D) Colorado Desert

10. Which plant-to-park pairing is INCORRECT?

A) Saguaro cactus — Saguaro NP
B) Coast redwood — Sequoia NP
C) Joshua tree — Joshua Tree NP
D) Giant sequoia — Sequoia NP

11. By the classic rule of thumb in park ecology, climbing 1,000 feet up a mountain is roughly like traveling how far northward?

A) About 1,500 miles
B) About 150 miles
C) About 600 miles
D) About 60 miles

12. What is a 'life zone' in park ecology?

A) A cool, very wet forest of the middle latitudes
B) The desert that always sits at a mountain's base
C) A fenced boundary marking a park's protected area
D) A band of plant and animal communities set by elevation and climate

13. As you climb a mountain, the air cools by roughly how much for every 1,000 feet of elevation?

A) About 3–5°F
B) About 10–15°F
C) About 20°F
D) About 1°F

14. Climbing a tall park from base to summit, in what order do the life zones typically stack?

A. Alpine tundra, subalpine, montane forest, desert
B. Subalpine, desert, alpine tundra, montane forest
C. Montane forest, desert, alpine tundra, subalpine
D. Desert, montane forest, subalpine, alpine tundra

15. Which best describes the alpine tundra life zone?

A. A fog-fed forest of towering moss-draped redwoods
B. The hot desert band at a mountain's base
C. A treeless zone of low, hardy plants above where trees can survive
D. A subtropical wetland of sawgrass and mangrove

16. The subtropical 'river of grass' sawgrass wetland is the signature ecosystem of which park?

A. Olympic NP
B. Everglades NP
C. Biscayne NP
D. Congaree NP

17. The Hoh Rain Forest, a temperate rainforest, is protected in which national park?

A. Redwood NP
B. Sequoia NP
C. Olympic NP
D. Mount Rainier NP

18. Alpine tundra crossed by the high Trail Ridge Road is a signature ecosystem of which park?

A. Rocky Mountain NP
B. Yellowstone NP
C. Grand Canyon NP
D. Sequoia NP

19. What defines a temperate rainforest?

A. A treeless high-elevation zone of cushion plants
B. A subtropical marsh of sawgrass and mangrove
C. A hot, humid jungle near the equator
D. A cool, very wet forest of the middle latitudes fed by heavy rain or fog

20. Olympic's Hoh Rain Forest, one of the wettest places in the contiguous US, receives roughly how much rain a year?

A. About 30–40 feet
B. About 12–14 feet
C. About 6–7 feet
D. About 2–3 feet

Go deeper

WATCH Biggest, Tallest, Oldest 0:32 · YouTube
The largest single-stem tree on Earth is General Sherman, a giant sequoia: about 52,500 cubic feet of wood.

WATCH 1,000 Feet Up, 600 Miles North 0:29 · YouTube
Climb 1,000 feet up a mountain, and the air cools by about 3 to 5 degrees Fahrenheit.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-5-flora-and-ecosystems

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 6 OF 27

Lesson 6: Records & Superlatives

Extremes of the System · Firsts, Mosts & Onlys

WHAT YOU'LL BE ABLE TO DO

- Recall the system's physical record numbers and extreme places.
- Match living and ancient records to the parks that hold them.
- Identify the firsts, mosts, and onlys of the park system.
- Recognize the least-visited park and Acadia's first-in-the-East milestone.
- Recognize signature extreme features on sight.

Extremes of the System

The national parks are a catalog of superlatives — the country's wildest highs and lows are nearly all protected inside park boundaries. This part gathers the deepest, hottest, longest, and tallest of them.

Crater Lake deepest lake in America

Crater Lake, in southern Oregon, is the deepest lake in the United States at **1,943 feet** — and among the deepest on Earth. What makes it strange is how it fills: no river runs in or out. The lake sits inside the caldera of Mount Mazama, a volcano that erupted and collapsed roughly 7,700 years ago, leaving a vast circular pit. Rain and snowmelt alone have slowly filled it to its present level, and because almost no sediment flows in, the water is extraordinarily clear. Sunlight penetrates deep, scattering back as an intense, almost artificial sapphire blue. Wizard Island, a small cinder cone, rises from one side — a volcano within a volcano.

Badwater Basin the lowest hottest ground

Death Valley owns more records than any other park. **Badwater Basin** drops to **282 feet below sea level**, the lowest point in North America — a blinding white plain of salt left behind by evaporated water. The same park holds the planet's heat record: on **July 10, 1913**, Furnace Creek reached **134°F**, still the highest reliably recorded air temperature anywhere on Earth. Death Valley is also the driest place in the country, averaging only about two inches of rain a year. Low, hot, and parched — its extremes all reinforce one another, since the deep, walled-in basin traps heat and blocks moisture.

Mammoth Cave the longest in the world

Beneath Kentucky's green hills lies **Mammoth Cave**, the longest known cave system on Earth. Surveyors have mapped more than **426 miles** of interconnected passages, and new sections are still being discovered. The scale is hard to overstate: the second-longest cave in the world is less than half as long. The labyrinth formed as slightly acidic water dissolved soluble limestone over millions of years, hollowing out level upon level of corridors, domes, and pits.

Great Sand Dunes tallest in North America

Against Colorado's snow-capped Sangre de Cristo Mountains rise the tallest dunes on the continent — **Great Sand Dunes**, reaching about **741 feet** from base to crest. The sand blew off an ancient dried lakebed and accumulated where the mountains trap the prevailing wind. The juxtaposition is unforgettable: soft golden sand mountains beneath jagged snowy peaks, often with a shallow snowmelt creek running along their base in spring.

Living and ancient records

The parks hold biological records too. **Yosemite Falls** is the tallest waterfall in North America, dropping 2,425 feet in three tiers. **Redwood National Park** shelters the tallest trees on Earth, the coast redwoods, while **Sequoia National Park** holds the largest tree by volume, the General Sherman. The oldest non-clonal trees on the planet — bristlecone pines nearly 5,000 years old — cling to the heights of **Great Basin**. And in **Black Canyon of the Gunnison**, the dark Painted Wall exposes rock about 1.7 billion years old, among the oldest stone visible anywhere in the parks.

Firsts, Mosts & Onlys

Some park records are about geography and history rather than raw size — the first park, the newest, the loneliest, and the strange geographic outliers. This part collects the firsts, the mosts, and the onlys.

Acadia first park east of the Mississippi

Most of America's earliest parks were carved from western public land. **Acadia**, established in **1919** on the coast of Maine, broke that pattern as the first national park east of the Mississippi River — and the first created from land *donated* by private citizens rather than reserved from the federal domain. Its **Cadillac Mountain**, at 1,530 feet, is the highest point on the eastern seaboard of the U.S. From early October to early March, its summit is the first place in the U.S. to see the sunrise. Acadia is also remarkably popular for its size, drawing close to four million visitors a season to a park of under 50,000 acres.

Gates of the Arctic the least visited

At the opposite extreme from the crowded Smokies sits **Gates of the Arctic** in northern Alaska, the least-visited national park. In 2024 it recorded roughly **11,900 visitors** — fewer in a year than Great Smoky Mountains sees in a few hours. Every acre of its 8.5 million lies above the Arctic Circle, and the park has no roads, no maintained trails, and no visitor facilities of any kind. Reaching it means chartering a bush plane or undertaking a long, unsupported backcountry trek. It is the second-largest national park and very nearly the emptiest — wilderness in its purest administrative form.

Alaska holds the four largest

Scale in the park system means Alaska. The **four largest national parks are all Alaskan**: Wrangell–St. Elias, Gates of the Arctic, Denali, and Katmai, in that order. Wrangell–St. Elias alone is larger than the entire country of Switzerland. Most of these giants share a birthday — **December 2, 1980** — when the Alaska National Interest Lands Conservation Act (ANILCA) created or expanded them in a single stroke, more than doubling the total acreage of the National Park System overnight.

The outliers

A few records round out the map. The **newest national park** is **Chiricahua** in Arizona, redesignated from a national monument in October 2026 as the **64th**; **New River Gorge** in West Virginia, redesignated in 2020 as the **63rd**, held the title before it. The **only park lying entirely south of the equator** is the **National Park of American Samoa**, scattered across volcanic islands and reef in the South Pacific. And the record that started it all: **Yellowstone**, signed into existence in **1872**, was the world's first national park — the original from which every other park, here and abroad, ultimately descends.

Key concepts

Badwater Basin

- This blinding white salt flat marks the lowest ground on an entire continent.
- It sits 282 feet below sea level, in the same park that holds the planet's heat record.
- A plain of salt left by evaporated water, it is the lowest point in North America — deep in Death Valley.

Furnace Creek

- This spot holds a temperature record that has never been beaten anywhere on Earth.
- On July 10, 1913, the air here soared to a scorching 134°F.
- It remains the highest reliably recorded air temperature ever measured on the planet, in Death Valley.

Wizard Island

- This small cinder cone is, in effect, a volcano rising inside another volcano.
- It pokes up from one side of the deepest lake in the United States.
- It stands within the collapsed caldera of Mount Mazama, in Oregon's Crater Lake.

Painted Wall

- This sheer cliff exposes some of the oldest stone visible anywhere in the parks.
- Its dark rock has been dated at about 1.7 billion years old.
- It looms inside the steep, narrow gorge of Black Canyon of the Gunnison.

Yosemite Falls

- This ranks as the tallest waterfall anywhere in North America.
- It drops in three separate tiers rather than a single continuous plunge.
- Top to bottom, its water descends a full 2,425 feet.

New River Gorge

- Until 2026, it was the newest national park in the system.
- It was redesignated as a full national park in 2020.
- It sits in the state of West Virginia.

Key facts



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Mammoth Cave — The Longest in the World

Beneath the green hills of Kentucky winds Mammoth Cave, the longest known cave system on Earth, with more than 426 miles of passages surveyed — and explorers keep finding more. No other cave comes close; the second-longest in the world is less than half its length. Its limestone labyrinth was carved over millions of years by water seeping through the soluble rock.

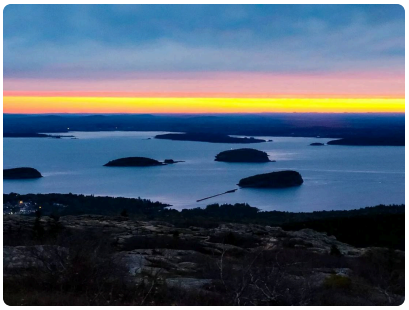


Library of Congress · The distant dunes of the Great Sand Dunes National Park and · No known restrictions (verify at source)

Great Sand Dunes: Continent's Tallest

Pressed against Colorado's snow-capped Sangre de Cristo Mountains stand the tallest dunes in North America — Great Sand Dunes rise about 741 feet from base to crest. The sand blew off an ancient lakebed and piled up where the mountains trap the wind. Climbing Star Dune or High Dune is a leg-burning slog through soft sand, often with snowmelt creek water at the base in spring.

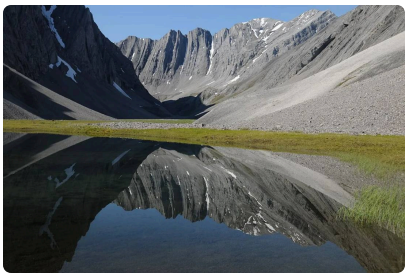
> **No Rivers In or Out**
>
> Crater Lake sits inside the caldera of Mount Mazama, a volcano that erupted and collapsed about 7,700 years ago. With no river flowing in or out, only rain and snowmelt fill the basin, leaving the water famously clear and deep blue.



John Manard · CC BY-SA 2.0

Acadia: First East of Mississippi

Established in 1919, Acadia in Maine was the first national park east of the Mississippi River — and the first created from land donated by private citizens. Its Cadillac Mountain (1,530 ft) is the highest point on the eastern seaboard of the U.S., and from early October to early March it is the first place in the country to see the sunrise. Today Acadia draws nearly four million visitors a season.



National Park Service, Alaska Region · Public domain

Gates of the Arctic: Emptiest

While Great Smoky Mountains draws over twelve million people a year, Gates of the Arctic in northern Alaska sees only about 11,900. There are no roads, no trails, and no visitor facilities — every one of its 8.5 million acres lies above the Arctic Circle. Reaching it means a bush plane or a long backcountry hike. It is the second-largest national park, and very nearly the emptiest.



Wikimedia Commons · Mr. David Sinson, NOAA, Office of Coast Survey · Public domain

Alaska Holds the Four Largest

The four biggest national parks are all in Alaska: Wrangell–St. Elias, Gates of the Arctic, Denali, and Katmai. Wrangell–St. Elias alone is larger than Switzerland. Most were created on a single day — December 2, 1980 — when the Alaska National Interest Lands Conservation Act more than doubled the entire National Park System overnight.

> **Where It All Began**
>
> Yellowstone was established in 1872, making it the world's first national park — the original from which every national park that came later descends.

> **Freshly Minted**
>
> New River Gorge, in West Virginia, became the 63rd national park when it was redesignated in 2020. Chiricahua, in Arizona, followed as the 64th in October 2026.

By the numbers

How deep is Crater Lake, the deepest lake in the United States?

1943 ft

How far below sea level is Badwater Basin, the lowest point in North America?

−282 ft

What is the hottest air temperature ever reliably recorded on Earth, set in Death Valley in 1913?

134 °F

How many miles of passages have been mapped in Mammoth Cave, the world's longest cave system?

426 miles

How tall are the dunes at Great Sand Dunes, the tallest in North America?

741 ft

Roughly how many people visited Gates of the Arctic, the least-visited national park, in 2024?
11900 visitors

Matched pairs

Each item on the left goes with the one on the right.

Yosemite Falls → Tallest waterfall in North America, plunging 2,425 ft in three tiers

Tallest trees on Earth (coast redwoods) → Redwood National Park

Largest tree on Earth by volume (General Sherman) → Sequoia National Park

Oldest non-clonal trees on Earth (bristlecone pines, ~5,000 yrs) → Great Basin National Park

Some of Earth's oldest exposed rock (~1.7 billion years, Painted Wall) → Black Canyon of the Gunnison

Newest national park → Chiricahua, Arizona (2026)

Only park entirely south of the equator → National Park of American Samoa

World's first national park (1872) → Yellowstone

Self-test

Answer each question from memory, then check your work against the answer key.

1. How did Crater Lake, the deepest lake in the United States, form?

A. A volcano (Mount Mazama) erupted and collapsed into a caldera that filled with rain and snowmelt
B. A landslide dammed a river and drowned a valley
C. A retreating glacier gouged out a deep basin that filled with meltwater
D. A meteorite impact blasted out a deep crater

2. How deep is Crater Lake, the deepest lake in the United States?

A. 1,530 feet
B. 2,425 feet
C. 282 feet
D. 1,943 feet

3. What is the highest air temperature ever reliably recorded on Earth, set at Furnace Creek in 1913?

A. 129°F
B. 134°F
C. 120°F
D. 141°F

4. Which extreme does Death Valley NOT hold?

A. Driest place in the United States
B. Hottest air temperature on Earth
C. Longest cave system on Earth
D. Lowest point in North America

5. About how tall are the dunes at Great Sand Dunes, the tallest in North America?

A) 426 feet
B) 1,943 feet
C) 741 feet
D) 282 feet

6. Which national park shelters the tallest trees on Earth, the coast redwoods?

A) Redwood National Park
B) Sequoia National Park
C) Yosemite National Park
D) Great Basin National Park

7. The General Sherman, the largest tree on Earth by volume, grows in which park?

A) Kings Canyon National Park
B) Sequoia National Park
C) Great Basin National Park
D) Redwood National Park

8. Where do the oldest non-clonal trees on Earth, bristlecone pines nearly 5,000 years old, cling to the heights?

A) Redwood National Park
B) Sequoia National Park
C) Great Sand Dunes National Park
D) Great Basin National Park

9. The Painted Wall, exposing rock about 1.7 billion years old, rises in which park?

A) Grand Canyon
B) Canyonlands National Park
C) Black Canyon of the Gunnison
D) Zion National Park

10. Which record is NOT correctly matched to its park?

A) Tallest waterfall in North America — Yellowstone
B) Oldest bristlecone pines — Great Basin
C) Largest tree by volume — Sequoia
D) Tallest trees on Earth — Redwood

11. Signed into existence in 1872, which park was the world's first national park?

A) Sequoia
B) Grand Canyon
C) Yosemite
D) Yellowstone

12. Which park became the 63rd national park when it was redesignated in 2020?

A) Gateway Arch
B) New River Gorge
C) Indiana Dunes
D) White Sands

13. Which is the only national park lying entirely south of the equator?

A) National Park of American Samoa
B) Everglades National Park
C) Virgin Islands National Park
D) Haleakala National Park

14. Which is the single largest national park, alone bigger than the country of Switzerland?

A) Yellowstone
B) Gates of the Arctic
C) Wrangell–St. Elias
D) Denali

15. Which park is NOT one of the four largest (all Alaskan) national parks?

A. Wrangell–St. Elias
B. Gates of the Arctic
C. Denali
D. Glacier Bay

16. What made Acadia National Park, established in 1919 in Maine, a milestone in park history?

A. It was the first national park to span two states
B. It was the first national park east of the Mississippi River
C. It was the first national park north of the Arctic Circle
D. It was the first national park created by presidential proclamation

17. Which is the least-visited national park?

A. Isle Royale
B. Katmai
C. North Cascades
D. Gates of the Arctic

18. Roughly how many people visited Gates of the Arctic in 2024?

A. About 119,000
B. About 11,900
C. About 500,000
D. About 1,900

19. In what year was Acadia established as the first national park east of the Mississippi?

A. 1890
B. 1906
C. 1919
D. 1872

20. Besides being first in the East, Acadia was unusual because it was created from what?

A. Land donated by private citizens
B. Reclaimed farmland
C. Land purchased from a railroad
D. Former military land

21. A small cinder cone rising from the water inside Crater Lake's caldera — a volcano within a volcano — is called what?

A. Painted Wall
B. Wizard Island
C. Mount Mazama
D. Star Dune

22. In Black Canyon of the Gunnison, which dark cliff exposes rock about 1.7 billion years old?

A. El Capitan
B. Half Dome
C. Painted Wall
D. Angels Landing

23. Which feature is the tallest waterfall in North America, dropping 2,425 feet in three tiers?

A. Bridalveil Fall
B. Multnomah Falls
C. Yellowstone Falls
D. Yosemite Falls

24. The blinding white plain of salt flats at the lowest point in North America is known as what?

A. Badwater Basin
B. Star Dune
C. Furnace Creek
D. Wizard Island

25. Which signature feature is NOT paired with its correct park?

A Painted Wall — Black Canyon of the Gunnison
B Wizard Island — Crater Lake
C Yosemite Falls — Yosemite
D Badwater Basin — Great Sand Dunes

Go deeper

WATCH Lowest, Hottest, Driest 0:28 · YouTube
Death Valley holds more records than any other national park.

WATCH Firsts and Onlys 0:31 · YouTube
Acadia, in Maine, was the first national park east of the Mississippi. It was also the first created from land that private citizens donated.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-6-records-and-superlatives

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 7 OF 27

Lesson 7: Visiting the Parks

Sites & Experiences · Timing & Safety · The Park Lexicon

WHAT YOU'LL BE ABLE TO DO

- Match iconic scenic roads and seasonal events to their parks.
- Apply the parks' core safety rules for water, wildlife distance, and hazards.
- Distinguish park designations: national park, monument, wilderness, and preserve.
- Define the backcountry and trail vocabulary of the park lexicon.
- Match the visitor-facility terms of the park lexicon.

Sites & Experiences

Some park memories aren't a single overlook — they're an experience you plan a whole trip around. This part gathers the must-dos: the legendary roads, the dark skies, the ranger who makes it all make sense, and the little card that opens every gate.

Going-to-the-Sun Road

Glacier National Park's 50-mile marvel is one of the great drives on Earth. It crosses the Continental Divide at Logan Pass (6,646 ft), carved straight into cliff faces with waterfalls spilling onto the asphalt and switchbacks that took roughly two decades of dangerous work to complete in 1932. The catch is snow: plows fight drifts dozens of feet deep each spring, so the full road typically opens only from late June or July through mid-October. Driving it is the headline event of a Glacier visit — and a reminder that the most beautiful routes are rarely the easy ones.

Trail Ridge Road

In Rocky Mountain National Park, Trail Ridge Road is the highest continuous paved road in the United States, cresting at 12,183 feet. For miles it runs above treeline through fragile alpine tundra, where marmots whistle, elk graze, and the thin air makes a short walk feel like work. Snow seals it for much of the year, so it's usually open only from late May to late October. Two seasonal cousins round out the high-country drives: Yosemite's Tioga Road, which crests Tioga Pass at 9,943 feet, and Shenandoah's 105-mile Skyline Drive, a fall-foliage icon. Acadia's Cadillac Mountain Road reaches a summit that, from early October to early March, is the first place in the U.S. to see the sunrise.

Dark Skies

Get far enough from city light and the night sky becomes a destination of its own. Many parks are certified International Dark Sky Parks — Big Bend, Death Valley, Capitol Reef, Bryce Canyon, Great Basin, Joshua Tree, and Canyonlands among them. On a clear, moonless night the Milky Way arcs overhead like a luminous river, and thousands of stars appear that most Americans, under light-polluted skies, will never see. A few parks add rarer spectacles still: Yosemite's Firefall, when Horsetail Fall glows orange at

sunset in mid-to-late February, and the lottery-access synchronous fireflies of Great Smoky Mountains in early June.

Ranger Programs

The flat hat is an invitation. National Park Service rangers lead free guided walks, evening campfire talks, and night-sky programs that turn a pretty overlook into a story — about deep time, fire, wolves, and the people who fought to protect the place. The programs cost nothing and need no special gear. Kids can earn a Junior Ranger badge by completing an activity booklet and reciting a pledge to help protect the park, a small ceremony many adults remember decades later.

America the Beautiful Pass

One 80 annual pass covers entrance to every national park and federal recreation site for a full year — a clear bargain if you'll visit more than two or three. It's free for fourth-graders (part of the Every Kid Outdoors program), and discounted for seniors (80 lifetime or $20 annual), military members, and visitors with disabilities. Buying one is often the first, simplest step in planning a season of park trips.

Timing & Safety

A great park trip is half timing and half humility. Go at the right moment and you'll trade gridlock for solitude; respect the heat, the height, and the wildlife and you'll come home with stories instead of a rescue report.

Timed-Entry Reservations

As visitation surged, the most popular parks ran out of room — so they added timed-entry or vehicle reservation systems in peak season. In recent years these have applied at Arches, Rocky Mountain, parts of Glacier, Yosemite during peak periods, Zion's shuttle and the Angels Landing trail, Mount Rainier, Haleakalā for sunrise, and Acadia's Cadillac sunrise. The crucial thing to know is that the rules change every year: a system that existed last summer may shift dates, hours, or vanish entirely. Always check Recreation.gov and the specific park's website before you travel, and book early — popular slots can disappear within minutes of release.

When to Go

Peak season is June through August, with July often the single busiest month, and the marquee parks the most crowded of all. The shoulder seasons — May and September through October — are the connoisseur's choice: thinner crowds, cooler air, fall foliage, and the autumn rut when elk bugle and wildlife is active. Winter transforms parks entirely. High roads close (Trail Ridge, Going-to-the-Sun, Tioga), and Yellowstone's interior becomes reachable only by snowcoach or snowmobile, a hushed, steaming world few visitors ever see.

Wildlife Distances

The NPS rule is easy to remember: stay 100 yards from bears and wolves, and 25 yards from bison, elk, and other large animals — roughly a football field and two bus lengths, respectively. Counterintuitively, bison injure more Yellowstone visitors than any other animal, almost always people who edged too close for a photo. A bison can outrun a person and pivots on a dime. In grizzly country, carry bear spray, keep

it accessible, and know how to use it. And one rule has no exceptions: never feed wildlife. A fed animal becomes a bold, dependent, often doomed one.

Heat, Altitude, and Water

In the desert parks, heat is the quiet killer — more lethal to Southwest park visitors than nearly any other hazard. The defenses are simple: hike before 10 a.m., avoid midday exertion, and carry a full gallon of water per person per day. At elevation — above about 8,000 feet on Trail Ridge, in Yellowstone, or in the Sequoia high country — acute mountain sickness is a real risk; ascend gradually, hydrate, and watch for headache and nausea. At the Grand Canyon, the mantra is "down is optional, up is mandatory": most rescues involve hikers who descended too far in the heat and couldn't climb back out.

Before any serious day hike, pack the Ten Essentials — navigation, sun protection, insulation, illumination, first aid, fire, a repair kit, extra nutrition, extra hydration, and emergency shelter. It's a decades-old checklist built on a simple idea: be ready for the day to go sideways.

The Park Lexicon

Every world has its own words, and the parks are no exception. Learn a handful and the maps, signs, and ranger talks suddenly snap into focus. These terms fall into three families: what a place is *designated* as, how it's *managed*, and what you'll meet out on the *trail*.

National Park

The headline designation, and the hardest to earn. A national park is a protected area created by an act of Congress, generally barring hunting and resource extraction in favor of preservation and public enjoyment. There are 64 of them, the crown jewels of a much larger federal system.

National Monument

A national monument is a protected site that the president can proclaim directly under the Antiquities Act of 1906 — no act of Congress required. That speed has saved countless landscapes from development, and many of today's beloved national parks, including the Grand Canyon, began life as monuments before Congress upgraded them. A related designation, the national preserve, is a protected unit that may permit some hunting or resource extraction; several places are combined "Park & Preserve" units.

Wilderness Area

Wilderness is the strictest federal land protection there is. A designated wilderness area bars roads, motor vehicles, and permanent development, with the goal of keeping the land — in the language of the 1964 Wilderness Act — "untrammeled by man." Much of the acreage inside the big parks carries this extra layer of protection.

Backcountry

The backcountry is the remote, undeveloped interior of a park, beyond the roads and the front-country facilities like visitor centers and lodges. You reach it on foot, by horse, or by boat, and an overnight stay there usually requires a permit. It's where the wilderness words below come into their own.

Switchback

A switchback is a sharp zigzag turn in a trail or road that tames a steep slope. By lengthening the route and easing the grade, switchbacks let hikers and vehicles climb terrain that would be impossible to ascend straight on — the secret behind roads like Going-to-the-Sun.

Cairn

A cairn is a deliberate stack of stones that marks a route across bare rock or open terrain where no worn path shows the way. Follow the cairns and you stay found; the rule is to use them, not build rogue ones, since false cairns can lead hikers astray.

Inholding

An inholding is privately owned land that sits within a park's boundaries — a leftover from before the park was drawn, which can complicate management and access. Two more management terms round out the vocabulary: a **gateway town** is the community at a park's entrance that feeds and beds its visitors, and a **concessioner** is a private company licensed to run the lodges, tours, and services inside the park itself. Out at the start of any trail, you'll also meet the **trailhead** — simply the point where a trail begins.

Key terms

National Park

A protected area created by an act of Congress, generally barring hunting and resource extraction — the highest-profile designation in the federal system.

National Monument

A protected site that the president can proclaim directly under the Antiquities Act of 1906, without waiting for Congress — often later upgraded to full park status.

Wilderness Area

The strictest federal land protection, barring roads, vehicles, and development so the land stays untrammeled by people.

Backcountry

The remote, undeveloped interior of a park beyond roads and front-country facilities, usually reached on foot or by boat and often requiring an overnight permit.

Switchback

A sharp zigzag turn in a trail or road that eases a steep climb by lengthening the route and softening the grade.

Cairn

A deliberate stack of stones used to mark a route across rock or open terrain where no worn path is visible.

Inholding

Privately owned land that sits within the boundaries of a park, sometimes complicating management and access.

Key concepts

Going-to-the-Sun Road

- This 50-mile marvel is counted among the great drives anywhere on Earth.
- Carved into cliff faces with waterfalls spilling onto the asphalt, it took about two decades to finish in 1932.
- It crosses the Continental Divide at Logan Pass and is the headline event of a Glacier visit.

Trail Ridge Road

- This is the highest continuous paved route in the entire United States.
- Cresting at 12,183 feet, it runs for miles above treeline through fragile alpine tundra.
- Marmots whistle and elk graze beside it in Rocky Mountain National Park.

Tioga Road

- This seasonal high-country drive is sealed shut by snow for much of the year.
- It crests its namesake pass at 9,943 feet.
- It is the drive that climbs into the high country of Yosemite.

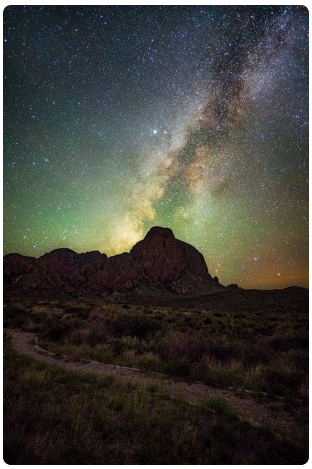
Skyline Drive

- This 105-mile route is beloved as a fall-foliage icon.
- Its many overlooks blaze with color once autumn arrives.
- It traces the entire length of Shenandoah National Park.

Cadillac Mountain Road

- This short climb leads to a summit prized above all for one fleeting daily moment.
- From early October to early March, its summit is the first place in the U.S. to see the sunrise.
- It ascends to the highest point in Acadia National Park.

Key facts



Viktorwills · CC BY-SA 4.0

Dark Skies

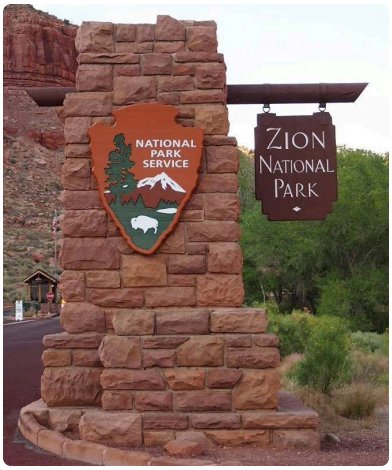
Far from city glow, many parks are certified International Dark Sky Parks — Big Bend, Death Valley, Capitol Reef, Bryce Canyon, Great Basin, Joshua Tree, and Canyonlands among them. On a moonless night the Milky Way arcs overhead like a river of light, and thousands of stars appear that most Americans never see.



GlacierNPS · Public domain

Ranger Programs

The flat hat is an invitation. Park rangers lead free guided walks, evening campfire talks, and night-sky programs, turning a scenic overlook into a story about deep time, wildlife, and people. Kids can earn a Junior Ranger badge by completing an activity booklet and reciting a pledge to protect the park.



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America the Beautiful Pass

One 80 annual pass covers entrance to every national park and federal recreation site for a full year — a bargain if you'll visit more than two or three. It's free for fourth-graders, and discounted for seniors (80 lifetime or $20 annual), military, and visitors with disabilities.

> ### Timed-Entry Reservations
>
> As crowds swelled, the busiest parks added timed-entry or vehicle reservations in peak season — Arches, Rocky Mountain, parts of Glacier, Yosemite at peak periods, Zion's shuttle and Angels Landing, Mount Rainier, Haleakalā sunrise, and Acadia's Cadillac sunrise. The systems change yearly, so always check Recreation.gov and the park website before you go.



Jacob W. Frank · Public domain

When to Go

Peak season is June through August, with July often the single busiest month — and the marquee parks the most jammed. The shoulder seasons, May and September–October, reward you with thinner crowds, cooler air, fall foliage, and the autumn rut. Winter transforms parks entirely: Yellowstone's interior is reachable only by snowcoach or snowmobile.

> **Heat, Altitude, and Water**
>
> In desert parks, heat kills more visitors than almost any other hazard: hike before 10 a.m. and carry a gallon of water per person per day. Above 8,000 feet, altitude sickness is real — ascend gradually and hydrate. And at the Grand Canyon, remember the mantra: "down is optional, up is mandatory."

> **Not the Bears**
>
> Despite bears' fearsome reputation, bison injure more Yellowstone visitors than any other animal, almost always people who edged too close for a photo. Because a bison can outrun a person and pivot instantly, the NPS rule is to stay 25 yards back.

By the numbers

How many gallons of water per person per day does the NPS recommend in desert parks?

1 gallons

How many yards should you stay back from bears and wolves?

100 yards

Matched pairs

Each item on the left goes with the one on the right.

Tioga Road → Yosemite (crests Tioga Pass, 9,943 ft)

Skyline Drive → Shenandoah (105 miles of fall foliage)

Cadillac Mountain Road → Acadia (first U.S. sunrise, early Oct–early Mar)

Firefall (Horsetail Fall glows orange) → Yosemite (mid-to-late February)

Synchronous fireflies (lottery event) → Great Smoky Mountains (early June)

Trailhead → The point where a trail begins

Gateway town → A community at a park's entrance serving visitors

Concessioner → A private company licensed to run lodges and tours inside a park

National Preserve → A protected unit that may allow some hunting or extraction

Self-test

Answer each question from memory, then check your work against the answer key.

1. Trail Ridge Road in Rocky Mountain National Park holds what national distinction?

- A The highest continuous paved road in the United States
- B The steepest paved road in the United States
- C The first paved road built in the National Park System
- D The longest paved road in any national park

2. Tioga Road, which crests Tioga Pass at 9,943 feet, is a seasonal high-country drive in which park?

- A Kings Canyon
- B Yosemite
- C Glacier
- D Rocky Mountain

3. Going-to-the-Sun Road, crossing the Continental Divide at Logan Pass, is the headline drive of which park?

- A Grand Teton
- B Yellowstone
- C North Cascades
- D Glacier

4. The lottery-access synchronous fireflies of early June are a signature spectacle of which park?

- A Shenandoah
- B Mammoth Cave
- C Great Smoky Mountains
- D Congaree

5. Which scenic road is NOT correctly matched to its park?

- A Skyline Drive — Shenandoah
- B Cadillac Mountain Road — Acadia
- C Trail Ridge Road — Rocky Mountain
- D Going-to-the-Sun Road — Yosemite

6. Yosemite's 'Firefall,' when Horsetail Fall glows orange at sunset, occurs during which window?

- A Mid-to-late February
- B Early June
- C Peak summer (July)
- D Autumn (October)

7. The lottery-access synchronous fireflies display takes place in which national park?

- A Acadia
- B Great Smoky Mountains
- C Yosemite
- D Shenandoah

8. Counterintuitively, which animal injures more Yellowstone visitors than any other?

- A Grizzly bears
- B Wolves
- C Bison
- D Elk

9. In desert parks, how much water does the NPS recommend carrying per person per day?

A Half a gallon
B One quart
C One gallon
D Two gallons

10. How far back does the NPS rule say to stay from bears and wolves?

A 25 yards
B 50 yards
C 10 yards
D 100 yards

11. Which action best follows NPS guidance for surviving desert-park heat?

A Start at noon when the trails are least crowded
B Hike before 10 a.m. and avoid midday exertion
C Rest in the sun to let your body acclimate
D Save most of your water for the hike back

12. Which of these is NOT one of the parks' core safety rules?

A Feed wildlife small, natural snacks
B Never feed wildlife
C Carry bear spray in grizzly country
D Stay 100 yards from bears and wolves

13. Which park designation can the President create directly, without an act of Congress?

A Wilderness area
B National monument
C National park
D National preserve

14. A national park is a protected area created by what?

A A Wilderness Act designation
B A state legislature
C An act of Congress
D A presidential proclamation

15. Which designation is the strictest federal land protection, barring roads, vehicles, and permanent development?

A Backcountry
B National Preserve
C National Monument
D Wilderness Area

16. Which designation is a protected unit that may permit some hunting or resource extraction?

A National Preserve
B Wilderness Area
C National Park
D National Monument

17. Which statement about park designations is FALSE?

A A national park generally bars hunting and extraction
B The Grand Canyon began life as a national monument
C A national monument requires an act of Congress
D A national preserve may permit some hunting

18. What is the defining feature of a designated Wilderness Area under the 1964 Wilderness Act?

A) It bars roads, motor vehicles, and permanent development
B) It permits regulated hunting and mineral extraction
C) It can be proclaimed directly by the President
D) It requires an act of Congress to establish a park

19. In its own language, what state does the 1964 Wilderness Act aim to keep protected land in?

A) "Open for multiple use"
B) "Reserved for future development"
C) "Managed for maximum yield"
D) "Untrammeled by man"

20. What term names the remote, undeveloped interior of a park beyond roads and front-country facilities?

A) Inholding
B) Backcountry
C) Wilderness Area
D) Frontcountry

21. A sharp zigzag turn in a trail or road that eases a steep climb by lengthening the route is a:

A) Traverse
B) Switchback
C) Cutback
D) Cairn

22. A deliberate stack of stones that marks a route across bare rock where no worn path shows is a:

A) Trailhead
B) Inholding
C) Cairn
D) Switchback

23. Privately owned land that sits within a park's boundaries is called an:

A) Inholding
B) Easement
C) Gateway
D) Concession

24. Which trail term is INCORRECTLY defined?

A) Switchback — a zigzag turn easing a steep climb
B) Cairn — a stack of stones marking a route
C) Inholding — private land within park boundaries
D) Backcountry — a park's developed visitor-center area

25. What term names the point where a trail begins?

A) Cairn
B) Trailhead
C) Backcountry
D) Gateway

26. A community at a park's entrance that feeds and beds its visitors is a:

A) Concessioner
B) Trailhead
C) Inholding
D) Gateway town

27. A private company licensed to run the lodges, tours, and services inside a park is a:

A Ranger station
B Inholding
C Concessioner
D Gateway town

28. Which facility term is correctly matched to its meaning?

A Concessioner — a private company running park lodges and tours
B Inholding — a community at a park's entrance
C Gateway town — the point where a trail begins
D Trailhead — private land inside a park

29. Which facility term is INCORRECTLY described?

A Gateway town — a community at a park's entrance serving visitors
B Trailhead — the point where a trail begins
C Concessioner — a community at a park's entrance serving visitors
D Inholding — privately owned land within a park

Go deeper

WATCH Going-to-the-Sun Road 0:30 · YouTube
Going-to-the-Sun Road crosses Glacier National Park for 50 miles. At Logan Pass, it crosses the Continental Divide at 6,646 feet.

WATCH 100 Yards, 25 Yards 0:29 · YouTube
The National Park Service rule is easy to remember. Stay 100 yards from bears and wolves: roughly a football field.

WATCH Park or Monument 0:29 · YouTube
A national park is created by an act of Congress. There are 64 of them.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-7-visiting-the-parks

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LESSON 8 OF 27

Lesson 8: Fun Facts & Famous Words

Stuff You'll Want to Repeat · Famous Words

WHAT YOU'LL BE ABLE TO DO

- Recall the parks' most-repeatable surprising facts.
- Identify the unusual places behind the park system's odd trivia.
- Attribute the parks' famous conservation quotes to their authors.

Stuff You'll Want to Repeat

Every national park hides a fact that sounds made up. Here are the ones that survive a fact-check — the kind you'll find yourself repeating at dinner.

Yellowstones Sleeping Giant

Yellowstone sits on one of the largest active volcanic systems on Earth. Beneath the geyser basins, a vast chamber of partly molten rock heats the water that makes Old Faithful blow. That's why the word "supervolcano" gets attached to it — and why doomsday headlines appear every few years. The reality is calmer: the U.S. Geological Survey, which monitors the system constantly, rates the chance of a major near-term eruption as very low. The ground does rise and fall by inches as magma shifts, and small earthquakes are routine, but on any human timescale Yellowstone is simply a very large, very slow, very closely watched giant.

The Park With No Entrance Fee

Great Smoky Mountains is the most-visited national park in the country — more than 12 million visits in 2024 — and it charges no entrance fee. That isn't generosity; it's legal history. In 1951 Tennessee transferred the park's two main roads, Newfound Gap Road and Little River Road, with a ban on tolls, and a federal law bars entrance fees where tolls are barred on a park's primary roads. So while most parks cost money to enter, you can still drive into the Smokies for free. (A parking tag has been required since March 2023 for vehicles that park for more than 15 minutes, but the entry price is still zero.)

The Cave With No Known End

Mammoth Cave, in Kentucky, is the longest known cave system on Earth — and it keeps growing. Not because the rock is changing, but because explorers keep finding and connecting new passages. Each linkage adds to the official mileage, and no one has yet mapped a natural end to the labyrinth. It is a record that is literally still being written, in the dark, one crawlway at a time. Two other underground superlatives round out the theme: **Wind Cave** in South Dakota was the first cave anywhere designated a national park, back in **1903**, famous for its rare honeycomb-like "boxwork" formations.

Bring Your Own Bottle

Hot Springs, Arkansas, earned the nickname "The American Spa" long before the park system existed — people came to soak in its thermal waters. It remains one of the few parks where you can legally collect the resource itself: public fountains let visitors fill bottles straight from the springs. The grand bathhouses along Bathhouse Row preserve the elegance of that spa-town era.

A Park on Loan

The National Park of American Samoa is one of a kind: the United States doesn't own the land. It's leased from local villages, an arrangement found nowhere else in the system. The lease keeps the territory in Samoan hands while protecting its rainforests, coral reefs, and fruit bats — proof that a national park doesn't have to be federal property to be protected.

The Most Urban Park

Gateway Arch became a national park in 2018, making it both the smallest and the most urban in the system. There are no backcountry trails here — the park is essentially Eero Saarinen's **630-foot** stainless-steel arch on the St. Louis riverfront, a monument to westward expansion that visitors can ride to the top of.

Where the Stones Walk

Death Valley is among the hottest and driest places on the planet, yet its strangest feature is cold and quiet: on the Racetrack Playa, heavy rocks leave long trails across the dried mud, as if they had strolled off on their own. The puzzle stood for decades. In 2014, researchers finally filmed the answer — thin sheets of overnight ice, nudged by light wind, glide the stones across the slick surface.

Famous Words

The national parks have a way of leaving people grasping for language. Across more than a century, the best attempts have come from writers, naturalists, and presidents — and the strongest lines have outlived everyone who said them.

Words for the Wild

Why do the parks inspire so much quotable prose? Partly because they ask a hard question — what is wild land *for*? — and partly because the people drawn to answer it were unusually good with words. John Muir wandered the Sierra and came back a poet of granite and light. Theodore Roosevelt stood at the rim of the Grand Canyon and spoke like a man defending something sacred. Decades later, the novelist Wallace Stegner distilled the whole experiment into a single famous phrase. The lines below are the ones people still repeat — at trailheads, on posters, and in the speeches of every generation that has fought to keep these places intact.

Wallace Stegner (1983) gave the parks their most quoted endorsement: *"The national parks are the best idea we ever had. Absolutely American, absolutely democratic, they reflect us at our best."* The power of the line is in that word *democratic* — the parks belong to everyone, regardless of wealth, which is exactly what made the idea radical.

John Muir appears twice, because no one wrote about wilderness more memorably. From *My First Summer in the Sierra* (1911) comes his most-quoted ecological insight: *"When we try to pick out anything by itself, we find it hitched to everything else in the Universe."* It reads today like a one-sentence summary of ecology, written before the word was in common use. Lighter and more inviting is his call to *"Climb the mountains and get their good tidings"* — a line that has launched a million hikes.

The parks also moved two presidents named **Roosevelt**. **Theodore Roosevelt**, standing at the Grand Canyon in 1903, issued a plea that became a conservation creed: *"Leave it as it is. The ages have been at work on it, and man can only mar it."* He understood the canyon as the work of deep time, something human hands could only diminish. A generation later, **Franklin D. Roosevelt** (1936) framed the parks as a national birthright: *"There is nothing so American as our national parks... the country belongs to the people."* Between the two quotations runs the same thread Stegner named — that these landscapes are not the property of a few, but the shared inheritance of all.

When you study these, keep the speakers straight: Stegner the novelist, Muir the wandering naturalist, and the two Roosevelts — Theodore at the canyon rim in 1903, Franklin proclaiming the parks the people's own in 1936.

Key concepts

Hot Springs

- This park earned the nickname 'The American Spa' long before the park system even existed.
- Visitors came to soak in its thermal waters, and grand bathhouses still line its historic row.
- It's one of the few parks where you can legally fill a bottle from public fountains — in Arkansas.

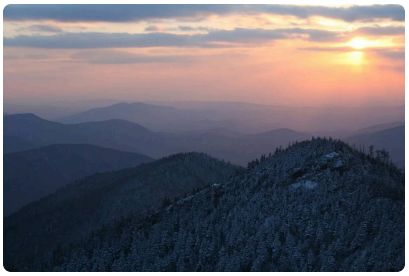
National Park of American Samoa

- This is the only unit in the system where the United States does not own the land.
- It is leased from local villages, an arrangement found nowhere else in the parks.
- The lease protects rainforests, coral reefs, and fruit bats on a South Pacific territory.

Racetrack Playa

- At this eerie spot, heavy rocks leave long trails across dried mud, as if they had strolled off alone.
- The riddle of the moving stones baffled people for decades.
- In 2014, researchers filmed thin overnight ice sheets, nudged by wind, gliding the rocks across this Death Valley flat.

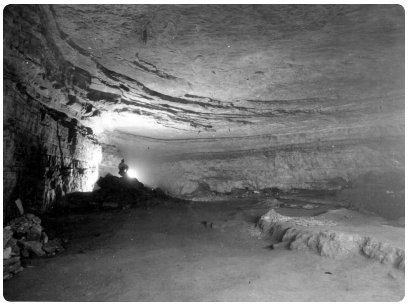
Key facts



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The Park With No Entrance Fee

Great Smoky Mountains charges no entrance fee: Tennessee's 1951 deed for its two main roads bars tolls on them, and a federal law bars entrance fees where tolls are barred. That free admission helps make it the most-visited national park in the country, with more than 12 million visits in 2024. (A parking tag has been required since March 2023 to park for more than 15 minutes, but getting in still costs nothing.)



Willis Thomas Lee · Public domain

The Cave With No Known End

Mammoth Cave is the longest known cave system on Earth, and it keeps getting longer — every time explorers connect a new passage, the official length grows. No one has yet mapped a natural end to it. It is, quite literally, a record still being written underground.



SaraDGarland · CC BY-SA 4.0

Bring Your Own Bottle

Hot Springs, Arkansas, is sometimes called "The American Spa." It's one of the few national parks where you can legally fill your own bottle straight from the source — public fountains let visitors collect the same thermal spring water that drew bathers here long before it was a park.



National Park Service · Public domain

A Park on Loan

The National Park of American Samoa is unique in the entire system: the United States doesn't own it. Instead it's leased from local villages, an arrangement that keeps the land in the hands of the Samoan community while protecting its rainforests, coral reefs, and flying foxes.



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Where the Stones Walk

Death Valley is one of the hottest and driest places on Earth — yet on its Racetrack Playa, heavy rocks leave long trails across the dried mud, as if they had wandered off on their own. The mystery held for decades until 2014, when scientists caught it on camera: thin overnight ice sheets, nudged by light wind, slide the stones along.



Will Keightley · CC BY-SA 2.0

Words for the Wild

The national parks have always inspired great lines. Writers, naturalists, and presidents have tried to put the idea into words — from John Muir wandering the Sierra to Theodore Roosevelt standing at the Grand Canyon. The quotes that follow are the ones people still repeat a century later.

> **Roosevelt at the Canyon**
>
> Standing at the Grand Canyon in 1903, President Theodore Roosevelt urged Americans to "Leave it as it is," warning that the ages had shaped the canyon and people could only mar it.

> **A Novelist's Praise**
>
> Novelist Wallace Stegner gave the parks their most-quoted endorsement in 1983, calling them "the best idea we ever had… Absolutely American, absolutely democratic, they reflect us at our best."

> **Muir on Connection**
>
> In 'My First Summer in the Sierra' (1911), John Muir wrote, "When we try to pick out anything by itself, we find it hitched to everything else in the Universe" — a line that reads like ecology before the word existed.

> **FDR's Declaration**
>
> In 1936, Franklin D. Roosevelt declared, "There is nothing so American as our national parks… the country belongs to the people," framing the parks as a national birthright.

By the numbers

In what year did Wind Cave become the world's first cave designated a national park?

1903 year

Matched pairs

Each item on the left goes with the one on the right.

Most-visited park with no entrance fee → Great Smoky Mountains

World's longest known cave system → Mammoth Cave (Kentucky)

"The national parks are the best idea we ever had. Absolutely American, absolutely democratic, they reflect us at our best."
→ Wallace Stegner (1983)

"When we try to pick out anything by itself, we find it hitched to everything else in the Universe."
→ John Muir (1911)

"Climb the mountains and get their good tidings." → John Muir

"Leave it as it is. The ages have been at work on it, and man can only mar it." (on the Grand Canyon)
→ Theodore Roosevelt (1903)

"There is nothing so American as our national parks... the country belongs to the people."
→ Franklin D. Roosevelt (1936)

Self-test

Answer each question from memory, then check your work against the answer key.

1. Great Smoky Mountains is the most-visited U.S. national park, yet it charges no entrance fee. Why?

A. It is fully funded by the state of Tennessee
B. A toll ban in Tennessee's 1951 road deed, backed by federal law
C. Its charter predates the national entrance-fee system
D. Congress waives fees at the single most-visited park each year

2. In what year did Wind Cave, in South Dakota, become the world's first cave designated a national park?

A. 1916
B. 1872
C. 1903
D. 1926

3. Which national park protects the longest known cave system on Earth — one that keeps getting longer as explorers connect new passages?

A. Mammoth Cave (Kentucky)
B. Jewel Cave (South Dakota)
C. Carlsbad Caverns (New Mexico)
D. Wind Cave (South Dakota)

4. Yellowstone's 'supervolcano' fuels doomsday headlines, but what does the U.S. Geological Survey — which monitors it constantly — say about a major near-term eruption?

A An eruption is overdue
B The risk is rising sharply
C It is likely within 50 years
D The risk is very low

5. Which of these surprising cave facts is NOT true?

A Wind Cave is the longest known cave system on Earth
B Mammoth Cave keeps getting longer as explorers connect new passages
C Great Smoky Mountains charges no entrance fee
D Wind Cave, in South Dakota, was the first cave designated a national park

6. At which national park, nicknamed 'The American Spa,' can visitors legally fill their own bottles straight from public thermal-spring fountains?

A Death Valley
B Yellowstone
C Hot Springs
D Mammoth Cave

7. On which Death Valley feature do heavy rocks leave long trails across dried mud, as if they had strolled off on their own?

A Bathhouse Row
B Badwater Basin
C Bonneville Salt Flats
D Racetrack Playa

8. Which unusual park is leased from local villages rather than owned by the federal government, protecting rainforests, coral reefs, and fruit bats?

A Racetrack Playa
B National Park of American Samoa
C Gateway Arch
D Hot Springs

9. In 2014 researchers finally filmed what moves the 'sailing stones' of Racetrack Playa. What was it?

A Thin overnight ice sheets nudged by light wind
B Strong underground magnetic fields
C Seismic tremors shaking the playa
D Flash-flood water currents

10. Which pairing of an unusual place with its claim to fame is INCORRECT?

A American Samoa — leased from local villages
B Racetrack Playa — rocks leave trails as if they walked
C Racetrack Playa — the first cave designated a national park
D Hot Springs — visitors can legally bottle its thermal spring water

11. Who urged Americans to "Leave it as it is" while standing at the Grand Canyon in 1903?

A John Muir
B Franklin D. Roosevelt
C Wallace Stegner
D Theodore Roosevelt

12. Who called the national parks 'the best idea we ever had… Absolutely American, absolutely democratic, they reflect us at our best'?

A John Muir
B Wallace Stegner
C Franklin D. Roosevelt
D Theodore Roosevelt

13. Who wrote, 'When we try to pick out anything by itself, we find it hitched to everything else in the Universe'?

A Theodore Roosevelt
B Wallace Stegner
C John Muir
D Franklin D. Roosevelt

14. Who declared in 1936, 'There is nothing so American as our national parks… the country belongs to the people'?

A Wallace Stegner
B Franklin D. Roosevelt
C Theodore Roosevelt
D John Muir

15. The parks moved two presidents named Roosevelt. Which statement correctly separates them?

A Theodore spoke at the Grand Canyon in 1903; Franklin called the parks the people's in 1936
B Franklin spoke at the Grand Canyon in 1903; Theodore in 1936
C Theodore declared 'the country belongs to the people' in 1936
D Both quotations came from Theodore Roosevelt

Go deeper

WATCH Where the Stones Walk 0:28 · YouTube
Death Valley is among the hottest and driest places on the planet. Yet its strangest feature is cold and quiet.

WATCH The Best Idea 0:31 · YouTube
The national parks are the best idea we ever had. That's their most quoted line, from the novelist Wallace Stegner, in 1983.

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STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 9 OF 27

Lesson 9: Western Mountains & Northern Plains

Park Profiles: The High Rockies · Park Profiles: Canyons, Cliffs & Plains · Which Western Park Is It? · By the Numbers

WHAT YOU'LL BE ABLE TO DO

- Identify the High Rockies parks by their signature features.
- Recognize the canyon, cliff, and plains parks of the West.
- Identify a Western park from a single distinctive clue.
- Recall the high points and visitation of the Western parks.
- Match the Western parks to their states.

Park Profiles: The High Rockies

These are the marquee parks of the American West — where the continent piles itself into geysers, granite, and tundra. Five profiles, each a doorway to a different way the West reaches for the sky.

Yellowstone

The grandfather of them all. Signed into being on March 1, 1872 by President Ulysses S. Grant, Yellowstone was the world's first national park — a then-radical idea that wild land could belong to everyone. It sprawls across Wyoming, Montana, and Idaho atop one of Earth's largest active volcanic systems: the Yellowstone Caldera, formed by a supereruption roughly 640,000 years ago. The hotspot beneath powers the greatest concentration of geothermal features on the planet — about 10,000 hydrothermal features and some 500 geysers, nearly half of all the active geysers on Earth. Old Faithful erupts every 60 to 90 minutes; the Grand Prismatic Spring, the largest hot spring in the U.S., glows in rainbow bands of heat-loving microbes; Steamboat is the tallest active geyser anywhere. At 2.22 million acres it is the 8th-largest U.S. park, and in 2024 it drew 4.74 million visitors. A surprising twist: thermophiles studied here yielded the enzyme behind modern DNA testing.

Grand Teton

Just south of Yellowstone, the Tetons do something few ranges dare — they rise straight up. About 7,000 feet of granite climbs from the valley of Jackson Hole with no foothills to ease the eye upward, cresting at Grand Teton, 13,775 feet. These are fault-block mountains, among the youngest in the Rockies, lifted along the Teton Fault over roughly 10 million years as the valley floor dropped and the peaks soared. Glaciers later carved the cirques and strung the valley with mirror-bright lakes. Established in 1929 and greatly expanded in 1950 with land John D. Rockefeller Jr. had quietly bought, the park drew about 3.5 million visitors in 2024. Ansel Adams made its profile above the Snake River one of the most famous photographs in America.

Glacier

George Bird Grinnell called northern Montana's high country the "Crown of the Continent," and the name endures. Across roughly a million acres sit some 700 lakes, glacially sharpened horns and arêtes, and the cliff-clinging Going-to-the-Sun Road, which crosses Logan Pass at 6,646 feet. The bedrock is astonishing — the billion-year-old Belt Supergroup, holding some of Earth's best-preserved Proterozoic stromatolites. Of roughly 150 glaciers present in 1850, only about 25 named ones remain. Glacier and Canada's Waterton Lakes together form the world's first International Peace Park (1932).

Rocky Mountain

Near Estes Park, Colorado, this is a park of thin air. Trail Ridge Road, the highest continuous paved road in the United States, crests at 12,183 feet and runs for miles above treeline; crews plow drifts up to 20 feet deep each spring to reopen it. More than a third of the park is alpine tundra, with 77-plus peaks above 12,000 feet and Longs Peak at 14,259. The Continental Divide threads through it. In 2024 it welcomed 4.15 million visitors, the 5th-most of any national park.

Great Sand Dunes

In Colorado's San Luis Valley, Star Dune and Hidden Dune rise about 741 feet — the tallest dunes in North America — heaped against the 13,000-foot Sangre de Cristo Mountains. Wind blew the sand off the valley floor over some 440,000 years, and creeks keep recycling it. A national park since 2004, it is an International Dark Sky Park where you can sandboard by day and trace the Milky Way by night.

Park Profiles: Canyons, Cliffs & Plains

Beyond the snow peaks, the West keeps its secrets lower down — in a gorge that swallows the light, in cliff cities carved by hand, in a cave that breathes, and across prairies that bury and surrender their fossils. Five more parks, five more ways the land tells time.

Black Canyon of the Gunnison

Some canyons are wide and bright; this one is neither. The Black Canyon is so narrow, sheer, and deep that parts of its floor receive only about 33 minutes of sunlight a day — hence the name. The Painted Wall, Colorado's tallest cliff at roughly 2,250 feet, drops straight from the rim. The secret is the rock: the Gunnison River cut through extraordinarily hard Precambrian gneiss and schist, about 1.7 billion years old, at roughly an inch a century. Soft rock would have let the gorge widen into a valley; this rock refused, so the river drove down instead of out. A national monument in 1933, it became a national park in 1999 and drew about 340,000 visitors in 2024. Early surveyors called it "inaccessible," and expert kayakers still rank its rapids among the most dangerous in North America.

Mesa Verde

Established in 1906, Mesa Verde was the first national park created to preserve human cultural heritage — "the works of man" rather than the works of nature. Across the sandstone mesa of southwestern Colorado lie over 5,000 archaeological sites and some 600 cliff dwellings, built into natural alcoves by the Ancestral Puebloans. The grandest, Cliff Palace, holds about 150 rooms — the largest cliff dwelling in North America. The poignant detail is timing: the Puebloans built these cliff homes only in their final

75 to 100 years here, then departed around 1300 CE, likely driven out by a prolonged megadrought. Today 24-plus modern tribes, including the Hopi and Zuni, trace ancestry here. A UNESCO World Heritage Site since 1978, it drew about 500,000 visitors in 2024.

Wind Cave

In the Black Hills of South Dakota, Wind Cave became, in 1903, the 7th national park and the first park in the world created to protect a cave. It is one of Earth's longest and most complex caves — over 160 miles mapped — and it holds about 95% of all the boxwork ever discovered, delicate honeycomb fins of calcite so rare the park contains more than all other known caves combined. The name comes from the air that whistles in and out of its small natural entrance as barometric pressure shifts, a "breathing" the Lakota revere as Maká Oníye, the place of their emergence into this world. Above ground, a genetically important bison herd roams mixed-grass prairie alongside the reintroduced black-footed ferret.

Badlands

Sharply eroded buttes, pinnacles, and spires banded in pink, tan, and gold rise from the largest protected mixed-grass prairie in the National Park System. The Lakota named it Mako Sica, "land bad." The rock is a layered record of ancient seas, floodplains, and volcanic ash, now eroding about an inch a year — fast enough that paleontologists find new fossils after nearly every rainstorm, drawn from one of the world's richest Oligocene mammal beds. A national park since 1978, its South Unit lies within the Pine Ridge Reservation and is co-managed with the Oglala Sioux Tribe. About 1.0 million visitors came in 2024.

Theodore Roosevelt

The only national park named for a single person sits in the colorful North Dakota badlands along the Little Missouri River. Free-roaming bison and wild horses move across three units — South, North, and Elkhorn Ranch — that include Roosevelt's own Maltese Cross and Elkhorn ranches. His time here in the 1880s forged the conservation ethic he carried to the White House; he later wrote that without his North Dakota years, "I never would have been President." The park drew about 700,000 visitors in 2024.

Which Western Park Is It?

A guessing game in clues, broad to specific. Each riddle below pins down one park of the Western Mountains and Northern Plains by region and size, then by signature feature, then by the one detail only it can claim.

Which Western Park Is It

The first park, atop a supervolcano. Spread across three Western states, holding roughly half of all the active geysers on Earth, with a geyser that erupts every 60 to 90 minutes — that is **Yellowstone**, the world's first national park.

Granite with no foothills. A compact Wyoming park just south of a far more famous neighbor, where a young fault-block range rises straight from Jackson Hole and Ansel Adams framed the peaks above the Snake River — that is **Grand Teton**.

The Crown of the Continent. A million-acre Montana park on the Canadian border, with billion-year-old rock and stromatolites, crossed by a cliff-hugging road over Logan Pass — that is **Glacier**.

A third of it above treeline. A Colorado park near Estes Park where the Continental Divide runs through and 77-plus peaks top 12,000 feet, served by Trail Ridge Road cresting at 12,183 feet, the highest continuous paved road in the country — that is **Rocky Mountain**.

Sand against the snow. A Colorado park in the high San Luis Valley where you can sandboard and stargaze, with dunes piled against the 13,000-foot Sangre de Cristo Mountains, topping out near 741 feet — the tallest in North America. That is **Great Sand Dunes**.

The gorge that swallows light. A small western-Colorado park built around a startlingly deep, narrow chasm where parts of the floor get only about 33 minutes of sun a day, walled by the 2,250-foot Painted Wall, Colorado's tallest cliff — that is **Black Canyon of the Gunnison**.

The first park for human history. A southwestern Colorado park, the first ever created to preserve cultural heritage, protecting over 5,000 archaeological sites and some 600 cliff dwellings, including the 150-room Cliff Palace — that is **Mesa Verde**.

The park that breathes. A Black Hills park in South Dakota, the first in the world made to protect a cave, named for the air rushing through its entrance, and holding about 95% of all the rare boxwork on Earth — that is **Wind Cave**.

Land bad. A South Dakota park whose Lakota name means exactly that, protecting the largest mixed-grass prairie in the park system, its banded buttes eroding an inch a year to reveal Oligocene fossils — that is **Badlands**.

The trick to these is layering: the region narrows the field, the signature feature narrows it further, and the final, oddly specific number or name — 741 feet, 33 minutes, 12,183 feet — leaves only one answer standing.

By the Numbers

The West measured: who draws the crowds, who reaches highest, and which state to point to on the map. Memorize a handful of these and the whole region snaps into focus.

Crowds on the Mountain

Two Colorado-and-Wyoming heavyweights lead the pack. **Yellowstone** drew **4,744,353 visitors in 2024**, the 4th-most-visited national park — astonishing for a place reachable only across long mountain distances. **Rocky Mountain** was close behind at **4,154,349 in 2024**, the 5th-most, thanks to its nearness to Colorado's Front Range cities and the lure of Trail Ridge Road. The contrast across the lesson is steep: Black Canyon of the Gunnison sees only about 340,000 a year, a reminder that fame and crowds track accessibility and icons more than raw beauty.

Reaching the Sky

The high points tell the story of these ranges. **Longs Peak** crowns Rocky Mountain at **14,259 feet**, one of Colorado's celebrated fourteeners and a serious, exposed climb by its Keyhole Route. The namesake summit of **Grand Teton** stands at **13,775 feet**, rising abruptly with no foothills to break the view. **Mount Cleveland**, the high point of **Glacier**, reaches **10,466 feet** — lower in raw elevation but no less commanding, because its base sits far lower than Colorado's mile-high floor.

A Road Above the Trees

One number captures Rocky Mountain better than any peak: **Trail Ridge Road crests at 12,183 feet**, the highest continuous paved road in the United States. For miles it runs above treeline through alpine tundra, which is why crews must clear drifts up to 20 feet deep each spring before it can open. It is the rare place where a family in a sedan can drive into a world usually reserved for climbers.

Naming the State

Geography anchors the rest. **Yellowstone** spans **Wyoming, Montana, and Idaho** — the only park in this lesson to claim three states, a measure of its sheer size. **Glacier** belongs to **Montana**, pressed against the Canadian border. **Mesa Verde** sits in **Colorado**, joining Rocky Mountain, Great Sand Dunes, and Black Canyon to make Colorado the standout state of this region. And **Theodore Roosevelt**, alone among them, lies in **North Dakota**, out on the northern plains where the badlands replace the peaks.

Put together, the numbers sketch a clear pattern: the Colorado-and-Wyoming high country pulls the millions and holds the highest summits, while the plains parks of the Dakotas trade altitude and crowds for solitude, fossils, and free-roaming herds.

Key concepts

Yellowstone

- The world's first national park, spread across three Western states atop a supervolcano.
- It holds roughly half of all the active geysers on Earth.
- Its most famous geyser erupts on a near-clockwork schedule every 60 to 90 minutes.

Grand Teton

- A compact Wyoming park just south of a far more famous neighbor.
- Its young fault-block range rises straight from the valley of Jackson Hole with no foothills.
- Ansel Adams' iconic photograph framed its jagged peaks above a bend in the Snake River.

Glacier

- A million-acre Montana park on the Canadian border, dubbed the Crown of the Continent.
- Its ancient billion-year-old rock holds some of Earth's best-preserved Proterozoic stromatolites.
- A cliff-hugging engineering marvel called Going-to-the-Sun Road crosses Logan Pass within it.

Rocky Mountain

- A Colorado park near Estes Park where over a third of the land lies above treeline.
- The Continental Divide runs through it and 77-plus peaks top 12,000 feet.
- Trail Ridge Road, the highest continuous paved road in the country, crests at 12,183 feet here.

Great Sand Dunes

- A Colorado park in the high San Luis Valley where you can sandboard and stargaze.
- Its formations are piled against the 13,000-foot Sangre de Cristo Mountains.
- Star Dune and Hidden Dune, near 741 feet, are the tallest of their kind in North America.

Black Canyon of the Gunnison

- A small western-Colorado park built around a startlingly deep, narrow gorge.
- Parts of its floor receive only about 33 minutes of sunlight a day.
- Its Painted Wall, near 2,250 feet, is the tallest cliff in Colorado.

Mesa Verde

- A southwestern Colorado park, the first ever created to preserve human cultural heritage.
- It protects over 5,000 archaeological sites and some 600 cliff dwellings.
- Its Cliff Palace, with about 150 rooms, is the largest such dwelling in North America.

Wind Cave

- A Black Hills park in South Dakota, the first park in the world made to protect a cave.
- It is named for the air that rushes through its small entrance as pressure changes.
- It holds about 95% of all the rare honeycomb calcite formation called boxwork on Earth.

Badlands

- A South Dakota park whose Lakota name means "land bad."
- It protects the largest mixed-grass prairie in the National Park System.
- Its banded buttes erode about an inch a year, exposing rich Oligocene mammal fossils.

Key facts

> **Theodore Roosevelt**
> The only national park named for a single person, set in the colorful North Dakota badlands along the Little Missouri River. Free-roaming bison and wild horses move across three units that include Roosevelt's own Maltese Cross and Elkhorn ranches, where his time in the 1880s forged the conservation ethic he carried to the presidency. He later wrote that without his North Dakota years, "I never would have been President."

By the numbers

In Grand Teton National Park, what is the elevation of Grand Teton, the range's highest summit?
13775 feet

In Rocky Mountain National Park, Trail Ridge Road — the highest continuous paved road in the United States — crests at what elevation?
12183 feet

At Black Canyon of the Gunnison, the Painted Wall is Colorado's tallest cliff. Roughly how tall is it?
2250 feet

Wind Cave is one of the longest, most complex caves on Earth. About how many miles of it have been mapped?
160 miles

How many people visited Yellowstone National Park in 2024?
4744353 visitors

How many people visited Rocky Mountain National Park in 2024?
4154349 visitors

How high is Longs Peak, the high point of Rocky Mountain National Park?
14259 ft

How high is the summit of Grand Teton, the park's namesake peak?
13775 ft

How high is Mount Cleveland, the high point of Glacier National Park?
10466 ft

At what elevation does Trail Ridge Road crest — the highest continuous paved road in the U.S.?
12183 ft

Matched pairs

Each item on the left goes with the one on the right.

Glacier National Park → Crown of the Continent

Cliff Palace, the largest cliff dwelling in North America → Mesa Verde

Yellowstone → Wyoming, Montana, Idaho

Glacier → Montana

Mesa Verde → Colorado

Theodore Roosevelt → North Dakota

Self-test

Answer each question from memory, then check your work against the answer key.

1. Which national park protects Star Dune and Hidden Dune, the tallest dunes in North America at about 741 feet?

A Rocky Mountain
B Great Sand Dunes
C Glacier
D Yellowstone

2. Which High Rockies park is a range of young fault-block mountains that rise straight from Jackson Hole with no foothills to soften the climb?

A Great Sand Dunes
B Glacier
C Rocky Mountain
D Grand Teton

3. George Bird Grinnell dubbed which Montana park the 'Crown of the Continent'?

A Glacier
B Rocky Mountain
C Yellowstone
D Grand Teton

4. Which park is served by Trail Ridge Road, the highest continuous paved road in the United States, running for miles above treeline?

A Great Sand Dunes
B Grand Teton
C Rocky Mountain
D Glacier

5. Which of these does NOT describe Yellowstone National Park?

A Rises abruptly from the floor of Jackson Hole
B Sits atop a supervolcano caldera
C Old Faithful erupts every 60 to 90 minutes
D Holds nearly half of Earth's active geysers

6. Which of these Western parks is the only U.S. national park named for a single person?

A Badlands
B Mesa Verde
C Wind Cave
D Theodore Roosevelt

7. Which park contains the Painted Wall, Colorado's tallest cliff at roughly 2,250 feet, dropping straight from the rim?

A Badlands
B Wind Cave
C Black Canyon of the Gunnison
D Mesa Verde

8. Which park protects Cliff Palace, the largest cliff dwelling in North America, built by the Ancestral Puebloans?

A Black Canyon of the Gunnison
B Mesa Verde
C Badlands
D Wind Cave

9. Which park holds about 95% of the world's discovered 'boxwork,' delicate honeycomb fins of calcite?

A Badlands
B Wind Cave
C Black Canyon of the Gunnison
D Mesa Verde

10. Which park, called Mako Sica by the Lakota, holds one of the world's richest Oligocene mammal fossil beds and erodes about an inch a year?

A Theodore Roosevelt
B Wind Cave
C Black Canyon of the Gunnison
D Badlands

11. Badlands National Park's eroded buttes and spires rise from the largest protected example of what landscape in the park system?

A Alpine tundra
B Subalpine forest
C Mixed-grass prairie
D Desert sand dunes

12. Which Western park's badlands terrain sits along the Little Missouri River amid a plains landscape roamed by free-ranging bison?

A Theodore Roosevelt
B Black Canyon of the Gunnison
C Wind Cave
D Badlands

13. Which Western park lets you sandboard and stargaze beneath the Sangre de Cristo Mountains, with the tallest dunes in North America (about 741 feet)?

A Glacier
B Badlands
C Black Canyon of the Gunnison
D Great Sand Dunes

14. A gorge so narrow, sheer, and deep that parts of its floor receive only about 33 minutes of sunlight a day. Which park is it?

A Glacier
B Black Canyon of the Gunnison
C Wind Cave
D Mesa Verde

15. The Lakota call it Maka Oniye for the air that whistles in and out of its small entrance. Which park is it?

A Yellowstone
B Mesa Verde
C Wind Cave
D Badlands

16. It spreads across Wyoming, Montana, and Idaho atop a supervolcano and holds nearly half of Earth's active geysers. Which park is it?

A Yellowstone
B Glacier
C Grand Teton
D Rocky Mountain

17. The first park created to preserve 'the works of man,' with over 600 cliff dwellings built into sandstone alcoves. Which park is it?

A Badlands
B Black Canyon of the Gunnison
C Mesa Verde
D Wind Cave

18. Yellowstone drew about 4.7 million visitors in 2024. Where did that rank among U.S. national parks?

A 4th-most-visited
B 1st-most-visited
C 2nd-most-visited
D 6th-most-visited

19. How high is Longs Peak, the high point of Rocky Mountain National Park?

A 10,466 feet
B 14,259 feet
C 13,775 feet
D 12,183 feet

20. What is the elevation of the summit of Grand Teton, the range's namesake peak?

A 10,466 feet
B 12,183 feet
C 14,259 feet
D 13,775 feet

21. How high is Mount Cleveland, the high point of Glacier National Park?

A 14,259 feet
B 12,183 feet
C 13,775 feet
D 10,466 feet

22. Rocky Mountain drew about 4.15 million visitors in 2024. Where did that rank among U.S. national parks?

A 8th-most-visited
B 5th-most-visited
C 3rd-most-visited
D 1st-most-visited

23. Yellowstone National Park spreads across which three states?

A Wyoming, Montana, Idaho
B Montana, Idaho, Washington
C Wyoming, Montana, South Dakota
D Colorado, Utah, Wyoming

24. In which state is Glacier National Park, the 'Crown of the Continent'?

A North Dakota
B Colorado
C Montana
D Wyoming

25. Theodore Roosevelt National Park, the only park named for one person, lies in which state?

A South Dakota
B Montana
C Wyoming
D North Dakota

26. Which of these Western parks is NOT in Colorado?

A Glacier
B Great Sand Dunes
C Mesa Verde
D Black Canyon of the Gunnison

27. Wind Cave and Badlands National Parks both lie in which state?

A Nebraska
B North Dakota
C South Dakota
D Colorado

Go deeper

WATCH Half the World's Geysers 0:30 · YouTube
Yellowstone sits atop one of Earth's largest active volcanic systems. Its caldera formed in a supereruption roughly 640,000 years ago.

WATCH 33 Minutes of Sun 0:32 · YouTube
Parts of the floor of the Black Canyon of the Gunnison get only about 33 minutes of sunlight a day. It's that narrow, sheer, and deep.

WATCH 741-Foot Dunes 0:32 · YouTube
Which western park is it? 3 clues.

WATCH 12,183 Feet 0:33 · YouTube
One number captures Rocky Mountain National Park: 12,183 feet.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-9-western-mountains-and-northern-plains

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 10 OF 27

Lesson 10: Southwest & Colorado Plateau

Canyon Country · Rock, Wood & Cactus · Caves, Reefs & Extremes · Which Southwest Park Is It? · By the Numbers

WHAT YOU'LL BE ABLE TO DO

- Identify the canyon-country headliners of the Colorado Plateau.
- Explain the rock, wood, and cactus marvels of the Southwest.
- Recognize the Southwest's desert extremes of heat, elevation, and dunes.
- Identify a Southwest park from a single distinctive clue.
- Recall Southwest elevation and temperature extremes and match parks to states.

Canyon Country

The Colorado Plateau is a slab of rock the size of several states, slowly lifted a mile or more into the sky. As it rose, rivers kept cutting downward — and the result is the densest cluster of jaw-dropping parks in the country. These five are the headliners, all carved from sandstone and limestone laid down over hundreds of millions of years.

Grand Canyon

The marquee of the marquees. The Colorado River runs ~277 miles through the canyon, which reaches up to 18 miles wide and more than a mile (~6,000 ft) deep. Astonishingly, the river only began carving it ~5–6 million years ago, as the plateau rose to meet the water. The walls expose nearly 2 billion years of Earth's history; the oldest rock at the bottom, the Vishnu Schist, is ~1.8 billion years old. Stacked life zones run from desert scrub at the river to spruce-fir forest on the high North Rim — the ecological equivalent of a trip from Mexico to Canada. Eleven tribes are traditionally associated with the canyon, including the Havasupai, who still live at Supai deep inside it. It drew 4.92 million visitors in 2024, the 3rd-most of any national park, ~90% of them to the South Rim. (It is not, surprisingly, the deepest canyon in the U.S. — just the most expansive and revealing.)

Zion

Utah's first national park (1919) and now its busiest — 4.95 million visitors in 2024 made it the 2nd-most-visited park in the country. Its towering Navajo Sandstone cliffs, up to ~2,000 ft, are petrified ancient sand dunes about 180 million years old, banded in red, pink, and cream. The Virgin River carved Zion Canyon and the slot canyon called The Narrows, and still cuts deeper. Angels Landing's exposed knife-edge got its name in 1916 when a visitor said only an angel could land there; the chained route now requires a lottery permit, in place since 2022.

Bryce Canyon

Despite the name, Bryce is not a canyon — it's a series of natural amphitheaters eroded into the edge of the Paunsaugunt Plateau. Inside them stands the densest concentration of hoodoos (rock spires) on Earth, glowing orange, pink, and white. They form as over 200 freeze-thaw cycles a year pry apart the Claron Formation limestone, and the rim retreats 1–4 ft per century. Southern Paiute legend says the hoodoos are the "Legend People" turned to stone by Coyote. High and cold — the rim reaches 9,115 ft at Rainbow Point — it's an International Dark Sky Park with superb stargazing.

Arches

Near Moab, Arches catalogs over 2,000 natural stone arches, the greatest density on Earth. Delicate Arch, a 52-ft freestanding span, rides Utah's license plate; Landscape Arch stretches ~290 ft, among the longest in the world. They form where water and ice widen cracks in Entrada Sandstone "fins" until a hole opens — and they collapse just as naturally (Wall Arch fell in 2008). Ranger Edward Abbey wrote the wilderness classic *Desert Solitaire* (1968) here.

Canyonlands

Utah's largest national park is a vast, dry wilderness carved by the Green and Colorado Rivers into four districts: Island in the Sky (mesa-top overlooks), The Needles (banded spires), The Maze (one of the most remote places in the U.S.), and the rivers themselves. The mysterious Upheaval Dome may be a meteor crater or a collapsed salt dome. The Maze is so remote the NPS warns help can be days away — fittingly, it once hid outlaws like Butch Cassidy.

Rock, Wood & Cactus

Beyond the famous canyons, the Southwest hides parks built around stranger marvels: a wrinkle in the Earth's crust, a forest turned to stone, cacti that live two centuries, trees named for a prophet, and pines older than the pyramids. Each one protects a single astonishing thing.

Capitol Reef

This park protects the Waterpocket Fold, a ~100-mile-long "wrinkle" (a monocline) in the Earth's crust. Rock layers were bent and uplifted 50–70 million years ago, then eroded to reveal tilted, colorful strata, sheer cliffs, and white domes — one of which resembles the U.S. Capitol, giving the park its name. At its heart sits Fruita, a historic Mormon orchard settlement. Visitors can still pick fruit in season from the roughly 1,900 trees the NPS maintains, and buy fresh-baked pies at the Gifford House. Petroglyphs left by the Fremont culture line Highway 24. It's an International Dark Sky Park.

Petrified Forest

Along old Route 66 in eastern Arizona lies one of the world's largest concentrations of petrified wood — ~225-million-year-old Late Triassic logs turned to rainbow-colored quartz — alongside the banded badlands of the Painted Desert. The transformation happened by permineralization: silica-rich groundwater replaced the wood cell by cell, with iron and manganese painting the agate red, orange, and purple. It's the only national park containing a stretch of historic Route 66. Taking petrified wood is

illegal, and the park keeps a famous file of "conscience letters" from visitors mailing back stolen pieces they blame for bad luck.

Saguaro

Flanking Tucson in two districts, Saguaro protects dense forests of the giant saguaro cactus — the iconic silhouette of the American West, which grows only in the Sonoran Desert. Saguaros can live 150–200 years, top 40 ft, weigh several tons when full of water, and may not sprout a first arm until age 50–75. A "nurse tree" such as a palo verde shelters the seedling for decades before the cactus outlives and replaces it. The Tohono O'odham harvest the fruit each summer to mark their new year, and the blossom — Arizona's state flower — opens in May–June. Summer here is dangerously hot, 100–110°F.

Joshua Tree

East of Los Angeles, this park marks where two deserts meet: the higher, cooler Mojave, full of twisted Joshua trees (giant yuccas), and the lower, hotter Colorado, of creosote, cholla, and ocotillo. Jumbled monzogranite boulders — formed underground, then weathered into rounded stacks — draw climbers to over 8,000 routes. Mormon settlers reputedly named the tree for the prophet Joshua reaching skyward; it is pollinated only by the yucca moth in a strict mutualism. A renowned Dark Sky Park, it drew ~3.0 million visitors in 2024.

Great Basin

In remote east-central Nevada, Great Basin is a "sky island" climbing from sagebrush desert through piñon-juniper and aspen to alpine tundra at 13,065-ft Wheeler Peak. It shelters ancient bristlecone pines — some about 5,000 years old — the ornate Lehman Caves, and Nevada's only glacier, a small rock glacier below the peak. With only ~150,000 visitors in 2024 and some of the darkest skies in the country, it's a quiet gem. A bristlecone here named "Prometheus" was cut down in 1964 and found to be ~4,900 years old — among the oldest trees ever documented, and a turning point for protecting the species.

Caves, Reefs & Extremes

The far Southwest pushes nature to its limits — underground, underwater (long ago), and off the temperature charts. These five parks include a cave carved by acid, two slices of the same ancient reef, a river that doubles as an international border, dunes of pure white, and the lowest, hottest, driest park of all.

Carlsbad Caverns

Beneath the Chihuahuan Desert of southeast New Mexico, Carlsbad's "Big Room" is one of the largest cave chambers in North America — about 8.2 acres of floor under a ceiling reaching ~255 ft. It formed in an unusual way: sulfuric acid, rising from oil and gas deposits below, dissolved the limestone of an ancient Permian reef (the Capitan Reef) from the inside, rather than ordinary rainwater seeping down. Each summer evening, hundreds of thousands of Brazilian free-tailed bats pour out at dusk. A teenage cowboy, Jim White, explored and publicized the cave in the early 1900s, naming many formations — he first spotted the bats as what looked like "smoke" rising from the ground.

Guadalupe Mountains

Just across the Texas line from Carlsbad rises Guadalupe Peak — at 8,751 ft, the highest point in Texas — beside El Capitan's sheer limestone prow and McKittrick Canyon's blazing fall foliage. The whole range is an exposed section of the Permian Capitan Reef, a ~265-million-year-old fossil reef from a tropical sea and one of the best-preserved on Earth — the very same reef that hosts Carlsbad Caverns underground. Geologists travel here to study an ancient marine reef now standing as desert mountains. It's a quiet park, with ~200,000 visitors in 2024.

Big Bend

Where the Rio Grande makes its great "big bend" along the Mexico border, this vast West Texas park (~801,000 acres) stacks deep canyons — Santa Elena's walls rise ~1,500 ft — the rugged Chisos Mountains, and sprawling Chihuahuan Desert beneath one of the darkest skies in the contiguous U.S. Its layered marine, volcanic, and desert rocks hold rich fossils, including the giant pterosaur *Quetzalcoatlus*, whose ~35-ft wingspan was discovered here. You can legally hike to the river and look across into Mexico; the village of Boquillas runs a small, ranger-supervised border crossing.

White Sands

In New Mexico's Tularosa Basin lies the world's largest gypsum dune field — about 275 square miles of brilliant white, wind-rippled sand. Rain dissolves gypsum from surrounding mountains; it pools and dries in Lake Lucero, and wind grinds the selenite crystals into sand. Because gypsum doesn't absorb heat, the dunes stay cool to the touch. Life here has evolved white camouflage, from bleached lizards to white mice. Fossilized human footprints found in the basin (announced 2021) suggest people walked here ~21,000–23,000 years ago — among the oldest evidence of humans in the Americas, possibly rewriting the timeline of human arrival. It became a national park in December 2019.

Death Valley

The largest national park in the contiguous U.S. (~3.4 million acres) is a study in extremes. Badwater Basin sits at −282 ft — the lowest point in North America — and Furnace Creek recorded 134°F on July 10, 1913, the hottest air temperature reliably measured on Earth. From the basin the land climbs to 11,049-ft Telescope Peak, a two-mile vertical range within one park. It's the driest place in North America (~2 inches of rain a year), yet a rare "superbloom" can carpet it in wildflowers after wet winters, and the Devils Hole pupfish cling to life in a single geothermal pool — among the rarest fish on Earth. The Timbisha Shoshone still live in the valley they call *Tümpisa*.

Which Southwest Park Is It?

The desert and plateau parks each have a signature you can recognize once you know what to look for — a single river, a forest of spires, a cave full of bats, a field of white sand. Read the clues from broad to specific and name the park before the last one gives it away.

Grand Canyon

An Arizona park where essentially one river — the Colorado — did all the carving. Its walls expose nearly 2 billion years of Earth's history, layer by readable layer. Eleven tribes are traditionally associated with it,

including the Havasupai, who still live deep inside at Supai. It's the 3rd-most-visited national park.

Zion

Utah's first national park, and the 2nd-most-visited in the country. Its towering cliffs are petrified sand dunes about 180 million years old, banded in red, pink, and cream. A knife-edge spine here, reached by chains under a lottery permit, was said to be a place only an angel could land.

Bryce Canyon

Despite its name, this Utah park is not a canyon — it's a set of eroded amphitheaters carved into a plateau's edge. Inside them stands the densest concentration of rock spires on Earth. Southern Paiute legend says those spires are the "Legend People" turned to stone by Coyote.

Arches

A Utah park near Moab with the greatest density of natural stone openings on Earth — over 2,000 of them. Its most famous freestanding span appears on the state's license plate. Ranger Edward Abbey wrote the wilderness classic *Desert Solitaire* here.

Carlsbad Caverns

A New Mexico park whose main attraction lies entirely underground. It formed unusually — sulfuric acid dissolving an ancient reef from the inside, not ordinary rainwater. Each summer evening, hundreds of thousands of bats stream out of its mouth at dusk.

Death Valley

The largest national park in the contiguous United States. It holds both the lowest point in North America and the hottest air temperature ever reliably recorded on Earth. Rare pupfish survive in a single geothermal pool within it, among the rarest fish anywhere.

Saguaro

An Arizona park split into two districts flanking the city of Tucson. It protects forests of a giant cactus found only in the Sonoran Desert — one that can live two centuries. The Tohono O'odham harvest that cactus's fruit each summer to mark their new year.

White Sands

A New Mexico park in the Tularosa Basin, ringed by a military missile range. Its dunes are the world's largest gypsum field — brilliant white and cool to the touch. Fossilized human footprints here suggest people walked the basin over 20,000 years ago.

By the Numbers

The Southwest parks set records you can measure: the lowest basin, the highest peak in a state, the hottest day on Earth, and the busiest gates in the system. Here are the figures worth memorizing — and a quick map of which park sits in which state.

The Extremes

Death Valley is the land of superlatives. **Badwater Basin** sinks to **−282 ft**, the lowest point in North America — a salt flat below sea level. And on **July 10, 1913**, Furnace Creek reached **134°F**, the hottest air temperature ever reliably recorded on Earth. Within the same park the land climbs to 11,049-ft Telescope Peak, a two-mile vertical range.

The High Points

Two peaks anchor the region's elevations. **Wheeler Peak** tops out at **13,065 ft**, the high point of Great Basin National Park in Nevada and home to ancient bristlecone pines just below the summit. **Guadalupe Peak** rises to **8,751 ft** — the highest point in all of Texas, nicknamed the "Top of Texas," reached by a strenuous ~8.4-mile round-trip climb.

The Crowds

Two Southwest parks sit near the very top of the visitation charts. **Zion** drew about **4,946,592 visitors in 2024**, making it the 2nd-most-visited national park in the country — remarkable for a single narrow canyon served mostly by shuttle. **Grand Canyon** welcomed about **4,919,163 visitors** the same year, the 3rd-most, with roughly 90% of them heading to the South Rim. The two are separated by only a few thousand visitors.

Park to State

Knowing which state holds which park anchors the whole region. **Grand Canyon** is in **Arizona**, sharing the state with Saguaro, Petrified Forest, and part of Joshua Tree's desert kin. **Big Bend** is in **Texas**, deep in the southwest corner on the Rio Grande, alongside Guadalupe Mountains. **Great Basin** is in **Nevada**, near the Utah line. Utah carries the densest cluster — Zion, Bryce, Arches, Canyonlands, and Capitol Reef — while New Mexico holds Carlsbad Caverns and White Sands.

Park to Summit

Each park has a named high point worth pairing with it. **Death Valley** rises to **Telescope Peak (11,049 ft)**, snow-capped in winter and visible from the salt flats far below — a reminder that even the hottest, lowest park reaches two miles into the sky. Great Basin pairs with Wheeler Peak (13,065 ft), Guadalupe Mountains with Guadalupe Peak (8,751 ft), and Grand Canyon with Point Imperial (8,803 ft) on its quiet North Rim.

Key concepts

Grand Canyon

- An Arizona park where one river did almost all the work.
- Its walls expose nearly 2 billion years of Earth's history, layer by layer.
- Eleven traditionally associated tribes include the Havasupai, who still live deep inside it at Supai.

Zion

- Utah's first national park, and the second-most-visited in the country.
- Its cliffs are petrified sand dunes ~180 million years old, in red, pink, and cream.
- A knife-edge spine here, reached by chains under a lottery permit, was said to be a place only an angel could land.

Bryce Canyon

- Despite its name, this Utah park is not a canyon — it's a set of eroded amphitheaters.
- It holds the densest concentration of rock spires on Earth.
- Southern Paiute legend says those spires are the "Legend People" turned to stone by Coyote.

Arches

- A Utah park near Moab with the greatest density of natural stone openings on Earth.
- Its most famous freestanding span appears on the state's license plate.
- Ranger Edward Abbey wrote the wilderness classic Desert Solitaire here.

Carlsbad Caverns

- A New Mexico park whose main attraction lies entirely underground.
- It formed when sulfuric acid dissolved an ancient reef from the inside, rather than ordinary rainwater.
- Each summer evening hundreds of thousands of bats stream out of its mouth at dusk.

Death Valley

- The largest national park in the contiguous United States.
- It contains both the lowest point in North America and the hottest air temperature ever reliably recorded on Earth.
- Rare pupfish survive in a single geothermal pool within it, among the rarest fish anywhere.

Saguaro

- An Arizona park split into two districts flanking the city of Tucson.
- It protects forests of a giant cactus found only in the Sonoran Desert.
- The Tohono O'odham harvest that cactus's fruit each summer to mark their new year.

White Sands

- A New Mexico park in the Tularosa Basin, surrounded by a military missile range.
- Its dunes are the world's largest gypsum field — brilliant white and cool to the touch.
- Fossilized human footprints here suggest people walked the basin over 20,000 years ago.

Key facts



Thomas Wolf, www.foto-tw.de · CC BY-SA 3.0

Canyonlands

Utah's largest national park is a vast wilderness carved by the Green and Colorado Rivers into four districts: Island in the Sky's mesa-top overlooks, the banded spires of The Needles, the remote Maze, and the rivers themselves. Mysterious Upheaval Dome may be a meteor crater or a collapsed salt dome. The Maze is so remote the NPS warns help can be days away — it was a hideout for outlaws like Butch Cassidy.



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Capitol Reef

Capitol Reef protects the Waterpocket Fold — a ~100-mile-long "wrinkle" in the Earth's crust where rock layers were bent and uplifted 50–70 million years ago, then eroded into colorful cliffs and domes (one resembling the U.S. Capitol). At its heart is Fruita, a historic Mormon orchard settlement. Visitors can still pick fruit from the ~1,900 trees the NPS maintains — and buy fresh-baked pies at the Gifford House.



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Petrified Forest

Along old Route 66 in eastern Arizona lies one of the world's largest concentrations of petrified wood — ~225-million-year-old Triassic logs turned to rainbow quartz, plus the banded badlands of the Painted Desert. Silica-rich groundwater replaced the wood cell-by-cell, with iron and manganese coloring the agate. It's the only national park containing a stretch of historic Route 66. Taking petrified wood is illegal — and the park keeps a famous file of "conscience letters" from visitors returning stolen pieces that brought bad luck.



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Joshua Tree

East of Los Angeles, Joshua Tree marks where the Mojave and Colorado deserts meet — the higher, cooler Mojave full of twisted Joshua trees (giant yuccas), the lower, hotter Colorado of creosote and cholla. Jumbled monzogranite boulders that formed underground and weathered into rounded stacks draw climbers to 8,000+ routes. Mormon settlers reputedly named the tree for the prophet Joshua reaching skyward; it's pollinated only by the yucca moth in a strict mutualism.



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Great Basin

In remote east-central Nevada, Great Basin climbs from sagebrush desert to 13,065-ft Wheeler Peak, a "sky island" holding ancient bristlecone pines — some ~5,000 years old — and the ornate Lehman Caves. Below the peak sits Nevada's only glacier, a small rock glacier. With ~150,000 visitors in 2024 and some of the darkest skies in the U.S., it's a quiet gem. A bristlecone here named "Prometheus" was cut down in 1964 and found to be ~4,900 years old — spurring stronger protection of the species.

> ### Guadalupe Mountains
>
> West Texas hides Guadalupe Peak (8,751 ft), the highest point in the state, beside El Capitan's sheer limestone prow and McKittrick Canyon's blazing fall foliage. The whole range is an exposed slice of the Permian Capitan Reef — a ~265-million-year-old fossil reef from a tropical sea, one of the best-preserved on Earth (the same reef that hosts Carlsbad Caverns). Geologists travel here to study an ancient marine reef now standing as desert mountains.

By the numbers

How long is the Grand Canyon, measured along the Colorado River that carved it?

277 miles

How many visitors came to Zion National Park in 2024, making it the 2nd-most-visited national park?

4.95 million visitors

In Great Basin National Park, how high (in feet) is Wheeler Peak, the summit that holds ancient bristlecone pines?

13065 feet

How old, in years, are the Triassic petrified logs at Petrified Forest National Park?

225000000 years

How high is Guadalupe Peak, the highest point in Texas?

8751 feet

What is the hottest air temperature reliably recorded on Earth, measured at Furnace Creek in Death Valley on July 10, 1913?

134 degrees Fahrenheit

How far below sea level is Badwater Basin in Death Valley — the lowest point in North America?

−282 ft

What is the hottest air temperature ever reliably recorded on Earth, set at Furnace Creek, Death Valley, in 1913?

134 °F

How high is Wheeler Peak, the high point of Great Basin National Park?
13065 ft

How high is Guadalupe Peak, the highest point in Texas?
8751 ft

About how many people visited Zion National Park in 2024, the 2nd-most-visited national park?
4946592 visitors

About how many people visited Grand Canyon National Park in 2024?
4919163 visitors

Matched pairs

Each item on the left goes with the one on the right.

The densest concentration of hoodoos (rock spires) on Earth → Bryce Canyon

Capitol Reef → protects the Waterpocket Fold, a ~100-mile wrinkle in the Earth's crust

Badwater Basin (−282 ft), the lowest point in North America → Death Valley

Grand Canyon → Arizona

Big Bend → Texas

Great Basin → Nevada

Death Valley → Telescope Peak (11,049 ft)

Step by step

Trace how the gypsum dunes of White Sands are made

1. Rain dissolves gypsum from the surrounding mountains
2. The dissolved gypsum pools in Lake Lucero
3. The water dries and leaves selenite crystals behind
4. Wind grinds the crystals into brilliant white sand

Rain, a drying lakebed, and wind turn mountain gypsum into white dunes.

Self-test

Answer each question from memory, then check your work against the answer key.

1. In which national park did ranger Edward Abbey write the wilderness classic Desert Solitaire in 1968?

A Zion
B Arches
C Bryce Canyon
D Canyonlands

2. Which Southwest park, despite its name, is not a canyon but a set of eroded amphitheaters holding the densest concentration of rock spires (hoodoos) on Earth?

A Bryce Canyon
B Zion
C Grand Canyon
D Arches

3. About how long is the Grand Canyon, measured along the Colorado River that carved it?

A 190 miles
B 18 miles
C 277 miles
D 400 miles

4. Which canyon-country park was Utah's first national park (1919) and its busiest, drawing ~4.95 million visitors in 2024?

A Canyonlands
B Arches
C Bryce Canyon
D Zion

5. Which of these is NOT one of the five canyon-country headliners of the Colorado Plateau?

A Arches
B Canyonlands
C Zion
D Saguaro

6. The giant saguaro cactus protected at Saguaro National Park is found only in which desert?

A Colorado Desert
B Painted Desert
C Sonoran Desert
D Mojave Desert

7. Capitol Reef National Park was set aside to protect what geological feature?

A The Waterpocket Fold, a ~100-mile wrinkle in the crust
B The Painted Desert badlands
C The Vishnu Schist
D The Capitan Reef

8. By what process did the logs at Petrified Forest turn to rainbow-colored quartz?

A Freeze-thaw wedging of the wood
B Permineralization — silica-rich groundwater replaced the wood cell by cell
C Wind grinding of dried crystals
D Sulfuric-acid dissolution

9. The Joshua tree survives through a strict mutualism, being pollinated exclusively by which organism?

A The lesser long-nosed bat
B The Brazilian free-tailed bat
C The yucca moth
D Honeybees

10. Which statement about the giant saguaro cactus is accurate?

A Its blossom opens in December
B It typically lives only about 50 years
C It grows across all four southwestern deserts
D It waits until age 50–75 to sprout its first arm

11. Which park protects the world's largest gypsum dune field — about 275 square miles of brilliant white sand in the Tularosa Basin?

A White Sands
B Death Valley
C Big Bend
D Carlsbad Caverns

12. Carlsbad Caverns' Big Room formed unusually. What dissolved the limestone from the inside out?

A A retreating glacier
B Sulfuric acid rising from oil and gas deposits below
C The Rio Grande's floodwaters
D Rainwater seeping down from above

13. Guadalupe Mountains and Carlsbad Caverns are both part of what ~265-million-year-old feature?

A The Waterpocket Fold
B The Colorado Plateau
C The Permian Capitan Reef
D The Vishnu Schist

14. Death Valley's Badwater Basin is the lowest point in North America. At what elevation does it sit?

A −282 ft
B −512 ft
C Exactly at sea level
D −136 ft

15. Along which river, forming the U.S.–Mexico border, does Big Bend National Park sit?

A The Virgin River
B The Rio Grande
C The Colorado River
D The Green River

16. Which park is known for towering Navajo Sandstone cliffs and the knife-edge Angels Landing hike above the Virgin River?

A Canyonlands
B Capitol Reef
C Bryce Canyon
D Zion

17. Which Utah park protects over 2,000 natural sandstone spans, including the famous Delicate Arch on the state license plate?

A Arches
B Capitol Reef
C Bryce Canyon
D Canyonlands

18. Which park's chambers empty each summer evening as hundreds of thousands of Brazilian free-tailed bats stream out at dusk?

A Guadalupe Mountains
B Great Basin
C Big Bend
D Carlsbad Caverns

19. Which park exposes nearly 2 billion years of Earth's history — down to the 1.8-billion-year-old Vishnu Schist — in walls over a mile deep?

A Bryce Canyon
B Grand Canyon
C Zion
D Canyonlands

20. Which park holds Badwater Basin — the lowest point in North America — and the hottest air temperature ever reliably recorded on Earth?

A Great Basin
B Big Bend
C Death Valley
D Guadalupe Mountains

21. Death Valley holds both Badwater Basin (below sea level) and Telescope Peak (11,049 ft). Roughly how much vertical relief separates them?

A About one mile
B About half a mile
C About three miles
D About two miles

22. How high is Wheeler Peak, the high point of Great Basin National Park?

A 9,115 ft
B 13,065 ft
C 11,049 ft
D 8,751 ft

23. Guadalupe Peak, the highest point in Texas, rises to what elevation?

A 8,751 ft
B 11,049 ft
C 6,000 ft
D 13,065 ft

24. In which state is Great Basin National Park?

A Utah
B Arizona
C Nevada
D New Mexico

25. Which park–state pairing is correct?

A Big Bend — Texas
B Grand Canyon — Utah
C Saguaro — New Mexico
D Great Basin — Arizona

Go deeper

WATCH Not a Canyon 0:31 · YouTube
Despite its name, Bryce Canyon isn't a canyon. It's a series of natural amphitheaters, eroded into the edge of a plateau.

WATCH Conscience Letters 0:30 · YouTube
Petrified Forest holds one of the world's largest concentrations of petrified wood. The logs are about 225 million years old, turned to rainbow-colored quartz.

WATCH Carved by Acid 0:33
Carlsbad Caverns' Big Room is one of the largest cave chambers in North America: about 8.2 acres of floor.

WATCH Cool White Dunes 0:30
Which Southwest park is it? Name it before the last clue gives it away.

WATCH Zion vs. Grand Canyon 0:29
Zion outdrew the Grand Canyon in 2024. It had about 4.95 million visitors, the second-most of any national park.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-10-southwest-and-colorado-plateau

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 11 OF 27

Lesson 11: California, Pacific Northwest & Hawaii

California Giants · Coast, Spires & the Northwest · Volcanoes & the Pacific Edge · Which Pacific Park Is It? · By the Numbers

WHAT YOU'LL BE ABLE TO DO

- Identify California's giant parks and why its sequoias need fire.
- Recognize the coast and Pacific Northwest parks.
- Explain the volcanic and Pacific-edge parks, from Crater Lake to American Samoa.
- Identify a Pacific park from a single distinctive clue.
- Recall Pacific park peaks and records and match parks to states.

California Giants

California holds more national parks than any other state, and its best are studies in superlatives — the tallest, the biggest, the deepest, the most recently violent. This part profiles five of them, strung down the Sierra Nevada and the northern coast: a granite valley, the planet's largest tree, North America's deepest canyon, a smoking volcano, and the tallest living things on Earth.

Yosemite

Yosemite is the granite heart of the Sierra Nevada. A great batholith of rock was uplifted with the range, then glaciers ground through it, carving the U-shaped **Yosemite Valley** and leaving behind exfoliating domes and walls. **El Capitan** rises about 3,000 ft in a single sheer face — the most coveted big-wall climb on Earth, free-climbed up its Dawn Wall in 2015 and free-soloed by Alex Honnold in 2017. **Half Dome** looms ~4,737 ft above the valley floor. The park has the highest concentration of major waterfalls anywhere, crowned by **Yosemite Falls** at **2,425 ft**, the tallest in North America. The 1864 Yosemite Grant was the first time the federal government set aside scenic land for protection; the national park followed in **1890**, driven by John Muir. The **Ahwahneechee** people lived in the valley, which they called *Ahwahnee*, before being violently expelled in 1851. About **4.1 million** visitors come each year.

Sequoia

Established the same week as Yosemite in **1890**, Sequoia is the second-oldest national park. Its fame rests on a single tree: the **General Sherman**, the largest single-stem tree on Earth by volume — roughly **52,500 cubic feet**, about 275 ft tall, ~36 ft across at the base, and an estimated 2,200 years old. It stands in the Giant Forest, one of several groves of giant sequoias. On the park's eastern boundary rises **Mount Whitney (14,505 ft)**, the highest peak in the contiguous United States. Counterintuitively, giant sequoias *need* fire: their cones open in heat, and decades of fire suppression actually threatened the species' renewal. Their thick, tannin-rich bark makes the mature trees nearly fireproof.

Kings Canyon

Kings Canyon adjoins Sequoia to the north and shares its management. The canyon itself plunges nearly **8,000 ft** from river to peak, among the deepest in North America, gouged by glaciers along the South Fork Kings River. The **General Grant Tree**, the third-largest tree on Earth, is the official "Nation's Christmas Tree." John Muir judged the canyon a "rival to Yosemite." Most of the **462,000-acre** park is roadless wilderness, crossed only on foot by trails including a stretch of the John Muir and Pacific Crest Trails.

Lassen Volcanic

In the southern Cascades of Northern California, **Lassen Peak (10,457 ft)** is one of the largest plug-dome volcanoes on Earth. It **erupted from 1914 to 1917**, blasting ash 30,000 ft high — the most recent Cascade eruption before Mount St. Helens in 1980. Remarkably, all four volcano types — shield, composite, cinder cone, and plug dome — occur within the park. At **Bumpass Hell**, boiling mudpots and fumaroles vent from the ground. Heavy snow keeps the high road closed much of the year; the park, founded in **1916**, is also a designated Dark Sky Park.

Redwood

Along the foggy far-northern coast, **coast redwoods** are the tallest trees on Earth — including **Hyperion** at about **380 ft**, whose exact location is kept secret to protect it. Pacific fog supplies the moisture they need, and they can live ~2,000 years. Logging destroyed about 95% of the original old growth; these jointly managed national and state parks now protect roughly **45%** of what survives. The **Yurok**, California's largest tribe, co-steward parts of the parks and helped bring condors back to the coast in 2022.

Coast, Spires & the Northwest

This part runs from the central California coast up into Washington's Cascades. Two of its parks are small and strange — a sliced-up volcano and an island Galápagos — and three are vast Northwest landscapes: a park of three worlds, a glacier-clad giant, and the most rugged, least-visited range in the Lower 48.

Pinnacles

Pinnacles is, almost literally, half of a volcano. The ancient **Neenach Volcano** was split by the **San Andreas Fault** and its western half carried about **195 miles** northwest over some 23 million years — the other half still sits in Southern California. The journey left dramatic rock spires and rare **talus caves**, formed where boulders jammed into narrow canyons. East of the Salinas Valley and made a national park in **2013**, it is among the smallest in the system at ~26,700 acres, and one of the best places on Earth to watch wild **California condors** roosting on the crags. The east and west entrances do not connect by road.

Channel Islands

Five undeveloped islands off Southern California — Santa Cruz, Anacapa, Santa Rosa, San Miguel, and Santa Barbara — make up this 1980 park, the "**Galápagos of North America**." Isolation drove about 150

endemic species, and Santa Cruz holds the world's largest sea cave. The standout recovery story is the **island fox**: house-cat-sized, it crashed to ~1,500 animals under golden-eagle predation, then rebounded to be delisted in **2016**, one of the fastest Endangered Species Act recoveries ever. The **Chumash** navigated these waters for ~13,000 years in plank canoes; Arlington Springs Man, found on Santa Rosa, is among the oldest human remains in North America.

Olympic

Olympic squeezes three ecosystems into one Washington park: **glaciated mountains** crowned by **Mount Olympus (7,980 ft)** with 60-plus glaciers, the soaking **Hoh temperate rainforest**, and ~73 miles of wild **Pacific coastline**. The Hoh drinks **12–14 ft of rain a year**, among the wettest places in the contiguous U.S., while rain-shadow valleys to the northeast stay nearly dry. You can touch a glacier, a rainforest, and an ocean beach in a single day. Championed by Franklin Roosevelt and made a national park in **1938**, it is both a UNESCO Biosphere Reserve and a World Heritage Site. **Roosevelt elk** roam its valleys — the park was nearly named for them.

Mount Rainier

Mount Rainier (14,410 ft) is an active, glacier-clad **stratovolcano** and the most heavily glaciated peak in the contiguous U.S., wearing about **26 major glaciers**. It last erupted roughly 1,000 years ago and ranks among America's most dangerous volcanoes — not for an eruption but for **lahars**, volcanic mudflows that could race down to Puget Sound cities. The **Paradise** meadows erupt with wildflowers each summer; Paradise is also among the snowiest measured places on Earth (a record ~93.5 ft fell in 1971–72). Established in **1899**, Rainier was the fifth national park, and serves as the classic training peak for Everest and Denali climbers.

North Cascades

Nicknamed "**the American Alps**," North Cascades is a wall of jagged peaks holding **more than 300 glaciers** — about one-third of all the glaciers in the Lower 48. Turquoise glacier-fed lakes such as **Diablo** and **Ross** glow at the foot of the peaks. Established in **1968** on the Canadian border, it is one of the least-visited parks in the Lower 48 — roughly **40,000 visitors a year**, fewer than Yellowstone draws in a busy weekend — even though it sits only about three hours from Seattle. Most traffic simply passes through the adjacent recreation area.

Volcanoes & the Pacific Edge

The final stretch of the Pacific lesson is all fire and ocean: a lake born when a volcano destroyed itself, two Hawaiian volcanoes still building new land, the "House of the Sun," and the only U.S. national park south of the equator.

Crater Lake

At **1,943 ft** deep, Crater Lake in southern Oregon is the **deepest lake in the United States**. It fills the **caldera of Mount Mazama**, which erupted about 50 cubic km of magma and collapsed roughly **7,700 years ago**. No river runs in or out — the basin filled with rain and snowmelt alone, which keeps the water exceptionally clear, scattering sunlight back as an intense, pure blue. **Wizard Island**, a cinder cone, rises

from one side: a volcano within a volcano. Established in **1902** as the sixth national park, it sits in one of the snowiest inhabited places in the U.S. (~41 ft a year). The **Klamath** remember Mazama's eruption in oral tradition as a battle between spirit chiefs — a memory some 7,700 years old.

Hawaii Volcanoes

On the Big Island, this 1916 park holds two of the world's most active volcanoes. **Kīlauea** erupted nearly continuously from **1983 to 2018** and has flared episodically since (2020–2024+), while **Mauna Loa (13,681 ft)** is the **largest active volcano on Earth by volume**. Both are **shield volcanoes**, built by fluid basaltic lava welling up over the stationary **Hawaiian hotspot**. Lava lakes, steam vents, and lava tubes thread the landscape, and the volcanoes add new land before your eyes — hundreds of acres in recent decades. For **Native Hawaiians**, the goddess **Pele** dwells in Kīlauea's **Halemaʻumaʻu** crater, and the park is deeply sacred.

Haleakala

Haleakalā — "House of the Sun" — is a dormant **shield volcano (10,023 ft)** on Maui, last erupted some 400–600 years ago. Crowds gather before dawn for its famous sunrises above a sea of clouds; a reservation is required. Its vast, Mars-like summit "crater" is actually a large erosional basin studded with cinder cones. Hawaiian tradition tells of the demigod **Māui** lassoing the sun here to slow its journey across the sky. The endemic **silversword** (*ʻāhinahina*) can live about 90 years, bloom a single spectacular time, then die. Far below, the lush **Kīpahulu** district drops through bamboo forest to coastal waterfalls and pools.

American Samoa

The only U.S. national park south of the equator, the **National Park of American Samoa** spans three South Pacific islands — Tutuila, Taʻū, and Ofu. Authorized in **1988**, it protects rare **paleotropical rainforest**, coral reefs, and steep volcanic coastlines, plus giant **fruit bats** (flying foxes) with ~3-ft wingspans that soar in daylight. Uniquely in the system, the land is **leased from Samoan villages** rather than federally owned, and the park is co-managed with village councils. It is also the only national park where a **homestay** with a local family is the primary lodging — a direct immersion in *faʻa Samoa*, the Samoan way of life.

Which Pacific Park Is It?

The Pacific parks span granite, glacier, rainforest, and lava — but each has a fingerprint you can learn to read. This part is a recognition game: a few clues, broadest first, narrowing to the giveaway. Below are the tells worth memorizing for each park.

Playing which Pacific park is it

You are given two or three clues per park, broad to specific, and you name the park. The clues never say the name outright. Train yourself on the single most distinctive fact for each: a famous tree, a record depth, a unique recovery story.

The California granite and water parks

Three of these places are pure California superlative. **Yosemite** is the Sierra park of the 1864 federal grant, with glacier-carved granite walls — El Capitan's ~3,000-ft face and the 2,425-ft tallest waterfall in North America. **Redwood** is the foggy northern coast, run jointly as national and state parks, sheltering the tallest trees on Earth and fern canyons full of Roosevelt elk. **Pinnacles**, one of the smallest and newest parks, is half of an ancient volcano carried ~195 miles north by the San Andreas Fault, riddled with talus caves and patrolled by condors.

The island and the Hawaiian volcano

Channel Islands is five undeveloped islands off Southern California, reachable only by boat or plane — the "Galápagos of North America" with ~150 endemic species and a house-cat-sized fox that recovered from ~1,500 animals to be delisted in 2016. **Haleakalā**, on Maui, is the "House of the Sun," famous for pre-dawn summit sunrises above the clouds and for the silversword that blooms once after ~90 years and dies.

The Northwest and Cascade parks

Crater Lake, Oregon's sixth national park, fills the caldera of Mount Mazama — the deepest lake in the U.S., fed only by rain and snow, with Wizard Island rising from it. **Olympic**, on a Washington peninsula and recognized by UNESCO as both a Biosphere Reserve and a World Heritage Site, bundles glaciated mountains, ~73 miles of wild coast, and the soaking Hoh rainforest. **North Cascades**, "the American Alps" on the Canadian border, holds more than 300 glaciers — about a third of those in the Lower 48 — yet is among the least-visited parks there. The tells: deepest lake, three ecosystems, most glaciers.

By the Numbers

The Pacific parks are easy to feel and hard to scale. This part fixes the numbers — the heights, depths, and visitor counts worth carrying — and pins each park to its state and high point.

Heights and depths

A handful of measurements anchor the whole lesson. **Yosemite Falls** drops **2,425 ft**, the tallest waterfall in North America. On Sequoia's eastern edge, **Mount Whitney** rises to **14,505 ft**, the highest peak in the contiguous United States. Just shy of it, **Mount Rainier** summits at **14,410 ft** and is the most heavily glaciated peak in the Lower 48. In Hawaii, **Mauna Loa** reaches **13,681 ft** and is the largest active volcano on Earth by volume. And going the other direction, **Crater Lake** plunges **1,943 ft** down — the deepest lake in the United States, filling a collapsed volcano with nothing but rain and snowmelt.

How many come

Numbers also measure people. **Yosemite** draws about **4.1 million** visitors a year, one of the busiest parks in the system — which is why peak-period reservations have become routine. That figure is a useful yardstick: North Cascades, by contrast, sees only ~40,000 a year, roughly a hundredth of Yosemite's crowds, despite sitting just hours from Seattle.

Parks, states and high points

The map ties it together. **Yosemite** is in **California**; **Mount Rainier** in **Washington**; **Crater Lake** in **Oregon**; and **Haleakalā** on the island of Maui in **Hawaii**. Each park also has a high point that doubles as a landmark. **Sequoia**'s is **Mount Whitney (14,505 ft)** on its boundary — the contiguous U.S. summit record. **Olympic**'s is **Mount Olympus (7,980 ft)**, ringed by glaciers and rainforest. Learn the pairings and you can place any of these parks on a map and know its ceiling.

Key concepts

Yosemite

- A California park in the Sierra Nevada, born of the 1864 federal grant that John Muir championed.
- Glaciers carved its valley into a U-shape walled by exfoliating granite domes and cliffs.
- El Capitan's ~3,000-ft wall is a climbing mecca, and its 2,425-ft waterfall is the tallest in North America.

Crater Lake

- An Oregon park, the sixth national park, set in the southern Cascades.
- Its centerpiece fills the caldera of Mount Mazama, which collapsed about 7,700 years ago.
- Fed only by rain and snow, it is the deepest lake in the U.S. and holds a cinder cone called Wizard Island.

Redwood

- A foggy stretch of the far Northern California coast, jointly run as national and state parks.
- Fern canyons and Roosevelt elk meadows shelter beneath its old growth.
- It guards the tallest trees on Earth, including the secret-located Hyperion at about 380 ft.

Olympic

- A Washington park on a peninsula, championed by Franklin Roosevelt and recognized by UNESCO as both a Biosphere Reserve and a World Heritage Site.
- It bundles glaciated mountains, ~73 miles of wild coastline, and a soaking temperate rainforest.
- Its Hoh forest drinks 12–14 ft of rain a year, among the wettest places in the contiguous U.S.

Pinnacles

- One of the smallest and newest national parks, in central California east of the Salinas Valley.
- Boulders wedged in narrow canyons form rare talus caves you explore by flashlight.
- It is half of an ancient volcano carried ~195 miles north by the San Andreas Fault, and a prime condor refuge.

Channel Islands

- Five undeveloped islands off Southern California, reachable only by boat or small plane.
- Isolation made it the 'Galápagos of North America,' with roughly 150 endemic species.
- Its house-cat-sized dwarf fox staged one of the fastest Endangered Species Act recoveries ever, delisted in 2016.

Haleakalā

- A Maui park whose name means 'House of the Sun.'
- Crowds gather before dawn at its 10,023-ft summit for sunrises above the clouds.
- Its Mars-like summit basin shelters the endemic silversword, which blooms once after ~90 years, then dies.

North Cascades

- A rugged Washington park on the Canadian border, nicknamed 'the American Alps.'
- Its turquoise glacier-fed lakes include Diablo and Ross.
- It holds more than 300 glaciers — about a third of those in the Lower 48 — yet is among the least-visited parks there.

Key facts



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Kings Canyon

Adjoining Sequoia to the north, Kings Canyon plunges nearly 8,000 ft from river to peak — among the deepest canyons in North America. The General Grant Tree, the third-largest tree on Earth, is the nation's official Christmas Tree. John Muir called this glacier-carved, granite-walled wilderness a 'rival to Yosemite'; most of the 462,000-acre park is roadless backcountry threaded by the John Muir Trail.



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Lassen Volcanic

Lassen Peak (10,457 ft) is one of the largest plug-dome volcanoes on Earth, and it erupted from 1914 to 1917 — the most recent Cascade eruption before Mount St. Helens in 1980. All four volcano types occur in this Northern California park, and Bumpass Hell bubbles with boiling mudpots and fumaroles. The park, founded in 1916, is also a designated Dark Sky Park.



AI-generated (gpt-image-1.5)

Pinnacles

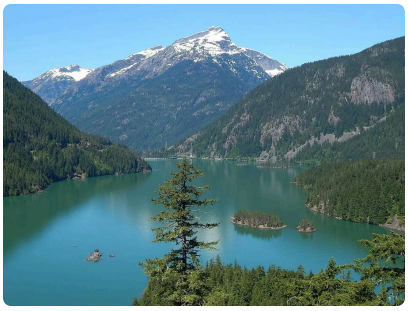
Pinnacles is literally a chunk of an ancient volcano. The Neenach Volcano was split by the San Andreas Fault and carried ~195 miles northwest over some 23 million years — its other half still sits in Southern California. Boulders wedged in narrow canyons form rare talus caves, and the spires are one of the best places on Earth to watch wild California condors. It became a national park in 2013.



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Channel Islands

Five undeveloped islands off the Southern California coast — the 'Galápagos of North America' — host about 150 endemic species, sea caves, kelp forests, and vast seabird colonies. The dwarf island fox, no bigger than a house cat, crashed to ~1,500 animals before recovering to be delisted in 2016, one of the fastest Endangered Species Act recoveries ever. The Chumash navigated these waters for ~13,000 years.



Ron Clausen · CC BY-SA 4.0

North Cascades

Nicknamed 'the American Alps,' North Cascades bristles with jagged peaks and more than 300 glaciers — about one-third of all the glaciers in the Lower 48. Turquoise glacier-fed lakes like Diablo and Ross glow below. Yet despite being only ~3 hours from Seattle, it draws around 40,000 visitors a year — fewer than Yellowstone sees in a busy weekend.



The U.S. National Park Service (public domain) · Public domain

American Samoa

Spread across three South Pacific islands, this is the only U.S. national park south of the equator. It protects rare paleotropical rainforest, coral reefs, and giant fruit bats — flying foxes with ~3-ft wingspans that soar in daylight. Uniquely in the system, the land is leased from Samoan villages, not owned by the government, and you can stay in a family's home as the primary lodging.

> **Māui Lassoed the Sun**
>
> Haleakalā, the dormant shield volcano on Maui, gets its name from Hawaiian tradition holding that the demigod Māui lassoed the sun there to slow its journey across the sky.

By the numbers

How tall is Yosemite Falls, the tallest waterfall in North America?
2425 feet

What is the elevation of Mount Whitney, the highest peak in the contiguous U.S., which rises on Sequoia's eastern boundary?
14505 feet

How tall is Mount Rainier, the active glacier-clad stratovolcano that is the most heavily glaciated peak in the contiguous U.S.?
14410 feet

Nicknamed 'the American Alps,' this park holds about one-third of all glaciers in the Lower 48 — how many glaciers is that, at minimum?
300 count

How deep is Crater Lake, the deepest lake in the United States?
1943 feet

What is the elevation of Mauna Loa, the largest active volcano on Earth by volume?
13681 feet

How tall is Yosemite Falls, the tallest waterfall in North America?
2425 ft

How high is Mount Whitney, the highest peak in the contiguous U.S., on Sequoia's eastern boundary?
14505 ft

How deep is Crater Lake, the deepest lake in the United States?
1943 ft

What is the summit elevation of Mount Rainier, the most heavily glaciated peak in the contiguous U.S.?
14410 ft

How high is Mauna Loa, the largest active volcano on Earth by volume, in Hawaii Volcanoes?
13681 ft

About how many people visited Yosemite National Park in 2024?
4100000 visitors

Matched pairs

Each item on the left goes with the one on the right.

General Sherman Tree → Largest single-stem tree on Earth by volume

Channel Islands → Galápagos of North America

Haleakalā → House of the Sun

Yosemite → California

Mount Rainier → Washington

Crater Lake → Oregon

Sequoia — high point → Mount Whitney (14,505 ft)

Olympic — high point → Mount Olympus (7,980 ft)

Haleakalā → Hawaii (Maui)

Self-test

Answer each question from memory, then check your work against the answer key.

1. Counterintuitively, the giant sequoias of Sequoia National Park depend on periodic fire. Why?

- A Ash supplies the only nutrients their shallow roots can absorb
- B Fire kills a bark beetle that would otherwise girdle the mature trunks
- C Flames scorch away a fungus that would otherwise rot the seeds before they sprout
- D The heat opens their cones to release seeds, so decades of fire suppression threatened the species' renewal

2. What distinction does the General Sherman Tree in Sequoia National Park hold?

- A The largest single-stem tree on Earth by volume
- B The widest tree canopy on Earth
- C The tallest tree on Earth
- D The oldest living tree on Earth

3. How far does Yosemite Falls, the tallest waterfall in North America, plunge?

- A 1,943 ft
- B 2,425 ft
- C 3,000 ft
- D 4,737 ft

4. Which statement about Sequoia National Park is NOT true?

- A Mount Whitney rises on its eastern boundary
- B The General Sherman is the largest single-stem tree by volume
- C Its coast redwoods are the tallest trees on Earth
- D It was established in 1890

5. Which far-northern California park protects the tallest trees on Earth, including Hyperion at about 380 ft?

A Yosemite
B Kings Canyon
C Sequoia
D Redwood

6. Which Pacific park — a chunk of the ancient Neenach Volcano split by the San Andreas Fault — is one of the best places on Earth to watch wild California condors?

A Olympic
B North Cascades
C Pinnacles
D Channel Islands

7. Which park off the Southern California coast is nicknamed the 'Galápagos of North America' for its roughly 150 endemic species?

A Channel Islands
B Olympic
C North Cascades
D Pinnacles

8. How is Mount Rainier best described?

A A caldera lake formed by a collapsing summit
B An active, glacier-clad stratovolcano and the most heavily glaciated peak in the contiguous U.S.
C A plug-dome volcano that last erupted in 1917
D A shield volcano built over the Hawaiian hotspot

9. North Cascades, 'the American Alps,' holds about one-third of the glaciers in the Lower 48. How many glaciers is that?

A Roughly 60
B More than 300
C Nearly 150
D Approximately 26

10. Which Washington park lets you touch a glacier, a rainforest, and a wild ocean beach in a single day?

A Mount Rainier
B Pinnacles
C Olympic
D North Cascades

11. Which is the only U.S. national park located south of the equator?

A Haleakalā
B Crater Lake
C Hawaii Volcanoes
D American Samoa

12. How deep is Crater Lake, the deepest lake in the United States?

A 1,943 ft
B 2,215 ft
C 1,450 ft
D 900 ft

13. How did the basin that holds Crater Lake form?

- A A fault dropped a block of crust below sea level
- B A glacier gouged out a deep U-shaped valley
- C A meteor impact blasted the crater
- D The caldera collapsed when Mount Mazama erupted ~7,700 years ago

14. Haleakalā, the dormant shield volcano on Maui, has a name that translates to what?

- A House of the Sun
- B Home of the Gods
- C House of the Moon
- D Mountain of Fire

15. Kīlauea and Mauna Loa, built by fluid basaltic lava welling up over the Hawaiian hotspot, are both what type of volcanic edifice?

- A Cinder cones
- B Shield volcanoes
- C Plug-dome volcanoes
- D Stratovolcanoes

16. In the 'Which Pacific Park?' game, which one is half of an ancient volcano carried roughly 195 miles north along the San Andreas Fault — a small, new park riddled with talus caves and patrolled by condors?

- A Haleakalā
- B Lassen Volcanic
- C Pinnacles
- D Channel Islands

17. Which park is the deepest lake in the U.S., filling the caldera of Mount Mazama with no inlet or outlet?

- A Crater Lake
- B Channel Islands
- C Olympic
- D North Cascades

18. Which park squeezes three worlds — glaciated mountains, the Hoh rainforest, and 73 miles of Pacific coast — into one?

- A Mount Rainier
- B North Cascades
- C Redwood
- D Olympic

19. Which park is the 'Galápagos of North America,' home to the recovered dwarf island fox?

- A American Samoa
- B Channel Islands
- C Pinnacles
- D Haleakalā

20. Which park is 'the American Alps,' with more than 300 glaciers yet only about 40,000 visitors a year?

- A Lassen Volcanic
- B Mount Rainier
- C North Cascades
- D Olympic

21. In Hawaii Volcanoes National Park, Mauna Loa rises to 13,681 ft. What superlative does it hold?

A. The most frequently erupting volcano in the world
B. The tallest mountain on Earth measured from base to summit
C. The largest active volcano on Earth by volume
D. The highest peak anywhere in the Pacific

22. What is the summit elevation of Mount Rainier, the most heavily glaciated peak in the contiguous U.S.?

A. 14,505 ft
B. 14,410 ft
C. 10,457 ft
D. 13,681 ft

23. About how many people visit Yosemite National Park each year?

A. 1.9 million
B. 12 million
C. 40,000
D. 4.1 million

24. Yosemite and Sequoia National Parks are both located in which state?

A. California
B. Oregon
C. Nevada
D. Washington

25. Mount Olympus, the high point of Olympic National Park, rises to what elevation?

A. 14,410 ft
B. 7,980 ft
C. 10,023 ft
D. 14,505 ft

Go deeper

WATCH Sequoias Need Fire 0:29
Counterintuitively, giant sequoias need fire. Their cones open in heat.

WATCH Half a Volcano 0:30
Pinnacles is, almost literally, half of a volcano.

WATCH No River In or Out 0:31
At 1,943 feet deep, Crater Lake is the deepest lake in the United States.

WATCH The Galápagos of North America 0:32
Which Pacific park is it? Three clues, narrowing to the giveaway.

WATCH A Hundredth of the Crowds 0:31
Yosemite draws about 4.1 million visitors a year. It's one of the busiest parks in the system, which is why peak-period reservations have become routine.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-11-california-pacific-northwest-and-hawaii

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 12 OF 27

Lesson 12: The Alaskan Giants

Alaskan Giants: Denali to Katmai · Alaskan Giants: Kenai Fjords to Wrangell–St. Elias · Which Alaskan Park Is It? · Alaska by the Numbers

WHAT YOU'LL BE ABLE TO DO

- Identify the first set of Alaskan giants, from Denali to Katmai and Glacier Bay.
- Identify the second set of Alaskan giants, from Kenai Fjords to Wrangell-St. Elias.
- Identify an Alaskan park from a single distinctive clue.
- Recall Alaska's superlative numbers and signature features.

Alaskan Giants: Denali to Katmai

Alaska holds eight of the wildest national parks on Earth — most without a single road. This first set runs from the continent's highest summit to a wilderness with no trails at all, past the fastest-retreating ice and the most famous fishing bears in the world.

Denali

Interior Alaska's marquee park sprawls across roughly 6 million acres — larger than New Hampshire — of taiga forest and alpine tundra. Its centerpiece is the **20,310-ft** peak the Koyukon Athabascan called *Denali*, "the high one" — the highest in North America. Its federal name was Mount McKinley until 2015, Denali from 2015, and Mount McKinley again after a January 2025 executive order; the park keeps the name Denali National Park and Preserve. The Alaska Range rises along the Denali Fault, and the mountain's base-to-summit rise of about 18,000 ft is, according to the National Park Service, a mile more than Everest's. A single ~92-mile road is the only way in; private vehicles are limited, so most visitors travel by park bus. The park, created in 1917 to protect Dall sheep from hunting, shelters the "Big Five": grizzly bears, gray wolves, moose, caribou, and Dall sheep. It also runs the only working sled-dog kennel in the Park Service. Catch is, Denali makes its own weather — only about 30% of summer visitors ever glimpse the summit.

Gates of the Arctic

At ~7.5 million acres, this is the **second-largest U.S. national park**, lying entirely north of the Arctic Circle in the Brooks Range. It is also the **least-visited national park**, with only ~11,000–12,000 visitors a year — and for good reason: there are no roads, no trails, no campgrounds, and no facilities of any kind. The NPS expects visitors to be fully self-sufficient. Access is by bush plane only, to float the Alatna, Noatak, or Kobuk rivers, see the granite Arrigetch Peaks, or follow the Western Arctic caribou herd. The Nunamiut (interior Iñupiat) and Gwich'in Athabascan still subsistence-hunt here. The name honors two peaks — "Boreal Mountain" and "Frigid Crags" — that wilderness advocate Bob Marshall called the gates to the Arctic.

Glacier Bay

When Captain George Vancouver sailed past in **1794, the bay was almost entirely filled with ice**. The glaciers have since retreated about **65 miles**, one of the fastest documented retreats anywhere, exposing fresh land that becomes a living laboratory of *primary succession* — bare rock progressing to forest over roughly 200 years, observable across the bay like a time-lapse. The park, made a monument in 1925 and a park in 1980, spans ~3.3 million acres of tidewater glaciers and rich marine waters: humpback whales, sea otters, and orcas. Mount Fairweather tops it at 15,300 ft. Most of its ~700,000 yearly visitors arrive by cruise ship. The Huna Tlingit, whose homeland the ice buried ~250 years ago, returned to dedicate a tribal house here in 2016.

Katmai

On the Alaska Peninsula, Katmai is famous for **Brooks Falls**, where brown bears catch leaping sockeye salmon. The park holds about **2,200 brown bears**, and its online "Fat Bear Week" tournament has become a global sensation. Katmai also protects the Valley of Ten Thousand Smokes, an ash plain from the **1912 Novarupta eruption — the largest volcanic eruption of the 20th century**, which ejected some 30 times the volume of Mount St. Helens.

Alaskan Giants: Kenai Fjords to Wrangell–St. Elias

The second half of Alaska's giants runs from an Ice Age icefield spilling into the sea, to Arctic sand dunes, to a one-park sampler of the whole state, and finally to the largest national park in the United States.

Kenai Fjords

Near Seward on the Kenai Peninsula, this park is built around the **Harding Icefield** — about 700 square miles of ice, a remnant of the last Ice Age, that feeds roughly **40 glaciers**. The land here is slowly sinking through tectonic subsidence, drowning glacial valleys to form the deep coastal fjords that give the park its name. Those fjords teem with whales, sea otters, puffins, and sea lions. The classic visit is a boat tour from Seward, but **Exit Glacier** is the one road-accessible piece, with roadside signs marking where the ice stood in past years — a stark, walkable record of glacial retreat within living memory. The strenuous Harding Icefield Trail (~8.2 miles, ~3,500 ft of gain) climbs to a vast sea of ice. The park spans ~669,650 acres and saw ~400,000 visitors in 2024.

Kobuk Valley

Above the Arctic Circle in northwest Alaska sits one of the system's strangest sights: the **Great Kobuk Sand Dunes**, ~25 square miles of dunes up to 100 ft tall, whose surface can reach **100°F in summer** despite the Arctic setting. They are Ice Age sand — glacially ground, deposited, and shaped by wind into active dunes. The park's other great story is movement: half a million caribou of the **Western Arctic Herd** migrate through the region, crossing the Kobuk River at **Onion Portage**, where the Iñupiat have hunted for some 9,000 years — one of the longest continuously used hunting sites in the Arctic. With only ~17,000 visitors a year, it is among the least-visited parks; there are no roads, trails, or facilities, and access is by bush plane only.

Lake Clark

Across Cook Inlet from Anchorage, Lake Clark is a compact sampler of Alaska in a single ~2.6-million-acre park: **two active volcanoes** (Redoubt and Iliamna), the turquoise **Lake Clark** itself, salmon runs, and brown bears. Here the Alaska and Aleutian ranges meet; Redoubt erupted in 1989–90 and again in 2009. The park guards the headwaters of the **Bristol Bay sockeye fishery — the largest wild sockeye run on Earth**. Its most beloved human story is **Dick Proenneke's** hand-built cabin at Upper Twin Lake, where he lived alone for about 30 years and filmed *Alone in the Wilderness*. The Dena'ina Athabascan, whose homeland this is, have used the lake region for subsistence for generations. Access is by small plane only — there are no roads. Bear viewing at Silver Salmon Creek and Chinitna Bay is a draw.

Wrangell–St. Elias

At **~13.2 million acres, this is the largest national park in the United States** — bigger than Switzerland, and so vast that **Yellowstone would fit inside it about six times**. Four major mountain ranges converge here, holding **nine of the 16 highest peaks in the U.S.**, including **Mount St. Elias (18,008 ft)**, the nation's second-highest. The Malaspina Glacier is larger than Rhode Island, and Mount Wrangell is an active volcano. The historic **Kennecott copper mines** survive as an early-1900s ghost town, reached by the gravel McCarthy Road. Combined with adjoining Canadian and Alaskan parks, it forms the largest internationally protected wilderness on Earth, a UNESCO World Heritage Site.

Which Alaskan Park Is It?

Eight of Alaska's national parks are giants of wilderness — most without a road, several among the largest and least-visited in the country. Each clue set runs broad to specific. Picture the place, then name the park.

Guess the Alaskan park

Use these recognition handles for each of the eight. They're the same broad-to-specific signals the game leans on — the landscape first, then the human or natural twist, then the dead-giveaway detail.

Denali — Interior Alaska, ~6 million acres of taiga and tundra. The only working NPS sled-dog kennel, reached by one ~92-mile road. Its summit is the highest peak in North America, whose Koyukon name means "the high one."

Gates of the Arctic — Entirely north of the Arctic Circle in the Brooks Range; the second-largest park. No roads, trails, campgrounds, or facilities; the least-visited national park. Named for two flanking peaks, "Boreal Mountain" and "Frigid Crags."

Glacier Bay — A Southeast Alaska panhandle park of tidewater ice and rich marine waters. Most visitors arrive by cruise ship and never step ashore. Its ice has retreated about 65 miles since Captain Vancouver found the bay choked with it in 1794.

Katmai — An Alaska Peninsula park protecting roughly 2,200 brown bears. Its waterfall viewing platforms inspired "Fat Bear Week." It also holds the Valley of Ten Thousand Smokes, born of the 1912 Novarupta eruption.

Kenai Fjords — Near Seward, pairing an Ice Age icefield with a drowned, fjord-cut coast. Its Harding Icefield feeds about 40 glaciers, one reachable by road. Markers along Exit Glacier show the ice retreating within living memory.

Kobuk Valley — A roadless park above the Arctic Circle, among the least-visited. Half a million caribou of the Western Arctic Herd cross its river at Onion Portage. Improbably, it shelters 25 square miles of Ice Age sand dunes that can hit 100°F.

Lake Clark — Across Cook Inlet from Anchorage, packing volcanoes, a turquoise lake, salmon, and bears into one park. It guards the Bristol Bay fishery, the largest wild sockeye run on Earth. Dick Proenneke's hand-built cabin stands at Upper Twin Lake.

Wrangell–St. Elias — In Southeast-central Alaska, the largest national park in the country, where four mountain ranges converge. It holds nine of the 16 highest U.S. peaks and a glacier larger than Rhode Island. The Kennecott copper boomtown survives within it as a ghost town.

Alaska by the Numbers

Alaska is where the national park superlatives live: the biggest parks, the tallest peaks, and the smallest crowds. These are the magnitudes worth memorizing — and the landmark-to-park pairings that go with them.

The biggest parks of all

Alaska holds the two largest national parks by a wide margin. **Wrangell–St. Elias** is the largest at **13,175,799 acres** — bigger than Switzerland, with Yellowstone fitting inside it about six times. **Gates of the Arctic** is second at **8,472,506 acres**. Both dwarf any park in the Lower 48; size rank #1 and #2 in the entire system belong to Alaska.

The tallest peaks

The highest summits in the country cluster here too. **Denali** rises to **20,310 ft**, the highest peak in North America, and its base-to-summit rise of about 18,000 ft is a mile more than Everest's, according to the National Park Service. **Mount St. Elias**, the high point of Wrangell–St. Elias, reaches **18,008 ft** — the second-highest peak in the United States. **Mount Fairweather**, crowning Glacier Bay, stands at **15,300 ft**. These figures make Alaska's parks the natural home of any "higher or lower" elevation contest.

The smallest crowds

Vastness comes with solitude. **Gates of the Arctic** drew only about **11,900 visitors in 2024**, making it the least-visited national park in the system — a number smaller than a single busy summer day at Yellowstone. Kobuk Valley (~17,000) and Lake Clark (~17,000–22,000) are close behind. The pattern is simple: the harder a park is to reach — bush plane only, no roads, no trails — the fewer people see it.

Landmarks and their parks

Several signature features are tied tightly to one park each, and knowing the pairings locks in the geography. The **Kennecott Mines** ghost town belongs to **Wrangell–St. Elias**, a relic of an early-1900s copper boom. The **Valley of Ten Thousand Smokes**, the ash plain from the 1912 Novarupta eruption, lies

in **Katmai**. The **Harding Icefield**, source of some 40 glaciers, sits in **Kenai Fjords**. And **Denali** itself — "the high one" in Koyukon Athabascan — is North America's highest peak at 20,310 ft, the soul of the park that bears its name.

Key concepts

Denali

- This interior Alaska park spans about 6 million acres of taiga and alpine tundra.
- It runs the only working sled-dog kennel in the National Park Service, and a single ~92-mile road is the lone way in.
- Its centerpiece is the highest peak in North America, whose Koyukon name means 'the high one.'

Gates of the Arctic

- Lying entirely north of the Arctic Circle in the Brooks Range, it is the second-largest national park.
- It has no roads, trails, campgrounds, or facilities, and is the least-visited national park.
- Its name comes from two flanking peaks dubbed 'Boreal Mountain' and 'Frigid Crags' by Bob Marshall.

Glacier Bay

- This Southeast Alaska panhandle park is a UNESCO-recognized expanse of tidewater ice and rich marine waters.
- Most of its visitors arrive by cruise ship and never step ashore.
- Its ice has retreated about 65 miles since Captain Vancouver found the bay choked with it in 1794.

Katmai

- This Alaska Peninsula park protects roughly 2,200 brown bears.
- Its waterfall bear-viewing platforms inspired the online 'Fat Bear Week' tournament.
- It also holds the Valley of Ten Thousand Smokes, born of the 1912 Novarupta eruption.

Kenai Fjords

- Near Seward on its namesake peninsula, this park pairs an Ice Age icefield with a drowned, fjord-cut coast.
- The Harding Icefield here feeds about 40 glaciers, one of them reachable by road.
- Roadside markers along Exit Glacier show how far the ice has retreated within living memory.

Kobuk Valley

- This roadless park above the Arctic Circle is among the least-visited in the system.
- Half a million caribou of the Western Arctic Herd migrate across its namesake river at Onion Portage.
- Improbably, it shelters 25 square miles of Ice Age sand dunes that can hit 100°F in summer.

Lake Clark

- Across Cook Inlet from Anchorage, this park packs volcanoes, a turquoise lake, salmon, and bears into one place.
- It guards the headwaters of the Bristol Bay fishery, the largest wild sockeye run on Earth.
- Dick Proenneke's hand-built cabin, where he filmed 'Alone in the Wilderness,' stands at Upper Twin Lake.

Wrangell–St. Elias

- Four mountain ranges converge in this Southeast-central Alaska park, the largest in the United States.
- It holds nine of the 16 highest peaks in the country and a glacier larger than Rhode Island.
- The Kennecott copper boomtown survives within it as a preserved ghost town.

Key facts

> **Not for Bison**
>
> Denali shelters a 'Big Five' of grizzly bears, gray wolves, moose, caribou, and Dall sheep — but not bison. The park was in fact established in 1917 specifically to protect Dall sheep.



National Park Service, Alaska Region · Public domain

Kobuk Valley

Improbably set above the Arctic Circle, the Great Kobuk Sand Dunes cover ~25 square miles and rise up to 100 ft — Ice Age sand whose surface can reach 100°F in summer. Half a million caribou of the Western Arctic Herd migrate through the region, crossing the Kobuk River at Onion Portage, where the Iñupiat have hunted for some 9,000 years. With ~17,000 visitors a year, it is among the least-visited parks; there are no roads, trails, or facilities.



Wikimedia Commons · Dev Dharm Khalsa / NPS · Public domain

Lake Clark

A compact sampler of Alaska: two active volcanoes (Redoubt and Iliamna), the turquoise Lake Clark, salmon runs, and brown bears. It also guards the headwaters of the Bristol Bay sockeye fishery — the largest wild sockeye run on Earth. At Upper Twin Lake stands the hand-built cabin of Dick Proenneke, who lived alone there for about 30 years and filmed 'Alone in the Wilderness.'

> **Alone in the Wilderness**
>
> Dick Proenneke hand-built his cabin at Upper Twin Lake in Lake Clark National Park, where he lived alone for about 30 years — a story later filmed as 'Alone in the Wilderness.'

By the numbers

The highest peak in North America, an Alaskan summit the Koyukon Athabascan called 'the high one,' rises to what elevation?
20310 feet

The second-largest U.S. national park, lying entirely north of the Arctic Circle with no roads or trails, covers roughly how many acres?
7500000 acres

The largest U.S. national park spans roughly how many million acres?
13.2 million acres

In Wrangell–St. Elias, how tall is Mount St. Elias, the nation's second-highest peak?
18008 feet

How many acres is Wrangell–St. Elias, the largest U.S. national park?
13175799 acres

How many acres is Gates of the Arctic, the second-largest national park?
8472506 acres

How tall is Denali, the highest peak in North America?
20310 ft

How tall is Mount St. Elias, the second-highest peak in the U.S.?
18008 ft

About how many people visited Gates of the Arctic, the least-visited national park, in 2024?
11900 visitors

How tall is Mount Fairweather, the high point of Glacier Bay?
15300 ft

Matched pairs

Each item on the left goes with the one on the right.

Katmai → Brooks Falls brown bears of 'Fat Bear Week'

Lake Clark → Dick Proenneke's hand-built cabin at Upper Twin Lake

Denali ('the high one') → Highest peak in North America (20,310 ft)

Kennecott Mines ghost town → Wrangell–St. Elias

Valley of Ten Thousand Smokes (1912 Novarupta eruption) → Katmai

Harding Icefield → Kenai Fjords

Self-test

Answer each question from memory, then check your work against the answer key.

1. Glacier Bay's ice has retreated about 65 miles, leaving bare rock that slowly turns to forest — a sequence scientists watch across the bay like a time-lapse. What is this ecological process called?

A Ecological eutrophication
B Secondary succession
C Glacial isostatic rebound
D Primary succession

2. Denali, the highest peak in North America, reaches what summit elevation above sea level?

A 20,310 ft
B 18,008 ft
C 15,300 ft
D 14,505 ft

3. Denali shelters the 'Big Five.' Which animal is NOT one of them?

A Dall sheep
B Bison
C Gray wolves
D Caribou

4. Katmai's Valley of Ten Thousand Smokes was created by which 1912 event, the largest volcanic eruption of the 20th century?

A Redoubt eruption
B Krakatoa eruption
C Novarupta eruption
D Mount St. Helens eruption

5. Since Captain Vancouver found the bay ice-choked in 1794, Glacier Bay's glaciers have retreated roughly how far?

A 65 miles
B 10 miles
C 200 miles
D 25 miles

6. Which Alaskan park holds the Great Kobuk Sand Dunes, a ~25-square-mile expanse of Ice Age sand above the Arctic Circle?

A Lake Clark
B Kenai Fjords
C Wrangell–St. Elias
D Kobuk Valley

7. At roughly 13.2 million acres, which is the largest national park in the United States?

A Denali
B Kobuk Valley
C Wrangell–St. Elias
D Gates of the Arctic

8. Mount St. Elias, the nation's second-highest peak, in Wrangell–St. Elias, stands at what height?

A 15,300 ft
B 18,008 ft
C 13,175 ft
D 20,310 ft

9. Dick Proenneke's hand-built cabin at Upper Twin Lake, filmed in 'Alone in the Wilderness,' stands in which park?

A Katmai
B Kobuk Valley
C Lake Clark
D Kenai Fjords

10. Kenai Fjords is built around the Harding Icefield, a ~700-square-mile Ice Age remnant that feeds roughly how many glaciers?

A 400
B 40
C 4
D 12

11. Which roadless Alaskan park north of the Arctic Circle improbably shelters 25 square miles of Ice Age sand dunes that can hit 100°F, while half a million caribou cross its river at Onion Portage?

A Gates of the Arctic
B Kenai Fjords
C Lake Clark
D Kobuk Valley

12. Which park has the only working sled-dog kennel in the National Park Service and a single ~92-mile road to its interior?

A Denali
B Katmai
C Lake Clark
D Gates of the Arctic

13. Which park's glaciers have retreated about 65 miles since 1794, and whose visitors mostly arrive by cruise ship?

A Katmai
B Wrangell–St. Elias
C Glacier Bay
D Kenai Fjords

14. Which park protects roughly 2,200 brown bears at Brooks Falls and inspired the online 'Fat Bear Week'?

A Kobuk Valley
B Katmai
C Denali
D Lake Clark

15. Which clue does NOT describe Wrangell–St. Elias?

A Harding Icefield feeds about 40 glaciers
B Malaspina Glacier larger than Rhode Island
C Nine of the 16 highest U.S. peaks
D Kennecott copper-mine ghost town

16. Wrangell–St. Elias, the largest U.S. national park at 13,175,799 acres, is bigger than Switzerland. Roughly how many times could Yellowstone fit inside it?

A About two times
B About a hundred times
C About twenty times
D About six times

17. About how many people visit Gates of the Arctic, the least-visited national park, each year?

A ~400,000
B ~700,000
C ~11,000–12,000
D ~2 million

18. From its base to its summit, roughly how much does Denali rise?

A ~29,000 ft
B ~12,000 ft
C ~6,000 ft
D ~18,000 ft

19. In the Koyukon Athabascan language, what does the name 'Denali' mean?

A 'The high one'
B 'Great river'
C 'White mountain'
D 'Home of the sun'

20. Despite their Arctic setting, the Great Kobuk Sand Dunes' surface can reach what temperature in summer?

A 130°F
B 100°F
C 50°F
D 70°F

Go deeper

WATCH 65 Miles of Retreat 0:30
Picture a bay almost entirely filled with ice. That's what Captain George Vancouver saw at Glacier Bay in 1794.

WATCH Arctic Dunes 0:33
Above the Arctic Circle in northwest Alaska sits one of the park system's strangest sights: the Great Kobuk Sand Dunes.

WATCH 2,200 Brown Bears 0:30
Which Alaskan park is it? Three clues, broad to specific. Picture the place, then name the park.

WATCH The High One 0:30
Denali rises to 20,310 feet: the highest peak in North America. Its base-to-summit rise is about 18,000 feet: a mile more than Everest's, says the National Park Service.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-12-the-alaskan-giants

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 13 OF 27

Lesson 13: East, Midwest & Territories

Appalachian Heart: Mountains, Gorge & Cave · Great Lakes & Heartland · Southern Waters & Tropics · Which Eastern Park Is It? · By the Numbers

WHAT YOU'LL BE ABLE TO DO

- Identify the Appalachian parks by their mountains and cave.
- Recognize the Midwest parks, from Gateway Arch to Isle Royale.
- Identify the southern and tropical parks, including Everglades' ecosystem first.
- Identify an Eastern park from a single distinctive clue.
- Recall Eastern park numbers and match parks to their states and high points.

Appalachian Heart: Mountains, Gorge & Cave

The eastern parks trade the West's raw verticality for something older and softer — ranges so ancient they have worn to rounded, mist-blue waves. These five are the Appalachian heart of the system: the most-visited park of all, the first east of the Mississippi, the Blue Ridge's scenic spine, the gorge that became the 63rd national park, and the longest cave on Earth.

Great Smoky Mountains

The Smokies straddle the Tennessee–North Carolina border on some of the oldest mountains on the planet, ~480–300 million years old — eroded stubs of a Himalayan-scale range raised when continents collided to build Pangaea. The famous blue "smoke" is natural haze, not pollution. Stacked by elevation from cove hardwood up to a spruce-fir "Canadian" forest, the park is the most biodiverse in the system: over 19,000 documented species and so many salamanders it is called the "Salamander Capital of the World." Around 1,900 black bears roam here, roughly two per square mile. Its high point, Kuwohi (formerly Clingmans Dome, 6,643 ft), is also the highest point on the Appalachian Trail. With 12.19 million visits in 2024 it is by far the most-visited national park — more than the next two combined — and, like about a third of the national parks, charges no entrance fee.

Acadia

Acadia crowns Maine's Mount Desert Island with pink granite, spruce-fir forest, and a glacially sculpted coast. It was the first national park east of the Mississippi (as Lafayette National Park, 1919, renamed Acadia in 1929) and the first created from donated private land, an effort led by George B. Dorr, who spent his fortune on it. Cadillac Mountain (1,530 ft) is the highest point on the eastern seaboard of the U.S. and, from early October to early March, the first place in the country to see the sunrise — so popular at dawn that a vehicle reservation is required in season. John D. Rockefeller Jr. funded 45 miles of carriage roads that still thread the island, and Somes Sound is often called the only true fjord on the East Coast.

Shenandoah

Shenandoah runs along Virginia's Blue Ridge, and its defining feature is Skyline Drive — 105 miles with 75 overlooks tracing the very crest of the mountains. The Appalachian Trail follows about 101 miles through the park. The bedrock is ancient: ~1.1-billion-year-old basement rock and Catoctin greenstone from old lava flows. Established in 1935 from private and condemned land, the park forcibly displaced roughly 500 mountain families; the Civilian Conservation Corps then built Skyline Drive and much of the infrastructure in the 1930s, and forest has since reclaimed the old farms. Its high point is Hawksbill (4,051 ft).

New River Gorge

West Virginia's first national park — and the 63rd overall, designated on December 27, 2020 — protects a deep Appalachian gorge cut by the New River, which despite its name is among the oldest rivers in the world. The New River Gorge Bridge is the longest single-span steel arch bridge in the Western Hemisphere, its deck about 876 ft above the water. The park is a mecca for whitewater rafting and rock climbing, with 1,400-plus routes on Nuttall Sandstone. Each October on Bridge Day, hundreds of BASE jumpers legally leap from the bridge.

Mammoth Cave

Beneath the Kentucky hills lies the longest known cave system on Earth: over 426 miles mapped, more than twice the next-longest, with new passages still being connected. It is classic karst — slightly acidic water dissolving Mississippian-age limestone capped by a protective sandstone layer over millions of years. Ancestral peoples explored the cave roughly 5,000 years ago, leaving cane-torch remains. In the 1840s–50s, an enslaved Black guide named Stephen Bishop explored and mapped much of it, crossing the "Bottomless Pit" to become one of its most famous early explorers. Since 1981 it has been a UNESCO World Heritage Site, and since 1990 an International Biosphere Reserve.

Great Lakes & Heartland

The Midwest's national parks are quieter surprises: an urban valley redeemed from disaster, a sweep of Lake Michigan dunes that birthed a science, a wolf-and-moose island at the edge of Lake Superior, a roadless world of lakes on the Canadian line, and — improbably — the smallest national park in the country, a stainless-steel arch over the Mississippi. Together they show how broad the idea of a "national park" can stretch.

Cuyahoga Valley

Tucked between Cleveland and Akron, Cuyahoga Valley wraps the river that infamously caught fire in 1969 — one of several blazes from industrial pollution that helped galvanize the Clean Water Act and the modern environmental movement. National park status came in 2000, and today the restored valley draws about 2.9 million visitors a year, remarkable for a park of modest fame, thanks to its urban setting. Highlights include 65-ft Brandywine Falls, the Ohio & Erie Canal Towpath Trail, the Ledges, the restored Beaver Marsh, and a scenic railroad. "Cuyahoga" is an Iroquoian word meaning "crooked river," and the river's comeback is now a national-park success story.

Indiana Dunes

Along 15 miles of Lake Michigan shoreline in northwest Indiana, the dunes (a national park since 2019) pack beach, dune, oak savanna, bog, and prairie into one of the most botanically diverse parks per acre — over 1,100 native plant species, all set against the backdrop of working steel mills. The dunes were built by post-glacial lake processes, and their ridges record former lake levels. This landscape shaped science: botanist Henry Cowles studied the dunes around 1899, and his work helped found the field of plant ecology and the concept of ecological succession. Visitors climb the "living," moving Mount Baldy and take on the Three Dune Challenge over the three tallest dunes.

Isle Royale

A remote wilderness island in Lake Superior, Isle Royale is reachable only by boat or seaplane and closes entirely from November to mid-April. It is one of the least-visited national parks — about 28,800 visitors in 2024 — yet those who come stay longer on average than at any other park. The island runs on billion-year-old basalt ridges and was mined for copper for some 4,500 years, long by the Ojibwe (Anishinaabe), who call it Minong. It hosts the world's longest-running predator-prey study, tracking wolves and moose since 1958. When the wolf population crashed to just two animals by 2018, the NPS controversially relocated new wolves in 2018–2019 to restore the balance and keep the famous study alive. Its high point is Mount Desor (1,394 ft).

Voyageurs

On Minnesota's Canadian border, Voyageurs is a water-based park of interconnected lakes — Rainy, Kabetogama, Namakan, Sand Point — navigated by boat, with no roads into the interior. Most of the park is reachable only by water, echoing the canoe travel of the 18th-century French-Canadian fur-trade canoemen, the voyageurs, for whom it is named. Underfoot lies some of the oldest exposed rock in North America — Precambrian Canadian Shield around 2.7 billion years old, scoured by glaciers into a lake-studded landscape. As a certified Dark Sky Park, it offers superb northern lights.

Gateway Arch

In downtown St. Louis stands Eero Saarinen's 630-ft stainless-steel Gateway Arch, completed in 1965 — the tallest arch and tallest monument in the U.S., commemorating the nation's westward expansion. It is a catenary curve, exactly as wide as it is tall, and a tram rides inside to the top. Redesignated a national park in 2018 (it was the Jefferson National Expansion Memorial), its roughly 193 acres within the park boundary make it the smallest and most urban national park — and the only one honoring a historical event rather than a natural landscape. (That figure is the gross area in the Park Service's acreage listing; its park pages cite about 91 acres, a different measure — either way, the smallest national park.) The grounds include the Old Courthouse, site of the Dred Scott case.

Southern Waters & Tropics

The South and the territories give the park system its warmest, wettest edges — thermal springs in a working town, an old-growth floodplain forest, the slow River of Grass, and parks that are mostly or

almost entirely underwater, including a Caribbean island. Water is the through-line: rising from underground, sheeting across limestone, or surrounding fortress walls and reefs.

Hot Springs

Hot Springs is the oldest area in the entire National Park System — federally protected in 1832, a full 40 years before Yellowstone. Its 47 natural thermal springs flow about a million gallons a day at roughly 143°F; rainwater seeps deep, is heated by the Earth's interior, and rises along faults, so the water emerging today fell as rain an estimated 4,000 to 4,400 years ago. The park is embedded in a working Arkansas town, and its historic Bathhouse Row earned the nickname "the American Spa." Multiple tribes treated the springs as neutral, sacred healing ground.

Congaree

Congaree protects the largest intact tract of old-growth bottomland hardwood forest in the U.S. — and, importantly, it is a floodplain forest, not a swamp. Periodic flooding from the Congaree and Wateree rivers deposits nutrients that grow some of the tallest trees in the eastern U.S., including a roughly 167-ft loblolly pine, in a "champion tree" forest with one of the highest canopies in eastern North America. The park was saved by a grassroots campaign in the 1970s after logging threatened it. Visitors walk the elevated 2.4-mile Boardwalk Loop or canoe Cedar Creek, and in late spring the forest stages a famous synchronous firefly display.

Everglades

Established in 1947, the Everglades was the first national park created to protect an ecosystem rather than scenery, championed by Marjory Stoneman Douglas. It is a vast "River of Grass" — a roughly 60-mile-wide, inches-deep sheet of water creeping south across a limestone shelf, fed by Lake Okeechobee. At about 1.5 million acres it is the largest tropical wilderness in the U.S., and the only place on Earth where alligators and crocodiles coexist. It shelters the endangered Florida panther, while the invasive Burmese python is a major threat. The park holds a rare triple honor — UNESCO World Heritage Site, International Biosphere Reserve, and Wetland of International Importance — yet survives at only half its original size.

Biscayne

Just south of Miami, Biscayne is about 95% underwater, one of the few majority-marine national parks. It protects the northern Florida Keys reef tract, Biscayne Bay, the longest mangrove shoreline on Florida's east coast, and a Maritime Heritage Trail of historic shipwrecks, all atop ancient limestone. In the 1960s, a plan to build a city called "Islandia" and an oil-refinery seaport here was defeated by conservationists — saving the reef and creating a park best explored by snorkel, dive, and boat.

Dry Tortugas

About 70 miles west of Key West, Dry Tortugas is roughly 99% water — seven small coral-and-sand islands reachable only by boat or seaplane. Its centerpiece is Fort Jefferson, a massive, unfinished 19th-century fortress of some 16 million bricks, the largest masonry structure in the Americas. The "Tortugas" (turtles) were named by Ponce de León in 1513; "Dry" warns there is no fresh water. As a Civil War prison, the fort held Dr. Samuel Mudd, convicted of treating John Wilkes Booth's broken leg after Lincoln's assassination.

Virgin Islands

Covering about 60% of the Caribbean island of St. John, Virgin Islands National Park was established in 1956, largely from land donated by Laurance Rockefeller. It pairs white-sand beaches and coral reefs — like Trunk Bay's underwater snorkel trail — with the ruins of Danish colonial sugar plantations worked by enslaved Africans. The island's 1733 slave revolt was one of the earliest and longest-sustained uprisings in the Americas, and the park preserves both a tropical paradise and that painful history.

Which Eastern Park Is It?

This round is a guessing game: each card gives you two to four clues, broad to specific, and asks you to name the eastern, midwestern, or territorial park. The clues never say the name. Here is the reasoning behind each one.

Guess the eastern park

The trick to these is to start wide and let the details narrow it down. A "vast subtropical wetland" could be several Florida parks — until "River of Grass" and "alligators and crocodiles together" pin it to the Everglades. A "mist-shrouded range across two southern states" could be any Appalachian park, but "most biodiverse" and "12 million visitors" can only be Great Smoky Mountains. Read every clue before committing.

The underground and the urban

Two of the trickiest are opposites. One park's main attraction is entirely underground at a constant ~54°F, with the longest cave system on Earth and a famous enslaved guide, Stephen Bishop — that is Mammoth Cave. Another is the smallest and most urban park, the only one honoring a historical event, built around a 630-ft steel curve — Gateway Arch. When a clue stresses "underground" or "urban," it is steering you hard.

The remote islands

Two island parks invite confusion. One is a wilderness island closed every winter, least-visited yet longest-stayed, home to the wolf-and-moose study since 1958 — Isle Royale, in Lake Superior. The other is a cluster of tiny waterless keys 70 miles from the nearest city, built around a giant brick fortress that imprisoned Dr. Samuel Mudd — Dry Tortugas. The tell is the setting: cold northern lake versus tropical Gulf.

The first in the East

A park of pink granite on a coastal island, the first national park east of the Mississippi, with the highest point on the eastern seaboard of the U.S. and Rockefeller's carriage roads, is Acadia. The "first east of the Mississippi" detail is the giveaway once you reach it.

By the Numbers

The East, Midwest, and territories hold some of the system's most extreme statistics — the busiest park, the longest cave, the tallest monument, and the oldest protected land. This round drills the figures and

the park-to-place matches worth remembering.

The most visited park

Great Smoky Mountains drew 12,191,834 visitors in 2024 — by far the most of any national park, more than the next two combined. The lack of an entrance fee (since 2023 a parking tag is required to park for more than 15 minutes) and its location within a day's drive of much of the eastern U.S. both feed those numbers. Compare that to the least-visited eastern parks, like Isle Royale at under 30,000, and the range across the system becomes vivid.

Elevations to remember

Two summits anchor the East's high points. Kuwohi (formerly Clingmans Dome) in the Smokies reaches 6,643 ft — both the park's high point and the highest point on the entire Appalachian Trail. Cadillac Mountain in Acadia rises only 1,530 ft, but the Park Service calls it the highest point on the eastern seaboard of the U.S. and, from early October to early March, the first place in the country to see the sunrise. Shenandoah tops out lower still, at Hawksbill (4,051 ft), and remote Isle Royale at Mount Desor (1,394 ft).

Records and milestones

Mammoth Cave has over 426 miles of mapped passage, making it the longest known cave system on Earth — more than twice the next-longest. The Gateway Arch stands 630 ft tall, the tallest monument in the U.S. and exactly as wide as it is high. Hot Springs was first federally protected in 1832, making it the oldest area in the National Park System, 40 years before Yellowstone. And the Everglades sprawls across about 1,508,938 acres, the largest tropical wilderness in the U.S.

Park to place

Some matches are worth memorizing cold: Great Smoky Mountains spans Tennessee and North Carolina; Virgin Islands National Park sits on St. John in the U.S. Virgin Islands. Pair each park with its high point too — Shenandoah with Hawksbill, Isle Royale with Mount Desor — and the geography of the eastern parks starts to lock into place.

Key concepts

Everglades National Park

- A vast, flat subtropical wetland in the far south of one state, with wet and dry seasons.
- Often described as a "River of Grass" — a 60-mile-wide, inches-deep sheet of water creeping south.
- The only place on Earth where alligators and crocodiles live side by side; threatened by invasive Burmese pythons.
- The first national park created to protect an ecosystem rather than scenery, championed by Marjory Stoneman Douglas.

Great Smoky Mountains National Park

- An ancient, mist-shrouded mountain range straddling two southern states.
- The most biodiverse national park in the U.S., nicknamed the "Salamander Capital of the World."
- By far the most-visited national park, drawing more than 12 million people a year.
- It charges no entrance fee: Tennessee's deed for its main roads bars tolls, and federal law bars fees where tolls are barred.

Mammoth Cave National Park

- A Kentucky park whose main attraction lies entirely underground at a constant ~54°F.
- Karst limestone capped by protective sandstone, with new passages still being discovered.
- The longest known cave system on Earth — over 426 miles mapped, more than twice the next-longest.
- An enslaved guide named Stephen Bishop mapped much of it in the 1840s–50s.

Acadia National Park

- A rugged park of pink granite and spruce-fir forest on a coastal island far up the Atlantic seaboard.
- The first national park east of the Mississippi, created from donated private land.
- Its summit is the highest point on the eastern seaboard of the U.S. and, from early October to early March, the first place in the country to see the sunrise.
- Famous for 45 miles of carriage roads funded by John D. Rockefeller Jr.

Gateway Arch National Park

- The smallest and most urban national park, sitting in a downtown riverfront.
- The only national park honoring a historical event rather than a natural landscape.
- Its centerpiece is a 630-ft stainless-steel catenary curve, the tallest monument in the U.S.
- It commemorates westward expansion from St. Louis, with a tram riding to the top.

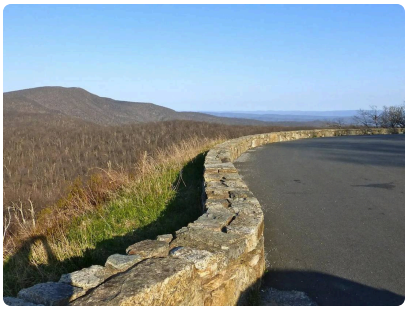
Dry Tortugas National Park

- A remote cluster of tiny coral-and-sand islands about 70 miles from the nearest city, reachable only by boat or seaplane.
- Nearly all water; its name warns there is no fresh water on the keys.
- Home to a massive unfinished 19th-century brick fortress, the largest masonry structure in the Americas.
- Its fort once imprisoned Dr. Samuel Mudd, convicted of treating John Wilkes Booth.

Isle Royale National Park

- A remote wilderness island reachable only by boat or seaplane, closed entirely each winter.
- One of the least-visited national parks, though visitors stay longer than anywhere else.
- Site of the world's longest-running predator-prey study, tracking wolves and moose since 1958.
- Sits in Lake Superior and was mined for copper for thousands of years by the Ojibwe.

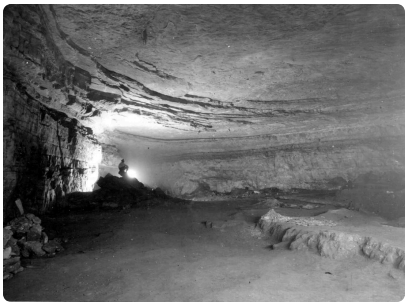
Key facts



MPSharwood · CC BY-SA 4.0

Shenandoah

Strung along Virginia's Blue Ridge, Shenandoah is defined by Skyline Drive — 105 miles and 75 overlooks running the very crest of the mountains. The Appalachian Trail threads about 101 miles through the park. Established in 1935 from private and condemned land, it displaced roughly 500 mountain families; the CCC then built the drive, and forest has since reclaimed the old farms.



Willis Thomas Lee · Public domain

Mammoth Cave

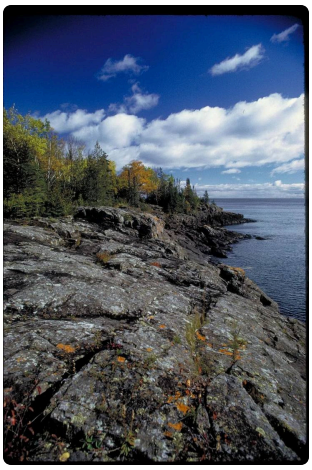
Beneath the Kentucky hills lies the longest known cave system on Earth — over 426 miles mapped, more than twice the next-longest, with new passages still being connected. Acidic water dissolved limestone capped by protective sandstone to carve this karst labyrinth. Ancestral peoples explored it ~5,000 years ago; in the 1840s–50s, an enslaved guide named Stephen Bishop mapped much of it and crossed the "Bottomless Pit."



Library of Congress · Scene at Indiana Dunes State Park, encompassing 2,182 acres · No known restrictions (verify at source)

Indiana Dunes

Along 15 miles of Lake Michigan shoreline, Indiana Dunes (a national park since 2019) packs beach, dune, oak savanna, bog, and prairie into one of the most botanically diverse parks per acre — over 1,100 native plant species amid working steel mills. Botanist Henry Cowles studied these dunes around 1899, helping found the science of plant ecology and the concept of succession.



NPS staff · Public domain

Isle Royale

A remote wilderness island in Lake Superior, reachable only by boat or seaplane and closed entirely each winter, Isle Royale is one of the least-visited parks — yet visitors stay longer than anywhere else. It hosts the world's longest-running predator-prey study, tracking wolves and moose since 1958. When wolves crashed to just two animals by 2018, the NPS relocated new wolves to restore the balance.

Voyageurs

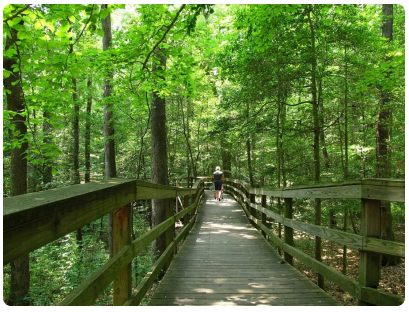
On Minnesota's Canadian border, Voyageurs is a park of interconnected lakes — Rainy, Kabetogama, Namakan, Sand Point — navigated by boat, with no roads into the interior. It is named for the French-Canadian fur-trade canoemen who once paddled these waters. Underfoot lies some of the oldest exposed rock in North America (~2.7 billion years), and overhead, as a certified Dark Sky Park, it offers superb northern lights.



Library of Congress · Scene along "Bathhouse Row" in Hot Springs, a city in centra · No known restrictions (verify at source)

Hot Springs

Hot Springs is the oldest area in the National Park System — federally protected in 1832, 40 years before Yellowstone. Its 47 thermal springs flow about a million gallons a day at ~143°F; the rain that emerges today fell roughly 4,400 years ago. Embedded in a working town, its historic Bathhouse Row earned it the nickname "the American Spa," and you can still fill jugs with free, drinkable hot spring water at public fountains.



Ken Lund from Reno, Nevada, USA · CC BY-SA 2.0

Congaree

Congaree protects the largest intact tract of old-growth bottomland hardwood forest in the U.S. — not a swamp but a floodplain forest, where periodic flooding from the Congaree and Wateree rivers feeds some of the tallest trees in the eastern U.S., including a ~167-ft loblolly pine. Saved by a 1970s grassroots campaign, it dazzles with synchronous fireflies each late spring and dark, star-filled skies.



John Brooks, National Park Service photographer · Public domain

Biscayne

Just south of Miami, Biscayne is about 95% underwater — one of the few majority-marine national parks. It protects the northern Florida Keys reef tract, Biscayne Bay, the longest mangrove shoreline on Florida's east coast, and a Maritime Heritage Trail of historic shipwrecks. A 1960s plan to build a city called "Islandia" and an oil-refinery seaport here was defeated by conservationists, saving the reef.



U.S. National Park Service · Public domain

Dry Tortugas

About 70 miles west of Key West, Dry Tortugas is ~99% water — seven small coral-and-sand islands reachable only by boat or seaplane. Its centerpiece is Fort Jefferson, a massive unfinished 19th-century fortress of some 16 million bricks, the largest masonry structure in the Americas. As a Civil War prison it held Dr. Samuel Mudd, convicted of treating John Wilkes Booth's broken leg. The fort never saw battle.

By the numbers

In Acadia, Cadillac Mountain is the highest point on the eastern seaboard of the U.S. What is its elevation in feet?

1530 feet

How many miles of Mammoth Cave have been mapped, making it the longest known cave system on Earth?

426 miles

In feet, how tall is the stainless-steel Gateway Arch in St. Louis — the tallest arch and tallest monument in the U.S.?

630 feet

In what year did Isle Royale's predator-prey study — the world's longest-running — begin tracking wolves and moose?

1958 year

How many thermal springs flow at Hot Springs, the oldest area in the National Park System?

47 count

Fort Jefferson at Dry Tortugas — the largest masonry structure in the Americas — was built from roughly how many bricks?

16000000 count

How many people visited Great Smoky Mountains, the most-visited national park, in 2024?
12191834 visitors

How high is Kuwohi (formerly Clingmans Dome), the highest point in Great Smoky Mountains and on the Appalachian Trail?
6643 ft

How tall is Cadillac Mountain, the highest point on the eastern seaboard of the U.S.?
1530 ft

How many miles of passage have been mapped in Mammoth Cave, the longest cave system on Earth?
426 miles

How tall is the Gateway Arch, the tallest monument in the U.S.?
630 ft

In what year was Hot Springs first federally protected, making it the oldest area in the National Park System?
1832 year

About how many acres does Everglades, the largest tropical wilderness in the U.S., cover?
1508938 acres

Matched pairs

Each item on the left goes with the one on the right.

Shenandoah → Skyline Drive (105 miles, 75 overlooks)

Cuyahoga (Iroquoian word) → crooked river

Everglades → First national park created to protect an ecosystem rather than scenery

Great Smoky Mountains → Tennessee & North Carolina

Shenandoah's high point → Hawksbill (4,051 ft)

Isle Royale's high point → Mount Desor (1,394 ft)

Virgin Islands National Park → U.S. Virgin Islands (St. John)

Self-test

Answer each question from memory, then check your work against the answer key.

1. Great Smoky Mountains is by far the most-visited national park, with 12.19 million visits in 2024. What else is true of it?

- A It protects the longest known cave on Earth
- B It was the first national park east of the Mississippi
- C It charges no entrance fee
- D It is the newest national park in the system

2. Which Appalachian park protects the longest known network of underground passages on Earth?

- A Shenandoah
- B Mammoth Cave
- C New River Gorge
- D Great Smoky Mountains

3. Which park's defining feature is Skyline Drive, running 105 miles with 75 overlooks along the Blue Ridge crest?

- A Shenandoah
- B Acadia
- C New River Gorge
- D Mammoth Cave

4. Which West Virginia park, designated December 27, 2020, became the 63rd national park overall?

- A Cuyahoga Valley
- B Shenandoah
- C Mammoth Cave
- D New River Gorge

5. Which of these is NOT one of the Appalachian Heart parks?

- A Shenandoah
- B Mammoth Cave
- C Isle Royale
- D Great Smoky Mountains

6. Which of these parks is the smallest and most urban national park, and the only one honoring a historical event rather than a natural landscape?

- A Gateway Arch
- B Indiana Dunes
- C Voyageurs
- D Cuyahoga Valley

7. The river that infamously caught fire in 1969, helping spark the Clean Water Act, flows through which national park?

- A Voyageurs
- B Cuyahoga Valley
- C Indiana Dunes
- D Isle Royale

8. Which remote Lake Superior island park hosts the world's longest-running predator-prey study, tracking wolves and moose since 1958?

- A Gateway Arch
- B Indiana Dunes
- C Voyageurs
- D Isle Royale

9. Which Minnesota park on the Canadian border is a roadless, water-based park named for 18th-century French-Canadian fur-trade canoemen?

A Isle Royale
B Indiana Dunes
C Cuyahoga Valley
D Voyageurs

10. All of these are Midwest / Great Lakes parks EXCEPT one. Which?

A Voyageurs
B Indiana Dunes
C Acadia
D Isle Royale

11. Which park sits just south of Miami and is about 95% underwater, protecting the northern Florida Keys reef tract?

A Biscayne
B Everglades
C Virgin Islands
D Dry Tortugas

12. Established in 1947, which park was the first national park created to protect an ecosystem rather than scenery?

A Biscayne
B Everglades
C Congaree
D Dry Tortugas

13. Which park, federally protected in 1832 — 40 years before Yellowstone — is the oldest area in the entire National Park System?

A Congaree
B Virgin Islands
C Hot Springs
D Everglades

14. Fort Jefferson, the largest masonry structure in the Americas, sits about 70 miles west of Key West in which park?

A Everglades
B Biscayne
C Virgin Islands
D Dry Tortugas

15. Congaree protects the largest intact tract of old-growth bottomland hardwoods in the U.S. It is best described as which of these?

A A thermal spring basin
B A floodplain forest
C A tropical coral reef
D A desert slot canyon

16. Which park is recognized as the first national park established east of the Mississippi River?

A Acadia
B Everglades
C Great Smoky Mountains
D Shenandoah

17. Called the 'Salamander Capital of the World,' this is the most biodiverse U.S. national park. Which is it?

A Mammoth Cave
B Great Smoky Mountains
C Shenandoah
D Congaree

18. An enslaved Black guide named Stephen Bishop explored and mapped much of this park in the 1840s–50s, crossing its 'Bottomless Pit.' Which park?

A Isle Royale
B New River Gorge
C Mammoth Cave
D Hot Springs

19. Each October on Bridge Day, hundreds of BASE jumpers legally leap from a record steel arch bridge in which park?

A New River Gorge
B Shenandoah
C Acadia
D Mammoth Cave

20. A 630-ft stainless-steel catenary curve, as wide as it is tall, towers over downtown St. Louis as the centerpiece of which national park?

A Hot Springs
B Voyageurs
C Cuyahoga Valley
D Gateway Arch

21. Which eastern summit is the highest point on the entire Appalachian Trail?

A Cadillac Mountain
B Kuwohi
C Mount Desor
D Hawksbill

22. Great Smoky Mountains straddles the border of which two states?

A Virginia & West Virginia
B North Carolina & Georgia
C Kentucky & Virginia
D Tennessee & North Carolina

23. Which summit is Shenandoah's high point?

A Hawksbill (4,051 ft)
B Mount Desor (1,394 ft)
C Kuwohi (6,643 ft)
D Cadillac Mountain (1,530 ft)

24. Which summit is Isle Royale's high point?

A Cadillac Mountain (1,530 ft)
B Hawksbill (4,051 ft)
C Mount Desor (1,394 ft)
D Kuwohi (6,643 ft)

25. About how many people visited Great Smoky Mountains — the most-visited national park — in 2024?

A 28,800
B 10.83 million
C 12.19 million
D 2.9 million

Go deeper

WATCH Salamander Capital 0:32
The Salamander Capital of the World is a national park: Great Smoky Mountains.

WATCH The River That Burned 0:30
The Cuyahoga River caught fire in 1969. It was one of several blazes from industrial pollution.

WATCH Older Than Yellowstone 0:31
One park was protected 40 years before Yellowstone: Hot Springs, Arkansas, in 1832. It's the oldest area in the National Park System.

WATCH Wolves and Moose 0:30
Which eastern park is it? 3 clues, broad to specific.

WATCH 426 Miles 0:30
Over 426 miles of mapped passage. That's Mammoth Cave, the longest known cave system on Earth, more than twice the next-longest.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/lesson-13-east-midwest-and-territories

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 14 OF 27

Spotlight: Yellowstone

Geysers Springs and the Supervolcano · America's Serengeti · Visiting Yellowstone

WHAT YOU'LL BE ABLE TO DO

- Explain Yellowstone's supervolcano, hotspot, and geothermal system.
- Identify Yellowstone's signature thermal and canyon features.
- Explain Yellowstone's wildlife and the wolves' trophic cascade.
- Plan a Yellowstone visit around its scale, overlooks, and seasons.

Geysers Springs and the Supervolcano

Some parks protect a mountain or a canyon. Yellowstone protects a window into the living Earth — a place where the planet's inner heat breaks the surface in steam, color, and roaring water.

Yellowstone

On March 1, 1872, President Ulysses S. Grant signed Yellowstone into existence as the world's first national park — an idea so new the word "national park" barely existed yet. It sprawls across three states, anchored in northwest Wyoming and spilling into Montana and Idaho. Its roughly 2.22 million acres (about 3,472 square miles) make it the 8th-largest U.S. national park and the largest in the contiguous United States after Death Valley. The land ranges from around 5,282 feet at Reese Creek up to **11,358-foot Eagle Peak**, its high point. But Yellowstone's true claim to fame isn't its size — it's what lies beneath.

The Yellowstone Supervolcano

Yellowstone sits inside a caldera, a vast crater left when a supervolcano erupted about **640,000 years ago** and the ground collapsed into the emptied magma chamber. Feeding that system is the **Yellowstone hotspot** — a plume of heat rising through the Earth's crust. This underground furnace is why the park holds the greatest concentration of geothermal features on the planet: roughly **10,000 hydrothermal features** and about **500 geysers**, nearly half of all the active geysers on Earth. Every steaming pool and shuddering geyser is the hotspot venting its heat. Among them, the **Grand Prismatic Spring** is the largest hot spring in the U.S., about 370 feet across, its rainbow rings painted by heat-loving microbes. **Steamboat Geyser**, the world's tallest active geyser, can blast water past 300 feet.

Old Faithful

The park's most beloved geyser earned its name for dependability, not height. **Old Faithful** erupts roughly every 60 to 90 minutes, sending boiling water 106 to 185 feet skyward. Rangers can predict each eruption within about ten minutes, and crowds gather on the boardwalks of the Upper Geyser Basin — the densest single cluster of geysers found anywhere on Earth — to watch the show repeat, faithful as a heartbeat.

The canyon and the falls

East of the geyser basins, the Yellowstone River has carved the **Grand Canyon of the Yellowstone**, a gorge about 1,000 feet deep through soft, sulfur-yellow rhyolite — the rock that gives the park its name. The river's centerpiece is the **Lower Falls**, which drops **308 feet**, nearly twice the height of Niagara. From overlooks like Artist Point, the white plume of the falls against the canyon's gold and orange walls is one of the park's defining images — proof that even amid all the steam and fire, water still does the patient work of carving the land.

America's Serengeti

Yellowstone is one of the last places in the Lower 48 where you can watch a complete wild food web at work — predators and prey, all of it, across open valleys at dawn.

America's Serengeti

The broad grasslands of the **Lamar and Hayden valleys** hold wildlife so abundant and visible that Yellowstone is often nicknamed "America's Serengeti." Roaming them is the **largest wild bison herd in the United States — about 4,000 to 6,000 animals** — the last continuously wild bison population in the country, descended from the few that survived the near-extermination of the 1800s. They share the valleys with elk, pronghorn, bighorn sheep, and moose. At sunrise and sunset the grass fills with movement, and patient watchers with binoculars and spotting scopes line the pullouts to take it in.

This abundance is no accident. Yellowstone sits at the heart of the **Greater Yellowstone Ecosystem**, one of the largest nearly intact temperate ecosystems left on Earth — millions of acres of connected wild land that let big animals migrate, breed, and survive the way they have for millennia. About **1,000 grizzly bears** range across this ecosystem, a recovery success story from the days when their numbers had crashed.

The wolves return

For most of the 20th century, the picture was incomplete. Wolves were hunted out of Yellowstone by the 1920s, and without them the system slipped out of balance — elk grew overabundant and overgrazed the river valleys. Then, in **1995**, biologists reintroduced wolves, and the change rippled outward. With wolves hunting again, elk no longer lingered along the streams; willows and aspens regrew, beavers returned to build ponds, songbirds and fish followed, and stabilized banks even changed how some rivers flowed. Scientists call this chain reaction a **trophic cascade**, and Yellowstone's wolves became its most famous example — a living demonstration that a top predator can reshape an entire landscape. Today wolves are once again a permanent part of the park.

The first peoples

Long before any of this was called a park, people knew this country intimately. At least **27 tribes** are formally associated with Yellowstone, among them the Eastern Shoshone, Crow (Apsáalooke), Blackfeet, Bannock, and Nez Perce. The **Tukudika**, or Sheep Eaters — a band of Shoshone — were unusual in living in the high country year-round, hunting bighorn sheep and crafting prized bows from their horns while

most peoples used the plateau seasonally. Their presence is a reminder that Yellowstone was never an empty wilderness; it was, and remains, a homeland.

Visiting Yellowstone

Yellowstone is enormous and busy, so a little planning turns a crowded blur into a string of unforgettable mornings. Here's how to see the best of it — and one secret hiding in the hot springs.

Mammoth Hot Springs

At the park's north end, **Mammoth Hot Springs** offers a geothermal feature unlike the geysers: here hot water rich in dissolved limestone rises to the surface and, as it cools, deposits travertine — soft, pale stone that builds tier upon tier into terraces that look like a frozen waterfall, or a cave turned inside out. Because the plumbing constantly shifts underground, individual terraces flood, grow, and dry out from one year to the next, so the formation is never quite the same twice. It's one of the park's must-see stops, along with the **Artist Point** overlook of the Lower Falls and the rainbow expanse of Grand Prismatic.

The microbe that changed science

Yellowstone's scalding springs are far from lifeless. They teem with **thermophiles** — heat-loving microbes whose colonies paint the pools in bands of orange, green, and yellow. In 1966 a researcher collected one such microbe, *Thermus aquaticus*, from a Yellowstone hot spring. Its heat-stable enzyme, **Taq polymerase**, later became the engine of PCR — the DNA-copying technique behind modern genetic testing, forensics, paternity tests, and disease diagnostics. A humble park hot spring quietly seeded one of the great revolutions in biology, a reminder that protected wild places hold value we can't always foresee.

Hikes and the lay of the land

To rise above the crowds, hikers climb **Mount Washburn**, a roughly **6.4-mile** round trip gaining about 1,400 feet to a summit with panoramic views across the whole plateau. For an easier outing, the **Fairy Falls trail** runs about 5 miles and passes the overlook above Grand Prismatic, where the spring's full rainbow finally reveals itself from above.

Timing your visit

Yellowstone drew about **4.74 million recreation visits in 2024**, making it the **4th-most-visited** national park — and most of that crowd arrives in summer. **Summer (June through September)** is the season for full road access and open facilities; in winter the park's interior can be reached only by snowcoach or snowmobile, a quieter, stranger, steam-wreathed world. There's no park-wide timed entry, but in-park lodging books up roughly a year ahead, so plan early.

A safety word

One more thing the rangers will tell you: give the wildlife room. **Bison injure more visitors than any other animal in Yellowstone**, almost always because someone crept too close for a photo. They look slow and placid, but they're fast, powerful, and unpredictable. Stay at least 25 yards from bison and elk, 100 yards from bears and wolves — and let the wild stay wild.

Key concepts

Grand Prismatic Spring

- Yellowstone holds roughly 10,000 hydrothermal features, and this is among the most photographed of them all.
- It is the largest hot spring in the United States, roughly 370 feet across.
- Heat-loving microbes paint its water in vivid rainbow rings of blue, green, orange, and red.

Steamboat Geyser

- Yellowstone has about 500 geysers, nearly half the active geysers on the whole planet.
- This one is the world's tallest active geyser.
- Its rare, unpredictable major eruptions can blast water past 300 feet into the sky.

Lower Falls

- The centerpiece of the Yellowstone River, famously viewed from Artist Point.
- This 308-foot waterfall drops nearly twice the height of Niagara.
- Its white plume plunges into the gold and orange walls of the Grand Canyon of the Yellowstone.

Grand Canyon of the Yellowstone

- East of the geyser basins, a river has carved a deep gorge nearly 1,000 feet down.
- Its walls of soft, sulfur-yellow rhyolite glow gold and orange, best seen from the Artist Point overlook.
- Its centerpiece, the Lower Falls, plunges 308 feet — nearly twice the height of Niagara.

Mammoth Hot Springs

- At Yellowstone's north end sits a geothermal feature quite unlike the park's geysers.
- Here hot water rich in dissolved limestone deposits soft travertine as it cools.
- It builds pale, tiered terraces like a frozen waterfall, never quite the same from one year to the next.

Key facts



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Old Faithful

The park's most famous geyser earned its name for reliability, not size: Old Faithful erupts roughly every 60–90 minutes, jetting boiling water 106–185 feet into the air. Rangers can predict its next show within about ten minutes, drawing crowds to the boardwalks of the Upper Geyser Basin — the densest cluster of geysers anywhere on Earth.

Half of Earth's Geysers

Yellowstone has about 500 geysers, roughly half of all the active geysers on Earth. That count is different from its roughly 10,000 total hydrothermal features, which also includes hot springs and mudpots.

Colored by Microbes

Grand Prismatic Spring, about 370 feet across, is the largest hot spring in the United States. Its rainbow rings of color come from heat-loving microbes living in the water, not the water itself.

The Last Wild Herd

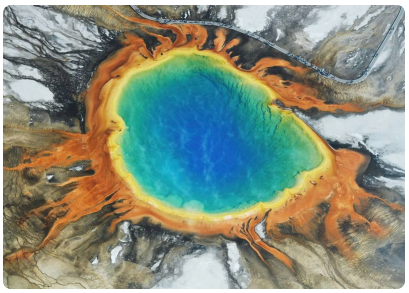
Yellowstone's bison herd numbers roughly 4,000 to 6,000 animals, the largest wild herd in the United States and the country's last continuously wild population.

The Sheep Eaters

The Tukudika, or Sheep Eaters, a band of Shoshone, were unusual among Yellowstone's associated tribes for living in the high country year-round, hunting bighorn sheep and crafting bows from their horns.

The Trophic Cascade

Yellowstone's wolves, exterminated by the 1920s, were reintroduced to the park in 1995 — the event that triggered the famous trophic cascade reshaping the ecosystem.



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The Microbe That Changed Science

Yellowstone's scalding springs teem with thermophiles — heat-loving microbes that paint the pools in rainbow colors. In 1966 a researcher collected one, Thermus aquaticus, from a hot spring here. Its heat-stable enzyme, Taq polymerase, later became the engine of PCR, the technique behind modern DNA testing, forensics, and disease diagnostics. A park hot spring quietly seeded a revolution in biology.

4.74 Million Visits

Yellowstone drew about 4.74 million recreation visits in 2024, ranking it the fourth most-visited national park in the country that year.

Snowcoach or Snowmobile Only

Yellowstone offers full road access and open facilities only in summer, from June through September. In winter, the interior can be reached only by snowcoach or snowmobile.

One of the Most Photographed

Artist Point is the classic overlook for viewing the Lower Falls set against the canyon's gold-and-orange walls, one of Yellowstone's most photographed views.

By the numbers

In what year was Yellowstone established as the world's first national park?
1872 year

Roughly how many years ago did the eruption that formed the Yellowstone Caldera occur?
640000 years

How tall is the Lower Falls of the Grand Canyon of the Yellowstone?
308 ft

What is the elevation of Eagle Peak, Yellowstone's highest point?
11358 ft

About how many bison live in Yellowstone's herd, the largest wild herd in the U.S. (lower estimate)?
4000 bison

Roughly how many grizzly bears live in the Greater Yellowstone Ecosystem?
1000 grizzlies

In what year were wolves reintroduced to Yellowstone?
1995 year

How many Indigenous tribes are formally associated with Yellowstone?
27 tribes

How many recreation visits did Yellowstone receive in 2024?
4744353 visitors

About how long is the round-trip hike to the summit of Mount Washburn?
6.4 miles

Matched pairs

Each item on the left goes with the one on the right.

Grand Prismatic Spring → Largest U.S. hot spring (~370 ft across), ringed in rainbow microbial mats

Steamboat Geyser → World's tallest active geyser — major eruptions exceed 300 ft

Grand Canyon of the Yellowstone
→ ~1,000-ft-deep gorge carved in yellow rhyolite, home to the 308-ft Lower Falls

~10,000 hydrothermal features
→ Earth's greatest concentration, including ~500 geysers — about half the world's total

Yellowstone hotspot → Rising plume of crustal heat that powers the entire geothermal system

Greater Yellowstone Ecosystem
→ One of the largest intact temperate ecosystems on Earth, with the park at its core

Lamar & Hayden valleys → Open grasslands prized for wildlife viewing — bison, wolves, and grizzlies

Tukudika (Sheep Eaters) → Shoshone people who lived in Yellowstone's high country year-round

Artist Point → Classic overlook of the Lower Falls and the yellow canyon walls

Fairy Falls trail → Easy-moderate ~5-mi hike passing the Grand Prismatic Overlook

Best season
→ Summer (June–Sept) for full road access; winter interior reached only by snowcoach or snowmobile

Self-test

Answer each question from memory, then check your work against the answer key.

1. Yellowstone sits inside a caldera. What is a caldera?

- (A) A dome pushed upward by magma rising beneath the crust
- (B) A basin carved by an ancient glacier
- (C) A crater left when the ground collapsed into an emptied magma chamber after a supervolcano eruption
- (D) A crater blasted out by a meteorite impact

2. Roughly how long ago did the eruption that formed the Yellowstone Caldera occur?

- (A) 640,000 years ago
- (B) 2.2 million years ago
- (C) 64 million years ago
- (D) 6,400 years ago

3. What ultimately powers Yellowstone's geysers, hot springs, and other geothermal features?

- (A) Heat released by melting glaciers
- (B) A shallow reservoir of trapped seawater
- (C) Friction from two colliding tectonic plates
- (D) The Yellowstone hotspot, a rising plume of crustal heat

4. About how many geysers does Yellowstone hold — nearly half of all the active geysers on Earth?

- (A) 10,000
- (B) 500
- (C) 5,000
- (D) 100

5. Which statement about the Yellowstone supervolcano system is NOT true?

- (A) The park holds Earth's greatest concentration of geothermal features
- (B) The last major eruption was about 640,000 years ago
- (C) The caldera formed when ground collapsed into an emptied magma chamber
- (D) The hotspot has cooled and no longer produces geothermal activity

6. Which feature is the largest hot spring in the U.S., about 370 feet across and ringed in rainbow microbial mats?

A Steamboat Geyser
B Grand Prismatic Spring
C Mammoth Hot Springs
D Old Faithful

7. The world's tallest active geyser, which can blast water past 300 feet, is:

A Lower Falls
B Grand Prismatic Spring
C Steamboat Geyser
D Old Faithful

8. About how often does Old Faithful erupt?

A Every 60 to 90 minutes
B Every 6 hours
C Once a day
D Every 10 minutes

9. The Lower Falls of the Grand Canyon of the Yellowstone drops how far — nearly twice the height of Niagara?

A 1,000 feet
B 185 feet
C 308 feet
D 106 feet

10. The Grand Canyon of the Yellowstone is carved through what soft, sulfur-yellow rock that gives the park its name?

A Sandstone
B Rhyolite
C Limestone
D Granite

11. After wolves returned to Yellowstone in 1995, elk stopped overgrazing the valleys, willows and beavers came back, and even some rivers changed course. What do scientists call this chain reaction?

A A trophic cascade
B Keystone predation
C Ecological succession
D A population bottleneck

12. About how many animals make up Yellowstone's bison herd, the largest wild herd in the United States?

A roughly 27
B nearly 100,000
C around 1,000
D 4,000 to 6,000

13. In what year were wolves reintroduced to Yellowstone, triggering the famous trophic cascade?

A 1872
B 1966
C 1920
D 1995

14. Which broad grasslands are so rich in visible wildlife that Yellowstone is nicknamed "America's Serengeti"?

A Lamar and Hayden valleys
B Mammoth and Norris terraces
C Washburn and Fairy meadows
D Upper and Lower Geyser basins

15. Which people lived in Yellowstone's high country year-round, hunting bighorn sheep and crafting bows from their horns?

- A The Apsáalooke (Crow)
- B The Tukudika (Sheep Eaters), a band of Shoshone
- C The Bannock
- D The Blackfeet

16. Where did Yellowstone rank among the most-visited U.S. national parks in 2024?

- A 6th
- B 2nd
- C 4th
- D 3rd

17. Which Yellowstone feature builds pale, terraced travertine from limestone-rich hot water, changing shape year to year?

- A Steamboat Geyser
- B Mammoth Hot Springs
- C Grand Prismatic Spring
- D Old Faithful

18. When does Yellowstone offer full road access and open facilities?

- A Summer, June through September
- B Year-round with no seasonal limits
- C Spring only
- D Winter, December through February

19. Which animal injures more visitors than any other in Yellowstone, usually when people approach too closely?

- A Grizzly bears
- B Wolves
- C Elk
- D Bison

20. Which overlook offers the classic view of the Lower Falls against the yellow canyon walls?

- A Mammoth Hot Springs
- B Mount Washburn
- C Artist Point
- D Fairy Falls trail

Go deeper

WATCH The Other Grand Canyon 0:31
Yellowstone has its own Grand Canyon. The Yellowstone River carved a gorge about 1,000 feet deep.

WATCH The Wolves Return 0:29
Wolves were hunted out of Yellowstone by the 1920s. Without them, elk overgrazed the river valleys.

WATCH A Cave Turned Inside Out 0:31
Mammoth Hot Springs looks like a frozen waterfall, or a cave turned inside out.

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LESSON 15 OF 27

Spotlight: Grand Canyon

A Mile Deep and Billions of Years Old · Rims, River & People · Visiting the Grand Canyon

WHAT YOU'LL BE ABLE TO DO

- Recall the Grand Canyon's scale and the deep-time record in its walls.
- Explain the canyon's stacked life zones and the peoples who call it home.
- Plan a Grand Canyon visit around its overlooks, trails, and seasons.
- Identify the Grand Canyon's landmarks on sight.

A Mile Deep and Billions of Years Old

Stand at the edge of the Grand Canyon and the numbers stop feeling like numbers. Below you is a chasm so vast that the far wall fades into haze and the river that carved it shrinks to a green thread. This part is about that scale — and about the deep time written into every band of rock.

The Grand Canyon

The Grand Canyon stretches about **277 river miles** along the Colorado River in northern Arizona, opens to as much as **18 miles** from rim to rim, and drops **over a mile — roughly 6,000 feet** — to the water. Those walls expose **nearly 2 billion years** of Earth's history, one of the most complete rock records anywhere on the planet. Theodore Roosevelt, who called it a place "every American should see," protected it as a national monument in **1908**; Congress made it a national park in **1919**. At about **1.2 million acres**, it is the country's 11th-largest national park.

How the River Carved It

The canyon is a paradox: ancient rock, young canyon. Over roughly the past **5 to 6 million years**, the Colorado Plateau bulged slowly upward, and the **Colorado River** sawed straight down through the rising rock, carrying the debris toward the sea. The result is a staircase of exposed layers, each older than the one above it. At the very bottom, in the dark, twisted **inner gorge**, lies the **Vishnu Schist** — about **1.8 billion years old**, the basement of the canyon. The deeper you descend, the further back in time you travel.

Two terms unlock the canyon's geology. The **Vishnu Schist** is that ancient bottom rock, formed deep in the Earth's crust and later lifted into view. The **Great Unconformity** is a stranger thing: a place in the walls where layers that should hold roughly **a billion years** of history are simply gone — eroded away long ago, leaving young rock resting directly on very old rock with the in-between missing.

The canyon has two faces. The **South Rim**, at about **7,000 feet**, is lower, drier, and open all year — where about nine in ten visitors go. The **North Rim** is higher, cooler, forested, and open only in the warm months. They sit just **10 miles apart as the condor flies**, yet driving between them takes over four hours.

One myth is worth retiring. Awesome as it is, the Grand Canyon is **not the deepest canyon in the United States** — Hells Canyon on the Idaho-Oregon border, among others, cuts deeper. What sets the Grand Canyon apart is not raw depth but its sheer breadth and the staggering sweep of time laid bare in its walls.

Rims, River & People

The Grand Canyon is not just rock. It is a stack of living worlds, a homeland for many peoples, and a stage for one of conservation's great comebacks. This part follows life and people from the cool forested rim down to the desert river.

From Mexico to Canada in One Canyon

Hike from rim to river and you cross a continent's worth of ecosystems in a single afternoon. Biologists describe the descent as covering the same span of **life zones** you would meet traveling from **Mexico to Canada**. The **North Rim**, above **8,000 feet**, holds a cool **spruce-fir forest**. The **South Rim**, near 7,000 feet, wears ponderosa pine and pinyon-juniper. Down at the river it becomes **Sonoran desert scrub** — cactus, lizards, and searing heat. That vertical climate ladder is why the canyon shelters such astonishing variety of life.

That same heat is a serious hazard. The **inner canyon** routinely climbs to **100–115°F** in summer, often around **110°F**, even when the rim feels pleasant. The temperature gap between rim and river is one of the canyon's most dangerous surprises.

Return of the Condor

The **California condor** is North America's largest land bird, with a wingspan of nearly **9.5 feet**. In the 1980s it nearly disappeared — the entire species fell to just **22 birds**, every one taken into captivity in a last-ditch rescue. Through captive breeding and reintroduction, condors now soar again on the thermals rising out of the Grand Canyon. Each wild bird wears a numbered wing tag, and spotting one wheeling above the rim is among the park's greatest wildlife thrills.

The canyon's wildlife holds a quieter rarity too. The **Kaibab squirrel**, a handsome tassel-eared squirrel, lives **only on the North Rim** — isolated there for so long that it evolved into its own distinct form, found nowhere else on Earth.

The Grand Canyon is also a homeland. **Eleven tribes** are traditionally associated with the canyon, including the **Hualapai, Navajo (Diné), Hopi, Zuni, Southern Paiute**, and the **Havasupai** — "**people of the blue-green water**." The Havasupai are unique among them: they **still live inside the canyon**, in the village of **Supai**, reachable only by foot, mule, or helicopter. Their turquoise waterfalls draw pilgrims from around the world, and their presence is a reminder that the Grand Canyon has been home to people for many centuries, not just a destination to visit.

Visiting the Grand Canyon

Few places reward a visit like the Grand Canyon — and few punish a careless one so quickly. This part covers where to stand, where to walk, the canyon's hard safety rule, and when to come.

One of America's Most Visited Parks

Nearly **4.9 million people** visited the Grand Canyon in **2024**, making it the country's **third-most-visited national park**. About **90 percent** of them head for the **South Rim**, where the lodges, the visitor center, the shuttle buses, and the paved **Rim Trail** are concentrated. The quieter, higher **North Rim** takes the rest — and is open only from roughly **mid-May to mid-October**, closing under deep snow the rest of the year. Two South Rim overlooks anchor most first visits: **Mather Point**, the classic first look beside the main visitor center, and the historic **Desert View Watchtower** designed by architect Mary Colter.

Never Rim to River and Back in a Day

The park's single firmest warning deserves its own card: **never hike from the rim to the Colorado River and back in one day.** Going down feels deceptively easy — you descend roughly a vertical mile — but the return is a brutal, heat-soaked climb, and every year it sends hikers into rescue or worse. The way down is optional; the way up is not.

Two corridor trails carry most hikers. The **Bright Angel Trail** is the signature route, with shade and **seasonal water stops** down to **Havasupai Gardens** (about 9 miles round trip) and on toward the river. The **South Kaibab Trail** trades water for views, riding an open ridgeline to **Ooh Aah Point** (~1.8 miles) and **Skeleton Point** (~6 miles round trip) — spectacular, but carry every drop you need. Deep at the bottom sits **Phantom Ranch**, a rustic lodge reachable only on foot, by mule, or by raft, where overnight beds are awarded by lottery months ahead.

The Famous Mules

For more than a century, sure-footed **mules** have carried riders and supplies down the canyon's steep trails to **Phantom Ranch** on the canyon floor. The mule trains are a Grand Canyon institution — slow, patient, and utterly unbothered by the dizzying drop-offs that make first-time riders grip the saddle horn a little tighter. They remain one of the classic ways to reach the river without walking out under your own power.

As for timing: aim for **spring or fall**. Summer rims are pleasant enough, but the inner canyon turns dangerously hot, often **100–115°F**; winter ices the rim trails. The shoulder seasons give you moderate temperatures, thinner crowds, and the canyon close to its best.

Key terms

Supai

The remote tribal village deep within the canyon, reachable only by foot, mule, or helicopter — the only such community inside a U.S. national park

Key concepts

Bright Angel Trail

- A South Rim corridor route most hikers use to descend toward the Colorado River.
- It is the signature way down, prized for its shade and seasonal water stops.
- It passes Havasupai Gardens, about 9 miles round trip, on the way toward the river.

South Kaibab Trail

- One of the two corridor trails carrying hikers down toward the Colorado River.
- It trades water for views, riding an open ridgeline with no shade, so carry every drop you need.
- Its overlooks include Ooh Aah Point and Skeleton Point.

Phantom Ranch

- A rustic lodge deep at the very bottom of the canyon, beside the river.
- It can be reached only on foot, by mule, or by raft.
- Its overnight beds are awarded by a lottery months ahead.

Desert View Watchtower

- A historic South Rim landmark that anchors many first visits, alongside Mather Point.
- It was designed by the architect Mary Colter.

Mather Point

- The classic first look at the canyon for most arriving South Rim visitors.
- It sits right beside the park's main visitor center and shuttle hub.
- One of two anchor overlooks — this is the busy one by the visitor center, not the historic stone lookout to the east.

Key facts

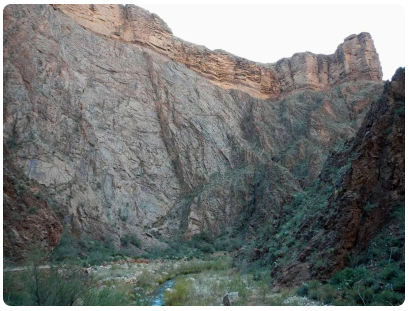
> **Over a Mile Down**
> From its rim down to the Colorado River, the Grand Canyon plunges about 6,000 feet, over a mile of vertical drop. That depth, combined with the canyon's breadth, is central to its scale.

> **A Billion Missing Years**
> In the canyon's walls, the Great Unconformity marks a gap where roughly a billion years of rock record are simply missing, eroded away so that young rock rests directly on much older rock.

> **Not the Deepest**
> Despite its fame, the Grand Canyon is not the deepest canyon in the United States — Hells Canyon cuts deeper. What sets it apart is its breadth and the vast sweep of geologic time exposed in its walls, not raw depth.

Eleven Tribes

Eleven tribes are traditionally associated with the Grand Canyon, including the Hualapai, Navajo, Hopi, Zuni, Southern Paiute, and Havasupai.



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Found Nowhere Else

The tassel-eared Kaibab squirrel exists naturally in only one place on Earth: the cool, forested North Rim of the Grand Canyon, where it evolved in isolation into its own distinct form.

People of Blue-Green Water

The Havasupai, whose name means 'people of the blue-green water,' still live inside the Grand Canyon in the village of Supai, reachable only by foot, mule, or helicopter.



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Down Is Optional, Up Isn't

The park's single firmest warning: do not try to hike from the rim down to the Colorado River and back in one day. What feels easy going down — you descend roughly a vertical mile — becomes a brutal, heat-soaked climb back out, and every year it sends hikers to rescue. The way down is optional; the way up is not.

The Famous Mules

For over a century, sure-footed mules have carried riders and supplies down the canyon's steep trails to Phantom Ranch on the canyon floor. The mule trains are a Grand Canyon institution — slow, patient, and unfazed by the dizzying drop-offs that make first-time riders grip the saddle horn a little tighter.

100 to 115 Degrees

Spring and fall bring the mildest temperatures for hiking below the Grand Canyon's rim. Summer can turn the inner canyon dangerously hot, often 100 to 115°F, while winter ices over the rim trails.

The First View

Mather Point, on the South Rim beside the main visitor center, is the classic first overlook where most visitors get their first view of the canyon.

By the numbers

Roughly how deep is the Grand Canyon, from rim to river?

6000 ft

How long is the Grand Canyon, measured along the Colorado River?
277 river miles

At its widest, how far is it across the Grand Canyon from rim to rim?
18 miles

About how old is the Vishnu Schist, the oldest rock at the canyon's bottom?
1.8 billion years

How many tribes are traditionally associated with the Grand Canyon?
11 tribes

About how wide is the wingspan of an adult California condor?
9.5 ft

On a summer day, the inner canyon can reach roughly what temperature?
110 °F

About how many people visited Grand Canyon National Park in 2024?
4900000 visitors

About what percentage of Grand Canyon visitors go to the South Rim?
90 percent

Matched pairs

Each item on the left goes with the one on the right.

Vishnu Schist → The dark, ~1.8-billion-year-old rock at the very bottom of the canyon

Great Unconformity → A gap in the walls where ~1 billion years of rock record is simply missing

South Rim vs. North Rim
→ South is lower (~7,000 ft) and open year-round; North is higher, cooler, and seasonal

Havasupai → "People of the blue-green water," who still live in the canyon at Supai

Kaibab squirrel → A tassel-eared squirrel found only on the canyon's North Rim

Mather Point → The South Rim's classic first-look overlook, near the main visitor center

Bright Angel Trail
→ The South Rim's signature corridor trail, with water stops down to Havasupai Gardens

South Kaibab Trail
→ A ridgeline trail with sweeping views to Ooh Aah Point and Skeleton Point — but no water

Phantom Ranch → The rustic lodge at the canyon bottom, reached only on foot, by mule, or by raft

Self-test

Answer each question from memory, then check your work against the answer key.

1. The Grand Canyon is often described as a paradox of 'ancient rock, young canyon.' How did the canyon itself form?

- A A glacier gouged it out during the last ice age
- B The Colorado Plateau rose while the Colorado River cut straight down through the rising rock
- C Wind slowly scoured it over nearly 2 billion years
- D A massive fault split the plateau apart

2. How far does the Grand Canyon drop from its rim down to the Colorado River?

- A About 3,000 feet
- B About 10,000 feet — nearly two miles
- C About 6,000 feet — over a mile
- D About 1,000 feet

3. About how old is the Vishnu Schist, the dark rock at the very bottom of the inner gorge?

- A About 2 million years
- B About 500 million years
- C About 5 to 6 million years
- D About 1.8 billion years

4. In the canyon's geology, what does the Great Unconformity refer to?

- A A gap where roughly a billion years of rock record is simply missing
- B The boundary line dividing the South Rim from the North Rim
- C The single oldest, darkest rock layer at the canyon floor
- D The point where the Colorado River changes direction

5. Which statement about the Grand Canyon's scale is FALSE?

- A It runs about 277 river miles along the Colorado River
- B Its walls expose nearly 2 billion years of Earth's history
- C It drops over a mile from rim to river
- D It is the deepest canyon in the United States

6. Hiking from the Grand Canyon's rim down to the river crosses the same span of life zones as traveling between which two places?

- A Mexico and Canada
- B Texas and Montana
- C Florida and Maine
- D California and Alaska

7. How many tribes are traditionally associated with the Grand Canyon?

- A Five
- B Eleven
- C Eight
- D Twenty-two

8. About how wide is the wingspan of the California condor, North America's largest land bird?

A Close to 4 feet
B Around 12 feet
C Nearly 9.5 feet
D Roughly 6 feet

9. The tassel-eared Kaibab squirrel lives naturally in only one place on Earth. Where?

A On both rims in equal numbers
B Only the Grand Canyon's North Rim
C Only the Grand Canyon's South Rim
D Along the Colorado River at the canyon bottom

10. Which Grand Canyon tribe is known as the 'people of the blue-green water' and still lives inside the canyon?

A Hualapai
B Navajo (Diné)
C Havasupai
D Hopi

11. When is the best time to hike below the Grand Canyon's rim?

A Spring or fall
B Late August
C Midwinter
D Midsummer

12. About how many people visited Grand Canyon National Park in 2024?

A Around 277,000
B Close to 1.2 million
C Roughly 10 million
D Nearly 4.9 million

13. About what share of Grand Canyon visitors head for the South Rim rather than the North Rim?

A About 50 percent
B About 10 percent
C About 90 percent
D About 75 percent

14. What is the park's single firmest safety warning for hikers?

A Never hike without a wilderness permit
B Never ride the mule trains alone
C Never hike the North Rim in winter
D Never hike from the rim to the river and back in one day

15. Which South Rim corridor trail rides an open ridgeline with sweeping views but has no water along the way?

A Rim Trail
B South Kaibab Trail
C Bright Angel Trail
D Desert View Trail

16. Which South Rim overlook is the classic first look at the canyon, sitting beside the main visitor center?

A Mather Point
B Skeleton Point
C Ooh Aah Point
D Desert View Watchtower

17. The historic Desert View Watchtower on the South Rim was designed by which architect?

A Stephen Mather
B Mary Colter
C Frank Lloyd Wright
D Theodore Roosevelt

18. Which landmark is the rustic lodge at the canyon bottom, reachable only on foot, by mule, or by raft?

A Havasupai Gardens
B Skeleton Point
C Supai
D Phantom Ranch

19. Which signature corridor trail offers shade and seasonal water stops down to Havasupai Gardens?

A Rim Trail
B Desert View Trail
C Bright Angel Trail
D South Kaibab Trail

20. Ooh Aah Point and Skeleton Point are viewpoints along which Grand Canyon trail?

A South Kaibab Trail
B Phantom Ranch Trail
C Rim Trail
D Bright Angel Trail

Go deeper

WATCH Not the Deepest 0:28
The Grand Canyon is not the deepest canyon in the United States. Hells Canyon cuts deeper, among others. It's on the Idaho-Oregon border.

WATCH Supai 0:31
One village sits inside the Grand Canyon: Supai. It's reachable only by foot, by mule or by helicopter.

WATCH The Way Up 0:30
Never hike from the rim to the Colorado River and back in one day. It's the park's firmest warning.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-grand-canyon

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 16 OF 27

Spotlight: Yosemite

Granite Walls and Waterfalls · Giant Trees and a Founding Idea · Visiting Yosemite

WHAT YOU'LL BE ABLE TO DO

- Explain Yosemite's granite features and how glaciers carved the valley.
- Explain Yosemite's giant sequoias and its founding role in the national-park idea.
- Plan a Yosemite visit around Half Dome, Firefall, and waterfall season.
- Identify Yosemite's waterfalls on sight.

Granite Walls and Waterfalls

Yosemite is what happens when ice meets granite. For two million years, glaciers ground down a river canyon in California's Sierra Nevada, leaving behind a valley so concentrated with marvels — sheer walls, naked domes, the tallest waterfall on the continent — that it became the very idea of what a national park should protect.

Yosemite

Yosemite National Park covers about 759,600 acres of the Sierra Nevada in central California, ranking 16th in size among the national parks. Its heart is **Yosemite Valley**, a glacier-carved trough only about seven miles long but lined with the most famous granite on Earth. Established as a national park in 1890, it now draws roughly 4.1 million visitors a year. The valley floor sits near 4,000 feet; the park climbs to 13,114-foot Mount Lyell. Almost everything Yosemite is known for began with one geologic gift: a vast body of granite, and the ice that exposed it.

El Capitan

El Capitan rises about 3,000 feet of nearly vertical, monolithic granite straight off the valley floor — the largest exposed granite monolith in the world, and climbing's ultimate proving ground. Its golden face has no easy way up. In 2015 the punishingly thin **Dawn Wall** route saw its first free climb; in 2017 Alex Honnold free-soloed El Cap with no rope at all, a feat that stunned the climbing world. From below, the climbers are invisible specks against the stone.

Half Dome

Half Dome looks as if a giant sheared it in two, but no missing half ever crashed down. Its shape comes from **exfoliation** — curved sheets of granite flaking off like the layers of an onion — combined with glacial plucking that steepened its northwest face. Its bald crown stands roughly 4,737 feet above the valley floor and serves as the park's unmistakable emblem, instantly recognizable on California's state quarter and a thousand photographs.

Yosemite Falls

Yosemite Falls drops 2,425 feet in three thundering tiers, making it the tallest waterfall in North America. It is fed entirely by snowmelt, so its mood swings with the calendar: a deafening, wind-whipped torrent in late spring, and by late summer often a faint streak — or nothing at all. Nearby **Bridalveil Fall**, a slender 620-foot ribbon at the valley's mouth, blows so easily sideways in the wind that its plume seems to float rather than fall.

How the valley was carved

Yosemite's granite cooled slowly deep underground as part of a huge mass called a **batholith**, then was lifted skyward with the rising Sierra Nevada. Rivers cut a V-shaped canyon into it; then ice-age glaciers filled that canyon and ground it into the broad **U-shaped** valley we see today, polishing the walls and steepening cliffs like El Capitan. The valley's signature profile is glacial, not volcanic — no eruption, impact, or collapse was involved. Ice did the sculpting, one slow inch at a time.

Giant Trees and a Founding Idea

Yosemite's fame is not only carved in granite. In its forests stand the largest living things on Earth, and in its history lies the spark of an idea that would spread across a continent: that the most beautiful places should belong to everyone, forever.

Mariposa Grove

In the park's south end, the **Mariposa Grove** shelters about 500 giant sequoias, the most massive living things on the planet by volume — bulkier even than the taller coast redwoods. The grove's elder statesman, the **Grizzly Giant**, has stood for an estimated 2,000-plus years; a single one of its lower branches is thicker than the trunks of most other trees. Walking among their cinnamon-red columns, you feel time itself slow down. These trees helped convince a young nation that such places were worth saving.

The 1864 Yosemite Grant

In 1864, with the Civil War still raging, President Abraham Lincoln signed the **Yosemite Grant** — the first time the U.S. government set aside scenic land purely to protect it for public use and enjoyment. The grant entrusted Yosemite Valley and the Mariposa Grove to the state of California. It was a radical notion, and it planted the seed of the national-park idea that fully bloomed eight years later at Yellowstone in 1872, and that returned to Yosemite when the surrounding high country became a national park in 1890.

John Muir

The naturalist **John Muir** wandered the Sierra he lovingly called the "Range of Light," and no one did more to make Yosemite a national park. His vivid writing and tireless lobbying helped win Yosemite full national-park status in **1890**. In 1892 he co-founded the **Sierra Club** to defend wild places, and his 1903 camping trip with President Theodore Roosevelt — three days alone in the backcountry — helped steer the nation toward sweeping land conservation. Decades later, the photographer **Ansel Adams** carried

that torch: his luminous black-and-white prints of Yosemite's cliffs and storms made the park an enduring icon of American wilderness.

The high country

Beyond the famous valley lies a vast alpine world reached by the seasonal **Tioga Road**, which crests **Tioga Pass at 9,943 feet**. At its heart sprawls **Tuolumne Meadows**, a broad subalpine meadow ringed by granite domes and laced with the Tuolumne River — a cooler, quieter Yosemite that opens only after the deep Sierra snow melts, usually by early summer. The park rises all the way to **Mount Lyell at 13,114 feet**, its highest summit, cradling one of Yosemite's last glaciers.

Ahwahnee, the first home

Long before any grant, the valley was home to the **Ahwahneechee**, a Southern Sierra Miwok and Paiute people who called it *Ahwahnee*. They shaped the landscape they lived in, using fire to keep the valley's oak woodlands and meadows open. In 1851, during the Mariposa War, they were violently expelled from the valley — a loss that sits beneath Yosemite's story of preservation, and one the park works to remember and honor today.

Visiting Yosemite

Yosemite rewards a little planning. The valley's greatest views are minutes from a parking lot, but its best hikes ask for your legs and lungs — and in peak season, the park itself asks for a reservation. Here is how to meet it at its best.

Tunnel View

Drive into the valley from the south on Highway 41 and the road bursts out of a tunnel onto the single most famous viewpoint in the park: **Tunnel View**. In one windshield frame you get El Capitan on the left, Bridalveil Fall feathering down on the right, and Half Dome floating in the hazy distance between them. It is the classic Yosemite postcard, made real — and it is where Ansel Adams shot some of his most famous images. Come at sunset, when the granite catches fire.

Glacier Point

From **Glacier Point**, a road-accessible overlook **3,200 feet** above the valley floor, you stand nearly eye-to-eye with Half Dome and gaze straight down on Vernal and Nevada Falls. Sunset turns the granite to glowing orange, and because the overlook faces the wild high country, the night sky here is among the darkest you'll find anywhere near a paved road. The Glacier Point Road is seasonal, closing under winter snow — another reminder to check conditions before you go.

The Mist Trail

The **Mist Trail** is Yosemite's most beloved day hike, climbing a staircase of granite steps so close to two waterfalls that spray drenches hikers on a warm afternoon — hence the name. A roughly **3-mile** round trip reaches the top of **Vernal Fall**; pushing on to **Nevada Fall** stretches it to about **7 steep miles**. For the truly ambitious, the **Half Dome** hike runs 14–16 miles and gains about **4,800 feet**, finishing with a grip up the famous **Half Dome cables** — two steel cables bolted to the final sheer pitch. That last stretch requires a **permit issued by lottery**, so plan months ahead.

When to come

Timing shapes everything at Yosemite. **Late spring** is when the waterfalls roar at their fullest, gorged on Sierra snowmelt; by late summer many slow to a trickle or vanish. **Summer and early fall** are best for the high country, once Tioga Road clears of snow. And in **mid-February**, a rare trick of light called the **Firefall** makes seasonal Horsetail Fall glow like flowing lava down El Capitan at sunset — a spectacle that now draws enormous crowds.

Crowds and reservations

Yosemite welcomed about **4.1 million** visitors in 2024, and most of them funnel into the small valley in summer. To manage the crush, the National Park Service has run **peak-period entry reservation systems** in recent years, requiring a timed reservation to drive in during the busiest stretches. The rules change year to year, so always check the current NPS reservation requirements before your trip — and consider arriving early, staying late, or visiting in the shoulder seasons to find the quiet Yosemite that John Muir knew.

Key concepts

Bridalveil Fall

- A slender waterfall at the mouth of Yosemite Valley.
- A 620-foot ribbon that blows sideways so easily its plume seems to float rather than drop.
- It frames the right side of the classic Tunnel View, opposite El Capitan.

Vernal Fall

- The lower of the two waterfalls reached by Yosemite's beloved Mist Trail.
- A roughly 3-mile round-trip climb up granite steps reaches its brink, soaked in spray.
- From Glacier Point you gaze down on it and its taller upstream neighbor.

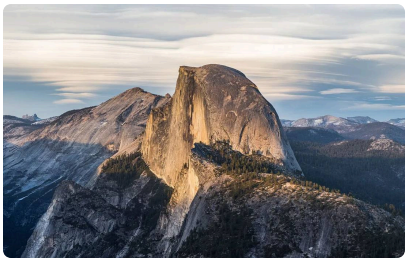
Nevada Fall

- The upper and taller of the two waterfalls along Yosemite's Mist Trail.
- Reaching its top stretches the hike to about 7 steep miles.
- Glacier Point looks straight down on it and its lower neighbor.

Horsetail Fall

- A seasonal waterfall on the sheer flank of El Capitan.
- In mid-February a rare trick of light makes it glow like flowing lava at sunset.
- This 'Firefall' spectacle now draws enormous crowds each winter.

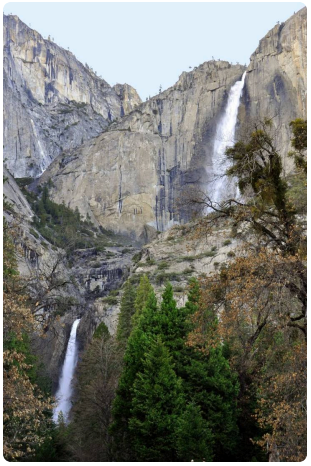
Key facts



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Half Dome

Half Dome looks sheared in two, but no missing half ever fell — glaciers and the slow flaking of curved granite sheets (exfoliation) shaped its rounded back and flat northwest face. Its bald crown stands roughly 4,737 feet above the valley floor, the unmistakable emblem of the park.



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Yosemite Falls

Dropping 2,425 feet in three thundering tiers, Yosemite Falls is the tallest waterfall in North America. It roars loudest in late spring as Sierra snowmelt peaks — and can slow to a trickle, or vanish entirely, by late summer.

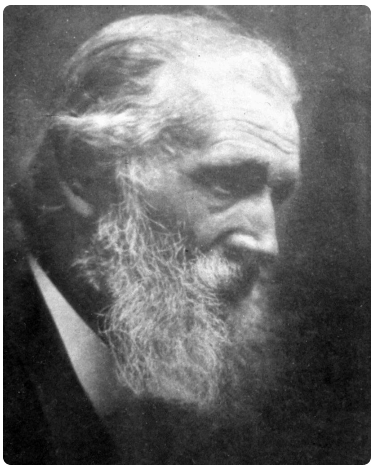


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The Batholith

Yosemite's domes and walls are carved from a batholith, a vast body of granite that cooled slowly deep underground before the Sierra Nevada lifted it toward the sky. Ice later exposed and sculpted the rock into today's cliffs and domes.

> **The 1864 Yosemite Grant**
>
> In 1864, with the Civil War still raging, President Lincoln signed the Yosemite Grant — the first time the federal government set aside scenic land to protect it for public enjoyment. Yosemite Valley and the Mariposa Grove were entrusted to California, planting the seed of the national-park idea that bloomed at Yellowstone in 1872.



USDAgov (Openverse) · pdm 1.0

John Muir

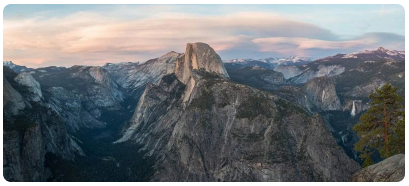
The naturalist John Muir wandered the Sierra he called the 'Range of Light,' and his writing and lobbying helped win Yosemite full national-park status in 1890. In 1892 he co-founded the Sierra Club, and a famous 1903 camping trip with Theodore Roosevelt helped steer the country toward broad land protection.

Driven From Ahwahnee

The Ahwahneechee, who called the valley Ahwahnee, were driven out during the Mariposa War in 1851 — more than a decade before the 1864 Yosemite Grant set the land aside for protection.

Through Ansel Adams's Lens

Photographer Ansel Adams captured Yosemite's cliffs and storms in luminous black-and-white prints, and his images helped cement the park as an enduring symbol of American wilderness.



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Glacier Point

From Glacier Point, a road-accessible overlook 3,200 feet above the valley floor, you stand eye-to-eye with Half Dome and gaze straight down on Vernal and Nevada Falls. Sunset here turns the granite to fire, and the night sky over the high country is among the darkest you'll find near a road.



David Fulmer · CC BY 2.0

The Mist Trail

The Mist Trail climbs a staircase of granite steps so close to Vernal and Nevada Falls that spray soaks hikers on a hot day — hence the name. A ~3-mile round trip reaches Vernal Fall; pushing on to Nevada Fall makes it ~7 steep miles. It is the park's most beloved day hike.

Glowing Like Lava

In mid-February, sunset light hits seasonal Horsetail Fall at just the right angle to make it glow like flowing lava down El Capitan — a rare phenomenon called the Firefall.

Win the Lottery First

The last pitch to the top of Half Dome is a steep, cable-assisted climb, and hikers must obtain a permit issued by lottery before attempting it — so a trip up the cables takes months of advance planning.

By the numbers

How tall is Yosemite Falls, the tallest waterfall in North America?
2425 ft

About how tall is El Capitan's sheer granite wall above the valley floor?
3000 ft

About how high does Half Dome's crown stand above the Yosemite Valley floor?
4737 ft

In what year was Yosemite established as a national park?
1890 year

How high is Mount Lyell, Yosemite's highest point?
13114 ft

How high is Tioga Pass, the crest of the seasonal high-country Tioga Road?
9943 ft

About how many people visited Yosemite in 2024?
4100000 visitors

About how much elevation does the strenuous Half Dome day hike gain?
4800 ft

Matched pairs

Each item on the left goes with the one on the right.

Bridalveil Fall
→ Slender 620-ft fall that greets you at the valley's mouth; wind often blows its plume sideways

Batholith
→ The huge mass of granite, cooled deep underground then uplifted, from which Yosemite's domes and walls are carved

Tuolumne Meadows
→ Vast subalpine meadow in the high country, ringed by granite domes and reached by the seasonal Tioga Road

Ansel Adams
→ Photographer whose black-and-white Yosemite prints made the park an icon of American wilderness

Ahwahneechee
→ The Native people who lived in the valley they called Ahwahnee, violently expelled in 1851

Half Dome cables

→ Two steel cables hikers grip to climb the final sheer granite pitch to the summit — a permit by lottery is required

Firefall

→ Mid-February sunset light that makes seasonal Horsetail Fall glow like flowing lava down El Capitan

Step by step

Trace how Yosemite Valley's granite walls and U-shaped floor came to be.

1. Granite cools slowly deep underground as a batholith
2. The rising Sierra Nevada lifts the granite skyward
3. Rivers cut a V-shaped canyon into the rock
4. Ice-age glaciers fill the canyon and grind it into a U shape

Granite forms underground, rises with the Sierra, is cut by rivers, then carved by ice into a U.

Self-test

Answer each question from memory, then check your work against the answer key.

1. What gave Yosemite Valley its broad, U-shaped profile?

- A) A meteor impact
- B) Glaciers grinding down the river canyon
- C) A volcanic eruption
- D) A collapsed cave system

2. About how tall is El Capitan's sheer, nearly vertical granite wall above the Yosemite Valley floor?

- A) 620 feet
- B) 2,425 feet
- C) 4,737 feet
- D) 3,000 feet

3. What gave Half Dome its rounded back and steep, flat northwest face?

- A) Exfoliation of curved granite sheets plus glacial plucking
- B) Wind erosion over millions of years
- C) Layers of hardened volcanic lava
- D) A missing half that broke off and crashed down

4. What is the batholith from which Yosemite's domes and walls are carved?

- A) A river that cut the original canyon
- B) A layer of volcanic ash from an ancient eruption
- C) A huge granite mass cooled deep underground, then uplifted
- D) A glacier that still fills the high country

5. Which statement about Yosemite's granite features is NOT true?

- A El Capitan is the largest exposed granite monolith in the world
- B Half Dome's missing half broke off and crashed down
- C Yosemite Falls drops 2,425 feet in three tiers
- D The valley's U-shape was carved by glaciers, not volcanism

6. Who signed the 1864 Yosemite Grant, the first time the U.S. government set aside scenic land purely to protect it for public enjoyment?

- A Abraham Lincoln
- B John Muir
- C Theodore Roosevelt
- D Ulysses S. Grant

7. The Mariposa Grove shelters about 500 of what — the most massive living things on Earth by volume?

- A Coast redwoods
- B Douglas firs
- C Giant sequoias
- D Bristlecone pines

8. Whose writing and lobbying helped win Yosemite full national-park status in 1890 and led to co-founding the Sierra Club in 1892?

- A Ansel Adams
- B Theodore Roosevelt
- C Abraham Lincoln
- D John Muir

9. The Ahwahneechee, who called the valley Ahwahnee, were violently expelled during the Mariposa War in what year?

- A 1890
- B 1872
- C 1851
- D 1864

10. Whose luminous black-and-white prints of Yosemite's cliffs and storms made the park an enduring icon of American wilderness?

- A Ansel Adams
- B Abraham Lincoln
- C Theodore Roosevelt
- D John Muir

11. When do Yosemite's waterfalls roar at their fullest?

- A Late summer
- B Midwinter
- C Early autumn
- D Late spring

12. In which month does the rare Firefall make Horsetail Fall glow like flowing lava down El Capitan at sunset?

- A May
- B February
- C July
- D October

13. To climb the final pitch up the Half Dome cables, what must a hiker obtain?

A) A first-come parking pass
B) Nothing — it is open to all
C) A ranger-guided tour booking
D) A permit issued by lottery

14. About how much elevation does the strenuous 14-16 mile Half Dome day hike gain?

A) 2,425 feet
B) 4,800 feet
C) 3,200 feet
D) 620 feet

15. Once Tioga Road clears of snow, which season is best for exploring Yosemite's high country?

A) Summer and early fall
B) Early spring
C) Late spring
D) Midwinter

16. Dropping 2,425 feet in three thundering tiers, ___ is the tallest waterfall in North America. It roars loudest in late spring as Sierra snowmelt peaks — and can slow to a trickle, or vanish entirely, by late summer.

A) Vernal Fall
B) Nevada Fall
C) Yosemite Falls
D) Bridalveil Fall

17. Which waterfall is a slender 620-foot ribbon at the valley's mouth whose plume blows sideways in the wind?

A) Yosemite Falls
B) Nevada Fall
C) Bridalveil Fall
D) Vernal Fall

18. Which seasonal waterfall glows like flowing lava down El Capitan during the mid-February Firefall?

A) Yosemite Falls
B) Vernal Fall
C) Bridalveil Fall
D) Horsetail Fall

19. The Mist Trail climbs past which two waterfalls, drenching hikers with spray?

A) Vernal and Nevada Falls
B) Nevada and Yosemite Falls
C) Bridalveil and Horsetail Falls
D) Yosemite and Bridalveil Falls

20. The Mist Trail's shorter, ~3-mile round trip climbs to the top of which waterfall?

A) Horsetail Fall
B) Vernal Fall
C) Nevada Fall
D) Bridalveil Fall

Go deeper

WATCH The Missing Half 0:28 · YouTube
Yosemite's Half Dome looks as if a giant sliced it in two. But no missing half ever crashed down.

WATCH Lincoln's Grant 0:32 · YouTube
The Civil War was still raging when Abraham Lincoln signed the Yosemite Grant.

WATCH The Firefall 0:31 · YouTube
A waterfall in Yosemite can glow like flowing lava. The effect is called the Firefall.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-yosemite

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LESSON 17 OF 27

Spotlight: Zion

The Canyon of Navajo Sandstone · Angels Landing and the Narrows · Visiting Zion

WHAT YOU'LL BE ABLE TO DO

- Explain Zion's Navajo Sandstone canyon and how its cliffs formed.
- Trace Zion's names from Mukuntuweap to today and identify its canyon and hike landmarks.
- Describe Zion's famous hikes, Angels Landing and The Narrows, and their permits.
- Plan a Zion visit around its mandatory shuttle, gateway town, and season.

The Canyon of Navajo Sandstone

In southwest Utah, the Virgin River has spent millions of years sawing a deep, narrow slot into the edge of the Colorado Plateau. The result is Zion — a canyon of glowing stone walls that feels less like a place you visit than a cathedral you walk into. It became Utah's first national park in 1919, and it remains one of the most beloved landscapes in America.

Zion Canyon

Zion Canyon is the park's beating heart: a gorge carved by the Virgin River through cliffs that soar up to about 2,000 feet straight off the canyon floor. The walls are banded in red, pink, and cream, and the canyon is narrow enough that sunlight slants in and out as the day turns. The park covers roughly 147,242 acres of country that shifts from high desert above to cool riparian green along the river below. Zion sits within the Colorado Plateau's "Grand Staircase" — a series of stepped, colorful rock layers that climbs north toward Bryce Canyon. Its highest point is Horse Ranch Mountain, at 8,726 feet, far above the canyon floor near 3,666 feet.

Petrified Sand Dunes

The great walls are Navajo Sandstone, and their story is astonishing: they are petrified sand dunes. About 180 million years ago a Sahara-scale desert covered this region, one of the largest dune fields in Earth's history. Over time the sand was buried, cemented, and lifted, and where the cliffs are exposed today you can read the slanting cross-beds — the frozen ripples of those ancient dunes. Iron oxide coats the sand grains red and pink, but in the upper cliffs ancient groundwater stripped much of that iron away, leaving the rock a pale cream. The Virgin River is still at work, deepening the canyon grain by grain, year by year. The same Navajo Sandstone underlies many neighboring parks, but nowhere does it stand quite so tall and sheer as in Zion.

A Park's Names and Numbers

Long before it had a federal name, the canyon belonged to the Southern Paiute, who called it *Mukuntuweap*. That Paiute word became the title of the first federal protection here, Mukuntuweap National Monument, set aside in 1909. A decade later, in 1919, the monument was enlarged and renamed Zion National Park — Utah's very first national park. The numbers that define the canyon are worth

holding onto: cliffs up to roughly 2,000 feet, rock about 180 million years old, a park of about 147,000 acres, and a crowning summit of 8,726 feet. Together they sketch a place that is both intimate and immense — a slender canyon walled by some of the tallest sandstone cliffs on Earth.

Angels Landing and the Narrows

Zion rewards the bold. Two hikes here are famous worldwide — one climbs a knife-edge of rock into the sky, the other descends into a river-filled slot so tight the walls almost touch. Between them lie quieter wonders: spring-fed pools and gardens hanging impossibly from desert cliffs.

Angels Landing

Angels Landing is a fin of stone with a spine so narrow it seems impossible to walk. The hike runs about 5 miles round trip and gains roughly 1,500 feet, switchbacking up Refrigerator Canyon and Walter's Wiggles before the real test: a final half-mile along a ridge with sheer drops on both sides, where you haul yourself up clinging to bolted chains. The view at the top, 1,000-plus feet above the canyon floor, is sublime. The name dates to 1916, when a visitor declared that "only an angel could land on it." The exposure is genuine — there have been fatal falls — and the crowds grew so heavy that since 2022 the National Park Service requires a permit, awarded by lottery, just to make the climb.

The Narrows

Where most trails avoid the river, The Narrows *is* the river. The canyon pinches so tight — sometimes only 20 to 30 feet apart, with walls hundreds of feet tall — that the only way forward is to wade upstream in the Virgin River itself. The bottom-up route can run up to about 9.4 miles before turning back, and most of it is spent shin- to waist-deep in cold, green water. The last shuttle stop, the Temple of Sinawava, is where the trail in begins. There is no high ground to retreat to, which makes the hike utterly dependent on the weather and one of the most thrilling slot-canyon walks anywhere on the planet.

Emerald Pools and Hanging Gardens

Zion's softer magic comes from water moving through stone. Rain and snowmelt soak into the porous Navajo Sandstone, sink until they hit a harder, less permeable layer, then ooze back out as springs along the cliff faces. These seeps feed the Emerald Pools — tinted green by algae — and nourish hanging gardens of ferns, moss, and crimson monkeyflower clinging to the wet rock in the middle of a desert. The same dripping alcoves are the only home on Earth of the tiny Zion snail, an endemic species found nowhere else. Waterfalls trickle over the pools' rims, a reminder that in Zion, even a few drops of water build whole worlds.

Visiting Zion

Zion is small, narrow, and extraordinarily popular — a combination that has shaped how the park is run. To protect a single fragile canyon from millions of feet and tires, Zion leans hard on planning: a mandatory shuttle, permit lotteries, and ranger-posted safety warnings. Knowing the system makes the difference between a frustrating day and an unforgettable one.

The Canyon Shuttle

For most of the year, private cars are banned on the Zion Canyon Scenic Drive. Instead, visitors ride a free shuttle that loops through the canyon, stopping at the trailheads — the Court of the Patriarchs, the Emerald Pools, and the Temple of Sinawava, where The Narrows begins. The mandatory shuttle runs spring through fall, exactly when crowds peak. It is one of the busiest park shuttle systems in the country, and it exists for a simple reason: the canyon is far too narrow to absorb the cars of millions of visitors without choking on gridlock. The gateway town of Springdale, just outside the south entrance, runs its own connecting shuttle so visitors can leave their cars behind entirely.

Among the Busiest Parks

Zion welcomed about 4.95 million visitors in 2024, making it the 2nd-most-visited national park in the United States — astonishing for a park whose centerpiece is one slender canyon. That popularity is precisely why the shuttle is mandatory and why Angels Landing now runs on a permit lottery. Timing matters: spring and fall are the sweet spots, with mild temperatures and the shuttle running. Summers are hot, crowded, and prone to monsoon storms, while mild winters bring quiet days and the occasional dusting of snow on the red cliffs — a beautiful, underrated season.

Flash-Flood Danger

The same geology that makes The Narrows breathtaking makes it dangerous. In a slot canyon, water has nowhere to spread out, so a thunderstorm miles away can funnel a wall of muddy water through the gorge with almost no warning, turning a calm wade into a deadly torrent. Rangers post a daily flash-flood potential rating and will close the canyon outright when storms threaten, especially during the summer monsoon. The lesson is non-negotiable: never enter The Narrows when storms are in the forecast, and always check the day's rating first. Respect the river, and Zion gives back one of the finest adventures in the National Park System.

Key concepts

Zion Canyon

- This glowing gorge is the park's beating heart, carved by the Virgin River.
- Its cliffs, banded in red, pink, and cream, rise up to about 2,000 feet off the valley floor.
- A free shuttle runs its scenic drive, since the gorge is far too tight to absorb millions of cars.

Angels Landing

- One of Zion's two most famous hikes, the one that climbs a knife-edge of rock into the sky.
- About 5 miles round trip up Refrigerator Canyon and Walter's Wiggles to a final chained ridge with sheer drops on both sides.
- After fatal falls, since 2022 the Park Service requires a permit, awarded by lottery, to make the climb.

The Narrows

- The Zion hike where the trail is the river itself.
- The canyon pinches to just 20 to 30 feet wide, so you wade upstream in the Virgin River, shin- to waist-deep.
- The bottom-up route can run up to about 9.4 miles, with no high ground to retreat to if storms strike.

Emerald Pools

- A softer Zion wonder, born where water seeps through porous sandstone.
- Springs ooze from the cliffs to feed them, tinted green by algae.
- Waterfalls trickle over their rims amid hanging gardens of fern and moss.

Temple of Sinawava

- The last stop on Zion's canyon shuttle line, at the head of the scenic drive.
- The trailhead where hikers leave dry ground and wade upstream into the Virgin River's slot.

Key facts

> **2,000 Feet Above the Floor**
> Zion Canyon's sandstone walls soar up to roughly 2,000 feet above the canyon floor, towering over a canyon floor that itself sits around 3,666 feet above sea level.

> **8,726 Feet Up**
> Horse Ranch Mountain is the highest point in Zion National Park at 8,726 feet, towering far above the canyon floor, which sits near 3,666 feet.

> **Mukuntuweap**
> Before it was Zion, the canyon was known by its Southern Paiute name, Mukuntuweap — the name later given to the national monument established here in 1909.



Phil Whitehouse from London, United Kingdom · CC BY 2.0

Emerald Pools and Hanging Gardens

Water seeping through porous Navajo Sandstone hits a harder layer and emerges as springs on the cliff faces, feeding the Emerald Pools and dripping into lush hanging gardens — ferns, monkeyflower, and moss clinging to the rock in a desert. These seeps even shelter the endemic Zion snail, found nowhere else on Earth. The pools' green tint comes from algae, and waterfalls trickle over the alcoves above them.

> **1,500 Feet of Climbing**
> Round trip, the Angels Landing hike covers about 5 miles and climbs roughly 1,500 feet — a short but strenuous climb to the fin's chained summit ridge.



ZionNPS (Openverse) · by 2.0

Nearly Twice as Long

Hiked bottom-up, the Narrows can stretch to about 9.4 miles before turning back — nearly twice the length of the Angels Landing round trip.



Ken Lund (Openverse) · by-sa 2.0

The Canyon Shuttle

To spare its narrow canyon from gridlock, Zion bans private cars on the Zion Canyon Scenic Drive for most of the year — visitors ride a free shuttle that stops at trailheads like the Court of the Patriarchs, Emerald Pools, and the Temple of Sinawava, where The Narrows begins. The mandatory shuttle runs spring through fall. It's one of the busiest park shuttle systems in the country, moving millions through the canyon each season.

> **Flash-Flood Danger**
>
> In a slot canyon, water has nowhere to spread — a storm miles away can send a wall of water roaring through The Narrows with little warning, turning a calm wade into a deadly torrent. Rangers post a daily flash-flood potential rating and close the canyon when storms threaten, especially in the summer monsoon season. The same desert geology that makes Zion beautiful makes its narrowest hikes weather-dependent and occasionally fatal.

> **At Zion's Doorstep**
>
> Springdale sits right at Zion's south entrance and runs its own connecting shuttle, making it the main gateway town for visitors entering the park.



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Monsoon Season

Spring and fall bring mild temperatures and the running shuttle to Zion, while summer is hot and crowded with monsoon storms, and winter is quiet but cold.

By the numbers

How high do Zion's tallest Navajo Sandstone cliffs rise above the canyon floor?

2000 ft

About how old is the Navajo Sandstone that forms Zion's cliffs (in millions of years)?

180 million years

Roughly how many acres does Zion National Park cover?

147242 acres

How tall is Horse Ranch Mountain, Zion's highest point?

8726 ft

In what year did Mukuntuweap National Monument become Zion National Park — Utah's first?

1919 year

About how long is the Angels Landing hike, round trip?

5 mi

About how much elevation does the Angels Landing hike gain?

1500 ft

How long is the bottom-up Narrows hike at its full length?

9.4 mi

Since what year has a lottery permit been required to hike Angels Landing?

2022 year

How many visitors did Zion receive in 2024 (in millions)?

4.95 million visitors

Where does Zion rank among U.S. national parks by visitation?

2 rank

Matched pairs

Each item on the left goes with the one on the right.

The Virgin River → The river that carved Zion Canyon and still deepens it today

Navajo Sandstone → Petrified ancient sand dunes that form Zion's red-and-cream cliffs

Mukuntuweap → The Southern Paiute name for the canyon, used by the 1909 national monument

Angels Landing → Knife-edge chained spine; permit by lottery since 2022

The Narrows → Slot-canyon hike where you wade upstream in the Virgin River

Zion snail → Tiny species found only in Zion's hanging gardens, nowhere else on Earth

Springdale → The gateway town at Zion's south entrance

Temple of Sinawava → Last shuttle stop, where the trail into The Narrows begins

Best season to visit Zion → Spring and fall — mild, when the mandatory shuttle runs

Self-test

Answer each question from memory, then check your work against the answer key.

1. What is the geological origin of the Navajo Sandstone that forms Zion's towering cliffs?

- A Cemented reefs from a shallow tropical sea
- B Lava flows from ancient volcanoes
- C Petrified sand dunes from an ancient desert
- D Silt deposited by the Virgin River

2. How high do Zion's tallest Navajo Sandstone cliffs rise above the canyon floor?

- A About 8,726 feet
- B About 1,000 feet
- C About 3,666 feet
- D About 2,000 feet

3. About how old is the Navajo Sandstone that forms Zion's cliffs?

- A About 180 million years
- B About 500 million years
- C About 2 million years
- D About 65 million years

4. What is the elevation of Horse Ranch Mountain, Zion's highest point?

- A 2,000 feet
- B 8,726 feet
- C 3,666 feet
- D 4,940 feet

5. The slanting cross-beds visible in Zion's exposed cliffs are best understood as the frozen record of what?

A. Ripple marks from an ancient seafloor
B. Silt bands left by Virgin River floods
C. Layers of volcanic ash falls
D. Ripples of ancient wind-blown sand dunes

6. What name did the Southern Paiute give the canyon that is now Zion?

A. Springdale
B. Mukuntuweap
C. Sinawava
D. Kolob

7. In what year was the monument enlarged and renamed Zion National Park, Utah's first?

A. 1909
B. 1929
C. 1919
D. 1916

8. Before it was a national park, Zion was first federally protected in 1909 under what name?

A. Mukuntuweap National Monument
B. Zion National Monument
C. Virgin River National Monument
D. Kolob Canyons National Monument

9. Which Zion landmark is a knife-edge fin of rock that hikers climb by clinging to bolted chains?

A. Emerald Pools
B. Angels Landing
C. Court of the Patriarchs
D. The Narrows

10. Which Zion landmark is the slot-canyon hike where the trail IS the Virgin River?

A. Temple of Sinawava
B. Emerald Pools
C. Angels Landing
D. The Narrows

11. The name 'Angels Landing' comes from a 1916 visitor's remark that...

A. "the light here falls like an angel's wing"
B. "the angels must have carved these walls"
C. "only an angel could land on it"
D. "you can see heaven from the summit"

12. About how long is the Angels Landing hike, round trip?

A. About 5 miles
B. About 2 miles
C. About 9.4 miles
D. About 1.5 miles

13. At its full length, how far does the bottom-up Narrows hike run before turning back?

A. About 20 miles
B. About 2 miles
C. About 9.4 miles
D. About 5 miles

14. Since 2022, a lottery permit has been required to hike which Zion route?

A. Angels Landing
B. Emerald Pools
C. The Narrows
D. Court of the Patriarchs

15. The endemic Zion snail, found nowhere else on Earth, lives in what habitat?

- A The dry sandstone crest of Angels Landing
- B The forests atop Horse Ranch Mountain
- C The cold current of the Virgin River
- D The seep-fed hanging gardens on the cliff faces

16. Why are private cars banned on the Zion Canyon Scenic Drive most of the year?

- A Rockfall has permanently closed the road to all traffic
- B The narrow canyon would gridlock, so a mandatory shuttle carries visitors instead
- C The canyon is reserved for permit-holding backpackers only
- D The road is unpaved and impassable to ordinary cars

17. How many visitors did Zion receive in 2024?

- A 1.5 million
- B 8.7 million
- C 4.95 million
- D 2.0 million

18. Where does Zion rank among U.S. national parks by visitation?

- A 2nd-most-visited
- B 5th-most-visited
- C The busiest overall
- D 10th-most-visited

19. What is the name of the gateway town just outside Zion's south entrance?

- A Moab
- B Springdale
- C Sinawava
- D Kolob

20. Which season is the best time to visit Zion?

- A Deep winter
- B The monsoon season
- C Midsummer
- D Spring and fall

Go deeper

WATCH Petrified Dunes 0:33 · YouTube
Zion's walls are petrified sand dunes. The rock is Navajo Sandstone.

WATCH Only an Angel 0:28 · YouTube
Only an angel could land on it. A visitor said that in 1916. That remark named Zion's Angels Landing.

WATCH A Storm Miles Away 0:30 · YouTube
A thunderstorm miles away can send a flood through Zion's Narrows.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-zion

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LESSON 18 OF 27

Spotlight: Glacier

Crown of the Continent · Vanishing Ice and Wild Life · Visiting Glacier

WHAT YOU'LL BE ABLE TO DO

- Explain Glacier's glacial landforms and its Going-to-the-Sun Road.
- Identify Glacier's Triple Divide Peak, Garden Wall arete, and famous glacier and island landmarks.
- Explain Glacier's shrinking ice, wildlife, and Indigenous peoples.
- Plan a Glacier visit around its lakes, trails, and vehicle reservations.

Crown of the Continent

Straddling the spine of the northern Rockies in Montana, Glacier National Park earned a regal nickname long before most Americans ever saw it. Established in 1910, its roughly 1.01 million acres are a museum of what moving ice can do to stone — and a place where the very water that falls from the sky is sorted toward three different oceans.

Glacier National Park

The conservationist George Bird Grinnell lobbied hard for this park and gave it the name that endures: the "Crown of the Continent." It is an apt crown. Ice Age glaciers ground the mountains into textbook shapes — pyramid-like **horns**, knife-edge **arêtes**, and broad U-shaped valleys — and left behind roughly **700 lakes**, many of them the unreal turquoise of glacial flour suspended in meltwater. The park rises from about 3,150 ft to **10,466 ft at Mount Cleveland**, its highest peak. More than scenery, it is a working laboratory of geology, climate, and a nearly intact wild ecosystem.

Going to the Sun Road

No road in America delivers the high country quite like the **Going-to-the-Sun Road**. In **50 miles** it crosses the entire park, topping the Continental Divide at **Logan Pass, 6,646 ft**. Built in the 1930s, it is an engineering legend — a narrow ribbon blasted into cliffs along the Garden Wall, with waterfalls spilling across the pavement and hairpin turns hung over thousand-foot drops. Snow rules it most of the year: plows chew through drifts up to 80 feet deep each spring, and the high stretch typically opens only from **late June to mid-October**. Driving it is the single most popular thing to do in the park.

Belt Supergroup and Stromatolites

Look closely at Glacier's cliffs and you are reading a billion years of time. The peaks are built from the **Belt Supergroup**, sedimentary rock laid down in shallow seas over a billion years ago, then shoved skyward along the Lewis Overthrust — older rock literally pushed up on top of younger rock. Pressed into those layers are **stromatolites**, cabbage-shaped mounds built by mats of microbes in the Proterozoic, long before complex life. They are among the best-preserved ancient fossils on Earth, and the reddish and greenish bands in the rock are simply iron that did or didn't see ancient air.

Triple Divide Peak

The park holds one of the most remarkable hydrological points on the planet: **Triple Divide Peak**. A snowflake landing on its slopes can end up in three different oceans. Water shed here may flow west to the **Pacific**, north to **Hudson Bay and the Arctic**, or down the Missouri–Mississippi to the **Gulf of Mexico**. The knife-edged ridges that do this sorting — the **arêtes**, including the famous **Garden Wall** traced by the Highline Trail — are themselves the work of glaciers gnawing a mountain from opposite sides until only a blade of rock remains.

Vanishing Ice and Wild Life

The park is named for ice — and that ice is leaving. Glacier is at once a place of staggering wildness, with one of the most complete predator-prey communities in the lower 48, and a front-row seat to climate change you can measure on a hiking trail. The people who have known these mountains longest call them sacred.

The Vanishing Glaciers

Around **1850**, at the close of the Little Ice Age, roughly **150 glaciers** gripped these peaks. Today, by USGS counts, only about **25 named glaciers** larger than 25 acres remain, and they continue to shrink — scientists project they will largely disappear in coming decades. The loss is not abstract here: paired photographs from the same overlooks, taken decades apart, show ice pulling visibly back up the mountainsides. Glacier has become a living classroom where the consequences of a warming climate are written directly onto the landscape.

Grinnell Glacier

The park's most-visited ice is **Grinnell Glacier**, high in the Many Glacier valley and named, like the park's nickname, for George Bird Grinnell. At its foot sits a turquoise meltwater lake studded with small icebergs — a postcard of beauty and of loss at once, since the lake itself is water that used to be ice. Reaching it is a reward earned: the strenuous round-trip hike runs about **10.6 miles** and climbs roughly **1,600 ft**, ending at the very edge of the retreating glacier.

Mountain Goat the Park Symbol

Glacier's official emblem is the **mountain goat**, a shaggy white climber utterly at home on cliffs that would stop almost anything else. Its secret is its feet: soft, two-toed hooves with rubbery pads that grip near-vertical rock as the goats lick mineral salts from exposed faces. Sharing the heights are curl-horned **bighorn sheep**. Below, in forest and meadow, roam **grizzly and black bears, moose, wolverines, and lynx** — a roster that makes Glacier one of the most intact wild ecosystems remaining in the contiguous United States. The highest peak the goats look down from is **Mount Cleveland, 10,466 ft**.

The first peoples

Long before any road or lodge, these mountains belonged to Indigenous nations who hold them sacred still. To the east are the **Blackfeet (Niitsitapi)**, for whom the high peaks are the **"Backbone of the World."** To the west are the **Salish, Pend d'Oreille, and Kootenai (Kalispel)**, with deep ties to the park's

western valleys. Their presence is not a chapter of the past but a living relationship with a landscape they have stewarded for millennia.

Visiting Glacier

Glacier rewards planning. Its season is short, its most famous corridors now need timed reservations, and its best places are spread across two very different sides of the Continental Divide — the wet, forested west and the dramatic, peak-walled east. Here is how to meet the park at its best.

Many Glacier

If the park has a heart, it is **Many Glacier**, on the east side. Ringed by towering peaks and fed by glacier-blue lakes, it is the launch point for the **Grinnell Glacier** and **Iceberg Lake** hikes and one of the most reliable places in the park to see grizzlies and moose. The historic **Many Glacier Hotel**, a Swiss-chalet lodge on Swiftcurrent Lake, anchors a valley many rangers quietly rank as the most beautiful of all.

Lake McDonald

On the wetter, forested west side lies **Lake McDonald**, the park's largest lake — about **10 miles** long and 472 ft deep. Its surprise is underfoot: a shoreline of smooth, colorful pebbles in reds and greens, tinted by iron in the ancient Belt rock. The reds formed where the iron baked in ancient air; the greens stayed submerged. It is a billion-year-old geology lesson you can hold in your palm, with the historic Lake McDonald Lodge nearby.

St Mary Lake and Wild Goose Island

Back on the east side, **St. Mary Lake** stretches deep blue between steep walls of rock, and from a roadside overlook a tiny, tree-tufted speck floats in it: **Wild Goose Island**. Barely an acre, it may be the single most-photographed scene in the park — peaks mirrored in still dawn water, the lonely little island as the focal point. The pullout is right on the **Going-to-the-Sun Road**, making it an easy stop.

The big hikes

Two trails define Glacier's high country. The **Highline Trail** runs about **11.8 miles** from Logan Pass along the Garden Wall — moderate in grade but thrillingly exposed, with a famous cable-assisted ledge near the start. The **Grinnell Glacier** hike (~10.6 miles round trip, ~1,600 ft gain) is strenuous but ends at the park's namesake ice. Plan around the calendar: the high road opens only **late June to mid-October**, with full road and trail access best from mid-July to mid-September, and **vehicle reservations** are required for the Going-to-the-Sun and North Fork corridors in peak season — check NPS each year.

Worlds First International Peace Park

Glacier does not stop at the Canadian line — the mountains continue into Alberta's **Waterton Lakes National Park**. In **1932**, the two nations joined them as the **world's first International Peace Park**, a symbol of friendship across an unfortified border. Together they are now a shared **UNESCO World Heritage Site**, managed cooperatively as one wild ecosystem split only by a line on a map.

Key concepts

Triple Divide Peak

- One of the most remarkable hydrological points on the planet, high in Glacier National Park.
- A snowflake landing on its slopes can end up in any of three different oceans.
- Water shed here may flow to the Pacific, to Hudson Bay and the Arctic, or down the Missouri-Mississippi to the Gulf of Mexico.

Grinnell Glacier

- The park's most-visited ice, tucked high in the Many Glacier valley.
- Named, like the park's 'Crown of the Continent' nickname, for a famous conservationist.
- A strenuous 10.6-mile round-trip hike ends at its turquoise meltwater lake, dotted with small icebergs.

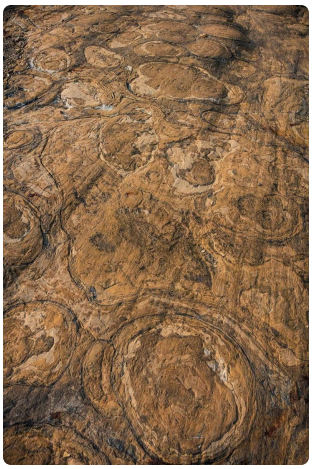
Lake McDonald

- The largest lake in Glacier National Park, on its wetter, forested west side.
- About 10 miles long and 472 feet deep, with a historic lodge on its shore.
- Its shoreline is a bed of smooth red and green pebbles, colored by iron in billion-year-old Belt rock.

Wild Goose Island

- Perhaps the single most-photographed scene in the whole park.
- From a roadside overlook on the Going-to-the-Sun Road, a tiny tree-tufted speck floats in St. Mary Lake.
- Barely an acre across, this lonely little dot of rock and trees anchors a view of peaks mirrored in still dawn water.

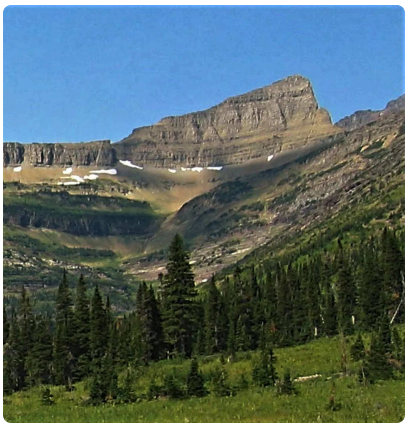
Key facts



GlacierNPS · Public domain

Belt Supergroup and Stromatolites

Glacier's peaks are built from the Belt Supergroup — sedimentary rock laid down in shallow seas over a billion years ago, then thrust upward along the Lewis Overthrust. Pressed into those ancient layers are some of Earth's best-preserved Proterozoic fossils: stromatolites, the cabbage-shaped mounds built by mats of microbes long before complex life. You can read a billion years of seabed in the cliff faces.



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Triple Divide Peak

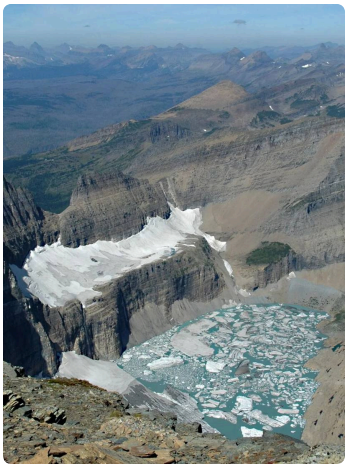
From Triple Divide Peak, a single snowflake's fate splits three ways. This is the hydrological apex of the continent: water shed here can flow to the Pacific Ocean, to Hudson Bay and the Arctic, or down the Missouri–Mississippi to the Gulf of Mexico. Few points on Earth feed three distinct ocean watersheds — the Garden Wall and surrounding arêtes are the knife edges that sort the drops.



Wikimedia Commons · Joeyp3413 · CC BY-SA 3.0

80-Foot Snowdrifts

Every spring, plow crews dig through snowdrifts as deep as 80 feet to reopen the Going-to-the-Sun Road, whose high stretch typically stays open only from late June to mid-October.



Lindsey Bengtson, USGS · Public domain

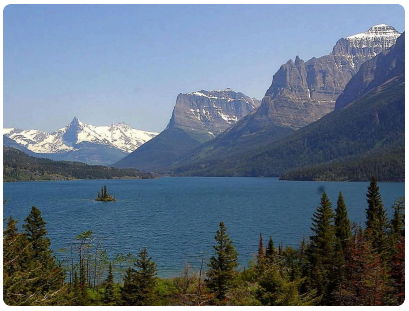
Grinnell Glacier

Named for the park's champion, Grinnell Glacier is the most-visited ice in the park — a turquoise meltwater lake fed by a retreating glacier high in the Many Glacier valley. Repeat photographs from the same overlook, decades apart, show the ice pulling steadily back up the mountain. The strenuous ~10.6-mile round-trip hike, climbing about 1,600 ft, ends at the edge of that shrinking ice.

> **Backbone of the World**
>
> On the park's east side, the Blackfeet (Niitsitapi) hold the high peaks sacred, calling them the 'Backbone of the World.'

Glacier's wild community

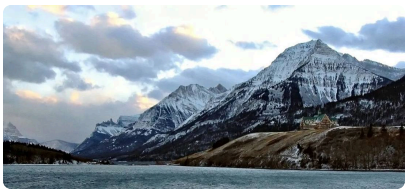
Beyond its famous mountain goats and bighorn sheep, Glacier is home to an intact wild community that includes grizzly and black bears, moose, wolverines, and lynx.



Jon Sullivan · Public domain

Wild Goose Island

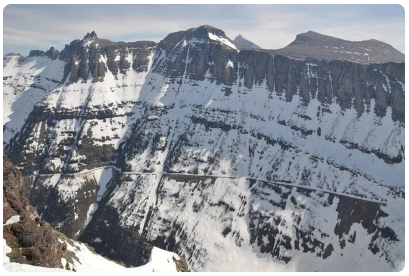
On the park's east side, St. Mary Lake stretches deep blue between steep peaks, and from a roadside overlook a tiny, tree-tufted speck floats in it: Wild Goose Island. Barely an acre, it may be the most-photographed scene in the park — peaks mirrored in still dawn water with the lonely little island as its focal point. The overlook is right off the Going-to-the-Sun Road.



Gorgo · Public domain

World's First International Peace Park

Glacier doesn't stop at the Canadian line — the mountains carry on into Alberta's Waterton Lakes National Park. In 1932, the two nations joined them as the world's first International Peace Park, a symbol of friendship across an unfortified border. Together they are now a joint UNESCO World Heritage Site, managed cooperatively as one wild ecosystem split only by a map line.



GlacierNPS · Public domain

Above Sheer Drop-Offs

From Logan Pass, the Highline Trail traces the Garden Wall for about 11.8 miles — a moderate but thrillingly exposed route above sheer drop-offs.

By the numbers

How high is Logan Pass, the high point of the Going-to-the-Sun Road?

6646 ft

How many miles long is the Going-to-the-Sun Road across Glacier?

50 miles

About how many lakes does Glacier National Park hold?

700 lakes

About how many glaciers did the park's mountains hold around 1850?

150 glaciers

About how many named glaciers larger than 25 acres remain today (USGS)?
25 glaciers

How tall is Mount Cleveland, Glacier's highest peak?
10466 ft

About how many miles long is Lake McDonald, the park's largest lake?
10 miles

About how many miles long is the Highline Trail from Logan Pass along the Garden Wall?
11.8 miles

About how many miles round trip is the strenuous Grinnell Glacier hike?
10.6 miles

In what year did Glacier and Waterton Lakes become the world's first International Peace Park?
1932 year

Matched pairs

Each item on the left goes with the one on the right.

Horn → Pyramid-shaped peak carved when glaciers gnaw a mountain from several sides

Arête → Knife-edge ridge left between two glaciers — Glacier's Garden Wall is one

Garden Wall → Glacier's most famous arête, traced by the exposed Highline Trail

Grizzly bear → Large brown bear; Glacier is core habitat in the lower-48 Rockies

Blackfeet (Niitsitapi) → People of the park's east side; the sacred peaks are the Backbone of the World

Salish, Pend d'Oreille & Kootenai → Peoples of the park's west side, with deep ties to its valleys

Highline Trail → Exposed ~11.8-mi route from Logan Pass along the Garden Wall arête

Vehicle reservation → Timed entry needed for Going-to-the-Sun & North Fork in peak season

Self-test

Answer each question from memory, then check your work against the answer key.

1. Each spring, plow crews chew through snowdrifts up to how deep to reopen the Going-to-the-Sun Road?

A) 45 feet
B) 150 feet
C) 20 feet
D) 80 feet

2. The Going-to-the-Sun Road tops the Continental Divide at Logan Pass. What is Logan Pass's elevation?

A 6,646 ft
B 5,280 ft
C 10,466 ft
D 3,150 ft

3. About how many miles long is the Going-to-the-Sun Road that crosses the entire park?

A 25 miles
B 105 miles
C 50 miles
D 72 miles

4. Ice Age glaciers left Glacier National Park with roughly how many lakes?

A 250
B 700
C 70
D 150

5. What is the term for the knife-edge ridge left when two glaciers grind a mountain from opposite sides?

A Cirque
B Arête
C Moraine
D Horn

6. From which point in Glacier can a single snowflake's meltwater end up flowing to three different oceans?

A Triple Divide Peak
B Grinnell Point
C Logan Pass
D Mount Cleveland

7. Water shed at Triple Divide Peak may reach the Pacific and the Gulf of Mexico. What is the third destination?

A The Caribbean Sea
B The Atlantic via the St. Lawrence
C Hudson Bay and the Arctic
D The Great Lakes

8. Glacier's most famous arête, a knife-edge ridge traced by the Highline Trail, is known as the what?

A Belt Supergroup
B Continental Divide
C Lewis Overthrust
D Garden Wall

9. What is the name of the park's most-visited glacier, sitting above a turquoise meltwater lake in the Many Glacier valley?

A Grinnell Glacier
B Jackson Glacier
C Sperry Glacier
D Blackfoot Glacier

10. A tiny, tree-tufted, roughly one-acre island in St. Mary Lake, perhaps the park's most-photographed scene, is called what?

A Goose Neck Rock
B Heron Island
C Wild Goose Island
D Swiftcurrent Isle

11. Which animal is the official symbol of Glacier National Park?

A Grizzly bear
B Moose
C Bighorn sheep
D Mountain goat

12. Around 1850, at the close of the Little Ice Age, about how many glaciers gripped Glacier's mountains?

A 25
B 150
C 50
D 700

13. By USGS counts, about how many named glaciers larger than 25 acres remain in the park today?

A 25
B 60
C 5
D 150

14. Which people, on the park's east side, call the high peaks the 'Backbone of the World'?

A Pend d'Oreille
B Salish
C Kootenai (Kalispel)
D Blackfeet (Niitsitapi)

15. Which animal is NOT part of Glacier's intact wild community?

A Lynx
B Bison
C Moose
D Wolverine

16. What gives Lake McDonald's shoreline pebbles their famous red and green colors?

A Ash from ancient volcanic eruptions
B Algae and lichen that stain the wet stones
C Iron in the billion-year-old Belt rock — red where it met ancient air, green where it stayed submerged
D Copper ore ground up and left by retreating glaciers

17. Lake McDonald, the park's largest lake on the forested west side, is about how many miles long?

A 10 miles
B 4 miles
C 50 miles
D 25 miles

18. The Highline Trail runs about how many miles from Logan Pass along the Garden Wall?

A 10.6 miles
B 11.8 miles
C 50 miles
D 6.6 miles

19. In what year did Glacier and Alberta's Waterton Lakes become the world's first International Peace Park?

A 1972
B 1895
C 1932
D 1910

20. To drive the Going-to-the-Sun and North Fork corridors in peak season, what do visitors now need?

(A) A backcountry camping permit
(B) Nothing — entry is first-come
(C) A state fishing license
(D) A timed vehicle reservation

Go deeper

WATCH Three Oceans 0:31 · YouTube
A snowflake in Glacier National Park can end up in 3 different oceans.

WATCH The Ice Is Leaving 0:29 · YouTube
Glacier National Park is named for ice. And that ice is leaving.

WATCH Red and Green Pebbles 0:30 · YouTube
Why are the rocks at Lake McDonald so colorful? The shore is covered in smooth pebbles, in reds and greens.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-glacier

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 19 OF 27

Spotlight: Grand Teton

A Range Without Foothills · Wildlife, Icons & Visiting

WHAT YOU'LL BE ABLE TO DO

- Explain the Tetons' fault-block geology and why they rise without foothills.
- Identify the string of glacial lakes at the foot of the range.
- Recognize the Tetons' iconic viewpoints, barns, and wildlife.
- Explain the Rockefeller land gift and the parkway linking Grand Teton to Yellowstone.

A Range Without Foothills

Most mountain ranges ease you in. The Tetons do not. They are the rare range that rises like a wall straight out of flat ground — and the reason is written in young, restless geology.

A Range Without Foothills

Stand on the sagebrush floor of Jackson Hole and the Teton Range climbs roughly **7,000 vertical feet** above you with nothing in between — no foothills, no gentle ramp of ridges. It is one of the most abrupt mountain fronts in North America. The crown of the range is **Grand Teton** at **13,775 ft**, a sharp granite pyramid that gives the park its name. The effect is theatrical: low flat valley, then sheer peaks, with almost no transition. That missing band of foothills is not an accident of erosion — it is a direct fingerprint of how these mountains were made.

The Youngest Rockies

The Tetons are **fault-block mountains**, built along the **Teton Fault** over roughly **10 million years** — geologically young, which makes them one of the youngest ranges in the Rocky Mountains. The mechanism is a seesaw: as the fault slips, the block on the mountain side tilts **up** while the block on the valley side drops **down**. So the peaks rose *and* Jackson Hole sank, at the same time, along the same fracture. That is why there are no foothills — the valley floor is literally the down-dropped half of the same structure. More recently, Ice Age glaciers flowed down the range, gouging out the U-shaped canyons, scooping the high cirques, and leaving the rubble that would dam the lakes.

The vocabulary is worth holding onto. **Jackson Hole** is the flat valley that dropped as the peaks rose. A **fault-block range** is mountains lifted along a fault as one block tilts up and another drops. Together they explain the whole skyline.

A String of Glacial Lakes

Where each canyon glacier reached the valley, it paused, melted, and dumped its load of ground-up rock. Those rubble piles — **moraines** — became natural dams, and behind them pooled a **string of glacial lakes** strung along the base of the range: **Jenny, Jackson, Leigh, and String** among them. **Jackson Lake** is the largest, spreading beneath Mount Moran. **Jenny Lake** is the most photographed and

the most useful: a boat shuttle ferries hikers across it to the mouth of **Cascade Canyon**, turning a long approach into a short one. The lakes are cold, clear, and mirror-still on calm mornings — the range doubled in the water.

Put the three ideas in a row and the park snaps into focus. A young fault lifts a block of granite while the valley beside it sinks, erasing any foothills. Glaciers then carve the peaks and leave a necklace of lakes at their feet. Everything you see from the valley floor — the wall of mountains, the missing foothills, the line of lakes — comes from those two forces, working one after the other.

Wildlife, Icons & Visiting

The Tetons supply the backdrop; the foreground is where the park earns its fame — a weathered barn, a famous river bend, great herds of elk, and the gold light of September.

Mormon Rows Moulton Barn

On a dirt lane called **Mormon Row**, Latter-day Saint homesteaders settled the sagebrush flats in the early 1900s, digging irrigation ditches and raising barns. The pioneers are long gone, but their **T.A. Moulton Barn** still stands — a gabled wooden silhouette framed by the full sweep of the Teton Range, and often called one of the most photographed barns in America. It is the human note in a wild composition: proof that people once tried to make a living in the shadow of these peaks, and a reminder of how hard that was.

The Ansel Adams Shot

A few miles north, **Snake River Overlook** offers the park's most famous view: the river curling in a great silver bend through dark timber toward the wall of the Tetons. **Ansel Adams** photographed it in 1942, and his black-and-white image became one of the defining pictures of the American West — so iconic that a copy rode aboard the **Voyager** spacecraft as one of humanity's images sent toward the stars. The cottonwoods have grown taller since, partly hiding the river, but the view still stops cars cold. Nearby, the quiet beaver ponds of **Schwabacher Landing** give the other classic shot: the peaks mirrored in glassy water at sunrise.

Grizzlies Moose and Elk

Grand Teton sits inside the **Greater Yellowstone Ecosystem**, one of the last large intact temperate ecosystems on Earth, and the wildlife shows it. **Grizzly and black bears** roam the slopes; **moose** wade the willow flats; **pronghorn** and **bison** range the sage. The signature animal is the **elk**. Each winter the **National Elk Refuge**, just south of the park near the town of Jackson, shelters roughly **7,000 to 10,000 elk** driven down from the high country by deep snow — one of North America's great seasonal gatherings of large mammals.

September Gold

Summer into early fall is the window, but **September** is the month locals wait for. The **aspen** groves turn molten gold against the granite, and the **elk rut** fills the valley with the eerie, whistling **bugles** of bull elk competing for mates. Mornings turn crisp, the light goes long and warm, and the whole valley feels charged.

Two of the park's best hikes reward the effort. **Cascade Canyon** is a moderate **9–10 mile** walk reached by the Jenny Lake boat shuttle, climbing into a glacier-carved cleft. **Delta Lake** is the strenuous prize: an off-trail scramble gaining about **2,300 ft** to a startlingly **turquoise** lake fed by glacial flour, right under the face of Grand Teton.

The Rockefeller Connection

The park owes much of its size to **John D. Rockefeller Jr.**, who quietly bought up Jackson Hole ranchland and donated it; a **1950** expansion folded that land into the park established in **1929**. His name lives on in the **John D. Rockefeller Jr. Memorial Parkway**, the land corridor that links Grand Teton north to **Yellowstone**, stitching the two parks into a single wild route. Little wonder the Tetons draw about **3.5 million** visitors a year.

Key concepts

Jenny Lake

- One of a string of cold, clear glacial lakes strung along the base of the Teton Range.
- Mirror-still on calm mornings, it is the most photographed and most useful of the park's lakes.
- A boat shuttle ferries hikers across it to the mouth of Cascade Canyon.

Jackson Lake

- One of the glacial lakes dammed by moraines along the foot of the Teton Range.
- It is the largest lake in the park.
- Its broad waters spread directly beneath the summit of Mount Moran.

Delta Lake

- A high lake reached not by maintained trail but by a steep off-trail scramble.
- The strenuous route gains about 2,300 feet to reach it.
- Fed by glacial flour, it glows a startling turquoise right under the face of Grand Teton.

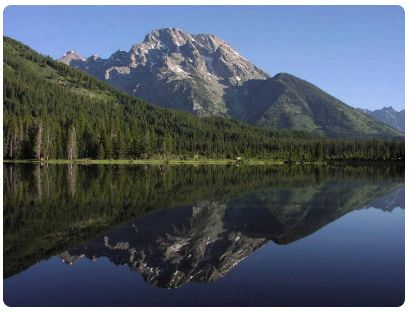
Snake River Overlook

- A roadside viewpoint of the park's most famous vista, a river curling in a silver bend toward the peaks.
- Ansel Adams photographed the scene here in 1942, creating a defining image of the American West.
- A copy of that black-and-white photo rode aboard the Voyager spacecraft toward the stars.

Mormon Row

- A dirt lane on the sagebrush flats where Latter-day Saint homesteaders settled in the early 1900s.
- The pioneers dug irrigation ditches and raised barns in the shadow of the peaks.
- Its T.A. Moulton Barn is often called one of the most photographed barns in America.

Key facts



S. Zenner · Public domain

A String of Glacial Lakes

Glaciers flowing out of the canyons left a string of jewel-like lakes along the base of the range — Jenny, Jackson, Leigh, and String among them. Each sits where a glacier paused and dumped its load of rubble, damming the meltwater behind it. Jackson Lake is the largest; Jenny is the most photographed, its boat shuttle the gateway to Cascade Canyon.

13,775 Feet

Grand Teton, the sharp granite pyramid that gives the park its name, rises to 13,775 feet — the tallest summit in the range.

The Teton Fault

As the Teton Fault slips, the mountain block tilts upward while the valley block drops down — a geologic seesaw that is exactly why the range has no foothills.

Grizzlies, Moose, and Elk

Grand Teton sits in the wildlife-rich Greater Yellowstone Ecosystem: grizzly and black bears, moose wading the willow flats, pronghorn on the sage, and one of North America's great elk migrations. Each winter the National Elk Refuge just south of the park shelters roughly 7,000–10,000 elk, drawn down from the high country by snow.



Library of Congress · Grand Teton National Park, Wyoming · No known restrictions (verify at source)

September Gold

Summer into early fall is prime time, but September is the magic month: the aspen groves turn molten gold, and the elk rut fills the valley with the eerie, whistling bugles of bull elk. Crisp mornings, golden light, and the great cycle of the wild on full display under the peaks.



Library of Congress · Ranch fencing in Jackson Hole, locals' term for a valley, in · No known restrictions (verify at source)

The Jackson Hole Buyer

John D. Rockefeller Jr. quietly bought up ranch land in Jackson Hole and donated it, and a 1950 expansion folded that land into Grand Teton National Park — the Rockefeller Parkway still bears his name.

By the numbers

How high is Grand Teton, the range's tallest peak?

13775 ft

About how many vertical feet does the Teton Range rise above the valley floor?

7000 ft

Over roughly how many millions of years has the Teton Fault uplifted the range?

10 million years

About how many people visited Grand Teton in 2024?

3500000 visitors

About how many elk winter on the National Elk Refuge just south of the park (upper estimate)?

10000 elk

Matched pairs

Each item on the left goes with the one on the right.

Jackson Hole → The flat valley below the Tetons that dropped as the peaks rose

Fault-block range → Mountains lifted along a fault as one block tilts up and another drops

Jenny Lake → Glacier-carved lake at the foot of Cascade Canyon, with a boat shuttle

Jackson Lake → The largest of the park's lakes, beneath Mount Moran

Delta Lake → Strenuous off-trail climb to a turquoise glacier-fed lake (~2,300 ft gain)

Cascade Canyon → Moderate ~9–10 mi hike reached via the Jenny Lake boat shuttle

Schwabacher Landing → Quiet Snake River beaver ponds famous for mirror reflections of the peaks

John D. Rockefeller Jr. Memorial Parkway
→ The land corridor that links Grand Teton north to Yellowstone

Self-test

Answer each question from memory, then check your work against the answer key.

1. What makes the Tetons unusual among Rocky Mountain ranges?

- A They were built by colliding glaciers
- B They are the oldest range in the Rockies
- C They are made entirely of volcanic ash
- D They are among the youngest, with no foothills

2. How high does Grand Teton, the range's tallest peak, crest?

- A 13,775 ft
- B 12,183 ft
- C 10,000 ft
- D 14,505 ft

3. The Teton Range climbs roughly how many vertical feet straight out of Jackson Hole?

- A 3,000 ft
- B 7,000 ft
- C 13,775 ft
- D 10,000 ft

4. As the Teton Fault slips, how do the two blocks move?

- A Both blocks push upward together
- B Two blocks slide sideways past each other
- C The mountain block tilts up while the valley block drops down
- D The valley rises as the peaks erode away

5. Over roughly how long has the Teton Fault uplifted the range, making it one of the youngest Rockies?

- A 500,000 years
- B 1 billion years
- C 10 million years
- D 100 million years

6. Which is the largest lake in the park, spreading beneath Mount Moran?

- A Jackson Lake
- B Leigh Lake
- C Jenny Lake
- D String Lake

7. A boat shuttle ferries hikers across which lake to the mouth of Cascade Canyon?

- A Jackson Lake
- B String Lake
- C Leigh Lake
- D Jenny Lake

8. What did each canyon glacier leave behind that dammed the meltwater into lakes?

- A Limestone reefs
- B Moraines — piles of ground-up rock
- C Fresh lava flows
- D Wind-blown sand dunes

9. Which of these is NOT one of the string of glacial lakes along the base of the range?

A Leigh Lake
B Crater Lake
C Jackson Lake
D Jenny Lake

10. Along with Jenny and Jackson, which two lakes are part of the string at the range's base?

A Bear and Trout
B Crater and Tahoe
C Leigh and String
D Louise and Moraine

11. Which weathered landmark on Mormon Row is called one of the most photographed barns in America?

A Menor's Ferry
B Cunningham Cabin
C Chapel of the Transfiguration
D T.A. Moulton Barn

12. Whose famous 1942 black-and-white photograph immortalized the view from Snake River Overlook?

A Ansel Adams
B Carleton Watkins
C Dorothea Lange
D Edward Weston

13. Which animal gathers by the thousands on the refuge south of the park each winter, driven down by deep snow?

A Elk
B Bison
C Moose
D Pronghorn

14. The strenuous off-trail scramble to Delta Lake ends at a lake of what startling color, from glacial flour?

A Dark navy
B Milky white
C Slate gray
D Turquoise

15. Which spot is known for quiet beaver ponds that mirror the peaks at sunrise?

A Cascade Canyon
B Schwabacher Landing
C Mormon Row
D Snake River Overlook

16. Which animal is Grand Teton's signature species, famed for its September rut and bugling calls?

A Moose
B Pronghorn
C Elk
D Bison

17. Which animal wades the willow flats of Grand Teton?

A Bison
B Pronghorn
C Moose
D Grizzly bears

18. Whose 1929-established donation of land greatly expanded Grand Teton in 1950?

A Andrew Carnegie
B John D. Rockefeller Jr.
C Theodore Roosevelt
D Henry Ford

19. The John D. Rockefeller Jr. Memorial Parkway links Grand Teton north to which neighboring park?

A Yellowstone
B Zion
C Glacier
D Rocky Mountain

20. In what year did the expansion fold Rockefeller's donated ranchland into Grand Teton National Park?

A 1929
B 1916
C 1972
D 1950

21. How did John D. Rockefeller Jr. help enlarge Grand Teton?

A He quietly bought up Jackson Hole ranchland and donated it
B He funded mapping of the Teton Fault
C He lobbied Congress to raise entry fees
D He built the Jenny Lake boat shuttle

22. Which statement about the Rockefeller connection to Grand Teton is NOT true?

A Rockefeller quietly bought up Jackson Hole ranchland
B The parkway links Grand Teton north to Yellowstone
C A 1950 expansion folded his donated land into the park
D The Rockefeller Parkway is a scenic railroad line

Go deeper

WATCH No Foothills 0:28
The Teton Range has no foothills. It rises roughly 7,000 vertical feet, straight out of flat ground.

WATCH Snake River Overlook 0:31
A photo of the Tetons rode aboard the Voyager spacecraft. It was one of humanity's images sent toward the stars.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-grand-teton

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 20 OF 27

Spotlight: Rocky Mountain

The Roof of the Rockies · Elk, Lakes & Visiting

WHAT YOU'LL BE ABLE TO DO

- Explain Rocky Mountain's high country, its founder, and its ancient rock.
- Define alpine tundra and the Continental Divide that threads the park.
- Recognize Rocky Mountain's signature wildlife and the Keyhole Route.
- Plan a Rocky Mountain visit around its lakes, elk season, and crowds.

The Roof of the Rockies

Rocky Mountain National Park is Colorado distilled to its essence — a high country of granite, ice-cut valleys, and tundra that feels closer to the Arctic than to Denver an hour away. This part climbs from the founding story up to the very crest of the continent.

Rocky Mountain

The park was established in **1915**, the hard-won prize of naturalist **Enos Mills**, the innkeeper and writer remembered as the "Father of Rocky Mountain National Park." He lobbied tirelessly through lectures, letters, and books until Congress acted. The park protects roughly **265,000 acres** of the Front Range near Estes Park, and its defining feature is altitude: more than **a third of the park lies above treeline** as windswept alpine tundra, and **77+ peaks** rise above 12,000 feet. Long before the park, the **Ute** held the mountain west and the **Arapaho** the eastern plains, leaving many of the place-names recorded by a 1914 expedition.

Trail Ridge Road

Trail Ridge Road is the park's signature drive and the **highest continuous paved road in the United States**, cresting at **12,183 feet**. For miles it runs above the treeline through open tundra, where ground-hugging wildflowers bloom in a growing season measured in weeks and the weather can swing from sun to sleet in minutes. The full route stretches about 48 miles between Estes Park and Grand Lake. It is so high that crews must plow drifts up to 20 feet deep each spring, so the road typically opens only from around Memorial Day to mid-October.

The Continental Divide

The **Continental Divide** runs the length of the park — the hydrologic ridgeline where water parts ways, draining west toward the Pacific and east toward the Atlantic. The mountains themselves are far older than the divide they carry. Their core is **ancient Precambrian granite and gneiss**, uplifted to form the Front Range and then sculpted during the Ice Ages by glaciers that gouged out the cirques, left moraines, and ground the valleys into their distinctive U-shape. The crown of it all is **Longs Peak** at **14,259 feet**, the park's only "fourteener" and a magnet for climbers.

By the numbers, the high country is staggering: Longs Peak at **14,259 ft**, Trail Ridge cresting at **12,183 ft**, and **77** named summits above 12,000 ft — all within a park founded in **1915**. Pair the names with what they are: Enos Mills with his title of "Father" of the park; Trail Ridge Road with its U.S. paving record; and **alpine tundra** — the treeless, frost-sculpted zone that blankets over a third of the landscape — with the harsh, beautiful world that begins where the forest gives out.

Elk, Lakes & Visiting

If the high country is the park's body, its wildlife and lakes are its pulse. This part comes down from the tundra into the meadows and forests where elk bugle, lakes mirror the peaks, and millions of visitors arrive each year.

The Autumn Elk Rut

Every fall, the broad meadows of **Moraine Park** stage one of the park's great spectacles: the **elk rut**. Bull elk gather and defend harems of cows, and they announce themselves with the **bugle** — a haunting, high-pitched whistle that rises to a guttural grunt and carries across the cold valley at dawn and dusk. Rivals clash antlers in the frosted grass while crowds line the roads to watch. **September** is the season for it, doubling as the park's prime window for golden aspen color. The elk share these slopes with **moose**, **mule deer**, and **marmots**.

Bear Lake and the Emerald Lake Trail

Bear Lake is the park's most beloved trailhead — a glassy subalpine pool ringed by spruce and rock, reached by road and ringed by an easy loop. From there the **Emerald Lake trail** climbs a gentle **3.6 miles round trip**, gaining about 700 feet as it strings together **Nymph, Dream, and Emerald lakes**, three jewels set beneath the sheer walls of Hallett Peak and Flattop Mountain. Hikers wanting more push on to **Sky Pond**, roughly 9 miles round trip past tumbling waterfalls. The ultimate challenge is the **Keyhole Route** up Longs Peak — a 14-to-15-mile, ~5,000-foot, very strenuous non-technical scramble with serious exposure that should only be attempted by the well-prepared.

The park's wildlife rewards close attention. The **bighorn sheep** is the official **symbol of the park**, picking its way across cliffs on the tundra's edge. Smaller but no less iconic is the **pika**, a tiny, round-eared relative of the rabbit that lives among high-elevation rock piles and spends summer stockpiling "haystacks" of dried plants to survive the alpine winter.

Visiting takes a little planning. Rocky Mountain drew about **4.15 million visitors in 2024**, making it the 5th-most-visited national park — and in recent peak seasons the crowds have prompted a **timed-entry reservation** system just to drive in, so checking the NPS site before a trip is essential. Trail Ridge Road's late opening — after crews clear those 20-foot drifts — and September's elk and color make summer-into-fall the sweet spot. Match the names to the experiences: **bighorn sheep** to the park symbol, the **pika** to the rock-pile hay gatherer, and the **Keyhole Route** to the lung-busting scramble up the park's only fourteener.

Key terms

Continental Divide

The high ridgeline separating watersheds that drain to the Pacific from those draining to the Atlantic; it runs through the heart of the park.

Key concepts

Longs Peak

- The park's highest summit and its only 'fourteener,' a magnet for climbers.
- At 14,259 feet it towers over all 77-plus of the park's named summits above 12,000 feet.
- The lung-busting Keyhole Route scrambles roughly 14 to 15 miles and 5,000 feet to its top.

Continental Divide

- A great ridgeline that runs the entire length of the park.
- The ancient Front Range peaks that carry it were uplifted and glacier-carved long before it settled on their crest.
- It is the watershed where water parts ways, draining west to the Pacific and east to the Atlantic.

Moraine Park

- Broad meadows that stage one of the park's great autumn spectacles.
- At dawn and dusk each September, bull elk bugle and clash antlers here as crowds line the roads.
- These frost-rimmed grasslands are also the park's prime spot for golden aspen color.

Bear Lake

- The park's most beloved trailhead, a glassy subalpine pool ringed by spruce and rock.
- Reached by road, it anchors an easy loop and a famous chain-of-lakes hike.
- From here the Emerald Lake trail strings past Nymph and Dream lakes in 3.6 miles round trip.

bighorn sheep

- A sure-footed grazer of the high country, at home where the alpine tundra meets bare rock.
- It picks its way across steep cliffs on the fringe of the treeless zone.
- The park chose this cliff-dweller as its official symbol.

pika

- A tiny, round-eared cousin of the rabbit that lives high in the mountains.
- It makes its home tucked among high-elevation rock piles.
- All summer it stockpiles 'haystacks' of dried plants to outlast the long alpine winter.

elk

- Each autumn the broad meadows of Moraine Park stage this animal's great rutting spectacle.
- Bulls gather and defend harems of cows, clashing antlers in the frosted grass while crowds watch.
- The males announce themselves with the bugle, a haunting whistle rising to a guttural grunt at dawn and dusk.

Key facts



Library of Congress · Continental Divide sign high in Rocky Mountain National Park · No known restrictions (verify at source)

The Continental Divide

The Continental Divide runs the spine of the park, the hydrologic ridgeline where rain and snowmelt part ways — water on the west flows toward the Pacific, water on the east toward the Atlantic. The park's granite core is ancient Precambrian rock, uplifted as the Front Range and then carved by Ice Age glaciers into cirques, moraines, and U-shaped valleys.

> **Enos Mills' Years of Lobbying**
> Naturalist and innkeeper Enos Mills lobbied for years before Congress finally created Rocky Mountain National Park, earning him the title 'Father of Rocky Mountain National Park.'

> **The Only Fourteener**
> Longs Peak is Rocky Mountain National Park's only 'fourteener' — a peak that tops 14,000 feet — cresting at 14,259 feet above sea level.

> **Not Elk or Moose**
> The bighorn sheep serves as the official emblem of Rocky Mountain National Park, even though elk, moose, and other animals share its slopes too.

> **The Hay Hoarder**
> The pika is a small, round-eared relative of the rabbit that gathers 'haystacks' of dried plants among the high alpine rock piles of Rocky Mountain National Park.

> **The Keyhole Route**
> The Keyhole Route is a very strenuous, non-technical scramble to the summit of Longs Peak, the park's only fourteener, covering 14 to 15 miles with about 5,000 feet of climbing and serious exposure.

By the numbers

How tall is Longs Peak, the park's highest summit?

14259 ft

At what elevation does Trail Ridge Road crest?
12183 ft

How many peaks in Rocky Mountain National Park rise above 12,000 feet?
77 peaks

In what year was Rocky Mountain National Park established?
1915 year

About how many people visited Rocky Mountain National Park in 2024?
4150000 visitors

How long is the round-trip hike from Bear Lake to Emerald Lake?
3.6 mi

How deep are the snow drifts crews plow each spring to open Trail Ridge Road?
20 ft

Matched pairs

Each item on the left goes with the one on the right.

Enos Mills → Naturalist called the "Father of Rocky Mountain National Park"

Trail Ridge Road → Highest continuous paved road in the U.S. (crests 12,183 ft)

Alpine tundra → Treeless high-elevation zone covering over a third of the park

Bighorn sheep → The official symbol of Rocky Mountain National Park

Pika → Tiny tundra-dwelling relative of the rabbit that stockpiles hay among the rocks

Keyhole Route → Very strenuous non-technical scramble up Longs Peak (~14–15 mi, ~5,000 ft gain)

Self-test

Answer each question from memory, then check your work against the answer key.

1. What ancient rock forms the core of the peaks in Rocky Mountain National Park?

(A) Basalt from ancient lava flows
(B) Precambrian granite and gneiss
(C) Navajo sandstone
(D) Belt Supergroup limestone and mudstone

2. Who is remembered as the "Father of Rocky Mountain National Park"?

(A) Enos Mills
(B) Stephen Mather
(C) John Muir
(D) Ferdinand Hayden

3. In what year was Rocky Mountain National Park established?

A 1890
B 1872
C 1915
D 1919

4. How tall is Longs Peak, the park's only "fourteener"?

A 14,505 ft
B 13,528 ft
C 12,183 ft
D 14,259 ft

5. What distinction does Trail Ridge Road hold?

A Only toll road in the U.S. park system
B Longest tunnel of any national park
C Highest continuous paved road in the United States
D Steepest railway grade in Colorado

6. What does the Continental Divide separate as it runs through the park?

A Watersheds draining to the Pacific from those draining to the Atlantic
B Montane forest from alpine tundra
C National park land from national forest
D The United States from Canada

7. Which best defines the alpine tundra of Rocky Mountain National Park?

A A chain of glacier-fed lakes below Bear Lake
B A treeless high-elevation zone covering over a third of the park
C A belt of Precambrian granite cliffs
D A dense spruce-and-fir subalpine forest

8. Which best describes where the Continental Divide lies within the park?

A It rings the shore of Bear Lake
B It marks the Colorado–Wyoming state line
C It forms the park's eastern boundary at Estes Park
D It runs the length of the park along its high spine

9. About how much of the park lies above treeline as windswept tundra?

A Roughly three-quarters
B Around half
C Under a tenth
D More than a third

10. Which statement about the park's alpine tundra is NOT true?

A It endures harsh, windswept weather
B It is densely forested with tall spruce
C It is treeless
D It covers over a third of the park

11. Which animal is the official symbol of Rocky Mountain National Park?

A Bighorn sheep
B Mountain goat
C Mule deer
D Moose

12. Which description best fits the pika?

A. A whistling ground squirrel of the meadows
B. A cliff-dwelling wild sheep and the park's symbol
C. A tiny round-eared rabbit relative that stockpiles hay among high rock piles
D. A large antlered member of the deer family

13. What is the Keyhole Route?

A. An easy loop trail around Bear Lake
B. A very strenuous non-technical scramble up Longs Peak
C. A boat-shuttle trail to a hidden lake
D. A paved scenic drive across the divide

14. During the autumn rut, the elk "bugle" is best described as what?

A. A marmot's sharp alarm whistle
B. A songbird's dawn call echoing off the peaks
C. A ranger's signal horn warning of crowds
D. A bull elk's haunting high-pitched whistle that rises to a guttural grunt

15. Which animal is NOT described as living in Rocky Mountain National Park?

A. Alligator
B. Moose
C. Mule deer
D. Marmot

16. About how many people visited Rocky Mountain National Park in 2024?

A. 12 million
B. 700,000
C. 4.15 million
D. 1.2 million

17. How long is the round-trip hike from Bear Lake to Emerald Lake?

A. 3.6 miles
B. 48 miles
C. 14–15 miles
D. 9 miles

18. Which month is the prime window for the elk rut and golden aspen color?

A. June
B. December
C. March
D. September

19. To manage peak-season crowds, what does the park require just to drive in?

A. A wildlife-viewing license
B. A backcountry lottery permit
C. A timed-entry reservation
D. A guided-tour booking

20. Where do crowds gather to watch the autumn elk rut spectacle?

A. Grand Lake
B. Moraine Park
C. Sky Pond
D. Longs Peak

Go deeper

WATCH Above the Trees 0:29
An hour from Denver, Rocky Mountain National Park feels closer to the Arctic.

WATCH The Elk Rut 0:31
Each fall, a haunting call sounds across the meadows of Rocky Mountain National Park. Bull elk are bugling.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-rocky-mountain

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 21 OF 27

Spotlight: Death Valley

The Hottest, Driest, Lowest Place · A Geologist's Wonderland · Visiting Death Valley

WHAT YOU'LL BE ABLE TO DO

- Recall Death Valley's records as the hottest, driest, lowest, and largest contiguous park.
- Explain Death Valley's geology, from Zabriskie Point to its graben origin.
- Plan a Death Valley visit around its peoples and dark skies.

The Hottest, Driest, Lowest Place

Death Valley is a park of superlatives. It is the largest national park in the contiguous United States, the lowest, the driest, and the holder of the hottest air temperature ever reliably recorded on Earth. Yet within its borders sits a snow-capped peak more than two miles above the valley floor. This is a landscape built on extremes.

Badwater Basin

The salt flats of Badwater Basin sit 282 feet below sea level — the lowest point in North America. The ground here is a vast crust of nearly pure sodium chloride, left behind as ancient lakes flooded and evaporated again and again. Each cycle deposits a fresh layer of salt, and as it dries it buckles into the honeycomb of hexagonal ridges that famously stretches to the horizon. The name comes from a survey pool of undrinkable water nearby — "bad water," too salty to drink. Look up at the cliff above the parking area and you'll spot a small white sign marking sea level, dizzyingly high overhead. It is the single best place to grasp just how deep this basin really is.

134 Degrees

On July 10, 1913, a thermometer at Furnace Creek climbed to 134°F — the hottest air temperature ever reliably measured anywhere on Earth. The valley is a near-perfect heat machine. Sunlight bakes the dark, barren floor; the heated air rises, cools slightly, then sinks back down, compressing and warming further as it drops. Steep walls trap that air, and the below-sea-level depth concentrates it like the bottom of a bowl. In summer the ground itself can exceed 200°F. This is why the heat record was set *here*, and why summer in Death Valley is no ordinary hot day.

Two Miles, Top to Bottom

The numbers that define this part fit together into one staggering fact. From the salt at Badwater (−282 ft) to the summit of **Telescope Peak** (11,049 ft), Death Valley packs more than two vertical miles into a single park — one of the most extreme elevation gradients anywhere in the U.S. park system. On a winter morning you can stand on snow at the top and look straight down onto a sun-baked salt pan that may never see frost.

The park's other records belong to the same story. It is the **driest place in North America**, receiving only about 2 inches of rain in a typical year — the mountain ranges to the west wring the moisture from incoming storms before they ever reach the valley. And it is the **largest national park in the contiguous United States**, spanning roughly 3.4 million acres (about 3,408,396), big enough to hold all of these extremes with room to spare. Lowest, hottest, driest, biggest: Death Valley wears every one of them at once, and that is precisely what makes it unforgettable.

A Geologist's Wonderland

Strip away soil, plants, and shade, and you are left with rock telling its story plainly. That is Death Valley. With almost nothing to hide it, the geology here is laid bare — painted badlands, pastel hillsides, rolling dunes, an explosion crater, and rocks that sail across a dry lake. Underlying it all is a basin still pulling itself apart.

Zabriskie Point

Zabriskie Point overlooks a sea of golden badlands: wrinkled, sculpted ridges of ancient lakebed mud, ribboned and folded by erosion. These sediments settled in lakes that dried up millions of years ago, then were tilted, lifted, and carved by rare flash floods into the maze you see today. At sunrise the low light sets the whole tangle glowing amber, with a dark spire called Manly Beacon rising from its center. It is the most photographed sunrise in the park, and the easiest place to read how water — even in the driest park in North America — does the sculpting.

Artists Palette

Along the one-way Artists Drive, a hillside erupts in pastel — pink, mint green, lavender, and gold splashed across the rock. None of it is paint. The colors come from weathered volcanic minerals: iron oxides tint the reds and pinks, mica and chlorite the greens, and manganese the purples. The chemistry sits exposed because there is no vegetation to cover it. Late afternoon, when the sun softens, is when the colors deepen most.

The Sailing Stones

On the remote, perfectly flat Racetrack Playa, heavy rocks leave long trails carved across the cracked mud — yet no one is ever there to see them move. The mystery held for decades and spawned wild theories. Time-lapse cameras finally caught the answer: on rare freezing nights, thin sheets of ice form across the playa, then break up in the morning sun. Floating panes of ice, nudged by a light breeze, glide the stones along the slick wet mud, etching the tracks behind them. It is one of the few great natural mysteries to be solved on camera.

The rest of the park's geology rewards a closer look. The **Mesquite Flat Sand Dunes**, near Stovepipe Wells, are the park's most accessible dunes — graceful, rippled, and a favorite at sunrise. **Ubehebe Crater** is a half-mile-wide pit roughly 600 feet deep, blasted out only a few thousand years ago when rising magma flashed groundwater into steam and exploded. From **Dante's View**, perched 5,475 feet up, you look a full mile straight down onto the Badwater salt flats — the whole basin in one glance.

Behind every feature lies one master process. Death Valley is a **graben**: a block of crust dropping between two faults as the region stretches and pulls apart. It is not a valley carved by a river or a glacier, but a gap that opened as the land was torn — and it is still deepening today.

Visiting Death Valley

The harshest park in America is also, in the right season, one of the most rewarding. Time your visit well and Death Valley offers mild hikes, the darkest skies in the country, and — once in a great while — a desert in full bloom. Time it badly and the same ground turns lethal. Knowing the difference is everything.

Visit in Winter

November through March is the season for Death Valley. Winter days are mild and clear, ideal for walking the salt flats and badlands, and even the high country stays accessible until snow caps Telescope Peak. Summer is genuinely dangerous: the National Park Service warns against hiking below sea level after 10 a.m., when the valley floor becomes an oven that has killed unprepared visitors. Whenever you go, carry far more water than feels reasonable, watch for heat exhaustion, and never rely on finding shade. In the cool months, the most forbidding place in the country becomes welcoming.

Gold Tier Dark Sky

Death Valley is one of the largest Dark Sky Parks in the nation, certified at the Gold Tier — the highest rating, reserved for the darkest, most pristine night skies. Far from any city's glow and shielded by surrounding mountains, the valley reveals the Milky Way in full, brilliant detail. On a moonless night you can see your own shadow cast by starlight alone. Furnace Creek and the open desert basins make superb viewing spots, and the same dry, cloudless air that makes the days hot makes the nights crystal clear.

The Timbisha Shoshone

Long before it had a fearsome name, this was — and is — home. The Timbisha Shoshone have lived in the valley for over a thousand years, calling it **Tümpisa**, after the red ochre paint made from local clay. They knew where the springs ran and how to live with the heat. They are still here: their reservation lies within the park, near Furnace Creek — a rare arrangement in which a tribe's ancestral homeland sits inside a national park, and the people who belong to this land remain part of it.

The Superbloom

After a rare wet winter, the driest place in North America can do something astonishing: carpet itself in wildflowers. Dormant seeds, some waiting years for their chance, burst into gold, purple, and white across the valley floor. A true "superbloom" happens perhaps once a decade, when the right rains, warmth, and gentle winds all align. It is proof that even here life merely waits for its moment.

A few orienting facts round out a visit. **Furnace Creek** is the park's hub — visitor center, lodging, and the site of that 1913 heat record. Death Valley became a national monument in 1933 and a full **national park in 1994**, and today draws about **1.1 million visitors a year**. And in a single warm pool called Devils Hole

live the **Devils Hole pupfish**, among the rarest fish on Earth — one more improbable life clinging on in a land named for death.

Key concepts

Zabriskie Point

- An overlook above a sea of golden badlands — wrinkled ridges of ancient lakebed mud.
- A dark spire called Manly Beacon rises from its center.
- At dawn the low light sets it glowing amber, making it the park's most photographed sunrise.

Artists Palette

- A hillside along a one-way scenic loop that erupts in unexpected color.
- Pink, mint green, lavender, and gold are splashed across the rock — none of it paint.
- The hues come from weathered volcanic minerals: iron oxides, chlorite, and manganese.

Ubehebe Crater

- A raw pit in the park's remote volcanic north, roughly 600 feet deep.
- It was blasted out only a few thousand years ago, one of the park's youngest features.
- Rising magma flashed groundwater into steam, and the blast hollowed its half-mile-wide bowl.

Key facts

> **Two Miles, Top to Bottom**
> From the salt at Badwater (−282 ft) to the summit of Telescope Peak (11,049 ft), Death Valley packs more than two vertical miles into a single park. On a winter morning you can stand on snow at the top and look straight down onto a sun-baked salt pan that may never see frost — one of the most extreme elevation gradients in any U.S. park.

> **The Bowl Effect**
> Sunlight heats Death Valley's dark, below-sea-level floor; the hot air rises, cools, then sinks back down and compresses, and the surrounding steep walls trap it like the bottom of a bowl — concentrating heat to record-setting extremes.

> **Never the Wettest**
> Despite its record heat, Death Valley is the driest place in North America, receiving only about 2 inches of rain a year — it genuinely is the lowest, hottest, and largest contiguous park all at once, but never the wettest.



Christian David · CC BY-SA 4.0

Artists Palette

Along the one-way Artists Drive, a hillside erupts in pastel — pink, mint green, lavender, and gold splashed across the rock. The colors come from weathered volcanic minerals: iron oxides for the reds and pinks, mica and chlorite for the greens, manganese for the purples. It looks painted, but every hue is pure chemistry.

Still Sinking

Death Valley owes its depth to being a graben — a block of crust sinking between two faults as the region stretches and pulls apart. The valley is still deepening today.



Wikimedia Commons · Jim Gordon · CC BY 2.0

Ubehebe Crater

Only a few thousand years ago, rising magma flashed underground water into steam, and the resulting explosion blasted out the half-mile-wide, roughly 600-foot-deep Ubehebe Crater.



Tuxyso · CC BY-SA 3.0

Visit in Winter

November through March is the season for Death Valley. Winter days are mild and clear, perfect for hiking the salt flats and badlands. Summer is genuinely dangerous — the NPS warns against hiking below sea level after 10 a.m., when the valley floor becomes a lethal oven. Come in the cool months and the harshest place in America turns welcoming.

The Timbisha Shoshone

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After a rare wet winter, the driest place in North America can do something astonishing: carpet itself in wildflowers. Dormant seeds, some waiting years, burst into gold, purple, and white across the valley floor. A true "superbloom" happens perhaps once a decade, when storms, warmth, and gentle winds all align — proof that even here, life waits for its moment.

> **A Six-Decade Wait**
> Death Valley was first protected as a national monument in 1933, then upgraded to full national park status in 1994 — a six-decade wait before it gained the highest level of protection.

By the numbers

How far below sea level is Badwater Basin, the lowest point in North America?
-282 ft

What is the hottest air temperature ever reliably recorded on Earth, set at Furnace Creek?
134 °F

About how much rain falls on Death Valley in a typical year, making it the driest place in North America?
2 in

Death Valley is the largest national park in the contiguous U.S. About how many acres does it cover?
3408396 acres

How high is Telescope Peak, the park's snow-capped summit above Badwater Basin?
11049 ft

Ubehebe Crater, blasted out by a steam explosion, is roughly how deep?
600 ft

In what year was Death Valley designated a national park (after decades as a national monument)?
1994 year

About how many people visited Death Valley in 2024?
1100000 visitors

Matched pairs

Each item on the left goes with the one on the right.

Badwater Basin → Lowest point in North America, 282 ft below sea level

Telescope Peak → Park high point, 11,049 ft — a 2-mile rise above Badwater

Mesquite Flat Sand Dunes → Rolling dunes near Stovepipe Wells, the park's easiest to reach

Ubehebe Crater → Half-mile-wide volcanic explosion crater, ~600 ft deep

Dante's View → Overlook 5,475 ft above the salt flats, a mile straight down

Tümpisa → Timbisha Shoshone name for the valley — "red ochre paint"

Devils Hole pupfish → Among Earth's rarest fish, surviving in one geothermal pool

Step by step

How the sailing stones of Racetrack Playa move

1. Thin sheets of ice form across the playa on a rare freezing night
2. Morning sun breaks the ice into floating panes
3. A light breeze nudges the panes
4. The panes glide the stones along the slick mud, etching trails

Time-lapse cameras caught this whole chain on Racetrack Playa, solving a mystery that had held for decades.

Self-test

Answer each question from memory, then check your work against the answer key.

1. Why does Death Valley record the hottest air temperatures on Earth?

- A Its below-sea-level floor traps heated air that sinks, compresses, and warms further, like the bottom of a bowl
- B Geothermal heat from active volcanoes warms the valley floor
- C It lies directly beneath a thin spot in the ozone layer
- D It sits nearly on the equator, where sunlight is most intense

2. Badwater Basin, the lowest point in North America, sits how far below sea level?

- A 1,024 feet
- B 86 feet
- C 550 feet
- D 282 feet

3. What was the hottest air temperature ever reliably recorded on Earth, measured at Furnace Creek on July 10, 1913?

- A 118°F
- B 129°F
- C 134°F
- D 122°F

4. Which superlative does Death Valley NOT hold?

- A Hottest air temperature on Earth
- B Wettest place in North America
- C Largest national park in the contiguous U.S.
- D Lowest point in North America

5. Telescope Peak rises 11,049 ft above the −282 ft salt of Badwater. Roughly how much vertical relief does the park pack into that gradient?

- A Nearly four miles
- B Around one mile
- C Roughly half a mile
- D More than two miles

6. About how many inches of rain does Death Valley receive in a typical year, its driest-place record?

A) 2 in
B) 10 in
C) 0.5 in
D) 20 in

7. What causes Death Valley's extremely low rainfall, the driest in North America?

A) A rain shadow east of the Rockies
B) Cold ocean currents blocking Pacific storms
C) Mountain ranges to the west wring moisture from storms
D) Position below the jet stream's usual path

8. Death Valley holds the record for largest national park in which area of the U.S.?

A) all fifty states combined
B) the contiguous United States
C) the Mojave Desert region only
D) the National Park System worldwide

9. About how many acres does Death Valley cover as the largest contiguous-U.S. national park?

A) about 800,000 acres
B) about 3.4 million acres
C) about 13.2 million acres
D) about 1.1 million acres

10. Death Valley owes its depth to what geologic process?

A) A meteor impact crater
B) A collapsed volcanic caldera
C) A fault-bounded basin (graben) that is pulling apart and dropping
D) A glacier that gouged out the valley floor

11. Zabriskie Point, the park's most photographed sunrise, overlooks a sea of what?

A) A white salt-flat pan
B) Pastel volcanic hillsides
C) Rolling sand dunes
D) Golden badlands of ancient lakebed mud

12. What gives Artists Palette its pink, green, and purple hues along Artists Drive?

A) Weathered volcanic minerals like iron oxides and manganese
B) Streaks of oxidized copper ore
C) Blooms of desert algae
D) Layers of colored salt deposits

13. Time-lapse cameras revealed how the sailing stones of Racetrack Playa move. What actually pushes them?

A) Thin floating ice panes nudged by a light breeze
B) Magnetic forces in the playa
C) Powerful windstorms dragging them over dry mud
D) Small earthquakes jolting the surface

14. The half-mile-wide, ~600-ft-deep Ubehebe Crater was blasted out by what?

A) Salt dissolving and sinking the ground
B) A collapsed volcanic caldera
C) A steam explosion when magma flashed groundwater to steam
D) A meteor impact

15. At what tier is Death Valley certified as a Dark Sky Park?

A Platinum Tier
B Gold Tier
C Silver Tier
D Bronze Tier

16. When is the ideal season to visit Death Valley?

A June through August (midsummer)
B September only (early fall)
C April through May (spring)
D November through March (winter)

17. The Timbisha Shoshone call the valley Tümpisa. What does the name refer to?

A A sacred desert spring
B Red ochre paint made from local clay
C The snow on Telescope Peak
D The vast salt flats

18. In what year was Death Valley designated a full national park, after decades as a national monument?

A 1994
B 1933
C 1872
D 1964

19. Which statement about visiting Death Valley is NOT true?

A It holds Gold Tier dark-sky certification
B Winter is the ideal season to visit
C The NPS recommends midday summer hikes on the valley floor
D The Timbisha Shoshone reservation lies within the park

Go deeper

WATCH The Heat Machine 0:32
In summer, the ground in Death Valley can top 200 degrees Fahrenheit. Why? The valley is a near-perfect heat machine.

WATCH Artists Palette 0:32
A hillside in Death Valley looks splashed with paint: pink, mint green, lavender and gold. None of it is paint.

WATCH Shadows by Starlight 0:28
On a moonless night in Death Valley, starlight alone can cast your shadow.

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-death-valley

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 22 OF 27

Spotlight: Sequoia

The Biggest Trees on Earth · Roof of the Lower 48 · Visiting Sequoia

WHAT YOU'LL BE ABLE TO DO

- Explain what makes giant sequoias and General Sherman the biggest trees on Earth.
- Identify Sequoia's high country, from Mount Whitney to Moro Rock and Crystal Cave.
- Plan a Sequoia visit around its trails, quirks, and season.

The Biggest Trees on Earth

Some places impress with height, others with age. Sequoia National Park impresses with sheer mass — it protects the most colossal living things that have ever grown. Established in 1890 as the country's second national park, it exists chiefly to guard one kind of tree: the giant sequoia.

The Giant Sequoia

Giant sequoias are the largest living things on Earth measured by volume. They are not the tallest trees — that title goes to their coastal cousins, the coast redwoods — nor the oldest, which are the gnarled bristlecone pines. What sets a giant sequoia apart is bulk: a single mature tree can weigh more than a thousand tons and live two to three thousand years. They grow naturally in only one place on the planet, the western slopes of California's Sierra Nevada, in scattered groves perched roughly between 4,500 and 7,000 feet of elevation. Their fibrous, cinnamon-red bark can grow a foot or more thick.

General Sherman

The single most famous tree in those groves is General Sherman, the largest single-stem tree on Earth by volume — about 52,500 cubic feet of wood. It stands roughly 275 feet tall, carries a base diameter near 36 feet, and is estimated to be around 2,200 years old, meaning it was already a sapling centuries before the Roman Empire fell. It is neither the tallest tree alive nor the widest, but no other living thing concentrates so much wood into one trunk. A low railing now keeps admirers from compacting the soil over its shallow roots.

The Giant Forest

General Sherman doesn't stand alone. It anchors the Giant Forest, the park's premier grove and home to five of the ten largest trees on Earth. The naturalist John Muir walked into it in 1875 and named it, judging it the grandest sequoia grove he had ever seen. A web of trails — most famously the paved Congress Trail — lets visitors wander among the giants, passing named clusters that stand shoulder to shoulder like assemblies of ancient elders.

Trees That Need Fire

The strangest fact about these giants is that they depend on fire. Their thick, tannin-rich bark makes them nearly fireproof, and a passing wildfire does them a favor: its heat dries and cracks open their

tightly sealed cones, scattering seeds onto bare, ash-cleared soil where sunlight reaches the ground and seedlings can take hold. For much of the twentieth century, well-intentioned fire suppression kept flames out of the groves — and the giants stopped reproducing. That hard lesson reshaped how the parks manage fire, bringing controlled burns back to the forest floor.

Together these facts make Sequoia's first lesson: this is a park built around trees that are biggest by volume, ancient beyond easy imagining, and quietly reliant on the very fire that seems most likely to destroy them.

Roof of the Lower 48

Sequoia is famous for its trees, but look up from the groves and the land keeps climbing — past forest, past treeline, all the way to the highest ground in the contiguous United States. This part follows the park upward, from hot foothills to bare alpine granite, with a marble cavern hidden in between.

Mount Whitney

On Sequoia's eastern boundary rises Mount Whitney, 14,505 feet — the highest peak in the contiguous United States, the literal roof of the lower 48. Its summit is bare granite, the high point of the vast Sierra Nevada batholith that forms the range's backbone. Reaching the top is a serious undertaking: the classic route runs about 22 miles round trip and demands a wilderness permit that is awarded by a competitive lottery. The mountain sits on the park's edge, so its summit looks east out of Sequoia entirely, toward the deserts of the Owens Valley far below.

Moro Rock

Closer to the groves, Moro Rock offers a summit almost anyone can earn. It is a great granite dome bulging from a forested ridge, and a stairway of more than 350 steps — carved and built into the stone by Civilian Conservation Corps crews in the 1930s — climbs its flank. The trail is only about half a mile, but it delivers a sweeping panorama over the Great Western Divide and the deep canyon of the Middle Fork Kaweah River. Few short hikes anywhere repay the effort so richly.

Crystal Cave

Beneath the granite peaks lies a different kind of wonder. Crystal Cave is a cool marble cavern dissolved by water through karst rock, its chambers polished smooth and hung with stalactites, stalagmites, and draped flowstone. It is a startling counterpoint to the world above — fiery red sequoias and sun-bleached alpine granite give way underground to pale, glistening stone. The cave is open seasonally and visited only by guided tour, which keeps its delicate formations intact.

Foothills to Alpine

What ties all of this together is range — vertical range. Sequoia climbs from roughly 1,300 feet in its hot, dry foothill chaparral, up through the giant sequoia montane forest, to the bare alpine summit of Mount Whitney at 14,505 feet. That is a rise of more than 13,000 feet within a single park. The gradient stacks entire ecosystems atop one another: oak and yucca scrub at the bottom, ancient conifers in the middle, and lichen-crusted granite swept by wind at the top. Travel from the entrance to the high country and you pass through climate zones that, at sea level, would be separated by thousands of miles of latitude.

The roof of the lower 48, a stone stairway to a dome-top view, a marble cave, and an ecosystem ladder over two and a half vertical miles — Sequoia's high country is every bit as superlative as its trees.

Visiting Sequoia

Knowing what Sequoia protects is one thing; knowing how to walk among it is another. This part is the practical guide — the trails that put you beside the giants, the quirks worth a photo, the seasons that open the high country, and the etiquette that keeps both you and the park's bears safe.

The Congress Trail

Almost every visit begins at General Sherman, and the natural next step is the Congress Trail, a paved loop of about two miles through the heart of the Giant Forest. It threads past named clusters of giants — the House and the Senate, where sequoias stand packed shoulder to shoulder — and the towering President Tree. The path is gentle and well graded, making it the easiest way on Earth to walk among the largest living things on the planet. Go early, before the crowds, and the grove feels like a cathedral.

Tunnel Log

One of Sequoia's most beloved curiosities was an accident. In 1937 a giant sequoia — about 275 feet tall — toppled across a park road. Rather than haul it away, crews cut a passage straight through the fallen trunk: the Tunnel Log, an opening about 8 feet tall and 17 feet wide. Visitors still steer their cars beneath it for one of the park's classic photographs, a small car framed inside the body of a tree.

Black Bears and Food Storage

Sequoia's forests are black bear country, and bears have an extraordinary nose for anything that smells like food. The park requires that food, trash, and all scented items be locked in steel bear boxes or approved canisters — never left in a parked car, where a determined bear can peel a door open for a cooler. This isn't bureaucracy; it's protection. A bear that learns to raid cars becomes a danger and often has to be killed. Proper food storage keeps the bears wild and visitors safe.

Planning your visit

A few practical notes round out a trip. Moro Rock's stairway climbs more than 350 steps to its viewpoint, a short but breath-stealing effort at altitude. The summit of Mount Whitney, by contrast, is a roughly 22-mile round-trip expedition requiring a permit — a goal for serious hikers, not a casual afternoon. For timing, the high country is best from summer to early fall, once snow has cleared; the Giant Forest stays accessible most of the year, though tire chains may be required in winter. And remember that Sequoia is managed jointly with neighboring Kings Canyon National Park to the north — one continuous wild landscape under two names, easily explored together on a single trip.

Walk the Congress Trail, drive through a fallen tree, lock up your snacks, climb a dome of stairs, and time it for summer: that is how you meet Sequoia on its own grand terms.

Key concepts

Giant Forest

- The park's premier sequoia grove, home to five of the ten largest trees on Earth.
- The naturalist John Muir walked into it in 1875 and judged it the grandest grove he had ever seen.
- General Sherman anchors it, and the paved Congress Trail winds among its towering trunks.

Mount Whitney

- On Sequoia's eastern boundary rises the literal roof of the lower 48.
- At 14,505 feet, it is the highest peak in the contiguous United States.
- Its bare granite summit, reached by a ~22-mile round trip and a lottery permit, looks east over the Owens Valley.

Moro Rock

- A great granite dome bulging from a forested ridge, a summit almost anyone can earn.
- A stairway of more than 350 steps, built by Civilian Conservation Corps crews in the 1930s, climbs its flank.
- The half-mile climb opens a panorama over the Great Western Divide and the Middle Fork Kaweah River.

Crystal Cave

- A cool underground wonder dissolved by water through karst rock beneath the granite peaks.
- Its polished marble chambers are hung with stalactites, stalagmites, and draped flowstone.
- Open only seasonally and by guided tour, it is a pale counterpoint to the red sequoias above.

Congress Trail

- A paved loop of about two miles through the heart of the Giant Forest.
- It threads past named clusters called the House and the Senate, where sequoias stand shoulder to shoulder.
- Starting at General Sherman, it passes the towering President Tree — the easiest walk among Earth's largest living things.

Key facts



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The Giant Forest

The Giant Forest is Sequoia's crown jewel of groves — home to five of the ten largest trees on Earth, including General Sherman. Naturalist John Muir named it in 1875, calling it the grandest sequoia grove he had seen. A network of trails, including the Congress Trail, threads among these ancient giants.



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Trees That Need Fire

Giant sequoias are nearly fireproof — their thick, tannin-rich bark resists flame — and they actually depend on fire to survive as a species. Heat from a passing wildfire dries and opens their cones, releasing seeds onto bare, ash-cleared soil where seedlings can take root. Decades of well-meaning fire suppression starved the groves of new growth, a lesson that reshaped how the parks manage fire.

> **Not Even the Tallest**
>
> The General Sherman Tree stands roughly 275 feet tall, but height isn't its record — coast redwoods grow taller. What makes it the largest tree on Earth is the sheer volume of wood packed into its single trunk.

> **Moro Rock**
>
> Moro Rock is a great granite dome jutting from the forested ridge, reached by a stairway of more than 350 steps carved and built into the stone in the 1930s. From the top, a sweeping panorama opens over the Great Western Divide and the deep canyon of the Middle Fork Kaweah River — a half-mile climb that rewards far beyond its length.



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Crystal Cave

Beneath Sequoia's granite peaks hides Crystal Cave, a cool marble cavern carved by water through karst rock. Its polished chambers are draped with stalactites, stalagmites, and flowing formations — a striking contrast to the fiery red sequoias and bare alpine granite above ground. The cave is open seasonally by guided tour.

Foothills to Alpine

Few parks span so much vertical world. Sequoia climbs from about 1,300 feet in its hot foothill chaparral, up through the giant sequoia montane forest, to the bare alpine summit of Mount Whitney at 14,505 feet — a rise of more than 13,000 feet. That gradient stacks ecosystems on top of one another, from oak and yucca to ancient conifers to lichen-crusted granite.

Over 350 Steps

During the New Deal in the 1930s, Civilian Conservation Corps crews carved and built the more-than-350-step stairway into Moro Rock's granite dome, opening a half-mile climb to sweeping views of the Great Western Divide.



Pavel Špindler · CC BY 3.0

Tunnel Log

When a giant sequoia fell across a park road in 1937, crews didn't haul it away — they cut a drive-through tunnel through its fallen trunk. Today's visitors steer their cars beneath the Tunnel Log, an 8-foot-tall, 17-foot-wide passage carved through a tree that stood about 275 feet tall, for one of the park's most beloved photo stops.

Black Bears and Food Storage

Black bears roam Sequoia's forests, and they have keen noses for anything that smells like a meal. The park requires food, trash, and scented items to be locked in steel bear boxes or canisters — never left in a car, where a determined bear can peel a door open. Proper food storage keeps both bears and visitors safe.



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The Visiting Window

Sequoia's high country stays snowed in for much of the year, opening up only in summer and early fall. The Giant Forest itself stays accessible most of the year, though chains may be required in winter.

> **One Landscape, Two Names**
>
> Sequoia and Kings Canyon are run together as one continuous wild landscape under two separate names, making it easy to explore both parks on a single trip.

By the numbers

How tall is the General Sherman Tree?

275 ft

About how old is the General Sherman Tree, in years?

2200 years

Roughly how much wood, in cubic feet, makes up the General Sherman Tree?

52500 cubic feet

In what year was Sequoia established as a national park?

1890 year

How high is Mount Whitney, the tallest peak in the contiguous US?

14505 ft

About how low, in feet, does Sequoia's elevation drop in its foothills?

1300 ft

About how many steps climb the Moro Rock stairway?

350 steps

About how long, in miles, is the round-trip hike to Mount Whitney's summit?

22 miles

Matched pairs

Each item on the left goes with the one on the right.

General Sherman → Largest single-stem tree on Earth by volume

Giant Forest → Grove holding 5 of the 10 biggest trees on Earth

Mount Whitney → Highest peak in the contiguous US (14,505 ft)

Crystal Cave → Underground marble cavern of stalactites

Moro Rock → Granite dome climbed by 350+ stone steps

Kings Canyon → Neighbor park managed jointly with Sequoia

Tunnel Log → Drive-through tunnel cut in a fallen sequoia

Step by step

How a wildfire helps giant sequoias reproduce

1. A wildfire passes through the grove
2. Heat dries and cracks open the sealed cones
3. Seeds scatter onto bare, ash-cleared soil
4. Sunlight reaches the ground and seedlings take root

Decades of fire suppression broke this chain, and the groves stopped producing seedlings until controlled burns returned.

Self-test

Answer each question from memory, then check your work against the answer key.

1. What record do giant sequoias hold among all the trees on Earth?

- A Largest by volume (most massive)
- B Tallest
- C Oldest
- D Widest trunk

2. Roughly how tall does the General Sherman Tree stand?

- A 350 feet
- B 500 feet
- C 275 feet
- D 145 feet

3. About how much wood, by volume, makes up the General Sherman Tree?

- A 275,000 cubic feet
- B 5,250 cubic feet
- C 14,505 cubic feet
- D 52,500 cubic feet

4. What distinction does Sequoia's Giant Forest hold among sequoia groves?

A It is the oldest grove of bristlecone pines
B It holds five of the ten largest trees on Earth
C It is the only grove outside California
D It is the tallest stand of coast redwoods

5. Which statement about the giant sequoia is NOT true?

A Its cinnamon-red bark can grow over a foot thick
B It grows naturally only in California's Sierra Nevada
C It is the largest living thing by volume
D It is the tallest tree species on Earth

6. Moro Rock is climbed by a stairway of more than 350 steps built into its granite dome. Who constructed it, and when?

A U.S. Army engineers in the 1910s
B The Civilian Conservation Corps in the 1930s
C John Muir's trail crews in the 1870s
D The Works Progress Administration in the 1950s

7. How high is Mount Whitney, the highest peak in the contiguous United States?

A 14,000 feet
B 12,505 feet
C 14,505 feet
D 20,320 feet

8. Which best describes Sequoia's Crystal Cave?

A A marble cavern of stalactites carved by water through karst
B A granite dome climbed by stone steps
C A grove of the park's largest sequoias
D The summit of the Sierra Nevada batholith

9. Which best describes Moro Rock?

A A granite dome reached by a stairway of 350+ stone steps
B An underground marble cavern of stalactites
C A drive-through passage cut in a fallen tree
D The highest granite peak in the lower 48

10. From its foothills near 1,300 feet up to Mount Whitney, Sequoia climbs a vertical range of more than how many feet?

A 5,000 feet
B 13,000 feet
C 8,000 feet
D 22,000 feet

11. When is the best time to explore Sequoia's high country?

A Late autumn
B Midwinter
C Early spring
D Summer to early fall

12. What is the Congress Trail that most Sequoia visitors walk after seeing General Sherman?

A The guided tour route inside Crystal Cave
B The stone stairway up Moro Rock
C A paved ~2-mile loop through the Giant Forest
D The ~22-mile route to Mount Whitney's summit

13. What is Sequoia's Tunnel Log?

(A) A natural rock arch over a park road
(B) A passage cut through a fallen sequoia that cars drive under
(C) A highway tunnel bored through a granite ridge
(D) A living tree with a hole carved through its standing trunk

14. How does Sequoia require visitors to store food and scented items in bear country?

(A) Sealed in a cooler inside a parked car
(B) Buried a short distance from camp
(C) Hung from a high tree branch
(D) Locked in steel bear boxes or approved canisters

15. Sequoia is managed jointly with which neighboring national park to its north?

(A) Yosemite
(B) Death Valley
(C) Kings Canyon
(D) Lassen Volcanic

Go deeper

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-sequoia

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 23 OF 27

Spotlight: Olympic

Three Parks in One · Rainforest and Rugged Coast · Visiting Olympic

WHAT YOU'LL BE ABLE TO DO

- Explain how Olympic packs glaciers, rainforest, and coast into one park.
- Trace Olympic's protection, its glaciated high point, and its landmark ridge and beach.
- Describe the Hoh rainforest and Olympic's wild coast, and define a nurse log.
- Plan an Olympic visit around Hurricane Ridge, Lake Crescent, and season.

Three Parks in One

Few national parks pack so many worlds into one boundary as Olympic. On the Olympic Peninsula in the far northwest corner of Washington, glaciers, rainforest, and a wild ocean coast crowd together — and a traveler with stamina can touch all three in a single day.

Olympic National Park

Olympic protects roughly 922,650 acres of the Olympic Peninsula, making it the 13th-largest national park in the United States. Its story of protection came in two stages: President Theodore Roosevelt declared Mount Olympus National Monument in 1909, and Congress redesignated the area a national park in 1938, a campaign championed by President Franklin Roosevelt. What sets Olympic apart is not size but variety — three distinct ecosystems stacked from sea level to summit. Glaciated mountains rise at the center, drenched temperate rainforest fills the western valleys, and about 73 miles of undeveloped Pacific coastline run along the edge. Some 3.7 million people visited in 2024, most circling the park on the highway that loops the peninsula, since no road crosses the wild interior.

Mount Olympus

The park's high point, Mount Olympus, reaches 7,980 feet. By the standards of nearby Mount Rainier that is modest, but Olympus sits squarely in the path of moisture-laden Pacific storms, so it is buried in snow and ice. More than 60 glaciers cling to the Olympic Mountains, fed by that relentless precipitation. The range itself is geologically young and strange: its marine sedimentary rock was scraped off the ocean floor and crumpled upward by subduction, the slow diving of one tectonic plate beneath another. Reaching the summit's Blue Glacier is a long backcountry expedition along the Hoh River Trail, not a day's outing — Olympus rewards only the committed.

Three Parks in One

Olympic's signature claim is almost a riddle: in one park you can stand on a glacier, walk through a rainforest, and reach a wild ocean beach, sometimes within the same day. Each realm keeps its own weather, plants, and animals — alpine ice up high, dripping moss-hung forest in the western valleys, and surf-pounded sea stacks along the coast. That breadth earned Olympic two international honors: it is

recognized as a UNESCO Biosphere Reserve (1976) and a World Heritage Site (1981), prized as much for its intact wildness as for its beauty.

The numbers anchor the story. The park became a national park in **1938**; its high point, Mount Olympus, stands at **7,980 feet**; it spans about **922,650 acres** with roughly **73 miles** of coast and more than **60 glaciers**. Two tectonic ideas tie the geology together — **subduction** built the mountains from old seafloor, and the same storm-fed heights now hold the ice. Together they explain how one corner of Washington became three parks in one.

Rainforest and Rugged Coast

Drop down from Olympic's icy peaks and the world turns green, then turns to surf. The park's western valleys hold one of the rainiest forests in the country, and beyond them lies a coast as wild as any in the Lower 48.

The Hoh Rain Forest

The Hoh Rain Forest, in a western valley fed by Pacific storms, is one of the wettest places in the contiguous United States, soaking up roughly 12 to 14 feet of rain a year. All that water builds a cathedral of green. Sitka spruce and western hemlock soar past 200 feet, and nearly every trunk, limb, and fallen log is sheathed in club moss, ferns, and lichen. Fallen "nurse logs" sprout rows of new trees along their length. The easy Hall of Mosses loop, about 0.8 miles, threads through the heart of it, the canopy so dense the light arrives soft and green. The Hoh is the most famous of these forests, but it is not the only one — the Quinault and Queets valleys nearby shelter their own moss-draped rainforest, each carved by its own river.

The Wild Coast

Olympic's coastal strip is one of the longest stretches of wilderness shoreline left in the Lower 48 — fog, driftwood, and sea stacks rising offshore like the ruined towers of a drowned coast. Rialto Beach and Ruby Beach are the celebrated frames. At low tide their pools brim with sea stars, anemones, urchins, and chitons, a hands-and-knees world of color. Unlike the high country, the coast is open year-round, though a visit almost always means rain gear: this is a shore best met wet, with the surf loud and the air full of salt and mist.

Roosevelt Elk

The largest of North America's elk, the Roosevelt elk graze the Hoh and Quinault valleys in herds, and their browsing keeps the rainforest understory open and oddly park-like. Protecting them was a driving reason the park exists; the herds were so central to the cause that Olympic was nearly named for the elk rather than the mountains. They share these forests with black bears and bald eagles, while the tide pools below hold a different cast of life entirely — one park, many animals, each tuned to its own elevation and weather.

A few facts pin the part together. The Hoh drinks about **12 feet** of rain at the low end of its range; the **Hall of Mosses** loop runs roughly **0.8 miles**; **Ruby Beach** is the postcard of sea stacks and tide pools; and the **Roosevelt elk**, the continent's largest, gave the park much of its reason to exist.

Visiting Olympic

No road crosses Olympic's wild heart, so seeing the park means choosing your spokes off the loop highway — a mountain overlook here, a clear lake there, a waterfall, a beach. Each entrance opens onto a different one of the park's three worlds.

Hurricane Ridge

The easiest way to stand among the high country is Hurricane Ridge, reached by a paved road that climbs from the town of Port Angeles to nearly a mile above the sea. From its subalpine meadows you look across a sea of glaciated peaks toward Mount Olympus, with wildflowers blooming in summer and deep snow piling in winter. The Hurricane Hill trail, about 3.2 miles round trip, climbs to even wider views — on a clear day, north across the Strait of Juan de Fuca toward Canada. It is the park's grandest scenery for the least effort.

Lake Crescent and Sol Duc Falls

On the park's north side, Lake Crescent is a deep, glacier-carved lake so clear that its water glows turquoise in sunlight, ringed by forested ridges and a historic lodge. A short drive away, the Sol Duc valley leads to Sol Duc Falls, where the river splits into ribbons as it drops into a mossy gorge. It is one of the most photographed waterfalls in the park, and an easy walk from the road through old-growth forest — a gentle counterpoint to the alpine heights of Hurricane Ridge.

The Peninsula's First Peoples

Eight tribes hold deep ties to the Olympic Peninsula, among them the Quinault, Hoh, Quileute, Makah, Klallam, and Skokomish — Coast Salish and neighboring peoples who fished its rivers and coast for thousands of years before any park existed. The Quileute, at La Push near the mouth of the Quillayute River, became known worldwide as a setting in the Twilight novels, though their living culture runs far deeper than any story. These nations remain woven through the region today, their lands and waters bordering the park on every side.

When to come matters. July through September is the dependable dry window for the high country, while the coast and rainforest stay open year-round, but wet. The figures to carry: about **3.7 million** visitors in 2024, the **Hurricane Hill** trail at roughly **3.2 miles** round trip, and the **eight** tribes of the peninsula whose history predates the park by millennia. Pair the names with the places — **Hurricane Ridge** for the peaks, **Lake Crescent** for the water, the **Quileute** for the coast — and Olympic comes into focus.

Key concepts

Mount Olympus

- The park's high point, buried in snow and ice despite standing under 8,000 feet.
- At 7,980 feet it sits squarely in the path of Pacific storms, feeding more than 60 glaciers.
- Reaching its Blue Glacier is a long backcountry trek up the Hoh River Trail.

Hoh Rain Forest

- A drenched western valley, one of the wettest places in the contiguous United States.
- Soaking up 12 to 14 feet of rain a year, it grows moss-draped Sitka spruce and hemlock past 200 feet.
- Its easy Hall of Mosses loop, about 0.8 miles, threads through soft green light.

Ruby Beach

- A wild stretch of Olympic's coastal strip, framed by fog and driftwood.
- Sea stacks rise offshore like the ruined towers of a drowned coast.
- At low tide its pools brim with sea stars, anemones, and urchins — the park's postcard shore.

Hurricane Ridge

- The easiest way to stand among Olympic's high country, reached by a paved road from Port Angeles.
- Its subalpine meadows climb nearly a mile above the sea, with summer wildflowers and deep winter snow.
- A short trail from the meadows opens wider views north across the Strait of Juan de Fuca toward Canada.

Lake Crescent

- A large body of water on the park's north side, ringed by forested ridges and a historic lodge.
- Carved deep by glaciers, it is famous for exceptional clarity.
- In sunlight its pure water glows a striking turquoise.

Key facts

> **Three Parks in One**
>
> Olympic's fame rests on a single, almost improbable claim: in one park you can touch a glacier, walk through a rainforest, and stand on a wild ocean beach — often on the same day. Glaciated peaks, temperate rainforest, and ~73 miles of undeveloped Pacific coast each form a distinct realm with its own weather, plants, and wildlife. That sweep of ecosystems is why Olympic carries two UNESCO honors: it is both a Biosphere Reserve and a World Heritage Site.

> **922,650 Acres**
>
> Olympic National Park covers roughly 922,650 acres, making it the 13th-largest national park in the United States.



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Two International Honors

Olympic National Park is recognized as both a UNESCO Biosphere Reserve and a World Heritage Site, prized for its intact wildness.



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Roosevelt Elk

The largest of North America's elk, Roosevelt elk graze the Hoh and Quinault valleys in herds, and their grazing helps keep the rainforest understory open and park-like. Protecting them was a driving reason the park exists — the herds were so central to the cause that the park was nearly named for the elk rather than the mountains. They share these forests with black bears, bald eagles, and the tide-pool life of the coast.

The Postcard Shot

Ruby Beach is celebrated as Olympic National Park's postcard image of offshore sea stacks and tide pools, distinct from the mountain overlook at Hurricane Ridge or the waterfall at Sol Duc Falls.

The Hall of Mosses

The Hall of Mosses is an easy, roughly 0.8-mile loop trail through the heart of the Hoh Rain Forest, one of the park's most popular short walks.



Sea Cow · CC BY-SA 4.0

Lake Crescent and Sol Duc Falls

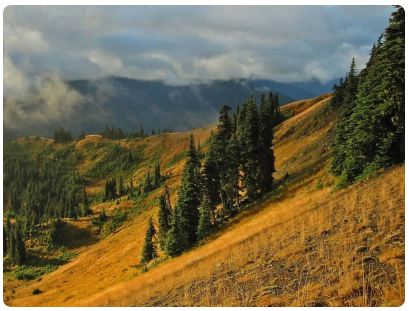
On the park's north side, Lake Crescent is a deep, glacier-carved lake so clear its water glows turquoise on a sunny day, ringed by forested ridges and a historic lodge. Nearby, the Sol Duc valley leads to Sol Duc Falls, where the river splits into ribbons over a mossy gorge — one of the most photographed waterfalls in the park, and an easy walk from the road through old-growth forest.



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The Peninsula's First Peoples

Eight tribes hold deep ties to the Olympic Peninsula, among them the Quinault, Hoh, Quileute, Makah, Klallam, and Skokomish — Coast Salish and neighboring peoples who fished its rivers and coast for thousands of years. The Quileute of La Push, at the mouth of the Quillayute River, became known worldwide as a setting in the Twilight novels. Their living cultures remain woven through the region today.



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The Dry Window

July through September offers Olympic National Park's most dependable dry weather for high-country trips. The coast and rainforest stay visitable year-round, though wet.

> **Beyond Hurricane Ridge**
>
> Climbing from Hurricane Ridge to wider views north across the Strait of Juan de Fuca, the Hurricane Hill trail covers roughly 3.2 miles round trip.

By the numbers

In what year was Olympic established as a national park?
1938 year

How tall is Mount Olympus, the park's high point?
7980 ft

Roughly how many acres does Olympic National Park cover?
922650 acres

About how many miles of wild Pacific coastline does Olympic protect?
73 miles

Roughly how many glaciers cling to the Olympic Mountains?
60 glaciers

Roughly how many feet of rain does the Hoh Rain Forest receive each year (lower end of the range)?
12 feet

About how long is the Hall of Mosses loop trail in the Hoh?
0.8 miles

About how many people visited Olympic National Park in 2024?
3700000 visitors

About how long is the Hurricane Hill trail (round trip)?
3.2 miles

How many tribes hold ties to the Olympic Peninsula?
8 tribes

Matched pairs

Each item on the left goes with the one on the right.

Mount Olympus → The park's highest peak, at 7,980 ft, cloaked in glaciers

1938 → Year Olympic became a national park, championed by Franklin Roosevelt

Subduction → Plate-diving that scraped up seafloor rock to build the Olympic Mountains

Hoh Rain Forest → One of the wettest spots in the Lower 48, with ~12–14 ft of rain a year

Ruby Beach → Coastal beach famed for sea stacks and tide pools

Roosevelt elk → North America's largest elk; the park was nearly named for them

Hurricane Ridge → Paved-road viewpoint into the high country above Port Angeles

Lake Crescent → Deep, clear, glacier-carved lake on the park's north side

Quileute → La Push tribe made famous as a setting in the Twilight novels

Self-test

Answer each question from memory, then check your work against the answer key.

1. Olympic's fame rests on three stacked ecosystems within one boundary. Which trio are they?

A. Desert, prairie, and alpine tundra
B. Volcanoes, geysers, and hot springs
C. Glaciers, temperate rainforest, and Pacific coast
D. Swamp, mangrove, and coral reef

2. About how many miles of undeveloped Pacific coastline does Olympic protect?

A. About 73 miles
B. About 450 miles
C. About 12 miles
D. About 200 miles

3. Roughly how much land does Olympic National Park cover, making it the 13th-largest U.S. national park?

A. About 73,000 acres
B. About 922,650 acres
C. About 7,980 acres
D. About 3.7 million acres

4. How many glaciers cling to the Olympic Mountains, fed by relentless Pacific storms?

A. More than 600
B. Around 8
C. Roughly 12
D. More than 60

5. Olympic's intact wildness earned it rare international recognition. Which two honors does it hold?

A Dark Sky Park and UNESCO Geopark
B National Historic Landmark and Ramsar Wetland
C UNESCO Biosphere Reserve and World Heritage Site
D State Natural Area and Marine Sanctuary

6. Olympic was first designated in 1909 as what kind of federal land?

A A state park
B A national forest
C A wildlife refuge
D A national monument

7. In what year did Congress redesignate the area a national park, a campaign championed by Franklin Roosevelt?

A 1890
B 1938
C 1972
D 1909

8. How tall is Mount Olympus, the park's glaciated high point?

A 7,980 feet
B 12,340 feet
C 5,280 feet
D 14,411 feet

9. Which Olympic landmark is a paved-road viewpoint into the high country above Port Angeles?

A Lake Crescent
B Hoh Rain Forest
C Ruby Beach
D Hurricane Ridge

10. Which Olympic landmark is the postcard of offshore sea stacks and tide pools?

A Sol Duc Falls
B Hurricane Ridge
C Ruby Beach
D Mount Olympus

11. In the Hoh Rain Forest, what is a "nurse log"?

A A fallen log along which rows of new trees sprout and take root
B A ring of saplings encircling a single living parent tree
C A standing dead tree hollowed out for nesting birds
D A moss-covered boulder that stores rainwater for seedlings

12. Roughly how much rain does the Hoh Rain Forest soak up each year, making it one of the wettest spots in the contiguous U.S.?

A 12 to 14 inches
B 12 to 14 feet
C 3 to 4 feet
D 40 to 50 feet

13. About how long is the easy Hall of Mosses loop through the heart of the Hoh?

A About 5 miles
B About 12 miles
C About 0.8 miles
D About 3.2 miles

14. What distinction do the Roosevelt elk that graze the Hoh and Quinault valleys hold?

- A Elk introduced from Yellowstone in the 1960s
- B The smallest deer species in North America
- C An endangered species found only on the coast
- D North America's largest elk; the park was nearly named for them

15. Which of these is NOT a feature of Olympic's wild coast?

- A A turquoise glacier-carved lake
- B Driftwood and fog
- C Offshore sea stacks
- D Tide pools with sea stars and anemones

16. Which window offers Olympic's most reliable dry weather for high-country trips?

- A October–November
- B July–September
- C April–May
- D January–March

17. The paved road up to Hurricane Ridge's high-country meadows climbs from which peninsula town?

- A Port Angeles
- B Port Townsend
- C La Push
- D Forks

18. What best describes Lake Crescent, a highlight on Olympic's north side?

- A A fog-wrapped beach of sea stacks and tide pools
- B A deep, glacier-carved lake glowing turquoise
- C A subalpine meadow of summer wildflowers
- D A moss-draped rainforest valley of giant spruce

19. For a trip into Olympic's high country, which months are the dependable dry window?

- A April through May
- B October through November
- C January through March
- D July through September

20. About how long is the Hurricane Hill trail, which climbs to wider views above Hurricane Ridge?

- A About 5.4 miles round trip
- B About 0.8 miles round trip
- C About 3.2 miles round trip
- D About 1.6 miles round trip

Go deeper

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STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

LESSON 24 OF 27

Spotlight: Denali

The High One · Subarctic Wilderness · Visiting Denali

WHAT YOU'LL BE ABLE TO DO

- Explain the peak's height, how its federal name changed in 2015 and 2025, and its greatest-rise record.
- Identify the Alaska Range, the peak's other name (Mount McKinley), and the park's Big Five animals.
- Describe Denali's subarctic ecosystems and the Big Five it protects.
- Plan a Denali visit around the bus, the weather, and the seasons.

The High One

Some mountains are tall. Denali is *overwhelming* — a single mass of rock and ice that owns the horizon of interior Alaska and the very top of the continent.

Denali

At **20,310 feet**, this is the highest peak in North America. It anchors the **Alaska Range**, the arcing chain of mountains that sweeps across the state's interior, and it stands inside a park of roughly six million acres of subarctic wilderness. The peak has two names, and both are old. **Denali** is Koyukon Athabascan for "the high one" (or "the tall one"), the name Alaska Native peoples used for generations before a prospector attached the name **Mount McKinley** in 1896. Alaska made Denali its official state name in 1975, and in **2015** the federal government followed, changing the peak's official name from Mount McKinley to Denali. In **January 2025** an executive order sent the federal name back to **Mount McKinley**, which is the peak's official federal name today. The park's name did not change: it is still **Denali National Park and Preserve**. In February 2025 the Alaska Legislature asked the federal government to keep the name Denali, so you will see both names in use. Whichever name you use, the mountain is the same: so big it generates its own weather, and far more often than not it hides itself in cloud.

Denali's Base-to-Summit Rise

Here is the statistic that sets Denali apart. Everest is higher above sea level — but Everest begins on a high plain, so its climb from its own base is shorter. Denali begins near the tundra, at roughly two thousand feet above sea level, and climbs in one unbroken sweep to its glaciated summit. That gives it a **base-to-summit rise of about 18,000 feet, or roughly three and a half miles — a mile taller than Everest from base to summit, according to the National Park Service.** You are not looking at a peak poking above a high plateau; you are looking at the entire mountain, floor to ceiling, all at once. That is why Denali feels bigger than its elevation suggests.

The range itself rides the **Denali Fault**, one of the great fracture lines in the Earth's crust, which has slowly shoved these mountains skyward over millions of years.

A Brutal Climb

Denali's far-northern latitude makes it one of the hardest high-altitude climbs on Earth — harder, in real terms, than its elevation alone would predict. Air pressure falls faster toward the poles, so the **effective altitude** a climber's body experiences near Denali's summit is closer to that of a much taller equatorial peak. Add savage cold and the storms the mountain brews for itself, and a Denali ascent becomes a serious mountaineering expedition, not a hike. Most climbers spend weeks on the mountain, hauling and acclimatizing, and many turn back at the weather's command.

Key numbers: summit **20,310 ft**; base-to-summit rise **~18,000 ft** (from a base near 2,000 ft); federal name changed to Denali **2015**, back to Mount McKinley **2025**; first protected **1917**. **Worth knowing:** *Denali* = "the high one" (Koyukon), the park's name and the name Alaska has used officially since 1975; *Mount McKinley* = the peak's federal name until 2015 and again since 2025; the *Alaska Range* = its home, rising along the *Denali Fault*.

Subarctic Wilderness

Beyond the mountain spreads the real Denali: six million acres of open, animal-rich, road-thin wilderness where you watch the land breathe through one short, blazing summer.

The Big Five

Denali's signature animals are the **Big Five**: **grizzly bears, caribou, moose, Dall sheep, and gray wolves.** This is one of the best places in North America to see large mammals behaving naturally, and there is a reason. The park was established in **1917** specifically to protect **Dall sheep** — the white, curl-horned wild sheep of the high slopes — from market hunters supplying the era's mining camps. Hunting has been barred in the core park ever since, so the animals here are neither tame nor terrified; they simply live. The open tundra helps too: there are few trees to hide behind, so a patient rider on the park bus can spot a grizzly digging roots a hillside away, or a bull moose wading a pond, or a wolf trotting the gravel.

A Subarctic World

Denali's climate is **subarctic** — long, dark, deeply cold winters and a brief, intense summer of near round-the-clock daylight when the whole land hurries to flower, feed, and breed. Two ecosystems stack by elevation. In the valleys grows **taiga**, the northern boreal forest of spruce and birch. Above the tree line stretches **alpine tundra**, treeless and low-growing, carpeting the slopes in dwarf shrubs that flare red and gold each autumn. The short growing season governs everything: when the caribou calve, when the berries ripen, and the narrow window in which the park road can carry visitors at all.

One Road, Wonder Lake, and the Scale of It

A single road, about **92 miles** long, is the only route into this **six-million-acre** wilderness — a park larger than the state of New Hampshire. Deep along that road lies **Wonder Lake**, a still tundra lake famous for holding a perfect mirror image of Denali on a calm morning, the whole snow giant doubled in the water. Reaching it is a long day, and it is the kind of place that rewards travelers who came for more than a roadside photo. Everything about Denali is built around this restraint: one road, few vehicles, and a vast wild left mostly to the animals it was created to protect.

Key numbers: road length **~92 miles**; park size **~6 million acres**; established **1917**. **Worth knowing:** *taiga* = boreal spruce-birch forest; *alpine tundra* = treeless ground above the tree line; *Dall sheep* = the animal Denali was first created to protect; *Wonder Lake* = the Denali-reflecting lake deep in the park.

Visiting Denali

Denali rewards patience and punishes assumptions. Plan around the bus, the weather, and the season, and the mountain will eventually give you its best.

The 30% Club

Denali is so massive it manufactures its own weather, wrapping itself in cloud even on days that are clear everywhere else. The result is humbling: only about **30%** of summer visitors ever actually see the full peak. Those lucky enough to catch it are unofficially inducted into the **"30% Club."** The practical lesson for any traveler is simple — give yourself several days, not a single afternoon. Treat a clear view of Denali as a gift, not a guarantee, and you will both manage your expectations and dramatically improve your odds of joining the club.

The Sled Dog Kennel

Denali runs the **only working sled-dog kennel in the entire National Park System.** This is not a tourist novelty; it is how the park is run. In deep winter, when snow shuts the road to every vehicle, rangers patrol the wilderness by dog team exactly as they have for roughly a century — quiet, reliable, and perfectly suited to the cold. In summer, the friendly Alaskan huskies become ambassadors, meeting visitors at daily kennel demonstrations. They are a living link between modern Denali and the way this enormous country was first explored and protected.

Getting There: Buses, Seasons, and Aurora

Denali's access runs on restraint. **Private vehicles are limited** to the first stretch of the road; beyond that, nearly everyone travels by **park bus.** It sounds like a constraint, but it is the secret to the experience — light traffic, calmer wildlife, and a window seat you can watch instead of a road you have to drive. Time your trip for the **best season, mid-June to early September**, when the road is open and summer is at full strength. (Note that a 2021 landslide at Pretty Rocks has limited travel on part of the road, so always check current status.) Come instead in the dark **shoulder months**, and the prize changes entirely: clear, black northern skies can light up with the **aurora**, the green curtains of the northern lights rippling over the Alaska Range.

Key numbers: summit-seen rate **~30%**; first established **1917**. **Worth knowing:** *park bus* = how most visitors travel (private cars limited); *best season* = mid-June to early September; *aurora season* = the dark shoulder months for northern lights.

Key concepts

Alaska Range

- This arcing chain of mountains sweeps across the interior of the 49th state.
- It is anchored by 'the high one,' North America's highest peak, and rides a great fracture line named for that summit.

Mount McKinley

- In 1896 a prospector attached this U.S. president's name to North America's highest peak.
- The federal government used this name until 2015, switched to the mountain's Koyukon name, Denali, and returned to this name in 2025.

Dall sheep

- A white, curl-horned mammal of Denali's high, rocky slopes — one of the park's 'Big Five.'
- Market hunters supplying the era's mining camps once threatened it, and protecting this animal was the very reason the park was founded in 1917.

moose

- One of Denali's 'Big Five' — a large mammal of the open subarctic country, often spotted from the park bus.
- Picture a bull of this species wading a pond out in the open tundra.

caribou

- One of Denali's 'Big Five' large mammals of the open tundra, best watched from a window seat on the park bus.
- The brief subarctic summer sets the timing of this animal's spring calving.

Wonder Lake

- Deep along Denali's single 92-mile road lies this still body of water surrounded by tundra.
- On a calm morning it holds a perfect mirror image of the snow-covered peak, the whole giant doubled on its surface.

Key facts

> **20,310 Feet**
>
> At 20,310 feet, Denali's summit is the highest point in North America. That figure is its elevation above sea level, separate from its roughly 18,000-foot rise from base to summit.



Wikimedia Commons · Frank K. from Anchorage, Alaska, USA · CC BY 2.0

The Alaska Range

Denali anchors the Alaska Range, the arcing mountain chain that rises along the Denali Fault and sweeps across Alaska's interior.

Two Names for One Peak

Mount McKinley was the peak's official federal name until 2015, when Denali became official. A January 2025 executive order changed the federal name back to Mount McKinley; the park is still Denali National Park and Preserve.

A Subarctic World

Denali's climate is subarctic: long, dark, deeply cold winters and brief, intense summers when the land erupts in wildflowers and round-the-clock daylight. Spruce-birch taiga blankets the valleys; above the tree line stretches open alpine tundra. This short growing season shapes everything — from when the caribou calve to when the park road can carry visitors.



Denali National Park and Preserve · Public domain

Denali's First Purpose

Denali was first set aside in 1917 as a refuge for Dall sheep, whose herds were being thinned by market hunters supplying nearby mining camps.



Wikimedia Commons · Denali National Park and Preserve · Public domain

Just One Road

A single road roughly 92 miles long is the only route into Denali's roughly six-million-acre wilderness.



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Bigger Than New Hampshire

Denali covers roughly six million acres of subarctic wilderness, an area larger than the state of New Hampshire.



Mind on Fire Photography (Openverse) · by-sa 2.0

The Sled Dog Kennel

Denali runs the only working sled-dog kennel in the entire National Park System. In winter, when the snow shuts out vehicles, rangers patrol the wilderness by dog team just as they have for a century. In summer, the friendly Alaskan huskies meet visitors at daily kennel demonstrations — a living link to how this country was first managed.

> **Keeping Wildlife Calm**
>
> Private vehicles on the Denali park road are limited to its first stretch; beyond that, nearly everyone travels by park bus, which keeps traffic light and wildlife calm.

> **Hidden by Daylight**
>
> Denali's dark shoulder-season skies offer the best chance to catch the northern lights over the Alaska Range, since midsummer's round-the-clock daylight hides the aurora.

> **When the Road Opens**
>
> To catch the park road open and summer at full strength, the recommended window for a Denali visit is mid-June to early September.

By the numbers

How tall is Denali's summit, the highest point in North America?

20310 ft

Roughly how great is Denali's base-to-summit rise?

18000 ft

In what year did the federal government officially rename Mount McKinley as Denali?
2015 year

About how long is the single road that runs into Denali's wilderness?
92 mi

About how many acres does Denali National Park and Preserve cover?
6000000 acres

About what percent of summer visitors actually see Denali's summit?
30 percent

In what year was the park first established (as Mount McKinley National Park)?
1917 year

Matched pairs

Each item on the left goes with the one on the right.

Denali
→ Koyukon Athabascan for "the high one" — the park's name, and the peak's federal name from 2015 to 2025

Mount McKinley → The peak's federal name until 2015, and again since 2025

Alaska Range → The arcing mountain chain, crowned by Denali, that rises along the Denali Fault

Alpine tundra → Treeless, low-growing ground above the tree line — much of Denali's open terrain

Taiga → The northern spruce-and-birch boreal forest of Denali's lower elevations

Dall sheep
→ White, curl-horned wild sheep of high slopes — the animal Denali was first created to protect

Wonder Lake → A still lake deep in the park famed for mirror reflections of Denali

Park bus → How most visitors travel the road — private vehicles are limited past the first stretch

Best season → Mid-June to early September, when the road is open and summer peaks

Aurora season → Late shoulder months, when dark skies bring the northern lights over the range

Self-test

Answer each question from memory, then check your work against the answer key.

1. What is the elevation of Denali's summit, the highest point in North America?

A) 18,000 feet
B) 14,411 feet
C) 20,310 feet
D) 29,032 feet

2. In the Koyukon Athabascan language, what does the name 'Denali' mean?

A The high one
B The great ice
C Father of rivers
D The white peak

3. In what year did the Interior Department officially change the mountain's federal name from Mount McKinley to Denali?

A 1980
B 1917
C 1896
D 2015

4. Roughly how far does Denali climb from base to summit?

A About 20,310 feet
B About 18,000 feet
C About 12,000 feet
D About 29,000 feet

5. Everest rises higher above sea level, yet by the National Park Service's measure Denali is a mile taller. Why?

A Its base-to-summit rise is greater (~18,000 ft); Everest sits on an already-high plateau
B It covers more ground area than any other mountain
C Its summit is actually farther from Earth's center than Everest's
D It contains more rock and ice by total volume than Everest

6. Denali is the crowning peak of which mountain chain that sweeps across Alaska's interior?

A The Brooks Range
B The Chugach Mountains
C The Rocky Mountains
D The Alaska Range

7. Which official name did the federal government use for North America's highest peak until 2015, and use again from 2025?

A Mount Rainier
B Mount Whitney
C Mount McKinley
D Mount Elias

8. Which animal is NOT one of Denali's 'Big Five'?

A Gray wolf
B Elk
C Grizzly bear
D Caribou

9. Which large mammal IS one of Denali's 'Big Five'?

A Mountain goat
B Moose
C Bison
D Elk

10. Which of the Big Five is a white, curl-horned wild sheep of Denali's high slopes?

A Moose
B Gray wolf
C Caribou
D Dall sheep

11. Which animal was Denali originally established in 1917 to protect?

A Caribou
B Grizzly bear
C Dall sheep
D Gray wolf

12. What is the name for the spruce-and-birch boreal forest that grows in Denali's valleys?

A Taiga
B Alpine tundra
C Steppe
D Chaparral

13. Above Denali's tree line stretches treeless, low-growing terrain known as what?

A Wetland marsh
B Alpine tundra
C Boreal forest
D Taiga

14. About how many miles long is the single road that runs into Denali's wilderness?

A About 500 miles
B About 20 miles
C About 92 miles
D About 250 miles

15. Denali National Park and Preserve covers roughly how much land?

A About 6 million acres
B About 20 million acres
C About 1 million acres
D About 500,000 acres

16. Since Denali so often wraps itself in cloud, what is the smartest way to improve your odds of seeing the full peak?

A Plan one visit at midday
B Come only in deep midwinter
C Stay in your vehicle the whole trip
D Give yourself several days rather than a single afternoon

17. About what share of summer visitors actually get to see Denali's full peak?

A About 10%
B About 60%
C About 30%
D About 90%

18. How do most visitors travel the Denali park road beyond its first stretch?

A By private car
B By rental RV
C On foot only
D By park bus

19. When are visitors most likely to catch the aurora over the Alaska Range?

A The dark shoulder months
B Late June
C The busiest weeks of summer
D Peak midsummer

20. To catch the park road open and summer at full strength, when should you time a Denali visit?

A Mid-July to late November
B Mid-June to early September
C Late September to October
D Early May to mid-June

Go deeper

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LESSON 25 OF 27

Spotlight: Great Smoky Mountains

The Blue Smoke Mountains · Forests, Fireflies & Heritage · Visiting the Smokies

WHAT YOU'LL BE ABLE TO DO

- Explain the Smokies' blue haze, ancient age, and superlatives.
- Recognize the Smokies' donor gift and salamander-capital fame.
- Explain the Smokies' biodiversity, synchronous fireflies, and Cherokee heritage.
- Plan a Smokies visit and explain why it charges no entrance fee.
- Identify the Smokies' landmark places on sight.

The Blue Smoke Mountains

Straddling the Tennessee–North Carolina line, the Great Smoky Mountains are the most-visited and most biodiverse national park in America — ancient, mist-wrapped peaks across roughly 522,400 acres, fully established in 1934 from land bought and donated rather than carved from the public domain.

The Blue Smoke

The park is named for the perpetual blue haze that hangs over its ridges — and the forest itself makes it. The dense Appalachian vegetation breathes out volatile organic compounds (VOCs) that scatter blue wavelengths of light; mixed with the natural fog rising off the wet forest, it reads as a smoke-like veil. There's no fire involved. The Cherokee named this country *Shaconage* — "place of the blue smoke" — long before the park existed. Look across the ridgelines at dawn and you'll see why: layer after layer of mountains dissolving into paler and paler blue. The park was assembled in 1934 not from federal land but from thousands of private parcels, bought and donated — including roughly $5 million from John D. Rockefeller Jr.

Among Earth's Oldest Mountains

The Smokies' soft, rounded silhouette is a clue to staggering age. These are the eroded roots of a once-Himalayan range, raised between about 480 and 300 million years ago as colliding continents assembled the supercontinent Pangaea. Hundreds of millions of years of rain and rivers have ground the sharp peaks down to gentle, forested domes. Where the Rockies are young and jagged, the Appalachians are old and worn — the difference you can read straight off the skyline.

Kuwohi (formerly Clingmans Dome)

At 6,643 feet, Kuwohi is the highest point in the park, the highest in Tennessee, and the highest along the entire 2,190-mile Appalachian Trail. Kuwohi (koo-WHOA-hee) is the Cherokee name and means "mulberry place"; the mountain was long called Clingmans Dome, after an 1859 survey named it for Thomas Clingman, until the U.S. Board on Geographic Names restored the Cherokee name in September 2024. A spiral concrete observation tower lifts visitors above a dark spruce-fir forest into a 360-degree panorama of blue ridges. The summit is cool, damp, and frequently fogbound — effectively a

transplanted slice of Canadian boreal forest perched in the American South, a relic of the last Ice Age that survives only at these elevations.

The most biodiverse park

More species have been documented in the Smokies than in any other U.S. national park — over 19,000 confirmed, with scientists estimating the true total at 80,000 or more. The standout group is salamanders: with 30-plus species, the park is nicknamed the **"Salamander Capital of the World."** That richness flows from the park's range of elevation, abundant rainfall, and unbroken old-growth forest, which together stack many habitats into one protected block.

Worth remembering: *Shaconage* means "place of the blue smoke"; Kuwohi (formerly Clingmans Dome), 6,643 ft, tops the entire Appalachian Trail; the haze is forest-made VOCs and fog, not smoke; the park was established in 1934 with help from a ~$5 million Rockefeller gift.

Forests, Fireflies & Heritage

The Smokies are less a single landscape than a stack of them — five forest types layered by elevation, a famous synchronized light show, the densest black bears in the East, and a human story reaching back to the Cherokee homeland.

Old-Growth Forest

The park holds one of the largest blocks of old-growth forest in the eastern United States — woods the logger's saw never reached. Forest type changes with height: rich cove hardwoods of tulip poplar, hemlock, and silverbell fill the valleys, giving way upslope to a high spruce-fir "Canadian" forest near the summits, a cold-climate relic left behind when Ice-Age glaciers retreated. That vertical stacking of habitats is a big reason the Smokies are so biologically rich, sheltering some of the tallest and most ancient hardwood stands in the East.

Synchronous Fireflies

For about two weeks in late spring, the park stages one of nature's rarest spectacles: thousands of *Photinus carolinus* fireflies blinking in unison, sending waves of light rippling through the dark forest. It's one of only a handful of places on Earth where this species synchronizes its flash. Demand to witness it is so intense that the park runs a lottery for viewing spots near Elkmont in early June. Scientists still debate exactly why the beetles coordinate — courtship signaling is the leading idea, but the mechanism remains a genuine mystery.

Black Bear Stronghold

The Smokies are black bear country at its densest: roughly 1,900 bears, about two per square mile — one of the densest populations anywhere in the country. The bears thrive on the forest's mast of acorns, berries, and nuts, and the park stands as a symbol of the species' recovery across the East. Sightings are common in open areas like Cades Cove, where bears amble through the meadows at dawn and dusk. Proper food storage and keeping your distance are the firm rules of the land.

Cherokee Homeland

These mountains are the ancestral homeland of the Cherokee (Tsalagi). In 1838 most were forced west on the Trail of Tears, but some resisted removal and remained; their descendants, the **Eastern Band of Cherokee**, still live on the adjacent Qualla Boundary at the park's southern edge. Cherokee place-names and stewardship are woven through the land. At the **Oconaluftee** entrance, a preserved Appalachian farmstead museum tells the parallel story of the mountain settlers who farmed these coves — log cabins, a barn, and split-rail fences moved here to honor a way of life the park displaced.

Worth remembering: ~19,000 species documented (est. 80,000+); 30-plus salamander species; ~1,900 black bears at ~2 per square mile; *Photinus carolinus* is the synchronous firefly; the Trail of Tears was 1838; the Eastern Band remains on the Qualla Boundary.

Visiting the Smokies

The Great Smoky Mountains draw more visitors than any other national park — and unlike most national parks, they charge no entrance fee. Here's how to make sense of the crowds, the cabins, and the color.

The Most-Visited Park

By a wide margin, this is the most-visited national park in America: 12.19 million people came in 2024, more than the next two parks combined. The reasons are geography and access — the Smokies sit within a day's drive of a huge share of the eastern U.S., charge no entrance fee, and offer endless ridgelines and roadside scenery. The trade-off is traffic. On peak fall weekends, Cades Cove and Newfound Gap Road can crawl bumper-to-bumper, so early starts and shoulder-season visits pay off.

Free Entry, Paid Parking

The Smokies charge no entrance fee, and the Park Service says it is unable to. In 1951 the State of Tennessee transferred Newfound Gap Road and Little River Road, the park's two main roads, with a restriction against tolls on either, and a federal law bars entrance fees where tolls are prohibited on a park's primary roads. That makes the busiest national park in America one of about a third of the 64 national parks (23 as of October 2026, including seven of Alaska's eight) with free entry, and by far the most visited of them. The one catch: since March 1, 2023, a paid **parking tag** has been required to park anywhere in the park for more than 15 minutes. Entry itself, though, remains free (camping has long cost money, too).

Cades Cove

Cades Cove is the park's most beloved corner: a broad green valley ringed by mountains and circled by an 11-mile one-way loop road. Along it stand preserved log cabins, churches, and a working grist mill from the Appalachian settlers who farmed here before the park. The cove is also prime wildlife viewing — white-tailed deer, wild turkey, and black bears graze the meadows, especially at dawn and dusk. Expect slow going on the loop when a bear stops traffic.

Autumn Color and Bugling Elk

October is the Smokies' showcase month. Because forest type shifts with elevation, fall color ripples *down* the mountains over several weeks, painting the slopes red, orange, and gold far longer than a single peak weekend. It's also elk season. Elk were reintroduced to the park in 2001 after more than a century's absence; today they gather in the Oconaluftee and Cataloochee valleys, where bulls bugle and spar through the autumn rut. The color brings peak crowds, so early mornings reward the patient — better light, fewer cars, and the best odds of seeing wildlife.

Worth remembering: 12.19 million visitors in 2024 (rank #1); no entrance fee, but a parking tag (for parking over 15 minutes) since March 2023; the Cades Cove loop is 11 miles one-way; Newfound Gap crosses the TN–NC crest; elk were reintroduced in 2001; October is the best season for fall color.

Key concepts

Kuwohi (formerly Clingmans Dome)

- The highest point in the entire park, and the highest peak in the state of Tennessee.
- At 6,643 feet it also tops the whole 2,190-mile Appalachian Trail, its cool spruce-fir summit often lost in fog.
- A spiral concrete observation tower lifts visitors above the trees into a 360-degree panorama of blue ridges.

Oconaluftee

- A park entrance and valley on the southern, North Carolina side, a good place to see reintroduced elk in autumn.
- Here a preserved Appalachian farmstead museum — log cabins, a barn, split-rail fences — honors the mountain settlers the park displaced.

Elkmont

- A spot in the park at the heart of a rare late-spring spectacle, so sought-after the park runs a lottery for viewing.
- In early June, viewing spaces near here are drawn by lottery to watch thousands of Photinus carolinus flash in unison.

Cades Cove

- A broad green valley ringed by mountains — the park's most beloved corner.
- An 11-mile one-way loop road circles it, passing preserved log cabins, churches, and a working grist mill.
- At dawn and dusk deer, wild turkey, and black bears graze its meadows — and a bear can bring the loop to a standstill.

Newfound Gap

- A high mountain pass whose scenic road crosses the crest between Tennessee and North Carolina.
- Tennessee's 1951 transfer of this road barred tolls on it, part of why the busiest U.S. national park charges no entrance fee.
- On peak fall weekends, the drive over it can slow to bumper-to-bumper traffic.

Key facts



Library of Congress · Great Smoky Mountains National Park Roads & Bridges, Clingma · No known restrictions (verify at source)

Kuwohi (formerly Clingmans Dome)

At 6,643 feet, Kuwohi is the highest point in the Smokies, the highest in Tennessee, and the highest along the entire 2,190-mile Appalachian Trail. Its Cherokee name means "mulberry place"; the mountain was long called Clingmans Dome until the U.S. Board on Geographic Names restored the Cherokee name in September 2024. A spiral concrete observation tower lifts visitors above the spruce-fir forest into a 360-degree sweep of blue ridges. The summit is cool, damp, and often fog-wrapped — a transplanted slice of Canadian forest perched in the American South.

> **Salamander Capital of the World**
>
> With over 19,000 documented species and estimates of 80,000 or more, Great Smoky Mountains holds the title of most biodiverse U.S. national park, earning it the nickname "Salamander Capital of the World."

> **A Park of Parcels**
>
> Great Smoky Mountains was assembled in 1934 from thousands of private parcels, with roughly $5 million toward the purchase donated by John D. Rockefeller Jr.



N Vision Photos (Openverse) · by 2.0

Black Bear Stronghold

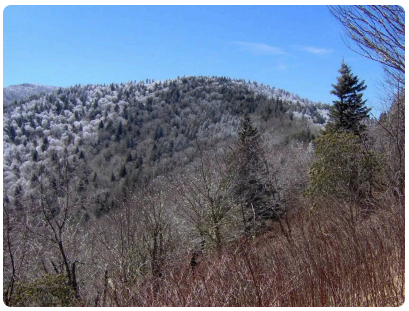
The Smokies are black bear country at its densest — roughly 1,900 bears roam the park, about two per square mile, one of the densest populations anywhere in the country. The bears thrive on the forest's acorns, berries, and nuts, and the park is a symbol of their comeback in the East. Sightings are common in places like Cades Cove, where bears amble through the meadows. Storing food and keeping your distance is the rule of the land.



Chris Light · CC BY-SA 4.0

Cherokee Homeland

These mountains are the ancestral homeland of the Cherokee (Tsalagi). In 1838 most were forced west on the Trail of Tears, but some resisted and remained; their descendants, the Eastern Band of Cherokee, still live on the adjacent Qualla Boundary at the park's southern edge. Cherokee place-names, stories, and stewardship are woven through the land. At the Oconaluftee entrance, a preserved Appalachian farmstead tells a parallel story of the mountain settlers who farmed these coves.



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An Ice-Age Relic

A spruce-fir forest more typical of Canada grows near the Smokies' highest summits, an Ice-Age relic stranded on the coldest peaks when the glaciers retreated. It's part of why the park stacks five distinct forest types by elevation.



Wikimedia Commons · AppalachianCentrist · CC BY-SA 4.0

Free Entry, Paid Parking

The Smokies charge no entrance fee, and the Park Service says it can't: Tennessee's 1951 deed for Newfound Gap Road and Little River Road, the park's main roads, bars tolls on them, and a federal law bars entrance fees where tolls are barred on primary park roads. That makes the most-visited national park in America one of about a third of the national parks with free entry. There's a catch: since March 2023 a paid parking tag has been required to park anywhere in the park for more than 15 minutes.



Library of Congress · Fog in the Tennessee portion of Great Smoky Mountains Nation · No known restrictions (verify at source)

Autumn Color and Bugling Elk

October is the Smokies' showcase month. Because forest type changes with elevation, fall color ripples down the mountains for weeks, painting the slopes in red, orange, and gold. It's also elk season: reintroduced to the park in 2001 after a century-plus absence, elk gather in the Oconaluftee and Cataloochee valleys, where bulls bugle and spar through the autumn rut. Crowds peak with the color, so early mornings reward the patient.

> **A Parking Tag Since 2023**
> Since March 1, 2023, a paid parking tag has been required to park in Great Smoky Mountains National Park for more than 15 minutes, even though entry itself remains free. Camping has long carried fees too.

By the numbers

How high is Kuwohi (formerly Clingmans Dome), the highest point in the Smokies?
6643 ft

Roughly how many acres does Great Smoky Mountains National Park cover?
522427 acres

In what year was Great Smoky Mountains fully established as a national park?
1934 year

Up to about how old is the rock of the Smoky Mountains (in millions of years)?
480 million years

About how many species have been documented in the Great Smoky Mountains?
19000 species

Roughly how many black bears live in the Great Smoky Mountains?
1900 bears

At least how many salamander species live in the "Salamander Capital of the World"?
30 species

In what year were most Cherokee forced west on the Trail of Tears?
1838 year

How many visitors did Great Smoky Mountains receive in 2024 (in millions)?
12.19 million visitors

Where does Great Smoky Mountains rank among U.S. national parks by visitation?
1 rank

How long is the one-way loop road around Cades Cove?
11 mi

In what year were elk reintroduced to the Great Smoky Mountains?
2001 year

Matched pairs

Each item on the left goes with the one on the right.

Shaconage → Cherokee name meaning "place of the blue smoke"

Kuwohi (formerly Clingmans Dome) → Highest point in the park and on the entire Appalachian Trail

Salamander Capital of the World → Nickname for the Smokies, home to 30+ salamander species

John D. Rockefeller Jr. → Donated ~$5 million to help buy the land for the park

Photinus carolinus → The firefly species that blinks in synchrony in the Smokies

Eastern Band of Cherokee → Cherokee who remained, living on the adjacent Qualla Boundary

Oconaluftee → Southern entrance with a preserved Appalachian farmstead museum

Newfound Gap → Mountain pass and road crossing the TN–NC crest of the park

Parking tag (since 2023) → Required to park for more than 15 minutes — though entry stays free

Best season to visit the Smokies → October for peak fall color (and the biggest crowds)

Self-test

Answer each question from memory, then check your work against the answer key.

1. What superlative does Great Smoky Mountains hold among U.S. national parks?

- A The driest national park
- B The highest national park
- C The youngest national park
- D The most biodiverse national park

2. What actually creates the perpetual blue haze that gives the Smokies their name?

- A Salt mist drifting inland from the coast
- B Emissions from nearby coal plants
- C Forest VOCs scattering blue light, mixed with fog
- D Smoke from frequent wildfires

3. How high is Kuwohi (formerly Clingmans Dome), the highest point in the park?

- A 6,643 ft
- B 5,280 ft
- C 4,229 ft
- D 8,751 ft

4. In what year was Great Smoky Mountains fully established as a national park?

- A 1950
- B 1934
- C 1919
- D 1872

5. The Smokies' soft, rounded summits are a clue to what about the range?

- A They are active volcanic cones
- B They are among Earth's oldest mountains, worn down over eons
- C They were carved by glaciers in the last century
- D They are young, recently uplifted peaks

6. Which philanthropist donated roughly $5 million toward buying land for the park?

A Henry Ford
B Andrew Carnegie
C John Muir
D John D. Rockefeller Jr.

7. Which statement about the Smokies is NOT true?

A The park is nicknamed the 'Salamander Capital of the World'
B It hosts more than 30 salamander species
C It charges a steep entrance fee that funds salamander research
D Its land was assembled from private parcels, bought and donated

8. What nickname has the Smokies earned for hosting 30-plus species of one small, tailed amphibian?

A Salamander Capital of the World
B Frog Capital of America
C Newt Nation
D Amphibian Kingdom of the East

9. At least how many salamander species earn the Smokies their 'capital' title?

A 8
B 30
C 60
D 15

10. How was the land for Great Smoky Mountains National Park acquired?

A Carved directly from federal public domain like western parks
B Purchased entirely with federal funds
C Bought from thousands of private parcels and donated
D Donated whole by a single timber company

11. A cold-climate spruce-fir "Canadian" forest grows near the Smokies' highest summits. Why does it survive so far south?

A It is an Ice-Age relic, stranded near the cold summits when the glaciers retreated
B It regrew from Canadian seed after 20th-century logging
C Settlers planted it as a timber crop in the 1800s
D The park's heavy rainfall alone allows it to grow there

12. Which firefly species stages the Smokies' rare synchronous light show?

A Photuris pennsylvanica
B Pyractomena angulata
C Lampyris noctiluca
D Photinus carolinus

13. In what year were most Cherokee forced west on the Trail of Tears?

A 1838
B 1776
C 1890
D 1804

14. The Eastern Band of Cherokee, descendants of those who resisted removal, live on which adjacent land?

A Pine Ridge Reservation
B Wind River Reservation
C Cherokee Strip
D Qualla Boundary

15. About how many species have been documented in the Smokies, the most biodiverse U.S. park?

A Roughly 500
B Over 19,000
C Over 100,000
D Close to 2,000

16. Why does Great Smoky Mountains charge no entrance fee?

A Congress banned all fees in eastern parks
B The park is too large to staff entrance booths
C A toll ban in Tennessee's road deed, plus a federal law
D A private donor pays the fees on visitors' behalf

17. How many visitors did the Smokies receive in 2024, ranking #1 among U.S. national parks?

A 4.7 million
B 25 million
C 12.19 million
D 8.3 million

18. How long is the one-way loop road around Cades Cove?

A 50 miles
B 25 miles
C 5 miles
D 11 miles

19. Since March 2023, vehicles that stop in Great Smoky Mountains for more than 15 minutes must display what?

A An entrance fee
B A paid parking tag
C A camping surcharge
D A shuttle fare

20. A visitor hoping for peak fall color and bugling elk should plan to come in which month?

A October
B January
C April
D July

21. Which place is a broad green valley circled by an 11-mile loop, with preserved cabins and a working grist mill?

A Newfound Gap
B Oconaluftee
C Cades Cove
D Elkmont

22. Which landmark is the mountain pass and road crossing the TN–NC crest of the park?

A Elkmont
B Newfound Gap
C Cades Cove
D Kuwohi

23. Which southern entrance features a preserved Appalachian farmstead museum of log cabins and split-rail fences?

A Newfound Gap
B Cades Cove
C Elkmont
D Oconaluftee

24. Near which area does the park run an early-June lottery for synchronous firefly viewing?

A Elkmont
B Cades Cove
C Newfound Gap
D Oconaluftee

25. Which landmark is the park's highest point, topped by a spiral concrete observation tower?

A Oconaluftee
B Newfound Gap
C Cades Cove
D Kuwohi

Go deeper

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-great-smoky-mountains

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LESSON 26 OF 27

Spotlight: Acadia

Where the Mountains Meet the Sea · Carriage Roads & Coast

WHAT YOU'LL BE ABLE TO DO

- Explain Acadia's coastal setting and its firsts among national parks.
- Identify Acadia's coastal landmarks on sight.
- Describe Acadia's carriage roads and the essentials of a visit.

Where the Mountains Meet the Sea

Acadia is small but seismic. On a single rocky island in coastal Maine, the last Ice Age left a landscape where rounded granite mountains tumble straight into the Atlantic — and where a handful of determined people invented a new way to make a national park.

Acadia

Acadia National Park sits on Mount Desert Island, a roughly nine-by-thirteen-mile slab of pink granite off the coast of Maine, with smaller pieces on the Schoodic Peninsula and Isle au Haut. At about **49,000 acres** it ranks in the bottom quarter of the parks by size (50th of 64) — yet it packs in sea cliffs, a glacier-carved sound, spruce-fir forest, tide pools, and a 1,530-foot granite summit. Its defining trait is the meeting of land and ocean: glacier-polished domes of pink granite drop directly into cold, deep Atlantic water. The Wabanaki peoples — Penobscot, Passamaquoddy, Maliseet, and Mi'kmaq — summered here for roughly 12,000 years before it was a park.

Cadillac Mountain

Cadillac Mountain rises 1,530 feet — the highest point on the eastern seaboard of the U.S. Its height plus its far-eastern position means that from early October to early March it is the first place in the United States to see the sunrise (the Park Service gives October 7 to March 6). Crowds climb to the bare granite summit in the dark to watch first light break over the islands. Demand is so high that in peak season you need a **timed vehicle reservation** to drive the Cadillac Summit Road.

Somes Sound

Somes Sound is a long arm of seawater that nearly cuts Mount Desert Island in two. It's frequently called the only true fjord on the U.S. East Coast — though geologists clarify that it's really a *fjard*, a shallower glacier-carved sea inlet that lacks a fjord's great depth. The label matters less than the sight: steep granite walls dropping straight into saltwater, sculpted by ice.

George B. Dorr

Acadia is the first national park created from **donated private land**, and that happened because of one man. **George B. Dorr**, remembered as the "Father of Acadia," spent decades and much of his own fortune buying parcels and coaxing other wealthy summer residents to give theirs. His effort produced

Sieur de Monts National Monument in 1916, which became **Lafayette National Park in 1919** — the first national park east of the Mississippi — and was renamed **Acadia in 1929**.

Three numbers anchor this part: Cadillac's **1,530 ft**, the park's **~49,000 acres**, and the founding year **1919**. Keep three terms straight too: **Mount Desert Island** is the island that holds most of the park; a **fjard** is what Somes Sound actually is; and **Lafayette National Park** was Acadia's original 1919 name.

Carriage Roads & Coast

Acadia rewards a slow loop. Its greatest hits — a car-free road network, a glass-clear pond, a booming sea cave, a clifftop lighthouse — cluster close enough that you can taste them all in a day, then come back for the parts that linger.

The Rockefeller Carriage Roads

Between 1913 and 1940, **John D. Rockefeller Jr.** funded and personally supervised **45 miles** of broken-stone carriage roads threading Acadia's woods and circling its ponds. He built them for horses, walkers, and bicycles — never cars — and that's still the rule. The result is a graceful, car-free network of gentle grades, hand-set granite culverts and retaining walls, and seventeen stone-faced bridges, no two designed alike. They're among the finest examples of broken-stone road building in America and a quiet counterpoint to the busy Park Loop Road.

Jordan Pond and the Bubbles

Jordan Pond is Acadia's clearest water — a glacial tarn so transparent you can see more than 40 feet down, a clarity the park protects by banning swimming. At its northern end rise **the Bubbles**, two rounded granite knobs whose twin domes reflect in the still surface in the park's most-photographed view. On the south lawn, the **Jordan Pond House** has served tea and warm popovers since the 1890s — a tradition as much a part of the visit as the trail around the shore.

Thunder Hole

Thunder Hole is a narrow granite inlet on the Park Loop Road where the ocean performs on cue. An incoming wave rushes into a small sea cave and traps a pocket of air; when the tide is right — often a few hours before high tide — the trapped air bursts back out with a deep, booming thunderclap and a tower of spray. Get the timing wrong and it's just a pretty cove; get it right and the ground seems to roar.

Bass Harbor Head Light

On the quiet southwestern tip of Mount Desert Island, **Bass Harbor Head Light** has guided mariners since **1858**. Its small white tower and red roof, perched above pink-granite ledges and framed by spruce, make it one of Maine's most photographed lighthouses — especially at sunset, when the structure glows warm against the darkening sea.

Two numbers carry this part: the carriage roads' **45 miles**, and Acadia's **~3.96 million visits in 2024**, which typically keeps it in the country's top ten parks. Remember the **Park Loop Road** as the scenic drive linking the coastal highlights, and the **Jordan Pond House** for those popovers. Two seasonal notes

round it out: **October** is prime fall-foliage time across Acadia's mixed hardwood and spruce-fir forest, and a **timed vehicle reservation** is required in peak season to drive up Cadillac Mountain for sunrise.

Key concepts

Cadillac Mountain

- A bald granite summit that, from early October to early March, is the first place in the United States to see the sunrise.
- At 1,530 feet it is the highest point on the eastern seaboard of the U.S.
- In peak season you need a timed vehicle reservation just to drive its summit road.

Somes Sound

- A long arm of seawater that nearly slices Mount Desert Island in two.
- Often called the only true fjord on the U.S. East Coast — though geologists insist it is really a shallower 'fjard.'

Jordan Pond

- Acadia's clearest water — a glacial tarn so transparent you can peer more than 40 feet down.
- Swimming is banned to guard its clarity; at its north end rise two rounded granite knobs called the Bubbles.
- The house on its south lawn has served tea and warm popovers since the 1890s.

Thunder Hole

- A narrow granite inlet on the Park Loop Road where the ocean performs on cue.
- An incoming wave traps air in a small sea cave and — a few hours before high tide — blasts it back with a booming roar and a tower of spray.

Bass Harbor Head Light

- On the quiet southwestern tip of Mount Desert Island, this small white tower with a red roof has guided mariners since 1858.
- Perched above pink-granite ledges and framed by spruce, it is one of Maine's most photographed beacons, glowing warm at sunset.

Key facts



James St. John · CC BY 2.0

Somes Sound

A long arm of seawater nearly splits Mount Desert Island in two. Somes Sound is often called the only true fjord on the U.S. East Coast — though geologists note it's really a fjard, a shallower glacier-carved inlet. Either way, the steep granite walls dropping into deep saltwater are pure Ice Age handiwork.

George B. Dorr

Acadia exists because one man refused to let the island be carved up. George B. Dorr, the "Father of Acadia," spent decades and much of his personal fortune buying land and persuading others to donate it. His campaign made Acadia the first national park created from donated private land — beginning as Sieur de Monts National Monument in 1916.

Small Park, Big Variety

At about 49,000 acres, Acadia ranks 50th of the 64 national parks by size, yet it packs in sea cliffs, forest, a fjard, and a 1,530-foot summit.

Thunder Hole

At a narrow granite inlet along the Park Loop Road, incoming waves slam into a small sea cave and trap a pocket of air. When the timing and tide are right — usually a few hours before high tide — the air explodes back out with a deep boom and a geyser of spray. That thunderclap gives Thunder Hole its name.



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Bass Harbor Head Light

Perched on a cliff at the quiet southwestern tip of Mount Desert Island, Bass Harbor Head Light has guided mariners since 1858. Its small white tower and red roof, set above pink granite ledges, make it one of the most photographed lighthouses in Maine — especially at sunset, when the light glows against the sea.

Peak Color Season

Acadia's mixed hardwood and spruce-fir forest peaks in color in October, drawing crowds for fall foliage alongside the park's summer high season.

By the numbers

How tall is Cadillac Mountain, the highest point on the eastern seaboard of the U.S.?

1530 ft

Roughly how many acres does Acadia National Park cover?

49000 acres

In what year did Acadia (then Lafayette National Park) become the first national park east of the Mississippi?

1919 year

How many miles of car-free carriage roads did Rockefeller fund in Acadia?

45 miles

About how many visits did Acadia receive in 2024?
3960000 visitors

Matched pairs

Each item on the left goes with the one on the right.

Mount Desert Island → The large coastal-Maine island holding most of Acadia

Fjard → A shallow glacier-carved sea inlet — what Somes Sound actually is

Lafayette National Park (1919) → Acadia's original name; renamed Acadia in 1929

Park Loop Road → The scenic drive linking Acadia's coastal highlights

Jordan Pond House → Lakeside spot famous for tea and warm popovers since the 1890s

Self-test

Answer each question from memory, then check your work against the answer key.

1. What distinction does Acadia hold among U.S. national parks?

- A First national park west of the Rockies
- B First national park on the Great Lakes
- C First national park in the Appalachian Mountains
- D First national park east of the Mississippi River

2. How tall is Cadillac Mountain, the highest point on the eastern seaboard of the U.S.?

- A 6,288 feet
- B 1,530 feet
- C 865 feet
- D 2,407 feet

3. Roughly how large is Acadia National Park by area?

- A ~49,000 acres
- B ~500,000 acres
- C ~1.2 million acres
- D ~3,000 acres

4. Somes Sound is often called the East Coast's only fjord, but geologists say it is really what?

- A A tidal estuary
- B A glacial tarn
- C A fjard
- D A true fjord

5. Which statement about Acadia National Park is NOT true?

- A It ranks among the largest national parks by area
- B It was created from donated private land
- C It sits mainly on Mount Desert Island in Maine
- D It was the first national park east of the Mississippi

6. Which Acadia landmark is the bare granite summit that, from early October to early March, is the first place in the U.S. to see the sunrise?

A Bass Harbor Head Light
B Somes Sound
C Cadillac Mountain
D Jordan Pond

7. Which landmark is the long arm of seawater that nearly cuts Mount Desert Island in two?

A Thunder Hole
B Jordan Pond
C Cadillac Mountain
D Somes Sound

8. Which landmark is a glacial tarn so clear that swimming is banned, with the twin Bubbles rising at its north end?

A Somes Sound
B Jordan Pond
C Bass Harbor Head Light
D Thunder Hole

9. Which landmark is a narrow granite inlet where a wave traps air in a sea cave, then bursts out with a booming clap?

A Thunder Hole
B Somes Sound
C Cadillac Mountain
D Jordan Pond

10. Which Acadia landmark is a white tower with a red roof on pink-granite ledges that has guided mariners since 1858?

A Thunder Hole
B Cadillac Mountain
C Bass Harbor Head Light
D Jordan Pond House

11. Which month is prime time for Acadia's fall foliage?

A March
B October
C December
D July

12. How many miles of car-free, broken-stone carriage roads did Rockefeller fund in Acadia?

A 27 miles
B 120 miles
C 8 miles
D 45 miles

13. Who funded and personally supervised Acadia's network of car-free carriage roads?

A George B. Dorr
B Stephen Mather
C John D. Rockefeller Jr.
D John Muir

14. Rockefeller's Acadia carriage roads were built for — and are still restricted to — everyone EXCEPT which of these?

A Bicycles
B Horses
C Walkers
D Cars

15. Since the 1890s, the lakeside Jordan Pond House has been a visiting tradition famous for serving what?

A Clam chowder
B Tea and warm popovers
C Blueberry pie
D Lobster rolls

Go deeper

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-acadia

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LESSON 27 OF 27

Spotlight: Everglades

The River of Grass · Where Alligators and Crocodiles Meet · Visiting the Everglades

WHAT YOU'LL BE ABLE TO DO

- Explain the Everglades as the first park protected for its ecosystem, and its river of grass.
- Distinguish the Everglades' sawgrass marsh and hardwood-hammock habitats.
- Explain the alligator-crocodile coexistence and the park's rarest wildlife and honors.
- Identify the Everglades' wading birds, reptiles, panther, and python invaders.
- Plan an Everglades visit around its trails, waterways, and dry season.

The River of Grass

Most national parks were set aside for a view — a canyon, a peak, a geyser. The Everglades was set aside for something you can barely see at all: a living wetland, moving so slowly it looks like it isn't moving. To grasp this park you have to stop looking for scenery and start seeing a system.

Everglades

Established on December 6, 1947, Everglades National Park was the first park in the United States created to protect an **ecosystem** rather than dramatic scenery — a genuine turning point in how Americans thought about conservation. It spreads across roughly **1.5 million acres** of southern Florida, making it the **largest tropical wilderness in the U.S.** and the third-largest park in the Lower 48. Its champion, the writer Marjory Stoneman Douglas, gave its defining feature a name that stuck: the "River of Grass."

The River of Grass

The Everglades is not a swamp — it is a river, just an extraordinarily wide and shallow one. The sheet of fresh water is about **60 miles wide** and only inches deep, sliding south across a nearly flat limestone shelf at roughly a mile a day toward Florida Bay. Historically this **sheet flow** began as the overflow of **Lake Okeechobee**, the vast inland lake to the north. Everything in the park — grass, trees, gators, birds — depends on that slow, shallow current of clean water.

A Mosaic of Habitats

Because the land is so flat, tiny changes in elevation — sometimes only inches — create entirely different worlds. Open **sawgrass** prairie, the sharp-edged sedge that carpets the marsh, gives way to **hardwood hammocks**: tree islands of dense broadleaf forest perched on slightly higher, drier ground. Elsewhere there are domes of bald cypress, pine rockland on exposed limestone, and a coastal tangle of mangroves where fresh water meets the salty Gulf. The whole park sits barely above the sea, ranging from sea level to only about **8 feet** — one of the flattest parks in the system.

The numbers and the people

Keep a few figures in mind: established in **1947**, about **1.5 million acres**, a river of grass roughly **60 miles wide**, and a high point near **8 feet**. The human story matters too. **Marjory Stoneman Douglas** named the River of Grass and led the decades-long fight to protect it. **Lake Okeechobee** is the source that once fed the whole sheet flow. And the central idea — a park protected for its ecosystem, not its views — was, in 1947, a genuinely new thing under the American sun.

Where Alligators and Crocodiles Meet

The Everglades is one of the great wildlife theaters of North America — and the stage for a few remarkable standoffs. Some of its dramas are ancient and natural; one of the most consequential arrived only in the last few decades, in a shipping crate.

Where Alligators and Crocodiles Meet

South Florida is the **only place on Earth where American alligators and American crocodiles live side by side**, and the Everglades is where the two meet in the same waters. Telling them apart is easy once you know the cues: the **alligator** is dark, broad-snouted, and prefers fresh water, while the rarer **crocodile** is grayish-green, narrow-snouted, and tolerates the brackish coast. Their ranges overlap exactly where the freshwater marsh meets the salty mangrove fringe — a meeting of two ancient reptiles found only in South Florida.

The Endangered Florida Panther

The **Florida panther**, a tawny subspecies of cougar, once ranged across the whole Southeast before hunting pushed it to the edge. As of the mid-2020s, only around **200** survive, most in and around the Everglades, making it one of the rarest large cats in North America. Each panther is secretive and wide-ranging — a single cat may patrol some 200 square miles — and roadside collisions remain a leading threat to the slow recovery of the population.

The Burmese Python Invasion

The park's gravest modern threat is not a predator that belongs here. Released or escaped pets, **Burmese pythons** — giant constrictors native to Southeast Asia — have exploded across the Everglades since the 1990s. With no natural predators, they devour native mammals and birds; in some areas raccoons, opossums, and rabbits have nearly disappeared. Hard to spot in the sawgrass and prolific breeders, pythons are now hunted through state-run removal programs in a fight to slow their spread.

A wealth of wading birds and a sea cow

The Everglades is a paradise for wading birds. The **roseate spoonbill** is unmistakable — a vivid pink bird that sweeps its flat, spoon-shaped bill side to side through the shallows. The **anhinga**, or "snakebird," swims underwater to spear fish, then perches with wings spread wide to dry. In the warm coastal waters glides the gentle **West Indian manatee**, the slow-moving "sea cow" grazing on seagrass.

A rare triple honor

Few places on Earth are so internationally celebrated. The Everglades holds a **triple international honor** — it is at once a UNESCO World Heritage Site, an International Biosphere Reserve, and a Wetland of International Importance, **3** designations rarely held together. Yet that global status sits beside an uncomfortable truth: the wetland is only about half its original size, and invasive pythons keep reshaping its food web from below.

Visiting the Everglades

The Everglades rewards the patient. There are no soaring summits to climb — the magic here is at eye level and just below the waterline, and the trick is knowing where and when to look. Get the season right and a flat green nowhere turns into one of the densest wildlife shows in the country.

The Anhinga Trail

If you walk a single path in the Everglades, make it the **Anhinga Trail**. It's a flat, easy boardwalk of about **0.8 mile** that loops over a freshwater slough near the main entrance. In the dry season the shrinking water draws wildlife into astonishing close range: alligators sun on the banks, anhingas dry their wings on the railings, and herons, turtles, and gar crowd the pools. Few short walks anywhere deliver so much for so little effort.

Shark Valley

On the park's northern edge, **Shark Valley** centers on a **15-mile** paved loop you can ride by bicycle or aboard an open-air tram. At the far end stands a **65-foot observation tower** with a long spiraling ramp — a rare high vantage over country this flat. From the top the River of Grass opens into a 360-degree sea of sawgrass, threaded with water and dotted with tree islands and basking gators to every horizon.

The Restoration Challenge

The Everglades is also one of the world's great repair jobs. A century of canals, levees, and farmland diverted the fresh water the wetland runs on, shrinking it to roughly half its original size and leaving the park with only about **half its natural water flow**. The response — Everglades restoration — is among the largest environmental efforts on Earth: re-engineering the plumbing of South Florida to send clean water south again, so the River of Grass can flow as it once did.

Getting on the water and timing your trip

Beyond the boardwalks, the park opens to paddlers. The **Wilderness Waterway** is a roughly 99-mile route winding through mangroves between Flamingo and Everglades City, while the **Ten Thousand Islands** offer a maze of mangrove islets along the Gulf, prized by kayakers. Note that the famous **airboats** operate in adjacent areas, not the park's core. Above all, time your visit: the best season is the **dry winter, December through April** — comfortable, far fewer mosquitoes, and falling water that concentrates wildlife around the remaining pools. The park drew about **950,000** visitors in 2024. Summer, by contrast, is hot, stormy, and buggy.

Key concepts

American crocodile

- One of two big reptiles that share the Everglades — the rarer of the pair.
- Grayish-green and narrow-snouted, it tolerates the brackish coast where freshwater marsh meets salty mangrove.
- The park is the only place on Earth where this animal lives side by side with its broad-snouted, freshwater-loving cousin the alligator.

Florida panther

- A tawny subspecies of cougar that once ranged across the whole Southeast.
- Hunting pushed it to the brink; today only about 200 survive, most in and around the Everglades.
- A single wide-ranging cat may patrol some 200 square miles, and roadside collisions still set back its slow recovery.

Burmese python

- The Everglades' gravest modern threat is an animal that doesn't belong here at all.
- A giant constrictor native to Southeast Asia, released from the pet trade, it has exploded across the wetland since the 1990s.
- With no natural predators it devours native mammals — raccoons and rabbits have nearly vanished in places — and is now hunted through state removal programs.

roseate spoonbill

- A wading bird whose vivid pink plumage makes it unmistakable in the Everglades shallows.
- It feeds by sweeping its flattened, rounded beak from side to side as it wades.

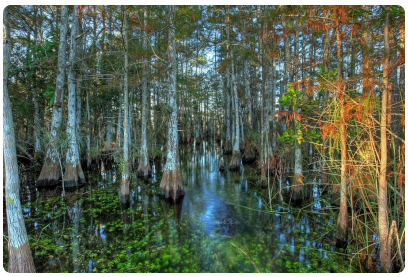
West Indian manatee

- A gentle, slow-moving giant that glides through the Everglades' warm coastal waters.
- Nicknamed the 'sea cow,' it grazes peacefully on beds of seagrass.

Anhinga

- Nicknamed the 'snakebird,' this Everglades bird swims underwater to spear fish.
- After a dive it perches with wings spread wide to dry, and a famous boardwalk trail near the main entrance is named for it.

Key facts



Everglades NPS from Homestead, Florida, United States · Public domain

A Mosaic of Habitats

Tiny changes in elevation — sometimes just inches — create wildly different worlds across the Everglades. Sawgrass prairie gives way to tree islands called hardwood hammocks, to dwarf and dome cypress, to pine rockland, and finally to a tangle of coastal mangroves where fresh water meets the salty Gulf. Sitting barely above sea level on porous limestone, the whole park ranges from sea level to only about 8 feet high.



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Lake Okeechobee

Historically, the Everglades' slow-moving sheet flow began as overflow from vast Lake Okeechobee, which fed water south through the marsh toward Florida Bay.

> **Where the Nickname Comes From**
>
> Sawgrass is a sharp-edged sedge that blankets the Everglades' open marsh prairie, growing so densely across the wetland that it inspired the park's nickname, the "River of Grass."



Bryan Falk, USGS. Public domain. · Public domain

The Burmese Python Invasion

Released or escaped pets, Burmese pythons have exploded across the Everglades since the 1990s. These giant constrictors, native to Southeast Asia, have no natural predators here and devour native mammals and birds — in some areas raccoons, opossums, and rabbits have nearly vanished. Sprawling, hard to find in the sawgrass, and prolific breeders, the python is now the park's gravest invasive threat, hunted by state-run removal programs.

> **Three Rare Titles**
>
> The Everglades is recognized simultaneously as a World Heritage Site, an International Biosphere Reserve, and a Wetland of International Importance, a combination rarely held together by any single place.



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The Roseate Spoonbill

The roseate spoonbill is one of the Everglades' most vivid wading birds, a bright pink species that sweeps its flat, spoon-shaped bill side to side to feed in shallow water.



evergladesnps · Public domain

The Restoration Challenge

A century of canals, levees, and farms diverted the fresh water that the Everglades runs on, shrinking the wetland to roughly half its original size and leaving the park with only about half its natural water flow. The response is one of the largest environmental restoration efforts on Earth — re-engineering the plumbing of South Florida to send clean water south again, so the River of Grass can flow as it once did.

> **Where the Wildlife Gathers**
>
> The dry winter season, December through April, brings the Everglades' most comfortable weather, far fewer mosquitoes, and lower water that concentrates wildlife around remaining pools.

> **99 Miles of Mangroves**
>
> The roughly 99-mile Wilderness Waterway winds through mangrove forest between Flamingo and Everglades City, a route prized by paddlers.

By the numbers

In what year was Everglades established as a national park?

1947 year

About how many acres does Everglades National Park cover?

1500000 acres

About how many miles wide is the Everglades' slow "River of Grass"?

60 miles

About how many feet above sea level is the highest ground in the Everglades — one of the flattest parks?
8 ft

Roughly how many endangered Florida panthers survive in the wild?
200 panthers

How many major international designations does the Everglades hold (World Heritage, Biosphere Reserve, Wetland of International Importance)?
3 designations

About how long is the Everglades' wildlife-packed Anhinga Trail boardwalk?
0.8 miles

About how long is the paved Shark Valley loop by bike or tram?
15 miles

About how many recreation visits did Everglades receive in 2024?
950000 visitors

Matched pairs

Each item on the left goes with the one on the right.

Marjory Stoneman Douglas
→ Writer-activist who named it the "River of Grass" and led the fight to protect it

Lake Okeechobee → Vast inland lake whose overflow once fed the entire Everglades sheet flow

Sawgrass → Sharp-edged sedge that blankets the marsh and gives the "River of Grass" its name

Hardwood hammock → Tree island of dense broadleaf forest rising on slightly higher, drier ground

American crocodile → Grayish, narrow-snouted, salt-tolerant — far rarer here than the alligator

Roseate spoonbill → Pink wading bird with a flat, spoon-shaped bill it sweeps through shallow water

Anhinga → Spear-billed "snakebird" that swims underwater, then spreads its wings to dry

West Indian manatee → Gentle, slow-moving "sea cow" that grazes in the park's warm coastal waters

Triple international honor
→ World Heritage Site, Biosphere Reserve, and Wetland of International Importance

Wilderness Waterway
→ ~99-mile paddling route through mangroves between Flamingo and Everglades City

Airboats → Fan-powered flat boats — offered in adjacent areas, not in the park's core

Ten Thousand Islands → Maze of mangrove islets along the Gulf coast, prized for kayaking

Self-test

Answer each question from memory, then check your work against the answer key.

1. When it was established in 1947, what made Everglades a turning point in American conservation?

- A) It was the first national park co-managed with a Native nation
- B) It was the first U.S. national park created to protect an ecosystem rather than scenery
- C) It was the first national park established east of the Mississippi River
- D) It was the first national park created from donated private land

2. In what year was Everglades established as a national park?

- A) 1947
- B) 1934
- C) 1968
- D) 1916

3. Which statement about the Everglades is NOT true?

- A) It was the first U.S. park created to protect an ecosystem
- B) Its River of Grass is roughly 60 miles wide
- C) It covers about 1.5 million acres
- D) It was established in 1847

4. Who named the Everglades the "River of Grass" and led the decades-long fight to protect it?

- A) Ansel Adams
- B) Rachel Carson
- C) Marjory Stoneman Douglas
- D) John Muir

5. Historically, the Everglades' slow sheet flow began as the overflow of which body of water?

- A) Florida Bay
- B) the Gulf of Mexico
- C) Lake Okeechobee
- D) the St. Johns River

6. What is sawgrass, the plant that gives the "River of Grass" its name?

- A) A sharp-edged sedge that carpets the open marsh
- B) A broadleaf tree of the forest islands
- C) A towering dome of bald cypress
- D) A salt-tolerant coastal mangrove

7. What is a hardwood hammock in the Everglades?

- A) A coastal tangle of salt-tolerant mangroves
- B) A tree island of dense broadleaf forest on slightly higher, drier ground
- C) An open prairie of sharp-edged sedge
- D) A dome of bald cypress standing in water

8. Why does the nearly flat Everglades hold so many distinct habitats side by side?

A. Steep canyon walls that trap separate microclimates
B. Wide swings in annual temperature between zones
C. Volcanic soils of sharply differing mineral content
D. Tiny changes in elevation, sometimes only inches, create entirely different worlds

9. Which of the following is NOT one of the Everglades' habitats?

A. Sawgrass prairie
B. Coastal mangroves
C. Alpine tundra above the treeline
D. Hardwood hammock tree islands

10. The Everglades ranges from sea level to a high point of only about how many feet, making it one of the flattest parks?

A. 8,000 feet
B. 8 feet
C. 80 feet
D. 800 feet

11. In the Everglades — the only place on Earth where the two coexist — how can you tell an American alligator from an American crocodile?

A. The alligator is dark and broad-snouted and prefers fresh water; the crocodile is grayish-green and narrow-snouted and tolerates the brackish coast
B. The alligator lives only along the salty mangrove coast, while the crocodile stays in the freshwater marsh
C. Both are broad-snouted, but the alligator is larger and only the crocodile ventures inland
D. The alligator is grayish-green and narrow-snouted and lives in salt water; the crocodile is dark and broad-snouted and lives in fresh water

12. Roughly how many endangered Florida panthers survive today, most in and around the Everglades?

A. About 750
B. About 90
C. About 1,500
D. About 200

13. The Everglades' rare triple international honor consists of which three designations?

A. National Monument, State Park, and Marine Sanctuary
B. Dark Sky Reserve, Geopark, and Ramsar buffer zone
C. World Heritage Site, Biosphere Reserve, and Wetland of International Importance
D. World Heritage Site, National Seashore, and Wilderness Area

14. How is the rarer American crocodile distinguished from the alligator in the Everglades?

A. Dark, broad-snouted, and restricted to fresh water
B. Grayish-green, narrow-snouted, and tolerant of the brackish coast
C. Salt-tolerant but dark and broad-snouted
D. Grayish-green, narrow-snouted, and restricted to the freshwater marsh

15. What makes the Everglades unique among all places on Earth regarding these two reptiles?

A) It is the only place where American alligators and American crocodiles live side by side
B) It is the only U.S. park that has any crocodiles
C) It is where alligators and crocodiles interbreed
D) It holds the world's largest alligator population

16. Which Everglades wading bird is vivid pink and sweeps a flat, spoon-shaped bill through the shallows?

A) Great blue heron
B) Anhinga
C) Wood stork
D) Roseate spoonbill

17. The "snakebird" that swims underwater to spear fish, then perches with wings spread to dry, is the:

A) Great blue heron
B) Great egret
C) Anhinga
D) Roseate spoonbill

18. What is the gravest modern invasive threat to the Everglades, a giant constrictor native to Southeast Asia?

A) Nile monitor
B) American crocodile
C) Florida panther
D) Burmese python

19. Which of these Everglades animals is an invasive species that does NOT belong there naturally?

A) American alligator
B) Burmese python
C) Florida panther
D) Roseate spoonbill

20. The gentle, slow-moving "sea cow" that grazes on seagrass in the Everglades' warm coastal waters is the:

A) West Indian manatee
B) American crocodile
C) Florida panther
D) Anhinga

21. When is the best season to visit the Everglades?

A) Dry winter (December–April)
B) Early autumn hurricane season
C) Late spring at peak mosquito season
D) Wet summer (June–September)

22. About how long is the Anhinga Trail, the wildlife-packed boardwalk near the Everglades' main entrance?

A) 2.5 miles
B) 6 miles
C) 12 miles
D) 0.8 mile

23. Shark Valley's paved loop, ridden by bike or open-air tram, is about how long, ending at a 65-foot observation tower?

A) 65 miles
B) 15 miles
C) 99 miles
D) 0.8 mile

24. The roughly 99-mile Wilderness Waterway paddling route winds through mangroves between which two points?

A. Key West and Everglades City
B. the Anhinga Trail and Miami
C. Flamingo and Everglades City
D. Shark Valley and Florida Bay

25. Which statement about visiting the Everglades is NOT true?

A. The best season is the dry winter, December through April
B. Airboats operate throughout the park's core
C. Shark Valley has a 65-foot observation tower
D. The Ten Thousand Islands are prized by kayakers

Go deeper

ONLINE This lesson on the web flashfeedlearningapp.com/study-guides/national-parks/spotlight-everglades

STUDY U.S. National Parks in the FlashFeed app flashfeedlearningapp.com/packs/national-parks

Answer key

Lesson 1: Lesson 1: America's Best Idea

1. C 1872

Yellowstone was signed into law on March 1, 1872 — the world's first national park. 1906 was the year of the Antiquities Act and 1916 created the National Park Service, so those later dates are wrong.

2. D Ulysses S. Grant

Ulysses S. Grant signed the act creating Yellowstone on March 1, 1872. None of the other three presidents signed that 1872 law.

3. A The Organic Act

The Organic Act of 1916 created the NPS to conserve parks 'unimpaired for future generations.' The Antiquities Act (1906) instead let presidents proclaim monuments.

4. B 44 years

From 1872 to 1916 — 44 years — the parks had no agency; the U.S. Cavalry even guarded Yellowstone until the NPS was formed.

5. B Woodrow Wilson

Woodrow Wilson signed the Organic Act on August 25, 1916, finally giving the parks an agency after 44 years without one. Grant had signed the Yellowstone act in 1872; Roosevelt championed the Antiquities Act.

6. C Wallace Stegner

Wallace Stegner gave the parks their famous phrase — 'absolutely American, absolutely democratic.' Muir was a naturalist; Adams a photographer.

7. A Thomas Moran

Painter Thomas Moran traveled with the 1871 Hayden Survey and brought back images proving Yellowstone's wonders were real. The others are landscape painters not on that survey.

8. D William Henry Jackson

William Henry Jackson was the 1871 Hayden Survey's photographer, working alongside painter Thomas Moran. Ansel Adams, Carleton Watkins, and Edward Weston shot other subjects and later eras.

9. B The first images proving its geysers and springs were real

Their paintings and photographs were the first images proving the tales of geysers and rainbow springs were true, so lawmakers protected the place sight unseen.

10. A Wallace Stegner

Writer Wallace Stegner supplied the words ('the best idea we ever had'); Moran and Jackson supplied the images, and Hayden led the survey.

11. D 1906

The Antiquities Act was passed in 1906. 1872 was Yellowstone; 1916 created the NPS.

12. C A national monument

The act let presidents declare national monuments by proclamation, sidestepping Congress. Many monuments were later upgraded to national parks.

13. B Theodore Roosevelt

Theodore Roosevelt, the 'Conservation President,' used the Antiquities Act first on Devils Tower, then the Grand Canyon.

14. A 64

Only 64 units carry the full 'national park' title, though the Park Service manages over 400 units in all.

15. D New River Gorge

New River Gorge in West Virginia became the 63rd national park in December 2020. Gateway Arch (2018), Indiana Dunes and White Sands (2019) were redesignated earlier.

16. C Wrangell–St. Elias

Wrangell–St. Elias is the largest U.S. national park, about 13.2 million acres — larger than several marquee parks combined. Yellowstone, Denali, and Death Valley are all far smaller.

17. C Gateway Arch

Gateway Arch in St. Louis — essentially a monument and its surrounding grounds — is the smallest national park, dwarfed by giants such as Wrangell–St. Elias.

18. A 193 acres

The Park Service's acreage listing counts about 193 acres within Gateway Arch's boundary. 13.2 million acres is the largest park, Wrangell–St. Elias — the opposite extreme.

19. D Switzerland

At about 13.2 million acres (~53,000 sq km), Wrangell–St. Elias is larger than Switzerland. Iceland, Ireland, and Portugal are each bigger, so 'larger than' them would be false.

20. B Alaska

All four biggest parks sit in Alaska, where the scale of the land dwarfs the Lower 48. Wrangell-St. Elias alone spans 13.2 million acres, larger than Switzerland and bigger than several marquee parks combined.

21. B Alaska

Alaska's scale dwarfs the Lower 48 — its parks, including 13.2-million-acre Wrangell–St. Elias, include the four biggest in the system.

22. C Alaska

All four of the largest national parks sit in Alaska, where the land's scale dwarfs anything in the Lower 48.

23. D Great Smoky Mountains

Great Smoky Mountains, on the Tennessee–North Carolina border, draws by far the most visitors — more than double its nearest rival.

24. A 12.2 million

The Smokies logged about 12.2 million visits in 2024, more than double the next-busiest park.

25. A Denali

Denali in Alaska is the highest point in any U.S. national park and the tallest peak in North America.

26. D 20,310 feet

Denali rises to 20,310 feet. 14,505 ft is Mount Whitney; 29,032 ft is Everest — both tempting but wrong.

27. C It charges no entrance fee

The Smokies charge no entrance fee, which, with its accessible location, helps explain the crowds.

Lesson 2: Lesson 2: The Story of the Parks

1. B John Muir

The Scottish-born John Muir founded the Sierra Club in 1892 and earned the title 'Father of the National Parks.' Mather ran the NPS, Grinnell championed Glacier, and Roosevelt was the Conservation President.

2. D Theodore Roosevelt

Theodore Roosevelt, the 'Conservation President,' camped with Muir in 1903 and signed the Antiquities Act of 1906. Lincoln signed the Yosemite Grant Act (1864); Carter signed ANILCA (1980).

3. A Stephen Mather

Borax millionaire Stephen Mather was the first NPS Director (1917–1929) and professionalized the parks. Grinnell edited Forest and Stream, Hayden was a geologist, and Rockefeller was a donor.

4. C George Bird Grinnell

George Bird Grinnell edited Forest and Stream, founded the first Audubon Society (1886), and championed Glacier. Mather directed the NPS, Leopold wrote of the 'land ethic,' and Muir founded the Sierra Club.

5. B Founding the National Park Service

The National Park Service was created by the 1916 Organic Act, after Roosevelt left office; Stephen Mather became its first director. Roosevelt did sign the Antiquities Act, proclaim 18 monuments, and protect ~230 million acres.

6. A Aldo Leopold

Aldo Leopold recanted his youthful war on wolves and articulated the 'land ethic' in A Sand County Almanac (1949). Carson wrote Silent Spring; Douglas gave us the Everglades' 'River of Grass'; Muir founded the Sierra Club.

7. C Rachel Carson

Rachel Carson's Silent Spring (1962) launched the modern environmental movement and the DDT ban. Douglas wrote of the Everglades, Leopold gave the 'land ethic,' and Adams was a photographer.

8. D Marjory Stoneman Douglas

Marjory Stoneman Douglas reframed the Everglades as a 'River of Grass' (1947). Carson wrote Silent Spring, Leopold A Sand County Almanac, and Muir founded the Sierra Club.

9. D Ansel Adams

Ansel Adams made Yosemite immortal in black and white. Jackson photographed and Moran painted the 1871 Hayden survey of Yellowstone; Grinnell was an editor and conservationist.

10. A Marjory Stoneman Douglas — 'River of Grass'

Douglas reframed the Everglades as a 'River of Grass' (1947). A Sand County Almanac was Leopold's, Silent Spring was Carson's, and Muir founded the Sierra Club rather than writing 'River of Grass.'

11. B John D. Rockefeller Jr.

John D. Rockefeller Jr. bought and donated land for Grand Teton, Acadia, and Great Smoky Mountains; his gifts doubled Grand Teton. Mather directed the NPS, Carter signed ANILCA, and Grinnell championed Glacier.

12. C Jimmy Carter

Jimmy Carter signed ANILCA in 1980, more than doubling the park system in a single act. Roosevelt signed the Antiquities Act, and Lincoln signed the Yosemite Grant Act.

13. A Ferdinand Hayden

Geologist Ferdinand Hayden led the 1871 Yellowstone survey; his report, illustrated by Moran and Jackson, birthed the first national park in 1872. Mather, Grinnell, and Muir were not survey geologists.

14. B Captain Charles Young

Captain Charles Young led the Sequoia detachment in 1903 and became the first Black acting superintendent of any national park. Hayden was a geologist, Grinnell an editor, and Mather the first NPS Director.

15. D The Buffalo Soldiers

The Buffalo Soldiers — African American U.S. Army cavalry — patrolled Yosemite and Sequoia in the early 1900s as some of the first park rangers. The Sierra Club and Audubon Society were advocacy groups.

16. C 1832

Congress reserved Hot Springs in 1832 — an early instance of the federal government holding land for the public. 1864 was the Yosemite Grant, 1872 Yellowstone, and 1906 the Antiquities Act.

17. B 1864

Lincoln signed the Yosemite Grant Act in 1864, mid–Civil War. Hot Springs was reserved in 1832, Yellowstone became the first national park in 1872, and the NPS was created in 1916.

18. C 1906

The Antiquities Act passed in 1906. Yellowstone was 1872, the Organic Act creating the NPS was 1916, and the Yosemite Grant was 1864.

19. D Hot Springs reservation → Yosemite Grant Act → Antiquities Act

The order is Hot Springs (1832) → Yosemite Grant Act (1864) → Antiquities Act (1906). The other sequences scramble those dates.

20. A The Hot Springs reservation

The Hot Springs reservation (1832) came first, decades before the Yosemite Grant (1864), Yellowstone (1872), and the Antiquities Act (1906).

21. C Created the National Wilderness Preservation System, closing the wildest backcountry to roads and machines

The 1964 Wilderness Act established the National Wilderness Preservation System, locking the wildest land away from roads and vehicles. The Antiquities Act (1906), Organic Act (1916), and ANILCA (1980) did the other three.

22. B The Endangered Species Act

The Endangered Species Act of 1973 is the legal backbone for restoring wolves, grizzlies, and condors. The Wilderness Act (1964) protected backcountry; the Antiquities Act (1906) and Organic Act (1916) came earlier.

23. D New River Gorge

New River Gorge in West Virginia became the 63rd national park in 2020. Gates of the Arctic, Kobuk Valley, and Kenai Fjords are Alaskan parks created or expanded by ANILCA in 1980.

24. A ANILCA (Alaska National Interest Lands Conservation Act)

ANILCA (1980) more than doubled the park system's acreage — the biggest expansion of protected land in U.S. history. The Wilderness Act (1964), ESA (1973), and Organic Act (1916) did other things.

25. C A trophic cascade

Restoring wolves set off a trophic cascade: elk were thinned, willows and aspen rebounded, beavers and songbirds returned, and riverbanks stabilized. The other terms describe unrelated ecological processes.

Lesson 3: Lesson 3: How the Landscapes Formed

1. D Subduction, one plate diving beneath another

Subduction, where one plate dives beneath another, builds volcanic arcs like the Cascades. Fault-block uplift raised the Tetons, and karst and wind shaped caves and dunes, not volcanoes.

2. C Fault-block uplift

Fault-block uplift, where stretching crust breaks and tilts upward, raised the Tetons with no foothills. Subduction builds the Cascades; karst hollows caves; a hotspot drives Yellowstone.

3. B Mammoth Cave

Karst dissolved limestone to hollow out Mammoth Cave, the longest cave system on Earth. Great Sand Dunes formed from wind-blown sand, North Cascades from glacial carving of uplifted terrain, and Grand Teton from fault-block uplift — different processes, different parks.

4. A Wind trapping sand against a barrier

Wind trapping sand against a barrier built the Great Sand Dunes, the tallest in North America. Glaciers, subduction, and karst shaped valleys, volcanoes, and caves instead.

5. D Subduction — Great Sand Dunes

Great Sand Dunes were built by wind, not subduction — subduction built the Cascade Range. The other three pairings are correct.

6. C A broad, gently sloping dome built from fluid basaltic lava

A shield volcano is a broad, gently sloping dome of fluid basaltic lava that spreads far before cooling. A collapse basin is a caldera; a frost-wedged spire is a hoodoo.

7. A Mauna Loa

Mauna Loa, in Hawaii Volcanoes NP, is the world's largest active shield volcano by volume. Rainier and Lassen are Cascade arc volcanoes, and Mazama collapsed to form Crater Lake.

8. B A geothermal feature

Geysers, hot springs, mudpots, and fumaroles are all geothermal features, produced where groundwater is heated by shallow magma. A caldera is a collapse basin; a hoodoo is an eroded spire.

9. C About 500

Yellowstone holds roughly 500 geysers, about half of Earth's total, all driven by groundwater heated by the shallow hotspot magma.

10. B Shallow magma

Geothermal features arise where shallow magma heats groundwater into geysers, hot springs, and fumaroles. Ice, wind, and limestone drive glaciation, dunes, and karst instead.

11. D The ground collapses into the void after a magma chamber empties

A caldera is a collapse inward: when a magma chamber empties in a huge eruption, the ground above caves into the void — the opposite of an outward-blasted crater. Crater Lake fills one.

12. A 1,943 feet

Crater Lake reaches 1,943 feet deep, making it the deepest lake in the United States, after rain and snowmelt filled the caldera left by Mount Mazama.

13. C They grind a sharp V-shaped valley into a broad U

Glaciers grind V-shaped valleys into broad U shapes, as at Yosemite, while scooping cirques and sharpening horns. Collapse basins, honeycomb, and dunes come from other forces.

14. D Cut downward faster than its walls could erode back

A canyon forms when a river cuts downward faster than its walls erode back — most dramatic in uplifted rock in a dry climate. The Colorado did this over 5–6 million years.

15. B About 25

Only about 25 named glaciers survive of the roughly 150 present in 1850, each shrinking as the climate warms, even though it was that same glacial carving that shaped the park's horns and hanging valleys.

16. A A tall, thin spire left standing as softer rock dissolves around it

A hoodoo is a tall, thin spire left as frost-wedging and rain dissolve the softer rock around it; Bryce Canyon has the densest concentration. The other choices define a fault-block, batholith, and arch.

17. B A natural bridge is cut by a flowing stream; an arch by seepage and frost

The difference is the sculptor: a natural bridge is cut by a flowing stream gnawing through a fin's base (Rainbow Bridge), while an arch is shaped by seepage and frost.

18. D A vast granite mass that cooled slowly deep underground before being uplifted

A batholith is a vast mass of granite that cooled slowly deep underground before uplift and exposure — the Sierra Nevada is one. A collapse basin is a caldera; a tilted range is a fault-block.

19. A Fault-block mountain

The Tetons are a fault-block mountain, raised where stretching crust broke and tilted upward over 10 million years, leaping 7,000 feet from the valley with no foothills.

20. C Hoodoo — a rock span cut by a flowing stream through a fin

That definition describes a natural bridge, not a hoodoo. A hoodoo is a thin spire left as softer rock erodes away. The other three definitions are correct.

21. C Half Dome

Half Dome is the glacially sliced granite landmark over Yosemite Valley. Delicate Arch and Landscape Arch are in Utah, and Old Faithful is Yellowstone's geyser.

22. B A geyser driven by magma-heated groundwater

Old Faithful is a geyser, a geothermal feature driven by groundwater heated by shallow magma. Arches, horns, and hoodoos are erosional rock features, not geothermal.

23. A Longest known passage network on Earth

Mammoth Cave, a karst labyrinth, is the longest cave on Earth with over 426 miles mapped. The other records belong to Crater Lake, Great Sand Dunes, and Bryce Canyon.

24. D Boxwork

Wind Cave holds about 95% of all known boxwork — a delicate honeycomb of calcite fins left jutting out after softer rock dissolved. Hoodoos, stalactites, and petrified logs form elsewhere.

25. B More than 2,000

Arches NP catalogs more than 2,000 arches, openings formed as water and ice widen cracks in a sandstone fin until a hole breaks clean through, including the slender 290-foot Landscape Arch.

Lesson 4: Lesson 4: Wildlife of the Parks

1. D Yellowstone

Yellowstone's herd of roughly 4,000-6,000 is the largest wild, free-ranging bison herd on Earth. Wind Cave and Theodore Roosevelt protect smaller, genetically important herds.

2. C Isle Royale

The Isle Royale moose-wolf study, running since 1958, is the longest-running predator-prey study in the world. Yellowstone's wolves returned only in 1995-96.

3. A Rocky Mountain

Rocky Mountain National Park's elk rut draws crowds each autumn to hear bull elk bugle. Everglades, Voyageurs, and Katmai are known for other wildlife.

4. B Glacier

Both the all-white mountain goat and the brown, curl-horned bighorn sheep range through Glacier (and Rocky Mountain). The others are wetland or northern-forest parks.

5. D Grizzly bears - Great Smoky Mountains

Great Smoky Mountains is famous for BLACK bears — grizzlies live in Yellowstone, Glacier and Alaska, not the southern Appalachians. The other three pairings are all correct.

6. C A muscular shoulder hump

A grizzly shows a muscular shoulder hump, a dished (concave) face, and long front claws built for digging. Tall ears, a straight facial profile, and short claws are marks of the black bear instead.

7. A Tall, prominent ears

Tall, prominent ears mark a black bear, not a grizzly. A grizzly shows a shoulder hump, a dished face, and long front claws built for digging.

8. B Pronghorn

The pronghorn clocks around 55 mph across the sagebrush of Yellowstone and Grand Teton, making it the Western Hemisphere's fastest land animal.

9. C American bison

The bison numbered 30-60 million before 1880s hunting cut it below 1,000; Yellowstone became its refuge and it is the enduring symbol of the American wilderness. The others never suffered that near-total collapse.

10. B Gray wolf

Reintroduced gray wolves thinned and moved elk herds, letting willows and aspen recover, which brought back beavers and songbirds - one predator rippling through the whole food web.

11. D Its influence on the whole ecosystem far outweighs its abundance

Named for the wedge stone that holds an arch together, a keystone species shapes its entire ecosystem out of proportion to its numbers. Wolves, beavers, and prairie dogs all qualify; remove the keystone and the system unravels.

12. A The wedge stone at the top of an arch

A keystone is the wedge-shaped stone at the top of an arch; remove it and the arch collapses. A keystone species holds its ecosystem together the same way.

13. B Beaver

The beaver is a keystone engineer: its dams create wetlands for countless other species. Pronghorn, bighorn sheep, and condors do not engineer habitat this way.

14. A American alligator

The American alligator is a keystone species whose gator holes retain water through the dry season. Crocodiles and manatees share the wetlands but do not dig them.

15. C Pronghorn

The wolf, beaver, and prairie dog are keystone species. The pronghorn is celebrated for speed, not for holding an ecosystem together.

16. D Pinnacles

Recovered condor flocks fly over Pinnacles, the Grand Canyon and Zion country, and Big Sur. Isle Royale, Voyageurs, and Katmai are known for other wildlife.

17. D Everglades

The Everglades uniquely hosts both American alligators and crocodiles together. Tell them apart by color and snout: alligators are dark with broad snouts, crocodiles grayish with narrow ones.

18. B Olympic and Redwood

The Roosevelt elk is at home in the misty rainforests of Olympic and Redwood. The other pairs are drier or wetland habitats without these elk.

19. C Elk National Park

Olympic's elk were so central to its creation that the park was first proposed as 'Elk National Park' explicitly to protect the herds.

20. A 22

Only 22 condors remained by 1982, so biologists took every wild bird into captive breeding. 136 was the 1975 Yellowstone grizzly count, 560 is today's total condor population, and 87 isn't tied to any other count — it's simply another specific number to rule out.

Lesson 5: Lesson 5: Flora & Ecosystems

1. A Total volume of wood

Giant sequoias win on bulk, not height. General Sherman is the largest single-stem tree by wood volume (~52,500 cubic feet). Coast redwoods are the tallest trees, and bristlecone pines the oldest.

2. C About 275 feet

General Sherman stands roughly 275 feet tall with ~52,500 cubic feet of wood. The taller 380-foot figure belongs to Hyperion the coast redwood; sequoias win on bulk, not height.

3. D About 380 feet

Hyperion, a coast redwood in Redwood NP, tops out near 380 feet — taller than the Statue of Liberty stacked nearly twice. General Sherman the sequoia is only ~275 feet.

4. B About 4,850 years

Methuselah is about 4,850 years old — older than the pyramids. The 2,200–2,700 range describes General Sherman the sequoia, a much younger (though larger) tree.

5. A Coast redwood (Hyperion)

Coast redwoods grow tall and slender, making Hyperion the tallest tree (~380 ft). The giant sequoia wins on wood volume and the bristlecone pine on age, not height.

6. C Sequoia NP

General Sherman grows in Sequoia NP on the western slope of the Sierra Nevada. Redwood NP protects the tall coast redwoods; Great Basin protects bristlecone pines.

7. B Redwood NP

Hyperion, the tallest tree on Earth, grows in Redwood NP along California's far north coast, where coastal fog sustains the redwoods. Sequoia NP protects the bulkier giant sequoias.

8. D Great Basin NP

Great Basin NP in Nevada protects ancient bristlecone groves on the flanks of Wheeler Peak. Joshua Tree and Saguaro protect desert plants, not high-country pines.

9. A Sonoran Desert

The saguaro grows wild only in the Sonoran Desert of Arizona. The Mojave is the Joshua tree's home; the Colorado Desert is the lower, hotter zone meeting the Mojave at Joshua Tree NP.

10. B Coast redwood — Sequoia NP

Coast redwoods belong to Redwood NP, not Sequoia NP. Sequoia NP protects the giant sequoias; the other three pairings are all correct.

11. C About 600 miles

Because air cools about 3–5°F per 1,000 feet, gaining elevation mimics heading toward the poles — 1,000 ft up ≈ 600 miles north. That's why one tall park can stack desert, montane, subalpine, and alpine tundra life zones.

12. D A band of plant and animal communities set by elevation and climate

A life zone is a band of plant and animal communities tied to a particular elevation and climate — the idea behind Merriam's classic bands. That's why one tall mountain can stack several.

13. A About 3–5°F

Air cools about 3–5°F per 1,000 feet gained. This rapid cooling is why climbing 1,000 feet up mimics traveling roughly 600 miles north and lets one park stack multiple life zones.

14. D Desert, montane forest, subalpine, alpine tundra

Because it cools with height, a tall park stacks desert at the base, then montane forest, then subalpine, then treeless alpine tundra near the summit — coldest zones highest.

15. C A treeless zone of low, hardy plants above where trees can survive

Alpine tundra is a treeless zone of low, hardy cushion plants above tree line, famously crossed by Rocky Mountain NP's Trail Ridge Road. The other options describe wetland, rainforest, and desert.

16. B Everglades NP

Everglades NP is the 'river of grass' named by Marjory Stoneman Douglas — a shallow sheet of water flowing through sawgrass, mangrove, and cypress found nowhere else in the US.

17. C Olympic NP

Olympic NP's Hoh Rain Forest is the signature American temperate rainforest, soaked by 12–14 feet of rain a year and draped in moss and ferns.

18. A Rocky Mountain NP

Rocky Mountain NP's Trail Ridge Road famously crosses treeless alpine tundra. Grand Canyon and Sequoia stack life zones too, but the tundra-and-Trail-Ridge pairing is Rocky Mountain's.

19. D A cool, very wet forest of the middle latitudes fed by heavy rain or fog

A temperate rainforest is a cool, extremely wet forest of the middle latitudes — 'rainforest' refers to rainfall, not latitude. Olympic's Hoh is the classic American example, not a tropical jungle.

20. B About 12–14 feet

The Hoh gets roughly 12–14 feet of rain a year, producing its dripping, moss-draped canopy — among the wettest spots in the contiguous United States.

Lesson 6: Lesson 6: Records & Superlatives

1. A A volcano (Mount Mazama) erupted and collapsed into a caldera that filled with rain and snowmelt

Crater Lake sits in the caldera of Mount Mazama, which erupted and collapsed about 7,700 years ago. With no river running in or out, only rain and snowmelt fill it — and with little sediment, the water is famously clear and deep blue.

2. D 1,943 feet

Crater Lake reaches 1,943 feet, the deepest in the U.S. The distractors are other park figures: Cadillac Mountain (1,530 ft), Yosemite Falls (2,425 ft), and Badwater's depth below sea level (282 ft).

3. B 134°F

On July 10, 1913, Furnace Creek in Death Valley hit 134°F, still Earth's highest reliably recorded air temperature. The others are hot but fall short of the record.

4. C Longest cave system on Earth

Death Valley owns the lowest point (Badwater, -282 ft), the hottest temperature (134°F), and is the driest place in the U.S. The longest cave belongs to Mammoth Cave in Kentucky.

5. C 741 feet

Great Sand Dunes rise about 741 feet from base to crest against Colorado's Sangre de Cristo peaks. The distractors are Badwater's depth, Mammoth Cave's mileage, and Crater Lake's depth.

6. A Redwood National Park

Redwood National Park protects the coast redwoods, the tallest trees on Earth. Sequoia holds the largest tree by volume, not the tallest.

7. B Sequoia National Park

Sequoia National Park holds the General Sherman, largest tree by volume. Redwood has the tallest trees; the two records belong to different parks.

8. D Great Basin National Park

Great Basin's high slopes hold bristlecone pines nearly 5,000 years old, the oldest non-clonal trees on Earth.

9. C Black Canyon of the Gunnison

Black Canyon of the Gunnison's Painted Wall exposes rock about 1.7 billion years old, among the oldest stone visible in the parks.

10. A Tallest waterfall in North America — Yellowstone

The tallest waterfall in North America, Yosemite Falls (2,425 ft), is in Yosemite, not Yellowstone. The other three pairings are correct.

11. D Yellowstone

Yellowstone, established in 1872, was the world's first national park — the original from which every later park descends.

12. B New River Gorge

New River Gorge in West Virginia became the 63rd national park in December 2020; Chiricahua in Arizona became the 64th in October 2026.

13. A National Park of American Samoa

The National Park of American Samoa, scattered across South Pacific islands and reef, is the only park entirely south of the equator.

14. C Wrangell–St. Elias

Wrangell–St. Elias in Alaska is the largest national park — larger than all of Switzerland. Gates of the Arctic is the second-largest; Denali and Yellowstone are far smaller.

15. D Glacier Bay

The four largest national parks are Wrangell–St. Elias, Gates of the Arctic, Denali, and Katmai — all in Alaska. Glacier Bay (~3.22 million acres) ranks about sixth, behind Death Valley, so it is not among the top four.

16. B It was the first national park east of the Mississippi River

Most early parks were carved from western federal land; Acadia broke that pattern as the first park east of the Mississippi — and the first created from privately donated land. Its Cadillac Mountain is the highest point on the eastern seaboard of the U.S.

17. D Gates of the Arctic

Gates of the Arctic in northern Alaska is the least-visited park, with no roads, trails, or facilities — about 11,900 visitors in 2024. Isle Royale is low but higher.

18. B About 11,900

Gates of the Arctic recorded about 11,900 visitors in 2024 — fewer in a year than Great Smoky Mountains sees in a few hours.

19. C 1919

Acadia was established in 1919 on the coast of Maine, the first national park east of the Mississippi River. 1872 was Yellowstone's founding year.

20. A Land donated by private citizens

Unlike western parks reserved from the federal domain, Acadia was the first created from land donated by private citizens.

21. B Wizard Island

Wizard Island, a cinder cone, rises from one side of Crater Lake — a volcano within a volcano. Mount Mazama is the collapsed volcano that formed the caldera.

22. C Painted Wall

The Painted Wall in Black Canyon of the Gunnison exposes rock about 1.7 billion years old. El Capitan and Half Dome are in Yosemite; Angels Landing is in Zion.

23. D Yosemite Falls

Yosemite Falls is the tallest waterfall in North America, dropping 2,425 feet in three tiers. The others are real but far shorter.

24. A Badwater Basin

Badwater Basin in Death Valley, 282 feet below sea level, is a white salt plain and the lowest point in North America. Furnace Creek is the nearby site of the heat record.

25. D Badwater Basin — Great Sand Dunes

Badwater Basin is in Death Valley, not Great Sand Dunes. The other three features are correctly paired with their parks.

Lesson 7: Lesson 7: Visiting the Parks

1. A The highest continuous paved road in the United States

Trail Ridge Road crests at 12,183 feet, making it the highest continuous paved road in the U.S. It runs for miles above treeline through fragile alpine tundra and stays snow-closed for much of the year.

2. B Yosemite

Tioga Road crosses Tioga Pass (9,943 ft) in Yosemite. Trail Ridge Road is Rocky Mountain's high road and Going-to-the-Sun is Glacier's, so those are the tempting mix-ups.

3. D Glacier

The 50-mile Going-to-the-Sun Road climbs to Logan Pass (6,646 ft) in Glacier National Park, completed in 1932. The other Rockies-region parks lack this specific road.

4. C Great Smoky Mountains

Great Smoky Mountains hosts the lottery-access synchronous firefly event in early June. Yosemite's mid-February Firefall is the other rare seasonal spectacle mentioned.

5. D Going-to-the-Sun Road — Yosemite

Going-to-the-Sun Road is in Glacier, not Yosemite (whose seasonal high road is Tioga Road). The other three pairings are correct.

6. A Mid-to-late February

Horsetail Fall's Firefall effect happens only in mid-to-late February, when sunset light hits the water just right.

7. B Great Smoky Mountains

Great Smoky Mountains hosts the lottery-access synchronous fireflies event each early June.

8. C Bison

Despite bears' fearsome reputation, bison injure the most Yellowstone visitors — almost always people who edged too close for a photo. A bison can outrun a person and pivot on a dime, so the NPS rule is to stay 25 yards back.

9. C One gallon

The guidance is a full gallon of water per person per day in desert heat, paired with hiking before 10 a.m. and avoiding midday exertion.

10. D 100 yards

Stay 100 yards (about a football field) from bears and wolves. The 25-yard rule applies to bison, elk, and other large animals.

11. B Hike before 10 a.m. and avoid midday exertion

Heat is the desert's quiet killer, so hike early and avoid midday exertion. Rationing water or starting at noon invites heat illness.

12. A Feed wildlife small, natural snacks

Feeding wildlife any snacks breaks the one rule with no exceptions — never feed wildlife — since a fed animal becomes bold, dependent, and often doomed. The other three are genuine NPS rules.

13. B National monument

A national monument can be proclaimed by the President under the Antiquities Act of 1906 — no act of Congress needed. That speed saved many landscapes; several, like the Grand Canyon, were monuments before Congress upgraded them to full parks.

14. C An act of Congress

National parks are created by an act of Congress and generally bar hunting and extraction. A presidential proclamation instead creates a national monument.

15. D Wilderness Area

A designated wilderness area is the strictest protection, keeping land 'untrammeled by man' under the 1964 Wilderness Act. A preserve is the loosest, permitting some hunting.

16. A National Preserve

A national preserve may allow some hunting or extraction; several places are combined 'Park & Preserve' units. National parks and wilderness areas bar such uses.

17. C A national monument requires an act of Congress

A national monument needs no act of Congress — the president can proclaim it directly under the 1906 Antiquities Act. The other three statements are true.

18. A It bars roads, motor vehicles, and permanent development

Wilderness Areas bar roads, vehicles, and development, keeping land 'untrammeled by man' per the 1964 Wilderness Act.

19. D "Untrammeled by man"

The 1964 Wilderness Act's goal is land kept 'untrammeled by man' — no roads, vehicles, or permanent development.

20. B Backcountry

The backcountry is the remote interior, reached on foot, horse, or boat, with overnight stays usually needing a permit. Wilderness is a legal protection layer, not this term.

21. B Switchback

A switchback softens the grade so hikers and vehicles can climb slopes impossible to ascend straight on — the secret behind roads like Going-to-the-Sun.

22. C Cairn

A cairn marks the way across rock or open terrain. The rule is to follow existing cairns, not build rogue ones, since false cairns can lead hikers astray.

23. A Inholding

An inholding is private land inside park boundaries — a leftover from before the park was drawn — that can complicate management and access.

24. D Backcountry — a park's developed visitor-center area

Backcountry is the remote, UNdeveloped interior beyond the roads and visitor centers — the opposite of a developed front-country area. The other three definitions are correct.

25. B Trailhead

The trailhead is simply where a trail starts. A gateway town is the community at a park's entrance, and a cairn marks a route across open rock.

26. D Gateway town

A gateway town sits at a park's entrance serving visitors. A concessioner, by contrast, is a company operating services inside the park itself.

27. C Concessioner

A concessioner is licensed to run lodges and tours inside the park. A gateway town is the outside community at the entrance, not an in-park operator.

28. A Concessioner — a private company running park lodges and tours

Only the concessioner pairing is right. A trailhead is where a trail begins, an inholding is private in-park land, and a gateway town is the entrance community.

29. C Concessioner — a community at a park's entrance serving visitors

A concessioner is a private company running lodges and tours inside a park — not the entrance community, which is the gateway town. The other three are correct.

Lesson 8: Lesson 8: Fun Facts & Famous Words

1. B A toll ban in Tennessee's 1951 road deed, backed by federal law

In 1951 Tennessee transferred Newfound Gap Road and Little River Road, the park's main roads, with a ban on tolls, and federal law bars entrance fees where tolls are barred on primary park roads. Entry stays free, though a parking tag has been required since 2023 to park over 15 minutes.

2. C 1903

Wind Cave was the first cave anywhere designated a national park, back in 1903 — famous for its rare honeycomb-like 'boxwork' formations.

3. A Mammoth Cave (Kentucky)

Mammoth Cave in Kentucky is the longest known cave system on Earth, and no one has mapped a natural end to it — the record is still being written underground.

4. D The risk is very low

The USGS, which monitors Yellowstone constantly, rates the chance of a major near-term eruption as very low. The ground breathes and small quakes are routine, but on any human timescale it's a slow, closely watched giant.

5. A Wind Cave is the longest known cave system on Earth

Mammoth Cave — not Wind Cave — is the longest known cave system on Earth. Wind Cave's claim to fame is being the first cave designated a national park (1903). The other three facts are all accurate.

6. C Hot Springs

Hot Springs, Arkansas, is one of the few parks where you can legally collect the resource itself — public fountains let visitors fill bottles from the thermal springs.

7. D Racetrack Playa

On Death Valley's Racetrack Playa, heavy 'sailing stones' leave trails across the dried mud. Badwater Basin is Death Valley's low point, but the walking-rocks puzzle belongs to the Racetrack.

8. B National Park of American Samoa

The National Park of American Samoa is leased from local villages — proof a national park need not be federal property to be protected.

9. A Thin overnight ice sheets nudged by light wind

In 2014 researchers filmed the answer: thin sheets of overnight ice, nudged by light wind, glide the stones across the slick surface.

10. C Racetrack Playa — the first cave designated a national park

Racetrack Playa is Death Valley's walking-stones site, not a cave — the first cave designated a national park was Wind Cave (1903). The other three pairings are correct.

11. D Theodore Roosevelt

President Theodore Roosevelt spoke those words at the Grand Canyon in 1903, warning that the ages had shaped it and people could only mar it.

12. B Wallace Stegner

Novelist Wallace Stegner gave the parks their most-quoted endorsement in 1983; the power of the line is in that word 'democratic.'

13. C John Muir

John Muir wrote it in My First Summer in the Sierra (1911) — it reads like a one-sentence summary of ecology, written before the word was in common use.

14. B Franklin D. Roosevelt

Franklin D. Roosevelt (1936) framed the parks as a national birthright. Theodore Roosevelt's famous park line was 'Leave it as it is,' at the Grand Canyon in 1903.

15. A Theodore spoke at the Grand Canyon in 1903; Franklin called the parks the people's in 1936

Theodore Roosevelt stood at the Grand Canyon rim in 1903 ('Leave it as it is'); Franklin D. Roosevelt proclaimed the parks the people's own in 1936.

Lesson 9: Lesson 9: Western Mountains & Northern Plains

1. B Great Sand Dunes

Great Sand Dunes' Star and Hidden Dunes rise about 741 feet against the Sangre de Cristo Mountains, the tallest in North America.

2. D Grand Teton

The Teton Range lifts about 7,000 feet of granite straight out of Jackson Hole along the Teton Fault, with no foothills. Rocky Mountain and Glacier are older, foothill-fringed ranges.

3. A Glacier

Grinnell's 'Crown of the Continent' name for Glacier endures, fitting its horns, aretes, ~700 lakes, and billion-year-old Belt Supergroup rock.

4. C Rocky Mountain

Trail Ridge Road crests at 12,183 feet in Rocky Mountain National Park, where more than a third of the park lies above treeline. Glacier's high road is Going-to-the-Sun over Logan Pass.

5. A Rises abruptly from the floor of Jackson Hole

Rising from Jackson Hole with no foothills describes Grand Teton, not Yellowstone. Yellowstone is the supervolcano park with ~500 geysers and Old Faithful.

6. D Theodore Roosevelt

Theodore Roosevelt National Park, in the North Dakota badlands along the Little Missouri River, is the only national park named for one person. His 1880s ranching years there forged the conservation ethic he carried to the White House.

7. C Black Canyon of the Gunnison

The Painted Wall plunges ~2,250 feet in Black Canyon of the Gunnison, where the Gunnison River cut through 1.7-billion-year-old gneiss and schist.

8. B Mesa Verde

Cliff Palace, with about 150 rooms, is the largest cliff dwelling in North America and sits in Mesa Verde, the first park created to preserve 'the works of man.'

9. B Wind Cave

Wind Cave, the world's first park created to protect a cave, contains roughly 95% of all boxwork ever found — more than all other known caves combined.

10. D Badlands

Badlands' fast-eroding buttes surrender new Oligocene mammal fossils after nearly every rainstorm. Theodore Roosevelt is also badlands terrain but lacks this fossil claim.

11. C Mixed-grass prairie

Badlands protects the largest protected mixed-grass prairie in the National Park System, from which its eroded buttes and spires rise.

12. A Theodore Roosevelt

Theodore Roosevelt National Park's badlands lie along the Little Missouri River in North Dakota's plains, where bison and wild horses roam freely.

13. D Great Sand Dunes

Great Sand Dunes, in Colorado's high San Luis Valley, piles North America's tallest dunes — topping near 741 feet — against the 13,000-foot Sangre de Cristo range, a landscape made for sandboarding and stargazing.

14. B Black Canyon of the Gunnison

The Black Canyon of the Gunnison is so deep and narrow that some of its floor gets only ~33 minutes of daily sun — the source of its name.

15. C Wind Cave

Wind Cave is named for the 'breathing' air that rushes through its entrance as pressure shifts — Maka Oniye, the Lakota place of emergence.

16. A Yellowstone

Yellowstone, the world's first national park, sits on the Yellowstone Caldera across three states and holds about half of all active geysers on Earth.

17. C Mesa Verde

Mesa Verde protects over 5,000 archaeological sites and some 600 cliff dwellings of the Ancestral Puebloans — the first park made to preserve human heritage.

18. A 4th-most-visited

Yellowstone's 4,744,353 visitors made it the 4th-most-visited national park in 2024 — astonishing for a place reachable only across long mountain distances. Rocky Mountain followed close behind at 5th.

19. B 14,259 feet

Longs Peak tops out at 14,259 feet. 13,775 is Grand Teton, 12,183 is the Trail Ridge Road crest, and 10,466 is Glacier's Mount Cleveland.

20. D 13,775 feet

Grand Teton crests at 13,775 feet. 14,259 is Longs Peak, 12,183 the Trail Ridge Road crest, and 10,466 Glacier's Mount Cleveland.

21. D 10,466 feet

Mount Cleveland reaches 10,466 feet, the lowest of these Western high points. The others are the Trail Ridge crest, Grand Teton, and Longs Peak.

22. B 5th-most-visited

Rocky Mountain's 4.15 million visitors made it the 5th-most-visited national park in 2024, just behind Yellowstone at 4th.

23. A Wyoming, Montana, Idaho

Yellowstone sprawls across Wyoming, Montana, and Idaho atop its volcanic hotspot, with most of the park in Wyoming.

24. C Montana

Glacier sits in northern Montana on the Canadian border, joined with Waterton Lakes to form the first International Peace Park.

25. D North Dakota

Theodore Roosevelt National Park is in the North Dakota badlands along the Little Missouri River, home to Roosevelt's Maltese Cross and Elkhorn ranches.

26. A Glacier

Glacier is in Montana. Mesa Verde, Great Sand Dunes, and Black Canyon of the Gunnison are all in Colorado.

27. C South Dakota

Wind Cave sits in the Black Hills of South Dakota, and Badlands rises from South Dakota's mixed-grass prairie, its South Unit within the Pine Ridge Reservation.

Lesson 10: Lesson 10: Southwest & Colorado Plateau

1. B Arches

Ranger Edward Abbey wrote Desert Solitaire at Arches in 1968.

2. A Bryce Canyon

Bryce Canyon isn't a canyon at all — it's amphitheaters carved into a plateau's edge, packed with the densest hoodoos on Earth. Southern Paiute legend says the spires are the 'Legend People' turned to stone by Coyote.

3. C 277 miles

The Colorado runs ~277 miles through the canyon. 18 miles is its maximum width, not its length.

4. D Zion

Zion (1919) was Utah's first park and, at ~4.95M visitors in 2024, the 2nd-most-visited in the country.

5. D Saguaro

The canyon-country headliners are Grand Canyon, Zion, Bryce, Arches, and Canyonlands. Saguaro is a Sonoran Desert cactus park, not a Colorado Plateau canyon.

6. C Sonoran Desert

The saguaro is the iconic symbol of the American West, found only in the Sonoran Desert.

7. A The Waterpocket Fold, a ~100-mile wrinkle in the crust

Capitol Reef protects the Waterpocket Fold, a ~100-mile monocline. The Vishnu Schist is in the Grand Canyon; the Capitan Reef underlies Carlsbad and Guadalupe.

8. B Permineralization — silica-rich groundwater replaced the wood cell by cell

Silica-rich groundwater replaced the wood cell by cell (permineralization); iron and manganese tinted the agate. Freeze-thaw carves hoodoos; sulfuric acid carved Carlsbad.

9. C The yucca moth

The Joshua tree (a giant yucca) is pollinated only by the yucca moth. The lesser long-nosed bat pollinates saguaro and agave, honeybees are generalist foragers but not obligate partners, and free-tailed bats roost in caves like Carlsbad Caverns.

10. D It waits until age 50–75 to sprout its first arm

Saguaros live 150–200 years and may not grow a first arm until 50–75. They grow only in the Sonoran Desert, and the blossom opens in May–June.

11. A White Sands

White Sands, in New Mexico's Tularosa Basin, holds the world's largest gypsum dune field at about 275 square miles.

12. B Sulfuric acid rising from oil and gas deposits below

Sulfuric acid, rising from oil and gas below, ate the Permian reef from within — unlike ordinary caves carved by rainwater seeping down.

13. C The Permian Capitan Reef

Both expose the Permian Capitan Reef — Guadalupe as desert mountains above, Carlsbad as caverns below. The Waterpocket Fold is at Capitol Reef.

14. A −282 ft

Badwater Basin lies 282 ft below sea level, the lowest point in North America. From there the park rises two miles to 11,049-ft Telescope Peak.

15. B The Rio Grande

Big Bend hugs the Rio Grande's 'big bend' on the Mexico border. The Green and Colorado carve Canyonlands; the Virgin River carved Zion.

16. D Zion

Zion's Navajo Sandstone cliffs, Angels Landing, and the Virgin River's Narrows are its signatures. Bryce is hoodoos; Canyonlands is river-carved districts.

17. A Arches

Arches, near Moab, holds the greatest density of natural arches on Earth, including the 52-ft Delicate Arch on Utah's plate.

18. D Carlsbad Caverns

Carlsbad Caverns' bat flights are famous; a teenage Jim White first saw them as 'smoke.' Great Basin has Lehman Caves but not the bat flights.

19. B Grand Canyon

The Grand Canyon's mile-deep walls expose ~2 billion years of history, with the Vishnu Schist at the bottom. Zion's rock is only ~180 million years old.

20. C Death Valley

Death Valley holds Badwater Basin (−282 ft) and the 134°F Furnace Creek record of 1913 — the lowest, hottest, driest park. It is also the largest park in the contiguous U.S.

21. D About two miles

From −282 ft at Badwater to 11,049 ft at Telescope Peak is over 11,300 feet — a two-mile vertical range within one park. Even the hottest, lowest place in North America reaches two miles into the sky.

22. B 13,065 ft

Wheeler Peak reaches 13,065 ft. 11,049 ft is Death Valley's Telescope Peak, 9,115 ft is Bryce's Rainbow Point, and 8,751 ft is Guadalupe Peak.

23. A 8,751 ft

Guadalupe Peak tops out at 8,751 ft, the highest point in Texas. 11,049 ft and 13,065 ft are Telescope Peak and Wheeler Peak.

24. C Nevada

Great Basin sits in remote east-central Nevada and holds the state's only glacier. Utah, Arizona, and New Mexico each host other Southwest parks.

25. A Big Bend — Texas

Big Bend is in Texas. Grand Canyon and Saguaro are in Arizona, and Great Basin is in Nevada.

Lesson 11: Lesson 11: California, Pacific Northwest & Hawaii

1. D The heat opens their cones to release seeds, so decades of fire suppression threatened the species' renewal

Giant sequoia cones need the heat of fire to open and drop their seeds, so decades of fire suppression actually endangered the species' renewal. The mature trees' thick, tannin-rich bark leaves them nearly fireproof.

2. A The largest single-stem tree on Earth by volume

The General Sherman is the largest single-stem tree on Earth by volume (~52,500 cubic feet). The tallest trees are the coast redwoods in Redwood, not Sequoia.

3. B 2,425 ft

Yosemite Falls drops 2,425 ft. 3,000 ft is El Capitan's face, 4,737 ft is Half Dome above the valley, and 1,943 ft is Crater Lake's depth.

4. C Its coast redwoods are the tallest trees on Earth

Coast redwoods, the tallest trees, grow in Redwood National Park, not Sequoia. Sequoia's fame is the giant sequoia General Sherman, and Mount Whitney sits on its eastern boundary.

5. D Redwood

Redwood National and State Parks protect the coast redwoods, the tallest trees on Earth. Sequoia's giant sequoias are largest by volume, not tallest.

6. C Pinnacles

Pinnacles, half of the fault-split Neenach Volcano, is one of the best places to watch wild California condors.

7. A Channel Islands

Channel Islands' isolation drove about 150 endemic species, earning it the 'Galápagos of North America' nickname and a famous island-fox recovery.

8. B An active, glacier-clad stratovolcano and the most heavily glaciated peak in the contiguous U.S.
Mount Rainier is an active, glacier-clad stratovolcano wearing ~26 glaciers. The plug-dome is Lassen, shield volcanoes are Hawaiian, and the caldera lake is Crater Lake.

9. B More than 300
North Cascades holds more than 300 glaciers, roughly a third of those in the Lower 48. 26 is Rainier's glacier count and 60-plus is Mount Olympus's.

10. C Olympic
Olympic packs glaciated mountains, the Hoh temperate rainforest, and ~73 miles of Pacific coastline into one park, so all three are reachable in a day.

11. D American Samoa
Spread across three South Pacific islands, American Samoa is the only U.S. national park south of the equator.

12. A 1,943 ft
Crater Lake reaches 1,943 ft, the deepest in the U.S., fed only by rain and snowmelt in Mount Mazama's caldera.

13. D The caldera collapsed when Mount Mazama erupted ~7,700 years ago
Crater Lake fills the caldera left when Mount Mazama erupted and collapsed about 7,700 years ago, then filled with rain and snowmelt.

14. A House of the Sun
Haleakalā means 'House of the Sun'; Hawaiian tradition says the demigod Māui lassoed the sun there to slow its journey across the sky.

15. B Shield volcanoes
Both Hawaiian volcanoes are shield volcanoes, built by fluid basaltic lava over the stationary Hawaiian hotspot. Stratovolcanoes and plug domes are steeper Cascade types.

16. C Pinnacles
Pinnacles, one of the smallest and newest parks, preserves half of an ancient volcano that the San Andreas Fault has hauled ~195 miles north from its other half; its talus caves and skies are patrolled by California condors.

17. A Crater Lake
Crater Lake fills Mount Mazama's caldera and, fed only by rain and snowmelt, is the deepest lake in the United States.

18. D Olympic
Olympic combines glaciated peaks, the soaking Hoh temperate rainforest, and wild Pacific coastline in a single Washington park.

19. B Channel Islands
Channel Islands, the 'Galápagos of North America,' saw its house-cat-sized island fox rebound to be delisted in 2016.

20. C North Cascades
North Cascades, 'the American Alps,' holds more than 300 glaciers but draws roughly 40,000 visitors a year, among the least-visited Lower 48 parks.

21. C The largest active volcano on Earth by volume
Mauna Loa is the largest active volcano on Earth by volume. The other options are real mountain superlatives, but none is the title Mauna Loa holds — making them tempting distractors.

22. B 14,410 ft

Mount Rainier stands 14,410 ft. 14,505 ft is Mount Whitney, 13,681 ft is Mauna Loa, and 10,457 ft is Lassen Peak.

23. D 4.1 million

About 4.1 million visitors come to Yosemite each year. 40,000 is North Cascades' annual total.

24. A California

Both parks sit in California's Sierra Nevada. Crater Lake is in Oregon, and Rainier, Olympic, and North Cascades are in Washington.

25. B 7,980 ft

Mount Olympus reaches 7,980 ft. 10,023 ft is Haleakalā, 14,410 ft is Rainier, and 14,505 ft is Mount Whitney.

Lesson 12: Lesson 12: The Alaskan Giants

1. D Primary succession

Newly exposed, lifeless rock progressing to mature forest over roughly 200 years is primary succession. Secondary succession, by contrast, follows a disturbance where soil already exists — so it is the wrong term here.

2. A 20,310 ft

Denali tops out at 20,310 ft. 18,008 ft is Mount St. Elias, 15,300 ft is Mount Fairweather in Glacier Bay, and 14,505 ft is Mount Whitney in the Lower 48.

3. B Bison

Denali's 'Big Five' are grizzly bears, gray wolves, moose, caribou, and Dall sheep. Bison are not among them; the park was in fact created in 1917 to protect Dall sheep.

4. C Novarupta eruption

The 1912 Novarupta eruption ejected about 30 times the volume of Mount St. Helens (a 1980 event) and formed the ash plain of the Valley of Ten Thousand Smokes.

5. A 65 miles

Glacier Bay's ice has retreated about 65 miles since 1794, one of the fastest documented retreats anywhere, exposing fresh land that undergoes primary succession.

6. D Kobuk Valley

The Great Kobuk Sand Dunes, covering ~25 square miles above the Arctic Circle, lie in Kobuk Valley.

7. C Wrangell–St. Elias

Wrangell–St. Elias is the largest U.S. national park, bigger than Switzerland. Gates of the Arctic (~7.5M acres) is second-largest; Denali is about 6 million acres.

8. B 18,008 ft

Mount St. Elias reaches 18,008 ft, the second-highest in the U.S. behind Denali's 20,310 ft. 15,300 ft is Mount Fairweather, not St. Elias.

9. C Lake Clark

Proenneke built his cabin at Upper Twin Lake in Lake Clark, where he lived alone about 30 years. Lake Clark also guards the Bristol Bay sockeye fishery.

10. B 40

The Harding Icefield feeds about 40 glaciers, including the road-accessible Exit Glacier, whose roadside markers show the ice's retreat within living memory.

11. D Kobuk Valley

Kobuk Valley's tells are its 25 square miles of Ice Age sand dunes that can reach 100°F and the Western Arctic caribou herd crossing the river at Onion Portage — an improbable desert above the Arctic Circle.

12. A Denali

Denali runs the Park Service's only working sled-dog kennel, reached by one ~92-mile road where private vehicles are limited and most visitors ride park buses.

13. C Glacier Bay

Glacier Bay's tidewater ice has retreated ~65 miles since Vancouver's 1794 visit, and most of its ~700,000 yearly visitors arrive by cruise ship.

14. B Katmai

Katmai holds about 2,200 brown bears that fish for sockeye at Brooks Falls, the setting of 'Fat Bear Week.' Lake Clark also has bears but far fewer.

15. A Harding Icefield feeds about 40 glaciers

The Harding Icefield belongs to Kenai Fjords, not Wrangell–St. Elias. Wrangell holds nine of the 16 highest U.S. peaks, the Kennecott mines, and the Malaspina Glacier.

16. D About six times

Yellowstone fits inside Wrangell–St. Elias about six times. At over 13 million acres it is larger than Switzerland and ranks #1 by area in the entire national park system, with Gates of the Arctic #2.

17. C ~11,000–12,000

Gates of the Arctic draws only ~11,000–12,000 visitors a year, the fewest of any national park — it has no roads, trails, or facilities and is reached by bush plane.

18. D ~18,000 ft

Denali rises about 18,000 ft from base to summit, about a mile more than Everest's, says the National Park Service. ~29,000 ft is Everest's total elevation above sea level.

19. A 'The high one'

The Koyukon Athabascan called the peak Denali, 'the high one.' It became the official federal name in 2015, replacing Mount McKinley; a January 2025 executive order changed the federal name back.

20. B 100°F

The Great Kobuk Sand Dunes' surface can reach 100°F in summer — Ice Age sand improbably forming a desert above the Arctic Circle across ~25 square miles.

Lesson 13: Lesson 13: East, Midwest & Territories

1. C It charges no entrance fee

The Smokies charge no entrance fee, and neither do roughly a third of the national parks. The other options belong to other parks: Acadia was first east of the Mississippi, Mammoth Cave holds the longest cave, and Chiricahua (2026) is the newest national park.

2. B Mammoth Cave

Mammoth Cave, beneath the Kentucky hills, has over 426 miles mapped — more than twice the next-longest, making it the longest known cave system on Earth.

3. A Shenandoah

Shenandoah, along Virginia's Blue Ridge, is defined by Skyline Drive — 105 miles and 75 overlooks tracing the very crest of the mountains.

4. D New River Gorge

New River Gorge, West Virginia's first national park, was designated on December 27, 2020 as the 63rd national park. It stayed the newest until Chiricahua in Arizona became the 64th in October 2026.

5. C Isle Royale

Isle Royale is a remote Lake Superior island in the Midwest group. Great Smoky Mountains, Shenandoah, and Mammoth Cave are all Appalachian Heart parks.

6. A Gateway Arch

Gateway Arch's ~193 acres within its boundary make it the smallest, most urban national park and the only one honoring a historical event rather than a natural landscape.

7. B Cuyahoga Valley

Cuyahoga Valley, between Cleveland and Akron, wraps the Cuyahoga River, whose 1969 fire helped galvanize the Clean Water Act and modern environmental movement.

8. D Isle Royale

Isle Royale, reachable only by boat or seaplane, hosts the world's longest-running predator-prey study of wolves and moose, begun in 1958.

9. D Voyageurs

Voyageurs, on Minnesota's Canadian border, is navigated by boat and named for the French-Canadian fur-trade canoemen — the voyageurs — who paddled these waters.

10. C Acadia

Acadia is on Maine's coast, in the Appalachian Heart group. Voyageurs, Indiana Dunes, and Isle Royale are all Great Lakes / Midwest parks.

11. A Biscayne

Biscayne, south of Miami, is about 95% underwater and protects the northern Florida Keys reef tract.

12. B Everglades

The Everglades (1947), a vast 'River of Grass,' was the first national park created to protect an ecosystem rather than scenic landscape.

13. C Hot Springs

Hot Springs, Arkansas, was federally protected in 1832, making it the oldest area in the National Park System, a full 40 years before Yellowstone.

14. D Dry Tortugas

Dry Tortugas, ~70 miles west of Key West and ~99% water, is centered on Fort Jefferson, a massive brick fortress and the largest masonry structure in the Americas.

15. B A floodplain forest

Congaree is a floodplain forest — not a swamp — where periodic river flooding feeds some of the tallest trees in the eastern U.S.

16. A Acadia

Acadia — a park of pink granite on a Maine coastal island with the highest point on the eastern seaboard of the U.S. — was the first national park east of the Mississippi, created from donated private land.

17. B Great Smoky Mountains

Great Smoky Mountains, with over 19,000 documented species, is the most biodiverse U.S. national park and the self-proclaimed 'Salamander Capital of the World.'

18. C Mammoth Cave

Stephen Bishop mapped much of Mammoth Cave, crossing the 'Bottomless Pit' to become one of its most famous early explorers.

19. A New River Gorge

New River Gorge's bridge — the longest single-span steel arch bridge in the Western Hemisphere — hosts Bridge Day, when BASE jumpers legally leap from its deck.

20. D Gateway Arch

Gateway Arch National Park in St. Louis centers on Eero Saarinen's 630-ft stainless-steel catenary monument commemorating westward expansion.

21. B Kuwohi

Kuwohi (formerly Clingmans Dome) in the Great Smoky Mountains reaches 6,643 ft — both the park's high point and the highest point on the whole Appalachian Trail. Cadillac (1,530 ft), Hawksbill (4,051 ft), and Mount Desor (1,394 ft) are lower park high points.

22. D Tennessee & North Carolina

The Smokies straddle the Tennessee–North Carolina border on some of the oldest mountains on the planet.

23. A Hawksbill (4,051 ft)

Hawksbill (4,051 ft) is Shenandoah's high point. Kuwohi (formerly Clingmans Dome) is in the Smokies, Cadillac in Acadia, and Mount Desor on Isle Royale.

24. C Mount Desor (1,394 ft)

Mount Desor (1,394 ft) is Isle Royale's high point. Hawksbill belongs to Shenandoah, Kuwohi (formerly Clingmans Dome) to the Smokies, and Cadillac to Acadia.

25. C 12.19 million

With 12.19 million visits in 2024, the Smokies are by far the most-visited national park — more than the next two combined. 2.9 million is Cuyahoga Valley's annual visitation.

Lesson 14: Spotlight: Yellowstone

1. C A crater left when the ground collapsed into an emptied magma chamber after a supervolcano eruption

A caldera is the vast crater that formed about 640,000 years ago when a Yellowstone supervolcano erupted and the ground collapsed into the emptied magma chamber. The Yellowstone hotspot still feeds its geothermal features.

2. A 640,000 years ago

The caldera formed about 640,000 years ago when a supervolcano erupted and the ground collapsed into the emptied magma chamber. 2.2 million is the park's acreage, not its age.

3. D The Yellowstone hotspot, a rising plume of crustal heat

The Yellowstone hotspot is a plume of heat rising through the crust; it feeds the entire geothermal system, venting through some 10,000 hydrothermal features.

4. B 500

Yellowstone has about 500 geysers, roughly half the world's active total. The 10,000 figure counts all hydrothermal features, not just geysers.

5. D The hotspot has cooled and no longer produces geothermal activity

The hotspot is still active — it powers roughly 10,000 hydrothermal features. The other three statements are all accurate.

6. B Grand Prismatic Spring

Grand Prismatic Spring is the largest U.S. hot spring (~370 ft across), its rainbow rings painted by heat-loving microbes. Steamboat and Old Faithful are geysers.

7. C Steamboat Geyser

Steamboat Geyser is the world's tallest active geyser, with major eruptions exceeding 300 ft. Old Faithful is famous for reliability, not height (106–185 ft).

8. A Every 60 to 90 minutes

Old Faithful erupts roughly every 60–90 minutes, sending boiling water 106–185 feet up. Rangers can predict each eruption within about ten minutes.

9. C 308 feet

The Lower Falls drops 308 feet. 1,000 feet is the canyon's depth; 106 and 185 feet are Old Faithful's eruption range.

10. B Rhyolite

The canyon cuts through soft, sulfur-yellow rhyolite — the rock that gives Yellowstone its name. Limestone is what forms Mammoth's travertine terraces.

11. A A trophic cascade

A trophic cascade is when a top predator reshapes an entire ecosystem down the food chain. Yellowstone's wolves are its most famous example — their return regrew streamside willows, revived beavers, and stabilized riverbanks.

12. D 4,000 to 6,000

Yellowstone's herd numbers roughly 4,000–6,000 bison, the last continuously wild population in the country. ~1,000 is the grizzly count; 27 is the number of associated tribes.

13. D 1995

Wolves were reintroduced in 1995. 1872 is the park's founding, wolves were exterminated by the 1920s, and 1966 is when Thermus aquaticus was collected.

14. A Lamar and Hayden valleys

The Lamar and Hayden valleys hold abundant, visible wildlife — bison, elk, wolves, and grizzlies. The geyser basins and Mammoth terraces are thermal, not grassland, areas.

15. B The Tukudika (Sheep Eaters), a band of Shoshone

The Tukudika, or Sheep Eaters — a Shoshone band — were unusual in living in the high country year-round. The other tribes are among the 27 associated with Yellowstone but used the plateau seasonally.

16. C 4th

With about 4.74 million recreation visits in 2024, Yellowstone was the 4th-most-visited national park.

17. B Mammoth Hot Springs

At the park's north end, Mammoth Hot Springs deposits travertine into shifting tiered terraces. Grand Prismatic is a flat hot spring; Steamboat and Old Faithful are geysers.

18. A Summer, June through September

Summer (June–September) brings full road access and open facilities. In winter the interior can be reached only by snowcoach or snowmobile.

19. D Bison

Bison injure more visitors than any other animal, almost always because someone crept too close for a photo. Stay at least 25 yards from bison and elk, 100 yards from bears and wolves.

20. C Artist Point

Artist Point is the classic overlook of the Lower Falls and the gold-and-orange canyon walls. Fairy Falls trail overlooks Grand Prismatic; Washburn is a summit hike.

Lesson 15: Spotlight: Grand Canyon

1. B The Colorado Plateau rose while the Colorado River cut straight down through the rising rock

Over the past ~5–6 million years the Colorado Plateau bulged upward while the Colorado River sawed straight down through the rising rock — young carving through very old stone. The rock at the bottom, the Vishnu Schist, is ~1.8 billion years old.

2. C About 6,000 feet — over a mile

The canyon plunges over a mile — roughly 6,000 feet — from rim to river. That depth, combined with its breadth, is part of its scale.

3. D About 1.8 billion years

The Vishnu Schist is roughly 1.8 billion years old — the basement of the canyon. The 5–6 million year figure is how long the river has been carving, not the rock's age.

4. A A gap where roughly a billion years of rock record is simply missing

The Great Unconformity is a place in the walls where about a billion years of history are gone — eroded away — leaving young rock resting directly on very old rock.

5. D It is the deepest canyon in the United States

The Grand Canyon is NOT the deepest U.S. canyon — Hells Canyon cuts deeper. What sets it apart is its breadth and the sweep of time in its walls, not raw depth.

6. A Mexico and Canada

Biologists say descending from the cool spruce-fir North Rim to Sonoran desert scrub at the river covers the same range of life zones as a trip from Mexico to Canada — the vertical climate ladder that makes the canyon so biodiverse.

7. B Eleven

Eleven tribes are traditionally tied to the canyon, including the Hualapai, Navajo, Hopi, Zuni, Southern Paiute, and Havasupai. (Twenty-two was the condor's low point, not tribes.)

8. C Nearly 9.5 feet

The California condor's wingspan reaches nearly 9.5 feet, making it North America's largest land bird — a giant now soaring again on the canyon's thermals.

9. B Only the Grand Canyon's North Rim

The Kaibab squirrel is found only on the cool, forested North Rim, isolated there so long it evolved into its own distinct form found nowhere else.

10. C Havasupai

The Havasupai, 'people of the blue-green water,' still live inside the canyon in the village of Supai, reachable only by foot, mule, or helicopter.

11. A Spring or fall

Spring and fall offer moderate temperatures. In summer the inner canyon turns dangerously hot, often 100–115°F, while winter brings ice to the rim trails.

12. D Nearly 4.9 million

Nearly 4.9 million people visited in 2024, making the Grand Canyon the country's third-most-visited national park. (1.2 million is roughly its acreage, not visitors.)

13. C About 90 percent

Roughly 90 percent of visitors go to the lower, year-round South Rim, where the lodges, visitor center, and Rim Trail are concentrated. The North Rim draws the rest.

14. D Never hike from the rim to the river and back in one day

The way down is optional; the way up is not. The descent feels easy, but the heat-soaked climb back out sends hikers into rescue every year — so never do rim-to-river-and-back in a day.

15. B South Kaibab Trail

The South Kaibab Trail trades water for views along an open ridgeline to Ooh Aah and Skeleton Points. The Bright Angel Trail, by contrast, has shade and seasonal water stops.

16. A Mather Point

Mather Point is the classic first-look overlook next to the main visitor center. Ooh Aah and Skeleton Points are viewpoints down the South Kaibab Trail, not rim overlooks.

17. B Mary Colter

Architect Mary Colter designed the Desert View Watchtower. Stephen Mather led the early Park Service (Mather Point's namesake), and Roosevelt protected the canyon — neither designed it.

18. D Phantom Ranch

Phantom Ranch sits deep at the canyon floor, its beds awarded by lottery months ahead. Supai is the Havasupai village; Havasupai Gardens is a water stop on the Bright Angel Trail.

19. C Bright Angel Trail

The Bright Angel Trail is the signature route, with shade and seasonal water down to Havasupai Gardens. The South Kaibab Trail, by contrast, has views but no water.

20. A South Kaibab Trail

The South Kaibab Trail rides an open ridgeline past Ooh Aah Point (~1.8 mi) and Skeleton Point (~6 mi round trip). Bright Angel leads instead to Havasupai Gardens.

Lesson 16: Spotlight: Yosemite

1. B Glaciers grinding down the river canyon

Ice-age glaciers flowed through the Merced River canyon, grinding the V-shaped river valley into a wide U-shaped trough and leaving sheer walls like El Capitan.

2. D 3,000 feet

El Capitan rises about 3,000 feet of monolithic granite, the largest exposed granite monolith in the world. 4,737 ft is Half Dome's crown; 2,425 ft is Yosemite Falls; 620 ft is Bridalveil.

3. A Exfoliation of curved granite sheets plus glacial plucking

Half Dome was shaped by exfoliation (curved granite sheets flaking off like an onion) combined with glacial plucking. No missing half ever fell.

4. C A huge granite mass cooled deep underground, then uplifted

A batholith is a vast body of granite that cooled slowly deep underground before being lifted skyward with the Sierra Nevada. Ice later exposed and sculpted it.

5. B Half Dome's missing half broke off and crashed down

No missing half ever fell from Half Dome; its shape comes from exfoliation and glacial plucking. The other three statements are all accurate.

6. A Abraham Lincoln

Amid the Civil War in 1864, Abraham Lincoln signed the Yosemite Grant, entrusting Yosemite Valley and the Mariposa Grove to California — the seed of the national-park idea that bloomed at Yellowstone in 1872.

7. C Giant sequoias

Giant sequoias are the most massive living things by volume, bulkier even than the taller coast redwoods. The Grizzly Giant is over 2,000 years old.

8. D John Muir

John Muir, who called the Sierra the 'Range of Light,' championed Yosemite and co-founded the Sierra Club in 1892. Adams was a later photographer; Lincoln signed the 1864 grant.

9. C 1851

The Ahwahneechee were expelled in 1851. 1864 was the Yosemite Grant, 1872 was Yellowstone, and 1890 was Yosemite's national-park status.

10. A Ansel Adams

Photographer Ansel Adams carried the conservation torch with his black-and-white Yosemite images. Muir was the naturalist; Lincoln and Roosevelt were presidents.

11. D Late spring

Waterfalls peak in late spring as Sierra Nevada snowmelt surges; by late summer many slow to a trickle or dry up. Summer and early fall are best for the high country.

12. B February

The Firefall is a mid-February trick of sunset light on seasonal Horsetail Fall. It is a winter event, not a spring, summer, or autumn one.

13. D A permit issued by lottery

The final cabled stretch of Half Dome requires a permit issued by lottery, so hikers must plan months ahead.

14. B 4,800 feet

The Half Dome hike gains about 4,800 feet. 3,200 ft is Glacier Point's height above the valley, not the hike's gain.

15. A Summer and early fall

Summer and early fall are best for the high country, after Tioga Road clears. Late spring is best for roaring waterfalls, not the snowbound high country.

16. C Yosemite Falls

Compare: Nevada Fall — The upper and taller of the two waterfalls along Yosemite's Mist Trail. Bridalveil Fall — A slender waterfall at the mouth of Yosemite Valley.

17. C Bridalveil Fall

Bridalveil Fall is the 620-foot ribbon at the valley's mouth that seems to float sideways in the wind. Yosemite Falls is the 2,425-foot giant.

18. D Horsetail Fall

Seasonal Horsetail Fall is the one lit like lava during the Firefall. Bridalveil and Yosemite Falls are elsewhere in the valley.

19. A Vernal and Nevada Falls

The Mist Trail passes Vernal Fall (~3 miles) then Nevada Fall (~7 miles), soaking hikers in spray. The other pairs are scattered around the valley.

20. B Vernal Fall

The ~3-mile round trip tops out at Vernal Fall; pushing on to Nevada Fall stretches the hike to about 7 steep miles.

Lesson 17: Spotlight: Zion

1. C Petrified sand dunes from an ancient desert

Zion's cliffs are lithified dune sand: about 180 million years ago a Sahara-scale desert covered the region, and its dunes were buried, cemented, and lifted into today's cross-bedded walls.

2. D About 2,000 feet

Zion Canyon's walls soar up to roughly 2,000 feet off the floor. 8,726 ft is Horse Ranch Mountain (the park's summit) and 3,666 ft is the canyon-floor elevation, not the cliff height.

3. A About 180 million years

The sandstone formed from a Sahara-scale desert about 180 million years ago. The other figures are plausible geologic ages but not the age of Zion's dune-built rock.

4. B 8,726 feet

Horse Ranch Mountain tops out at 8,726 feet, far above the canyon floor near 3,666 feet. 2,000 ft is the cliff height above the floor, not a summit elevation.

5. D Ripples of ancient wind-blown sand dunes

Navajo Sandstone is lithified dune sand, so its cross-beds preserve the slanting ripples of ancient wind-blown dunes, not marine, volcanic, or river deposits.

6. B Mukuntuweap

The Southern Paiute called the canyon Mukuntuweap, which named the 1909 national monument. Sinawava and Kolob are other Zion place-names; Springdale is the gateway town.

7. C 1919

Zion became a national park in 1919. The monument was set aside in 1909, and Angels Landing was named in 1916 — nearby dates meant to tempt.

8. A Mukuntuweap National Monument

The 1909 monument took the Paiute name, Mukuntuweap National Monument, a decade before the 1919 renaming to Zion.

9. B Angels Landing

Angels Landing is the fin with a chained knife-edge spine and sheer drops. The Narrows is the river slot canyon; the Emerald Pools are spring-fed pools, not a ridge climb.

10. D The Narrows

In The Narrows the canyon pinches so tight that hikers wade upstream in the river itself. Angels Landing is the chained ridge; the Temple of Sinawava is where the trail begins.

11. C "only an angel could land on it"

In 1916 a visitor gazing at the soaring fin declared that 'only an angel could land on it,' and the name stuck. The airy, chain-assisted spine now requires a lottery permit to climb.

12. A About 5 miles

Angels Landing runs roughly 5 miles round trip and gains about 1,500 feet. 9.4 miles is the full Narrows route; 1,500 is the elevation gain, not a distance.

13. C About 9.4 miles

The bottom-up Narrows can run up to about 9.4 miles. 5 miles is the Angels Landing round trip; the 20–30 feet figure describes how narrow the walls get, not the length.

14. A Angels Landing

Crowds on the exposed Angels Landing spine led the Park Service to require a lottery permit since 2022. The Narrows and Emerald Pools need no such permit.

15. D The seep-fed hanging gardens on the cliff faces

The tiny Zion snail lives only in the dripping, spring-fed hanging gardens where water seeps from the sandstone — not in the river current or dry uplands.

16. B The narrow canyon would gridlock, so a mandatory shuttle carries visitors instead

Zion's heart is a single narrow canyon. To prevent gridlock and protect it, the park runs a free mandatory shuttle along the scenic drive spring through fall.

17. C 4.95 million

Zion drew about 4.95 million visitors in 2024 (4,946,592), the 2nd-most of any national park.

18. A 2nd-most-visited

With about 4.95 million visitors in 2024, Zion is the 2nd-most-visited national park — remarkable for a park centered on one narrow canyon.

19. B Springdale

Springdale sits at the south entrance and runs its own connecting shuttle. Moab is the gateway to Arches/Canyonlands; Sinawava and Kolob are Zion place-names, not towns.

20. D Spring and fall

Spring and fall bring mild temperatures and the running shuttle. Summers are hot, crowded, and prone to monsoon storms; winter is quiet but cold.

Lesson 18: Spotlight: Glacier

1. D 80 feet

Spring plows clear drifts up to 80 feet deep to reopen the road, whose high stretch typically opens only from late June to mid-October.

2. A 6,646 ft

Logan Pass sits at 6,646 ft, the road's high point on the Continental Divide. 10,466 ft is Mount Cleveland, the park's highest peak; 3,150 ft is roughly the park's low point.

3. C 50 miles

The Going-to-the-Sun Road runs 50 miles clean across Glacier, crossing the Divide at Logan Pass. It is the single most popular thing to do in the park.

4. B 700

About 700 lakes dot the park, many an unreal turquoise from glacial flour in the meltwater. 150 is the count of glaciers around 1850, not lakes.

5. B Arête

An arête is the knife-edge ridge between two glaciers — Glacier's Garden Wall is one. A horn is instead a pyramid-shaped peak carved from several sides.

6. A Triple Divide Peak

Triple Divide Peak is the continent's hydrological apex, sending water toward the Pacific, Hudson Bay/Arctic, and the Gulf of Mexico. Mount Cleveland is merely the tallest peak.

7. C Hudson Bay and the Arctic

The third watershed drains north to Hudson Bay and the Arctic. The other two paths are west to the Pacific and down the Missouri–Mississippi to the Gulf of Mexico.

8. D Garden Wall

The Garden Wall is the park's celebrated arête, followed by the exposed Highline Trail. The Lewis Overthrust is the fault that thrust older rock atop younger; the Belt Supergroup is the rock itself.

9. A Grinnell Glacier

Grinnell Glacier — named, like the park's nickname, for George Bird Grinnell — is the most-visited ice, reached by a strenuous ~10.6-mile round-trip hike.

10. C Wild Goose Island

Wild Goose Island is the barely-an-acre speck in St. Mary Lake, framed by peaks mirrored in still dawn water — likely the single most-photographed view in Glacier.

11. D Mountain goat

The shaggy white mountain goat is the park's emblem, perfectly adapted to its sheer cliffs.

12. B 150

Roughly 150 glaciers existed around 1850. Only about 25 named glaciers larger than 25 acres remain today, and they keep shrinking.

13. A 25

Only about 25 named glaciers larger than 25 acres remain, down from roughly 150 around 1850 — and scientists project they will largely vanish in coming decades.

14. D Blackfeet (Niitsitapi)

The Blackfeet (Niitsitapi), to the east, hold the peaks sacred as the 'Backbone of the World.' The Salish, Pend d'Oreille, and Kootenai are tied to the western valleys.

15. B Bison

Glacier's intact wild community includes grizzly and black bears, moose, wolverines, and lynx — plus mountain goats and bighorn sheep. Bison, iconic to Yellowstone, is not among them.

16. C Iron in the billion-year-old Belt rock — red where it met ancient air, green where it stayed submerged

The pebbles are ancient Belt Supergroup rock tinted by iron: reds formed where the iron was exposed to oxygen in ancient air, greens where it stayed submerged — a billion-year geology lesson you can hold.

17. A 10 miles

Lake McDonald is about 10 miles long and 472 ft deep, the park's largest lake, famous for its red and green iron-tinted shoreline pebbles.

18. B 11.8 miles

The Highline Trail is about 11.8 miles, moderate but thrillingly exposed. The ~10.6-mile figure is the strenuous Grinnell Glacier round trip.

19. C 1932

The two nations joined the parks in 1932 as the world's first International Peace Park. 1910 is when Glacier itself was established.

20. D A timed vehicle reservation

Peak-season access to those corridors requires a timed vehicle reservation (check NPS yearly). A backcountry permit is for overnight camping, not driving the road.

Lesson 19: Spotlight: Grand Teton

1. D They are among the youngest, with no foothills

Uplifted along the Teton Fault over only ~10 million years, the Tetons are one of the youngest Rocky ranges — and they rise straight from the valley with no foothills.

2. A 13,775 ft

Grand Teton crests at 13,775 ft — the sharp granite pyramid that gives the park its name.

3. B 7,000 ft

The range rises ~7,000 vertical feet with no foothills — one of the most abrupt mountain fronts in North America. 13,775 ft is Grand Teton's summit height, not the relief.

4. C The mountain block tilts up while the valley block drops down

It is a seesaw along one fault: the peaks rose as Jackson Hole sank, which is exactly why there are no foothills.

5. C 10 million years

Built along the Teton Fault over roughly 10 million years, the Tetons are geologically young for the Rocky Mountains.

6. A Jackson Lake

Jackson Lake is the largest, beneath Mount Moran; Jenny is smaller but the most photographed.

7. D Jenny Lake

Jenny Lake, the most photographed, has a boat shuttle that turns the long approach to Cascade Canyon into a short one.

8. B Moraines — piles of ground-up rock

Glaciers dumped rubble piles called moraines, which acted as natural dams behind which the lakes pooled.

9. B Crater Lake

Jenny, Jackson, Leigh, and String line the range's base; Crater Lake is in Oregon, not the Tetons.

10. C Leigh and String

Jenny, Jackson, Leigh, and String are among the necklace of glacial lakes; Crater, Tahoe, Louise, and Moraine lie in other regions entirely.

11. D T.A. Moulton Barn

The T.A. Moulton Barn on Mormon Row, framed by the full sweep of the Tetons, is famously one of America's most photographed barns.

12. A Ansel Adams

Ansel Adams photographed the Snake River bend in 1942; a copy later rode aboard the Voyager spacecraft toward the stars.

13. A Elk

Roughly 7,000–10,000 elk winter on the National Elk Refuge near Jackson — one of North America's great seasonal mammal gatherings.

14. D Turquoise

Delta Lake glows turquoise from suspended glacial flour, reached by a strenuous ~2,300-ft off-trail climb under Grand Teton.

15. B Schwabacher Landing

Schwabacher Landing's glassy Snake River beaver ponds give the classic mirror reflection of the Tetons at sunrise.

16. C Elk

Elk are the park's signature animal; each September, bulls fill the valley with whistling bugles during the rut.

17. C Moose

Moose wade the willow flats of Grand Teton, part of the wildlife-rich Greater Yellowstone Ecosystem.

18. B John D. Rockefeller Jr.

Rockefeller quietly bought up Jackson Hole ranch land and donated it; a 1950 expansion folded it into the park. The Rockefeller Parkway still bears his name.

19. A Yellowstone

The parkway is a land corridor stitching Grand Teton to Yellowstone into a single wild route.

20. D 1950

The park was established in 1929; a 1950 expansion added Rockefeller's quietly purchased Jackson Hole land.

21. A He quietly bought up Jackson Hole ranchland and donated it

Rockefeller quietly purchased Jackson Hole ranchland and gave it to the park; the parkway still bears his name.

22. D The Rockefeller Parkway is a scenic railroad line

The parkway is a land corridor, not a railroad. Rockefeller did quietly buy and donate Jackson Hole ranchland, added by the 1950 expansion, and the parkway links the park to Yellowstone.

Lesson 20: Spotlight: Rocky Mountain

1. B Precambrian granite and gneiss

The Front Range's core is ancient Precambrian granite and gneiss, uplifted and then carved by Ice Age glaciers into cirques and U-shaped valleys. Belt rock and Navajo sandstone belong to Glacier and Zion.

2. A Enos Mills

Naturalist and innkeeper Enos Mills lobbied for years until Congress created the park in 1915. Muir, Mather, and Hayden shaped other parks but not this one's founding.

3. C 1915

The park was established in 1915 after Enos Mills's campaign. 1872 was Yellowstone, 1890 Yosemite, and 1919 Grand Canyon and Acadia.

4. D 14,259 ft

Longs Peak rises to 14,259 ft. 12,183 ft is where Trail Ridge Road crests, and 14,505 ft is California's Mt. Whitney — not in this park.

5. C Highest continuous paved road in the United States

Trail Ridge Road is the highest continuous paved road in the U.S., cresting at 12,183 ft with miles above treeline. The other distinctions are invented.

6. A Watersheds draining to the Pacific from those draining to the Atlantic

The Continental Divide is the hydrologic ridgeline where water parts — west toward the Pacific, east toward the Atlantic. It is not a political or land-use boundary.

7. B A treeless high-elevation zone covering over a third of the park

Alpine tundra is the treeless, frost-sculpted zone above treeline that blankets over a third of the park. The forest, lakes, and granite are separate features.

8. D It runs the length of the park along its high spine

The divide runs the spine of the park, the ridgeline threading its high country. It is a hydrologic crest, not a park boundary, a lakeshore, or a state line.

9. D More than a third

More than a third of the park's 265,000 acres sits above treeline as alpine tundra — a defining share, but not half or more.

10. B It is densely forested with tall spruce

Alpine tundra is by definition treeless — the forest gives out where it begins — so "densely forested" is false. The other three all describe it accurately.

11. A Bighorn sheep

The bighorn sheep is the park's emblem; all four animals live in the park, but the bighorn is the symbol.

12. C A tiny round-eared rabbit relative that stockpiles hay among high rock piles

The pika is a small, round-eared relative of the rabbit that gathers "haystacks" of dried plants in alpine rock piles. The antlered animal is elk; the cliff sheep is the bighorn.

13. B A very strenuous non-technical scramble up Longs Peak

The Keyhole Route is a 14–15 mile, ~5,000-ft scramble with serious exposure up Longs Peak, the park's only fourteener. The easy loop is Bear Lake and the drive is Trail Ridge Road.

14. D A bull elk's haunting high-pitched whistle that rises to a guttural grunt

The bugle is the bull elk's haunting, high-pitched whistle rising to a grunt, carrying across Moraine Park at dawn and dusk as bulls defend harems. It is made by the elk, not other animals.

15. A Alligator

Elk share the park's slopes with moose, mule deer, and marmots. Alligators are wetland reptiles found nowhere in this cold, high-altitude park.

16. C 4.15 million

Roughly 4.15 million visitors came in 2024, making it the 5th-most-visited national park — high enough to prompt timed-entry reservations.

17. A 3.6 miles

The Emerald Lake trail is a gentle 3.6-mile round trip past Nymph and Dream lakes. Sky Pond is ~9 miles, the Keyhole Route 14–15, and Trail Ridge Road spans 48.

18. D September

September stages the elk rut in Moraine Park and doubles as peak aspen color — the sweet spot for a fall visit. The other months miss both.

19. C A timed-entry reservation

Recent peak seasons have used a timed-entry reservation system to drive in, so checking the NPS site before a trip is essential. The other permits are not part of this system.

20. B Moraine Park

The broad meadows of Moraine Park stage the elk rut each September. Sky Pond and Longs Peak are high hiking destinations, and Grand Lake anchors the park's west end.

Lesson 21: Spotlight: Death Valley

1. A Its below-sea-level floor traps heated air that sinks, compresses, and warms further, like the bottom of a bowl

Sunlight bakes the dark floor; the hot air rises, cools, then sinks and recompresses, and steep walls plus the below-sea-level depth concentrate it like a bowl. That is why 134°F was recorded here in 1913.

2. D 282 feet

Badwater Basin lies 282 feet below sea level — the lowest point in North America. A sign high on the cliff above marks true sea level, showing how deep the salt-crusted basin really is.

3. C 134°F

The thermometer at Furnace Creek hit 134°F in 1913 — still the hottest air temperature reliably recorded anywhere on Earth. The below-sea-level basin traps and concentrates the heat like a bowl.

4. B Wettest place in North America

Death Valley is the driest place in North America (about 2 inches of rain a year), not the wettest. It genuinely is the lowest, hottest, and largest contiguous park all at once.

5. D More than two miles

From Badwater (−282 ft) to Telescope Peak (11,049 ft) is more than two vertical miles — one of the most extreme elevation gradients in the U.S. park system, with snow up top and a salt pan below.

6. A 2 in

Death Valley gets only about 2 inches of rain a year, making it the driest place in North America.

7. C Mountain ranges to the west wring moisture from storms

Mountain ranges west of the valley strip moisture from incoming storms before they arrive, leaving Death Valley just ~2 inches of rain a year.

8. B the contiguous United States

Death Valley is the largest national park in the contiguous U.S.; Alaska's Wrangell–St. Elias is larger overall.

9. B about 3.4 million acres

Death Valley covers roughly 3.4 million acres (about 3,408,396), the biggest national park in the contiguous United States.

10. C A fault-bounded basin (graben) that is pulling apart and dropping

Death Valley is a graben — a block of crust dropping between two faults as the region stretches and pulls apart. It is still deepening today.

11. D Golden badlands of ancient lakebed mud

Zabriskie Point overlooks golden badlands — wrinkled ridges of ancient lakebed mud carved by erosion, with Manly Beacon rising from the center. It glows amber at sunrise.

12. A Weathered volcanic minerals like iron oxides and manganese

The colors are weathered volcanic minerals: iron oxides tint the reds and pinks, mica and chlorite the greens, manganese the purples — exposed because no vegetation covers the rock. None of it is paint.

13. A Thin floating ice panes nudged by a light breeze

On rare freezing nights thin ice sheets form, break up in morning sun, and — floating and nudged by a light breeze — glide the stones across the slick wet mud, etching trails behind them.

14. C A steam explosion when magma flashed groundwater to steam

Only a few thousand years ago, rising magma flashed groundwater into steam and exploded, blasting out the ~600-ft-deep pit. It is a steam (phreatic) explosion crater, not an impact or caldera.

15. B Gold Tier

Death Valley holds Gold Tier certification — the highest rating, reserved for the darkest, most pristine skies. Far from city light it reveals the full Milky Way, and starlight alone can cast your shadow.

16. D November through March (winter)

November through March brings mild, clear days ideal for the salt flats and badlands. Summer is genuinely dangerous — the NPS warns against hiking below sea level after 10 a.m.

17. B Red ochre paint made from local clay

Tümpisa means 'red ochre paint,' after the pigment made from local clay. The Timbisha Shoshone have lived here over a thousand years, and their reservation lies within the park near Furnace Creek.

18. A 1994

Death Valley became a national monument in 1933 and a full national park in 1994. It now draws about 1.1 million visitors a year, hubbed at Furnace Creek.

19. C The NPS recommends midday summer hikes on the valley floor

The opposite is true: the NPS warns AGAINST hiking below sea level after 10 a.m. in summer, when the floor becomes a lethal oven. The other three statements are all accurate.

Lesson 22: Spotlight: Sequoia

1. A Largest by volume (most massive)

Giant sequoias are the most massive trees on Earth by volume. They aren't the tallest (that's the coast redwoods) nor the oldest (bristlecone pines) nor the widest — their record is sheer bulk of wood.

2. C 275 feet

General Sherman stands about 275 feet tall. Its record isn't height — coast redwoods are taller — but the sheer volume of wood packed into its single trunk.

3. D 52,500 cubic feet

General Sherman holds roughly 52,500 cubic feet of wood — the most of any single-stem tree on Earth, which is exactly what makes it the largest tree by volume.

4. B It holds five of the ten largest trees on Earth

The Giant Forest, named by John Muir in 1875, is home to five of the ten largest trees on Earth, including General Sherman. Bristlecones and redwoods are different species entirely.

5. D It is the tallest tree species on Earth

Giant sequoias are the most massive trees but not the tallest — that record belongs to the coast redwoods. The other three statements are all accurate.

6. B The Civilian Conservation Corps in the 1930s

New Deal Civilian Conservation Corps crews carved and built the 350-plus-step stairway into Moro Rock in the 1930s. The half-mile climb opens a sweeping view over the Great Western Divide and the Kaweah canyon.

7. C 14,505 feet

Mount Whitney rises 14,505 feet on Sequoia's eastern boundary — the roof of the lower 48. (20,320 feet is closer to Denali in Alaska.)

8. A A marble cavern of stalactites carved by water through karst

Crystal Cave is a cool marble cavern dissolved through karst rock, hung with stalactites and flowstone — a stark contrast to the granite peaks above. The dome is Moro Rock.

9. A A granite dome reached by a stairway of 350+ stone steps

Moro Rock is a granite dome climbed by a stairway of more than 350 steps for a panorama over the Great Western Divide. The cavern is Crystal Cave; the peak is Mount Whitney.

10. B 13,000 feet

Rising from about 1,300 feet to Whitney's 14,505-foot summit is a gain of more than 13,000 feet, stacking whole ecosystems from foothill chaparral to alpine granite.

11. D Summer to early fall

The high country opens up in summer and early fall once snow clears; the Giant Forest stays accessible most of the year (chains may be required in winter).

12. C A paved ~2-mile loop through the Giant Forest

The Congress Trail is a paved two-mile loop through the Giant Forest past clusters like the House and Senate — the easiest way to walk among the giants. The Whitney and Moro routes are separate.

13. B A passage cut through a fallen sequoia that cars drive under

After a sequoia fell across a road in 1937, crews cut an 8-by-17-foot passage through the fallen trunk — the Tunnel Log — which visitors still drive beneath. The tree is down, not standing.

14. D Locked in steel bear boxes or approved canisters

The park requires food, trash, and scented items to be locked in steel bear boxes or approved canisters. A determined bear can peel open a car door for a cooler, so cars are not allowed.

15. C Kings Canyon

Sequoia and Kings Canyon are run together as one continuous wild landscape under two names, easily explored on a single trip. The other parks are elsewhere in California.

Lesson 23: Spotlight: Olympic

1. C Glaciers, temperate rainforest, and Pacific coast

Olympic stacks glaciated peaks, drenched temperate rainforest, and wild Pacific coast into one park — a traveler can touch all three in a day.

2. A About 73 miles

Roughly 73 miles of wild coast run along the park's edge, one of the longest wilderness shorelines left in the Lower 48.

3. B About 922,650 acres

Olympic spans about 922,650 acres. 3.7 million is the 2024 visitor count and 7,980 is Mount Olympus's height in feet — not the park's acreage.

4. D More than 60

More than 60 glaciers cling to the range. Storm-fed snow buries Mount Olympus despite its modest 7,980-foot height.

5. C UNESCO Biosphere Reserve and World Heritage Site

Olympic is recognized as both a UNESCO Biosphere Reserve and a World Heritage Site, prized for its intact wildness.

6. D A national monument

President Theodore Roosevelt declared Mount Olympus National Monument in 1909; it was redesignated a national park in 1938.

7. B 1938

Olympic became a national park in 1938. 1909 was when Theodore Roosevelt declared the earlier Mount Olympus National Monument.

8. A 7,980 feet

Mount Olympus reaches 7,980 feet — modest next to Mount Rainier, yet buried in ice thanks to storm-fed snow.

9. D Hurricane Ridge

Hurricane Ridge is reached by a paved road climbing from Port Angeles to nearly a mile high, with views toward Mount Olympus.

10. C Ruby Beach

Ruby Beach is celebrated for sea stacks and tide pools. Hurricane Ridge is a mountain overlook and Sol Duc Falls is a waterfall.

11. A A fallen log along which rows of new trees sprout and take root

In the drenched Hoh, fallen "nurse logs" become seedbeds — new trees sprout in rows along the decaying trunk, drawing moisture and nutrients as it slowly rots into the forest floor.

12. B 12 to 14 feet

The Hoh receives about 12 to 14 feet of rain a year — feet, not inches — building its cathedral of moss and towering conifers.

13. C About 0.8 miles

The Hall of Mosses loop runs roughly 0.8 miles. 3.2 miles is the Hurricane Hill trail up at Hurricane Ridge.

14. D North America's largest elk; the park was nearly named for them

Roosevelt elk are the continent's largest elk, and protecting them was so central that Olympic was nearly named for the elk.

15. A A turquoise glacier-carved lake

The turquoise glacier-carved lake is Lake Crescent, inland on the north side. The coast is defined by sea stacks, tide pools, driftwood, and fog.

16. B July–September

July through September is the dependable dry season; the coast and rainforest stay visitable year-round, but wet.

17. A Port Angeles

Hurricane Ridge is reached by a paved road that climbs from Port Angeles to nearly a mile above the sea.

18. B A deep, glacier-carved lake glowing turquoise

Lake Crescent is a deep, glacier-carved lake so clear its water glows turquoise in sunlight, ringed by forested ridges and a historic lodge.

19. D July through September

July through September is Olympic's reliable dry season for the high country; the coast and rainforest stay open year-round but wet.

20. C About 3.2 miles round trip

The Hurricane Hill trail runs about 3.2 miles round trip, climbing from Hurricane Ridge to wider views north across the Strait of Juan de Fuca.

Lesson 24: Spotlight: Denali

1. C 20,310 feet

Denali's summit stands at 20,310 ft. 18,000 ft is its base-to-summit rise, not its elevation; 29,032 ft is Everest, which is higher above sea level.

2. A The high one

Denali is Koyukon Athabascan for 'the high one' (or 'the tall one'), the name Alaska Native peoples used long before it was called Mount McKinley.

3. D 2015

Interior made Denali the official federal name in 2015 (a January 2025 executive order later changed it back to Mount McKinley). In 1896 a prospector attached 'Mount McKinley'; 1917 is when the park was first established.

4. B About 18,000 feet

Denali rises about 18,000 ft from near-tundra to summit. 20,310 ft is its elevation above sea level, not its rise above its own base.

5. A Its base-to-summit rise is greater (~18,000 ft); Everest sits on an already-high plateau

Everest begins on a high plain, so its climb from its own base is shorter. Denali starts near 2,000 ft and rises about three and a half miles (about 18,000 ft) to its summit — a mile more than Everest's rise, by the Park Service's count.

6. D The Alaska Range

Denali anchors the Alaska Range, the arcing chain that rises along the Denali Fault across the state's interior.

7. C Mount McKinley

Mount McKinley was the official federal name until 2015, when Denali became official; a January 2025 executive order changed it back. The park is still Denali National Park and Preserve.

8. B Elk

Denali's Big Five are grizzly bears, caribou, moose, Dall sheep, and gray wolves. Elk is not among them.

9. B Moose

Denali's Big Five are grizzly bears, caribou, moose, Dall sheep, and gray wolves. Moose is one of them; bison, mountain goats, and elk are not.

10. D Dall sheep

Dall sheep are the white, curl-horned wild sheep of the high slopes, and the animal Denali was first created to protect.

11. C Dall sheep

The park was first set aside as a refuge for Dall sheep, whose herds were being thinned by market hunters supplying mining camps.

12. A Taiga

Taiga is the northern boreal forest of spruce and birch in the valleys. Alpine tundra is the treeless ground above the tree line.

13. B Alpine tundra

Alpine tundra is the treeless, low-growing ground above the tree line, carpeted in dwarf shrubs. Taiga is the spruce-birch forest below it.

14. C About 92 miles

One road, about 92 miles long, is the only route into the roughly six-million-acre wilderness.

15. A About 6 million acres

The park spans about six million acres of subarctic wilderness, larger than the state of New Hampshire.

16. D Give yourself several days rather than a single afternoon

Only about 30% of summer visitors ever see the full peak, so the advice is to give yourself several days and treat a clear view as a gift, not a guarantee.

17. C About 30%

Only about 30% of summer visitors ever see the full peak, since the mountain wraps itself in cloud; the lucky ones join the '30% Club.'

18. D By park bus

Private vehicles are limited to the first stretch of road; beyond that, nearly everyone travels by park bus, which keeps traffic light and wildlife calm.

19. A The dark shoulder months

The dark shoulder months bring clear black skies for the northern lights. Midsummer's round-the-clock daylight hides the aurora.

20. B Mid-June to early September

Mid-June to early September is Denali's best season, when the road is open and summer is at full strength.

Lesson 25: Spotlight: Great Smoky Mountains

1. D The most biodiverse national park

With over 19,000 documented species and estimates of 80,000 or more, the Smokies are the most biodiverse U.S. national park — earning the nickname "Salamander Capital of the World."

2. C Forest VOCs scattering blue light, mixed with fog

The dense Appalachian vegetation exhales volatile organic compounds that scatter blue light; blended with forest fog it reads as a smoke-like veil. No fire is involved.

3. A 6,643 ft

At 6,643 feet, Kuwohi is the highest point in the park, in Tennessee, and along the entire 2,190-mile Appalachian Trail.

4. B 1934

The park was assembled in 1934 from thousands of private parcels bought and donated. 1872 is Yellowstone's founding, not the Smokies'.

5. B They are among Earth's oldest mountains, worn down over eons

The rounded silhouette marks the eroded roots of a once-Himalayan range raised 480–300 million years ago. Where the Rockies are young and jagged, the Appalachians are old and worn.

6. D John D. Rockefeller Jr.

The park was assembled from private land in 1934 with help from a ~$5 million gift by John D. Rockefeller Jr. John Muir was a naturalist, not a donor here.

7. C It charges a steep entrance fee that funds salamander research

The Smokies charge no entrance fee. The rest are true: the 'Salamander Capital' nickname, 30-plus salamander species, and land assembled from bought-and-donated private parcels.

8. A Salamander Capital of the World

With 30-plus salamander species, the Smokies are nicknamed the 'Salamander Capital of the World.' Salamanders are the tailed amphibians behind the title.

9. B 30

The park hosts 30-plus salamander species, the standout group behind its status as the most biodiverse U.S. national park.

10. C Bought from thousands of private parcels and donated

Unlike western parks carved from public land, the Smokies were assembled in 1934 from thousands of private parcels bought and donated, aided by Rockefeller's ~$5 million gift.

11. A It is an Ice-Age relic, stranded near the cold summits when the glaciers retreated

As Ice-Age glaciers retreated, cold-adapted spruce-fir forest survived only on the coldest high peaks — a "Canadian" forest stranded far south, part of why the Smokies stack five forest types by elevation.

12. D Photinus carolinus

Thousands of Photinus carolinus fireflies blink in unison for about two weeks in late spring, one of only a few places on Earth where this species synchronizes.

13. A 1838

In 1838 most Cherokee were forced west on the Trail of Tears, though some resisted and remained as the Eastern Band.

14. D Qualla Boundary

The Eastern Band still lives on the Qualla Boundary at the park's southern edge. The others are unrelated western lands.

15. B Over 19,000

More than 19,000 species are confirmed, with scientists estimating the true total at 80,000 or more — the most of any U.S. national park.

16. C A toll ban in Tennessee's road deed, plus a federal law

In 1951 Tennessee transferred Newfound Gap Road and Little River Road to the park with a ban on tolls, and a federal law bars entrance fees where tolls are barred on primary park roads. Entry stays free, though a paid parking tag has been required since 2023.

17. C 12.19 million

12.19 million people visited in 2024 — more than the next two parks combined — making it the most-visited national park by a wide margin.

18. D 11 miles

Cades Cove is circled by an 11-mile one-way loop road lined with preserved cabins, churches, and a grist mill.

19. B A paid parking tag

A paid parking tag has been required since March 1, 2023 to park in the Smokies for more than 15 minutes. Entry itself remains free: the park charges no entrance fee.

20. A October

October is the showcase month: fall color ripples down the mountains for weeks and elk bugle through the autumn rut in Oconaluftee and Cataloochee.

21. C Cades Cove

Cades Cove is the park's most beloved corner — a valley ringed by mountains, looped by an 11-mile road, and prime for spotting deer, turkey, and bears.

22. B Newfound Gap

Newfound Gap is the pass and road crossing the Tennessee–North Carolina crest; Tennessee's 1951 deed for the road barred tolls, part of why the park charges no entrance fee.

23. D Oconaluftee

At the Oconaluftee entrance, a preserved farmstead museum tells the story of the mountain settlers the park displaced.

24. A Elkmont

Demand to see the Photinus carolinus display is so intense the park runs a lottery for viewing spots near Elkmont in early June.

25. D Kuwohi

Kuwohi (formerly Clingmans Dome), 6,643 ft, is the highest point in the park and on the Appalachian Trail; its spiral tower lifts visitors to a 360-degree panorama of blue ridges.

Lesson 26: Spotlight: Acadia

1. D First national park east of the Mississippi River

Established as Lafayette National Park in 1919, Acadia was the first national park east of the Mississippi — and the first created from donated private land.

2. B 1,530 feet

Cadillac Mountain rises 1,530 feet — modest for a mountain but the highest point on the eastern seaboard of the U.S. and, from early October to early March, the first place in the country to see the sunrise.

3. A ~49,000 acres

At about 49,000 acres Acadia ranks 50th of 64 parks by size, yet packs in sea cliffs, forest, a fjard, and a 1,530-foot summit.

4. C A fjard

Somes Sound is a fjard — a shallower glacier-carved sea inlet that lacks a true fjord's great depth. A tarn is a mountain pond, not a sea inlet.

5. A It ranks among the largest national parks by area

Acadia is one of the smallest parks (~49,000 acres, 50th of 64). It is the first park east of the Mississippi and the first created from donated private land.

6. C Cadillac Mountain

Cadillac Mountain's height (1,530 ft) and far-eastern position make it the first place in the U.S. to see the sunrise from early October to early March; a timed reservation is needed to drive up in peak season.

7. D Somes Sound

Somes Sound is the glacier-carved sea inlet (a fjard) that nearly splits Mount Desert Island. Thunder Hole and Jordan Pond are separate coastal features.

8. B Jordan Pond

Jordan Pond is Acadia's clearest water — visibility over 40 feet — framed by the Bubbles and the Jordan Pond House. Somes Sound is saltwater, not a pond.

9. A Thunder Hole

Thunder Hole booms when incoming waves — often a few hours before high tide — trap and explode a pocket of air. Jordan Pond is a still, clear tarn.

10. C Bass Harbor Head Light

Bass Harbor Head Light, on Mount Desert Island's quiet southwestern tip, is one of Maine's most photographed lighthouses, especially at sunset.

11. B October

Acadia's mixed hardwood and spruce-fir forest peaks in color in October, drawing crowds for fall foliage alongside the summer high season.

12. D 45 miles

Between 1913 and 1940, Rockefeller funded 45 miles of carriage roads with seventeen stone-faced bridges — built for horses, walkers, and bikes, never cars.

13. C John D. Rockefeller Jr.
John D. Rockefeller Jr. built the 45 miles of carriage roads from 1913 to 1940. George B. Dorr was the 'Father of Acadia' who assembled the park's land, not the roads.

14. D Cars
The carriage roads were deliberately built for horses, walkers, and bicycles, never cars — and that car-free rule still holds today.

15. B Tea and warm popovers
The Jordan Pond House has served tea and warm popovers on its lawn since the 1890s — a tradition as much a part of an Acadia visit as the trail around the pond.

Lesson 27: Spotlight: Everglades

1. B It was the first U.S. national park created to protect an ecosystem rather than scenery
Earlier parks preserved dramatic scenery — canyons, peaks, geysers. Everglades (1947) was the first set aside to protect a living ecosystem itself, a genuinely new idea in how Americans thought about conservation.

2. A 1947
Everglades was established on December 6, 1947. 1916 is the founding of the National Park Service, not this park.

3. D It was established in 1847
Everglades was established in 1947, not 1847. The other statements are all accurate: ~1.5 million acres, a ~60-mile-wide sheet flow, and the first park set aside for an ecosystem.

4. C Marjory Stoneman Douglas
Writer-activist Marjory Stoneman Douglas gave the Everglades its defining name, the "River of Grass," and championed its protection.

5. C Lake Okeechobee
The vast inland Lake Okeechobee overflowed to feed the entire sheet flow. Florida Bay is where that fresh water flows TO, at the southern end.

6. A A sharp-edged sedge that carpets the open marsh
Sawgrass is the sharp-edged sedge that blankets the open marsh prairie. Mangroves and cypress are separate Everglades habitats.

7. B A tree island of dense broadleaf forest on slightly higher, drier ground
Hardwood hammocks are tree islands of dense broadleaf forest perched on ground just inches higher and drier than the surrounding marsh.

8. D Tiny changes in elevation, sometimes only inches, create entirely different worlds
Because the land is so flat, elevation changes of just inches shift a spot from sawgrass marsh to a drier tree island, producing wildly different habitats.

9. C Alpine tundra above the treeline
The Everglades sits barely above sea level, so it has no alpine tundra. Sawgrass prairie, hardwood hammocks, and coastal mangroves are all real habitats there.

10. B 8 feet
The park's highest ground is only about 8 feet above sea level, which is exactly why inches-scale elevation changes matter so much for its habitats.

11. A The alligator is dark and broad-snouted and prefers fresh water; the crocodile is grayish-green and narrow-snouted and tolerates the brackish coast

The dark, broad-snouted alligator favors fresh water, while the rarer grayish-green, narrow-snouted crocodile tolerates the brackish coast — and their ranges overlap only where marsh meets mangrove, a meeting found only in South Florida.

12. D About 200

Only around 200 Florida panthers survive, making this tawny subspecies of cougar one of the rarest large cats in North America.

13. C World Heritage Site, Biosphere Reserve, and Wetland of International Importance

The Everglades holds all three at once: World Heritage Site, International Biosphere Reserve, and Wetland of International Importance, a combination rarely held together.

14. B Grayish-green, narrow-snouted, and tolerant of the brackish coast

The crocodile is grayish-green, narrow-snouted, and tolerates brackish coastal water. Dark, broad-snouted, freshwater-favoring describes the alligator.

15. A It is the only place where American alligators and American crocodiles live side by side

The Everglades is the only place on Earth where American alligators and American crocodiles coexist, overlapping where freshwater marsh meets salty mangrove.

16. D Roseate spoonbill

The roseate spoonbill is unmistakable: a bright pink bird that sweeps its flat, spoon-shaped bill side to side to feed in shallow water.

17. C Anhinga

The anhinga, or "snakebird," swims submerged to spear fish, then perches with wings held wide open to dry them.

18. D Burmese python

Released or escaped Burmese pythons, native to Southeast Asia, have exploded across the Everglades since the 1990s, devouring native mammals and birds.

19. B Burmese python

The Burmese python is a non-native invader from Southeast Asia. The panther, spoonbill, and alligator are all native to the Everglades.

20. A West Indian manatee

The West Indian manatee is the gentle "sea cow" that grazes on seagrass in the park's warm coastal waters.

21. A Dry winter (December–April)

The dry winter season brings comfortable weather, far fewer mosquitoes, and lower water that concentrates wildlife around remaining pools. Summer is hot, stormy, and buggy.

22. D 0.8 mile

The Anhinga Trail is a flat, easy boardwalk of about 0.8 mile looping over a freshwater slough, famous for close wildlife in the dry season.

23. B 15 miles

Shark Valley centers on a 15-mile paved loop leading to a 65-foot observation tower with a rare high view over the flat River of Grass.

24. C Flamingo and Everglades City

The ~99-mile Wilderness Waterway threads through mangroves between Flamingo and Everglades City, a route prized by paddlers.

25. B Airboats operate throughout the park's core

Airboats operate in adjacent areas, not the park's core. The dry winter is the best season, the Ten Thousand Islands draw kayakers, and Shark Valley's tower is 65 feet.

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