



## Visitor Guide Winter/Spring 2015



Winter at Badwater  
photo by Frank Graves

### Average Temperatures

	MAX	MIN
January	67°F / 19°C	40°F / 4°C
February	73°F / 23°C	46°F / 8°C
March	82°F / 27°C	55°F / 13°C
April	90°F / 32°C	62°F / 17°C
May	100°F / 38°C	73°F / 23°C
June	110°F / 43°C	81°F / 27°C
July	116°F / 47°C	88°F / 31°C
August	115°F / 46°C	86°F / 30°C
September	106°F / 41°C	76°F / 24°C
October	93°F / 34°C	61°F / 16°C
November	77°F / 25°C	48°F / 9°C
December	65°F / 18°C	38°F / 3°C

Official weather station at Furnace Creek

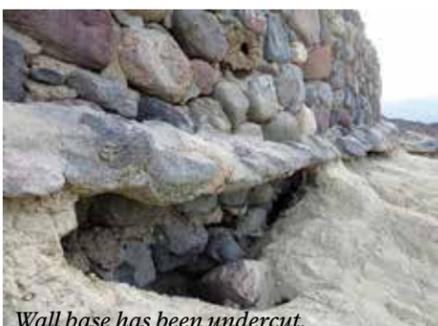


### What's Inside?

- Support Your Park ..... 2
- Survive..... 3
- What To See ..... 4
- Walks & Hikes ..... 5
- Park Map..... 6 & 7
- Park News ..... 8 & 9
- Ranger Programs ..... 10
- Dark Night Sky ..... 11
- Visitor Services ..... 8

### Repair Project at Zabriskie Point

During the winter and spring of 2014 / 2015, all access to Zabriskie Point and surrounding areas will be closed for major rehabilitation work to the site. Contractors will repair unstable support walls and improve safety conditions.



Wall base has been undercut.

Currently, the walls are deteriorating to the extent that they pose a danger to public safety.

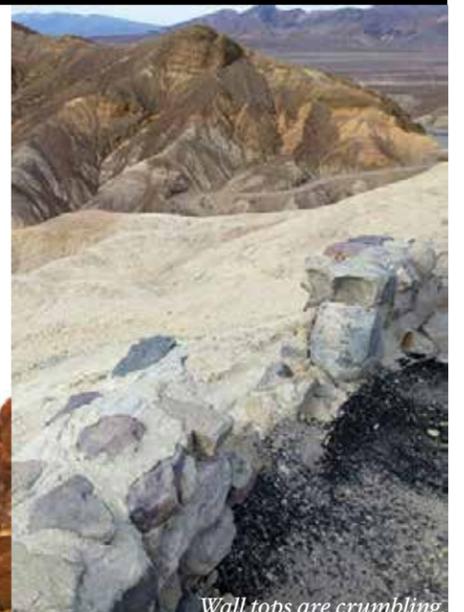
The popular vista was built by the Pacific Coast Borax Company in the 1920s and was named after the company's vice president and general manager, Christian Zabriskie. The site was originally intended as a waystop for visitors in automobiles to see Manly Beacon, the prominent

Manly Beacon

landmark in Death Valley's "badlands". It remains as one of the most visited areas within the park.

Other venues in the area to visit during the closure recommended by park staff are Golden Canyon, Artist's Drive, or Dante's View for exceptional vistas of the valley floor and distant peaks.

During construction, CA Hwy 190 will remain open to through traffic.



Wall tops are crumbling.

# Support Your Park

## Rules to Live By in Your National Park

Many park rangers are federal law enforcement officers. They help protect the park and its visitors by enforcing a wide range of federal, state and local regulations. You can help them by observing these laws:

- Obey the speed limit and other rules of the road.
- Rocks, plants, animals, and historic objects in Death Valley are protected just like in a museum. Vandalism and theft are prohibited.
- Let wild animals find their own food. They're good at it and feeding them is against the law.
- Keep your car on established roads. Unusually tire tracks in the desert destroy fragile plants and wildlife and scar the landscape for decades.
- Camp only in established campgrounds or in a permitted backcountry area. Check at a ranger station or visitor center for backcountry camping information.
- It is illegal to discharge a firearm anywhere in Death Valley or to bring one into a federal building.
- Keep pets on leash and close to roads or parking lots. Pets are not allowed on trails or in wilderness.
- Stay out of closed areas. Mines, service roads, and other areas are closed for your safety or the protection of features therein.
- Put garbage where it belongs. Litter in the desert spoils the landscape for each person that follows behind you.
- Campfires are allowed in established firepits only. Gathering firewood is prohibited.

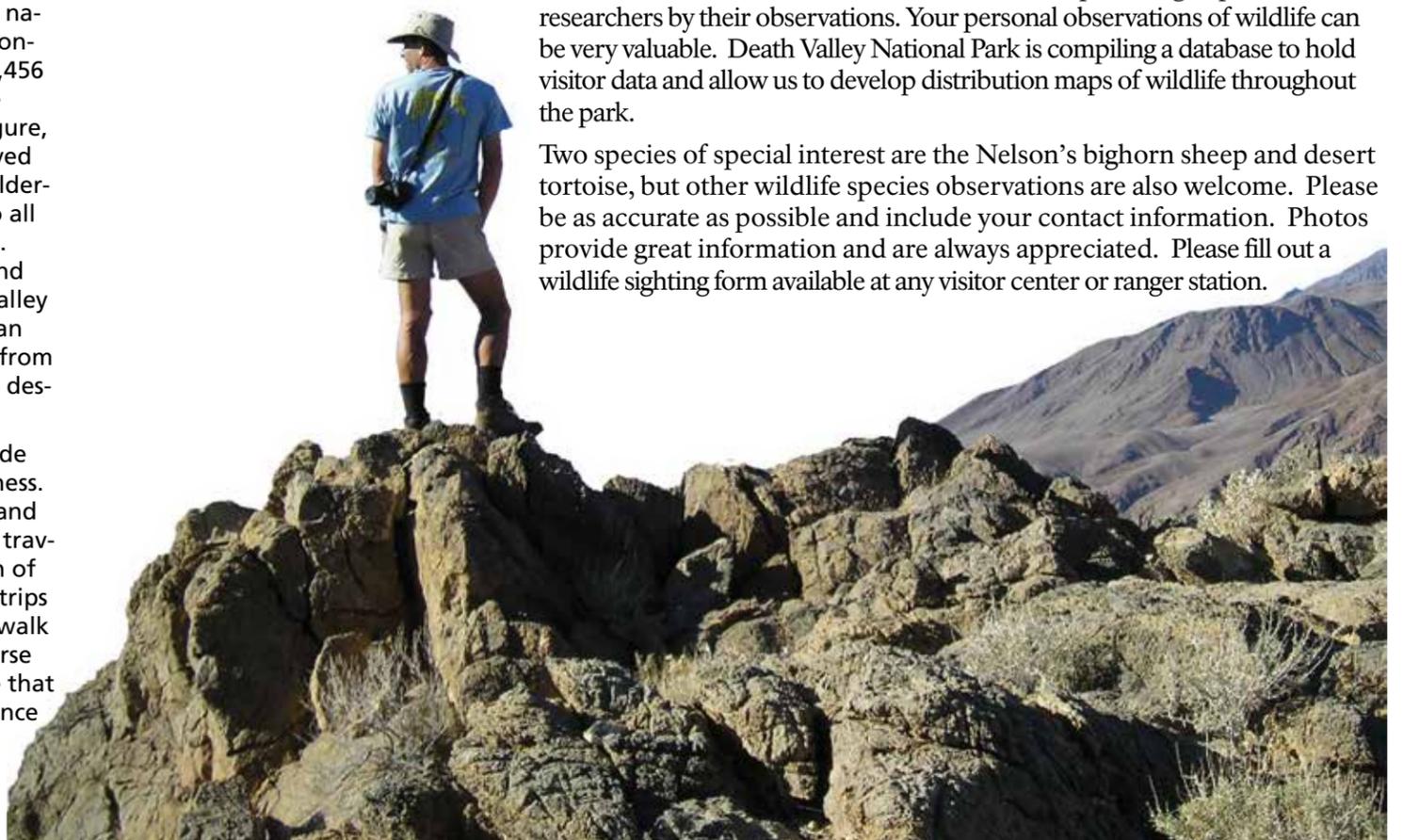


*Native rock nettle in Titus Canyon*

## Death Valley Wilderness

Death Valley National Park has the largest area of designated national park wilderness in the contiguous United States at 3,102,456 acres. That's 91% of the entire National Park! Despite that figure, nearly a thousand miles of paved and dirt roads intersect the wilderness, providing ready access to all but the most remote locations. In other words, most of the land between the roads in Death Valley National Park has been given an additional layer of protection from further development by being designated Wilderness.

Everyone is free to hike or ride horses throughout the wilderness. Although there are few trails and little water, the well prepared traveler will find a lifetime's worth of exploring. Multi-day camping trips are possible, but even a short walk away from the road will immerse you in the solitude and silence that defines the wilderness experience of Death Valley.



## Entrance Fees

Pay the park entrance fee at the Furnace Creek Visitor Center, Scotty's Castle Visitor Center, Stovepipe Wells Ranger Station or at one of the automated fee machines placed throughout the park.

### 7-day pass

Vehicle and passengers ..... \$20  
Individual entering on motorcycle, bicycle, or foot..... \$10

### Annual Pass

Death Valley Annual Pass ..... \$40  
Interagency Annual Pass ..... \$80  
Interagency Military Pass..... free (for active duty military and dependents)

### Lifetime Pass

Interagency Senior Pass..... \$10 (for U.S. citizens 62+)  
Interagency Access Pass ..... free (for U.S. citizens with disability)

**Other passes honored** .....  
Golden Age & Golden Access

## Death by a Million Cuts

With about a million people visiting Death Valley each year, every little action is multiplied. If each visitor did a seemingly harmless thing like stacking stones, scratching their name in the mud, picking a wildflower, collecting a rock, or feeding a chipmunk, the cumulative effect can be devastating.

Help protect America's national parks by leaving everything in its place and not defacing the natural and cultural resources. Other park visitors and future generations will thank you.



### Ephemeral Vandalism

Cairns are stacks of rocks often used to mark hiking routes in the desert, but in the narrows of Golden Canyon, cairns are not necessary to find your way. These visitor-built cairns were assembled one at a time over a single week, by dozens of visitors. Most likely, they were built as monuments to their visit...and because someone else had already built one. "If we make only one, what harm could it do?"



### Here today, gone...in a decade

If you think stacking rocks is OK in a national park, what about this? Names scraped into the dried mud on this little playa near Ubehebe Crater will eventually dissolve when rainstorms flood the surface, but it may take years before that happens.

This is vandalism even if it isn't permanent.

## Wildlife Sightings

Around the world, visitors to remote locations are providing important data to researchers by their observations. Your personal observations of wildlife can be very valuable. Death Valley National Park is compiling a database to hold visitor data and allow us to develop distribution maps of wildlife throughout the park.

Two species of special interest are the Nelson's bighorn sheep and desert tortoise, but other wildlife species observations are also welcome. Please be as accurate as possible and include your contact information. Photos provide great information and are always appreciated. Please fill out a wildlife sighting form available at any visitor center or ranger station.

# Survive!

## Personal Survival In a Land of Extremes



- **Water:** Drink at least one gallon (4 liters) of water per day to replace loss from perspiration. Carry plenty of extra drinking water in your car.

- **Heat & Dehydration:** If you feel dizzy, nauseous or get a headache, get out of the sun immediately and drink plenty of water. Dampen clothing to lower your body temperature. Heat and dehydration can kill.

- **Hiking:** Do not hike in the low elevations when temperatures are hot.

- **Dangerous Creatures:** Never place your hands or feet where you cannot see first. Rattlesnakes, scorpions, or black widow spiders may be sheltered there.

- **Mine Hazards:** Do not enter mine tunnels or shafts. Mines may be unstable, have hidden shafts, pockets of bad air and poisonous gas. *Stay Out Stay Alive.*

- **Flash Floods:** Avoid canyons during rain storms and be prepared to move to higher ground. While driving, be alert for water running in washes and across the road. Water can carry rocks and debris with it and may suddenly appear around the next curve in the roadway.

- **In Case of Emergency:** Dial 911 from any telephone or cell phone. Cell phones may not work in many parts of the park. Do not depend on them.



Echo Canyon Road

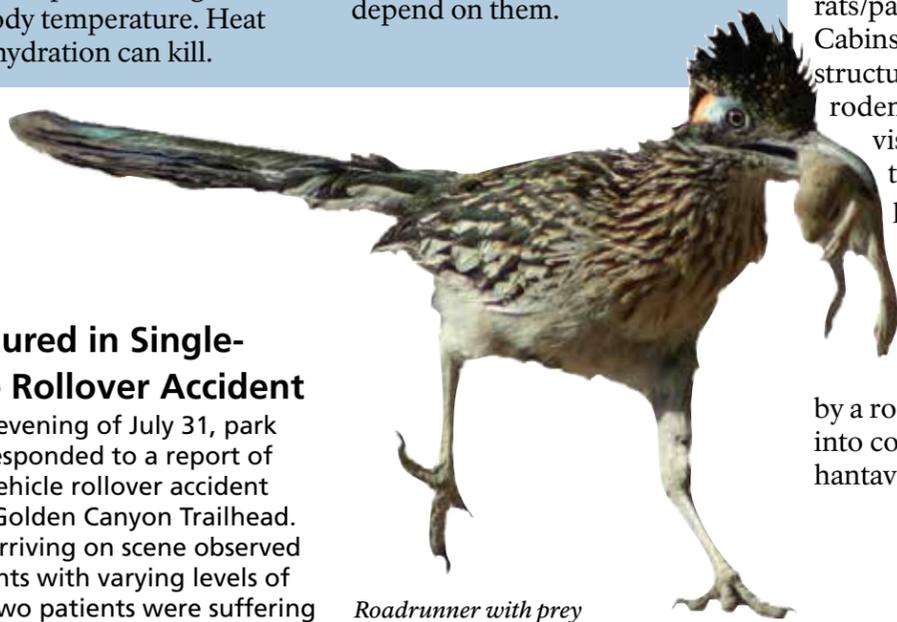
## Hantavirus

Hantavirus pulmonary syndrome (HPS) is a rare but frequently fatal respiratory disease that occurs throughout the United States and is caused by a virus spread to humans through contact with the urine, droppings, or saliva of infected rodents.

In Death Valley National Park, deer mice, cactus mice, and woodrats/packrats may carry the virus. Cabins and other abandoned structures are likely habitat for rodents and potential sites where visitors may be exposed to the virus. It is transmitted to people when they breathe air contaminated with the virus, touch their mouth or nose after handling contaminated materials, eat contaminated food, or are bitten by a rodent. Anyone who comes into contact with rodents that carry hantavirus is at risk of HPS.

### How can HPS be prevented?

- Do not use structures if you find signs of rodent droppings, nests and burrows.
- Do not clean cabins or other structures - stirring up dust increases the potential of inhalation.
- Air out cabins and other structures for at least 2 hours before occupying them.
- Do not disturb rodents' burrows, nests or dens.
- Avoid camping near rodent droppings, nests, woodpiles or dense brush frequented by rodents.
- Wash or sanitize hands if you contact rodents or their excretions.
- Store food in rodent-proof containers.
- Promptly dispose of all garbage to avoid attracting rodents.



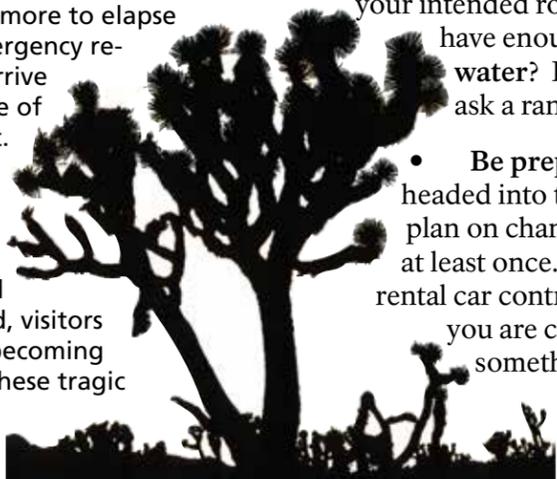
Roadrunner with prey

## Five Injured in Single-Vehicle Rollover Accident

On the evening of July 31, park rangers responded to a report of a single-vehicle rollover accident near the Golden Canyon Trailhead. Rangers arriving on scene observed five patients with varying levels of injuries. Two patients were suffering from only minor injuries and refused transport to a hospital. The other three were transported by NPS ambulance to Desert View Regional Medical Center in Pahrump, Nevada.

A subsequent investigation showed that the driver had become momentarily distracted and over-corrected when he felt the vehicle's tires hit the gravel road shoulder. The corrective action caused the vehicle to leave the roadway at a high rate of speed, rolling twice before coming to rest on the desert floor.

Dozens of these accidents occur in Death Valley every year, and are the single leading cause of fatalities in the park. Without cell service in the valley, it is not uncommon for an hour or more to elapse before emergency responders arrive at the scene of an accident. By observing the speed limit and staying focused on the road, visitors can avoid becoming victims of these tragic accidents.



## Backcountry Travel: Read This Before You Go!

You've got two flat tires. Your cell phone doesn't work. Nobody knows where you are. You're not sure where you are. You haven't seen another car since you turned off the highway 12 hours ago. The only thing you can hear is the ringing in your ears. Is this how you thought it would end?

Most backcountry emergencies begin in fairly commonplace ways: your car gets a flat tire, you run out of gas, you sprain your ankle while on a hike, or you get disoriented and turned around in the desert landscape. Things that are easy to address in most places quickly become life-threatening emergencies in the backcountry as heat, cold, exhaustion, dehydration, isolation and panic set in.

No matter what kind of adventure or experience you pursue in Death Valley, a little planning and caution will send you home with happy and fun-filled memories of your desert trip. Have a safe and inspiring visit to Death Valley by following these tips from the rangers:

- **Plan your visit.** Do you have the appropriate vehicle, tires, tools, camping gear, maps, and skills for your intended route? Do you have enough fuel and water? If you aren't sure, ask a ranger.
- **Be prepared.** If you're headed into the backcountry, plan on changing a flat tire at least once. Check your rental car contract to see if you are covered should something happen to your car on an unpaved road.
- **Have the necessary tools** (rental cars often lack the proper tire changing tools!) and know how to use them.
- **Bring food, water and other essentials** for several days, even if you're planning a much shorter visit.
- **Don't rely on technology.** Your cell phone won't work in most of the park. Emergency locator beacons have a high failure rate. GPS devices frequently tell Death Valley visitors to turn off well-traveled roads, and take "shortcuts" over

the desert and into isolated canyons. Common sense and good judgment are far more reliable.

- **Call someone at home** and tell them specifically where you are going. Have them call 1-888-233-6518 (Emergency Dispatch) if you do not return when expected: It takes a long time to search 3.4 million acres of wilderness. We can find you faster if we know where to look and what we're looking for. Complete a backcountry hiker form at any visitor center to ensure that we have all the information needed to find you quickly.

# What to See

## Furnace Creek Area

- **Badwater Basin:** The lowest point in North America, Badwater Basin is a surreal landscape of vast salt flats. A temporary lake may form here after heavy rainstorms. Do not walk on the salt flats in hot weather. Wheelchair accessible.



- **Harmony Borax Works:** Follow an easy 1/4 mile walking trail to learn about this important site in Death Valley's history. The Harmony Borax operation became famous through the use of 20 mule teams that moved borax from Death Valley to nearby communities.

- **Dante's View:** The most breathtaking viewpoint in the park, this mountain-top overlook is more than 5000 feet above the floor of Death Valley. The paved access road is open to all vehicles less than 25 feet in length.

- **Devil's Golf Course:** An immense area of rock salt eroded by wind and rain into jagged spires. So incredibly serrated that "only the devil could play golf on such rough links." The unpaved road leading to it is often closed after rain.

*Artist's Palette*



- **Artist's Drive:** A scenic loop drive through multi-hued volcanic and sedimentary hills. Artist's Palette is especially photogenic in late afternoon light. The 9 mile paved road is one-way and is only drivable with vehicles less than 25 feet in length.

- **Twenty Mule Team Canyon:** Winding through otherworldly badlands, this 2.7 mile, one-way loop drive is unpaved, but accessible to vehicles other than buses, RV's, and trailers.



*Aguereberry Point*

## Panamint Springs Area

- **Aguereberry Point:** One thousand feet higher than Dante's View, this viewpoint gives a perspective over Death Valley from the west. Along the gravel road are the remains of Pete Aguerberry's camp and his Eureka Mine. The last climb to the point may require a high-clearance vehicle.

- **Wildrose Charcoal Kilns:** These ten beehive-shaped structures are among the best preserved in the west. Built in 1876 to provide

fuel to process silver/lead ore, they still smell of smoke today. The last 2 miles of gravel road to the kilns are passable to most vehicles.

- **Father Crowley Vista:** A landscape of dark lava flows and volcanic cinders abruptly gives way to the gash of Rainbow Canyon below this viewpoint. Walk the dirt track east of the parking lot for a grand overlook of the northern Panamint Valley. Wheelchair accessible.



*Titus Canyon Narrows*

## Stovepipe Wells Area

- **Mesquite Flat Sand Dunes:** Tawny dunes smoothly rise nearly 100 feet from Mesquite Flat. Late afternoon light accentuates the ripples and patterns while morning is a good time to view tracks of nocturnal wildlife. Moonlight on the dunes can be magical, yet night explorers should be alert for sidewinder rattlesnakes during the warm season.

- **Salt Creek:** This stream of salty water is the only home to a rare pupfish, *Cyprinodon salinus*. Springtime is best for viewing pupfish; in summer the lower stream dries up and in winter the fish are

not as active. The wooden boardwalk loops 1/2 mile through stands of pickleweed and past pools reflecting badland hills. Wheelchair accessible.

- **Titus Canyon:** The largest and most diverse canyon in the park. Within its lofty walls visitors can find volcanic deposits, a ghost town, Indian petroglyphs, bighorn sheep, and deep, winding narrows. Titus Canyon is accessible to high-clearance vehicles via a 26 mile, one-way dirt road beginning outside the park. The trip will take 3 hours from pavement to pavement.

## Scotty's Castle Area

- **Scotty's Castle:** Prospector "Death Valley Scotty" claimed this elaborate Spanish-style mansion was built by gold from his fictitious mine. In reality, it was the 1920s vacation home of his wealthy friends. Today, living history tours of the castle's richly furnished interior are given by costumed park rangers. Wheelchair accessible.

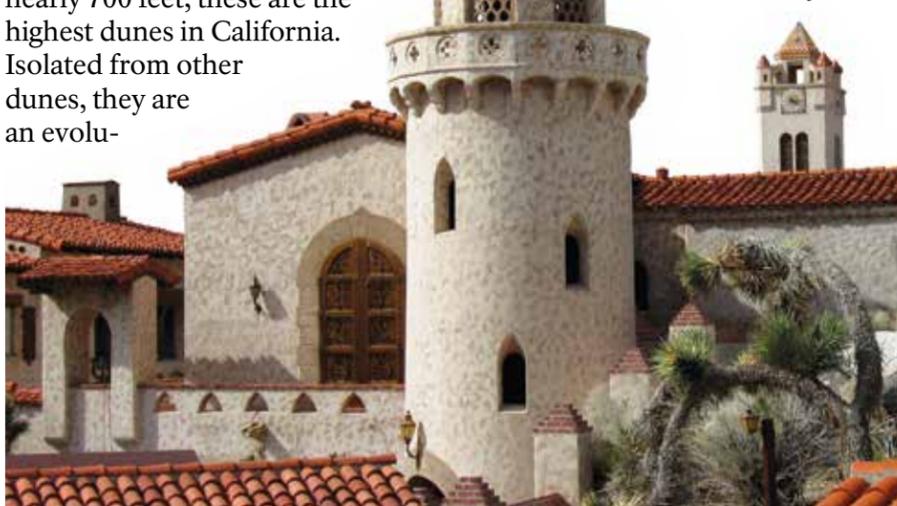
- **Ubehebe Crater:** Just a few hundred years ago a massive volcanic explosion caused by magma mixing with an underground spring, shattered the silence of northern Death Valley. When the cinders and dust settled, this 600 foot deep crater remained. Although easily visible from the paved road, hikers may want to circle the crater rim to see smaller craters.

- **Eureka Dunes:** Rising nearly 700 feet, these are the highest dunes in California. Isolated from other dunes, they are an evolu-

tionary island, home to rare and endangered species of plants and animals. To give them extra protection, the dunes are off limits to sandboarding and horseback riding. The drive can be rough and will take approximately 2.5 hours from the end of pavement off of Scotty's Castle Road.

- **The Racetrack:** Rocks mysteriously slide across the dry lakebed of the Racetrack, leaving behind long tracks for visitors to ponder. A high-clearance vehicle with heavy-duty tires is needed to traverse the 27 miles of rough dirt road; ask a ranger for current road conditions. Once you leave pavement at Ubehebe Crater the drive will take approximately 2.5 hours one-way to the Racetrack.

*Scotty's Castle*



# Walks & Hikes

- **Before starting a hike** learn the current conditions, water availability, and weather forecasts. Backpackers can obtain a free permit from any visitor center.
- **Always carry water.** Two liters for a short winter day hike; 4 liters or more in the summer or for longer hikes.
- **Dogs and bicycles** are not allowed on trails or in the Wilderness.

- **Constructed trails are rare in this park.** Trails are provided in places that are heavily used and sensitive to damage. If a trail is there, please use it. Most hiking routes in the park are cross-country, up canyons, or along ridges. Footing can be rough and rocky.
- **Hiking in low elevations** can be dangerous when it is hot. The high peaks can be covered with snow in winter and spring. The best time to hike in the park is October to April.

## Trails & Routes

### Golden Canyon Trail

Length: 1 mile, one-way.

Difficulty: Easy

Start: Golden Canyon parking area, 2 miles south of Hwy 190 on Badwater Road.

Description: Easy trail through colorful canyon. Red Cathedral located ¼ mile up canyon from last numbered marker. Interpretive trail guides are available.

### Gower Gulch Loop

Length: 4 miles round-trip.

Difficulty: Moderate

Start: Golden Canyon parking area, 2 miles south of Hwy 190 on Badwater Rd.

Description: Colorful badlands, canyon narrows, old borax mines. Hike up Golden Canyon to marker #10, then follow trail to divide below Manly Beacon and down Gower Gulch to finish loop. Two easy dry-falls must be scrambled down. Ask for Gower Gulch handout at Visitor Center. (No access to *Zabriskie Point* during closure.)

### Desolation Canyon

Length: 3 miles, round-trip.

Difficulty: Moderate

Start: Parking area at end of ½ mile dirt road off Badwater Road, 3.7 miles south of Hwy 190.

Description: Narrow canyon through colorful badlands. Follow old road and then main wash east continuing toward cliffs, then follow the wash draining from the south. Hike up canyon, keeping to the right at the forks. No trail.

### Natural Bridge Canyon

Length: 1 mile to end of canyon, ½ mile to natural bridge.

Difficulty: Easy

Start: Natural Bridge parking area, 1.5 miles off Badwater Road on gravel road, 13.2 miles south of Hwy 190.

Description: Uphill walk through narrow canyon. Large natural bridge at ½ mile. Trail ends at a dry waterfall.

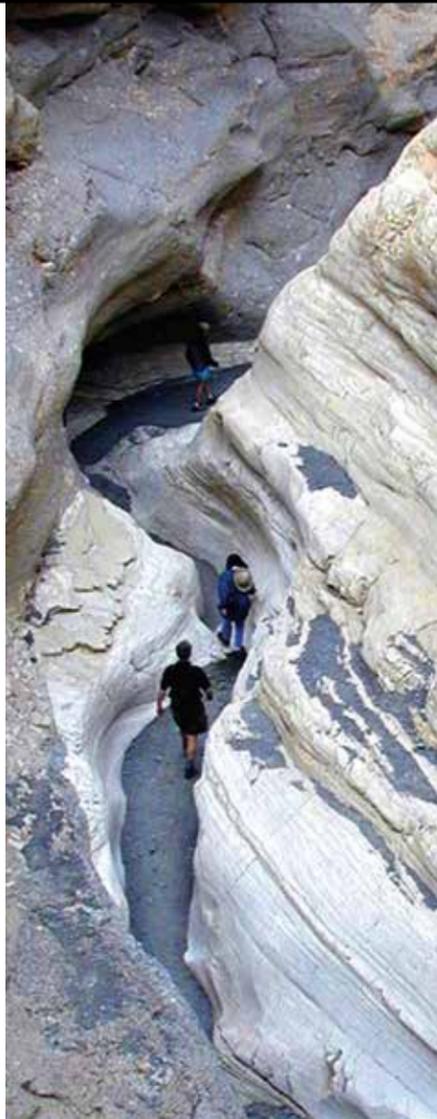
### Badwater Salt Flat

Length: ½ mile to edge, 5 mi. across

Difficulty: Easy

Start: Badwater parking area, 17 miles south of Hwy 190 on Badwater Road.

Description: Level walk across lowest place in the western hemisphere. Crust of salt crystals may be covered with temporary lake after rain storms. Watch out for muddy areas. No trail. Do not hike this area during hot months.



Mosaic Canyon

### Mosaic Canyon

Length: ½ to 2 miles, one-way.

Difficulty: Moderate

Start: Mosaic Canyon parking area, 2 miles from Stovepipe Wells Village on graded gravel road.

Description: Popular walk up a narrow, polished marble-walled canyon. First ½ mile is narrowest section. Some slickrock scrambling necessary. "Mosaics" of fragments of rocks cemented together can be seen in canyon walls. Bighorn sheep sighted occasionally.

### Salt Creek Interpretive Trail

Length: ½ mile round-trip.

Difficulty: Easy

Start: Salt Creek parking area, 1 mile off Hwy 190 on graded gravel road, 13.5 miles north of Furnace Creek.

Description: Boardwalk along small stream. Good for viewing rare pupfish and other wildlife. Best in late winter/early spring.

### Titus Canyon Narrows

Length: 1.5 miles, one-way.

Difficulty: Easy

Start: Titus Canyon Mouth parking area, 3 miles off Scotty's Castle Road on graded gravel road.

Description: Easy access to lower Titus Canyon. Walk on gravel road up wash 1.5 miles through narrows or continue to Klare Springs and petroglyphs at 6.5 miles.

### Fall Canyon

Length: 3 miles, one-way.

Difficulty: Moderately strenuous

Start: Titus Canyon Mouth parking area, 3 miles off Scotty's Castle Road on graded gravel road.

Description: Spectacular wilderness canyon near Titus Canyon. Follow informal path ½ mile north along base of mountains, drop into large wash at canyon's mouth, then hike 2½ miles up canyon to 35' dryfall. You can climb around the dryfall 300' back down canyon on south side. Canyon continues another 3 miles before second dryfall blocks passage. No trail.

### Little Hebe Crater Trail

Length: ½ mile, one-way.

Difficulty: Moderate

Start: Ubehebe Crater parking area, 8 miles west of Scotty's Castle.

Description: Volcanic craters and elaborate erosion. Hike along west rim of Ubehebe Crater to Little Hebe and several other craters. Continue around Ubehebe's rim for 1.5 mile loop hike.

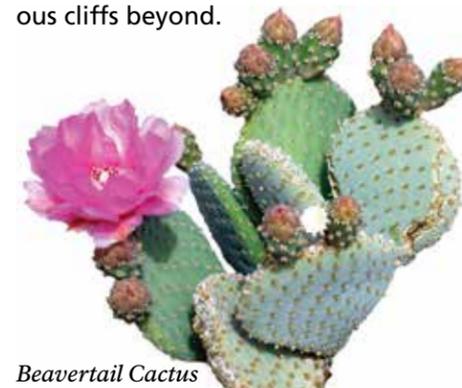
### Darwin Falls

Length: 1 mile, one-way

Difficulty: Moderate

Start: Darwin Falls parking area, 2.4 miles up gravel road toward Darwin, turn one mile west of Panamint Springs Resort on Hwy 190.

Description: Year-round waterfalls and lush vegetation tucked into a rugged canyon. Can be overgrown and has some rough spots. There is a trail to first waterfall but dangerous cliffs beyond.



Beavertail Cactus

## Mountain Hikes

Cool places to hike when the valley is too hot, but may be snow covered in winter:

### Wildrose Peak Trail

Length: 4.2 miles, one-way.

Difficulty: Moderately strenuous

Start: Charcoal Kilns parking area on upper Wildrose Canyon Road.

Description: A good high peak to climb (9,064 ft.). Trail begins at north end of kilns with an elevation gain of 2,200 ft. Spectacular views beyond 2 mile point. Steep grade for last mile.

### Telescope Peak Trail

Length: 7 miles, one-way.

Difficulty: Strenuous

Start: Mahogany Flat Campground at end of upper Wildrose Canyon Road. Rough, steep road after Charcoal Kilns.

Description: Trail to highest peak in the park (11,049 ft.) with a 3,000 ft. elevation gain. Climbing this peak in the winter may require ice axe and crampons, and only advised for experienced winter climbers. Trail is usually snow-free by June.

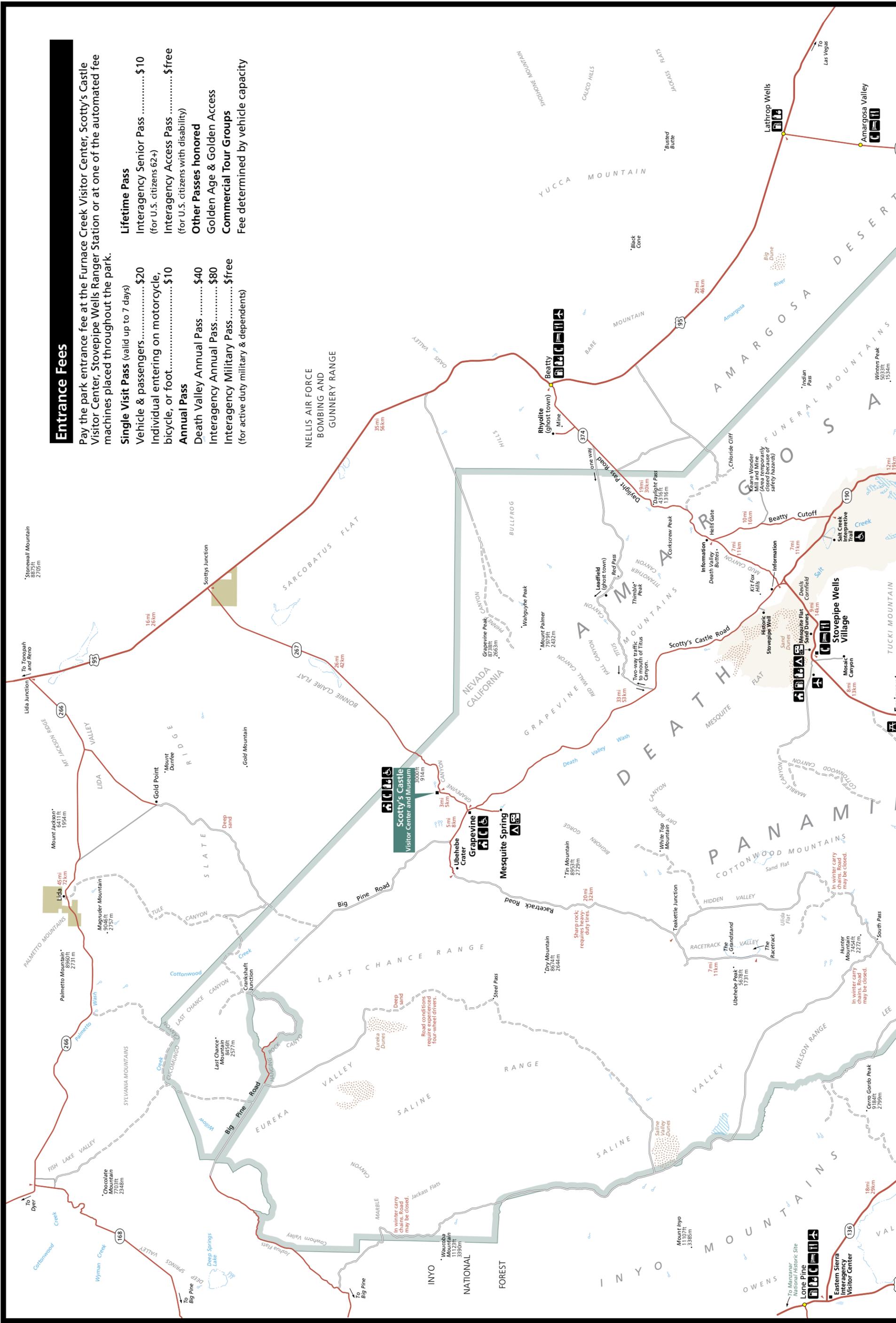


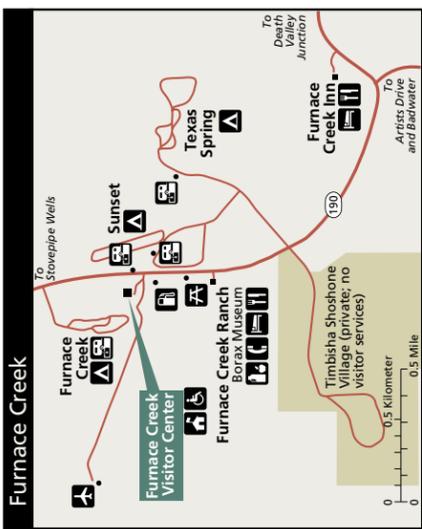
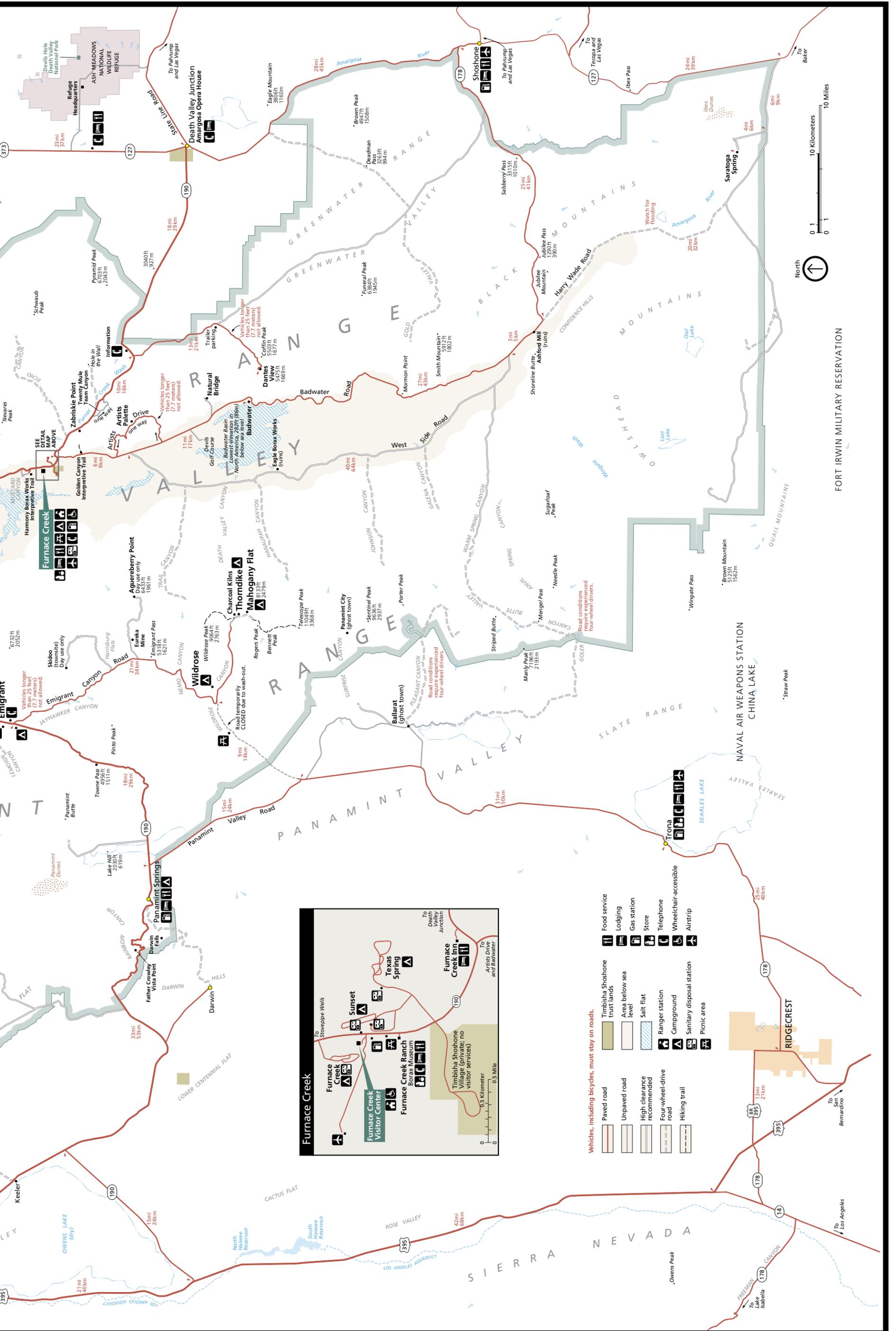
Mesquite Flat Sand Dunes photo by Bill Ratcliffe

## Entrance Fees

Pay the park entrance fee at the Furnace Creek Visitor Center, Scotty's Castle Visitor Center, Stovepipe Wells Ranger Station or at one of the automated fee machines placed throughout the park.

- Single Visit Pass** (valid up to 7 days)
- Vehicle & passengers .....\$20
  - Individual entering on motorcycle, bicycle, or foot.....\$10
- Annual Pass**
- Death Valley Annual Pass .....\$40
  - Interagency Annual Pass.....\$80
  - Interagency Military Pass.....\$free (for active duty military & dependents)
- Lifetime Pass**
- Interagency Senior Pass .....\$10 (for U.S. citizens 62+)
  - Interagency Access Pass .....\$free (for U.S. citizens with disability)
- Other Passes honored**
- Golden Age & Golden Access
  - Commercial Tour Groups
- Fee determined by vehicle capacity





- Vehicles, including bicycles, must stay on roads.**
- Paved road
  - Unpaved road
  - High clearance recommended
  - Four-wheel-drive road
  - Hiking trail
  - Timbisha Shoshone trust lands
  - Area below sea level
  - Salt flat
  - Ranger station
  - Campground
  - Sanitary disposal station
  - Picnic area
  - Food service
  - Lodging
  - Gas station
  - Store
  - Telephone
  - Wheelchair-accessible
  - Airstrip



FORT IRWIN MILITARY RESERVATION

## Climate Change Puts Endangered Devils Hole Pupfish at Risk of Extinction

by Mike Wolterbeek, University of Nevada, Reno

Climate change is hurting reproduction of the endangered Devils Hole pupfish, threatening the survival of this rare species that has numbered as few as 35 individuals, new research by the University of Nevada, Reno and Desert Research Institute shows.

Scientists report that geothermal water on a small shelf near the surface of an isolated cavern in the Nevada desert where the pupfish live is heating up as a result of climate change and is likely to continue heating to dangerous levels.

The hotter water, which now reaches more than 93°F, has shortened by one week the amount of time pupfish larvae have to hatch during the optimal recruitment periods. This 10-week period is when water temperatures are conducive to egg hatching and sufficient food is available



Devils Hole is a water-filled limestone cavern in a detached unit of Death Valley National Park in Nevada near the Ash Meadows National Wildlife Refuge. It is an extreme environment, with water temperatures and dissolved oxygen concentrations near lethal limits for most fish. The iridescent blue, one-inch-long pupfish have lived in the top 80 feet of the water-filled cavern for more than 10,000 years.

to sustain the newly hatched larvae. The research found that increasing temperatures will likely reduce the optimal period by another two weeks by mid-century.

There are now 107 Devils Hole pupfish observed living in the thermal pool. The population, which fluctuates throughout the year, is down from 553 fish when the population counts began in 1972.

“This is a fish that does live in a fishbowl, an incredibly hostile fishbowl, and you can’t move the fishbowl,” said Scott Tyler, lead scientist in the project and professor of hydrological sciences at the University of Nevada, Reno. “This is a species that can’t adapt or change or leave to go to a better environment, though it’s most likely gone through tremendous genetic bottlenecks in its more than 10,000 years of evolution.”

“While the population of the pupfish has declined, we are hoping they are in a period of recovery,” Kevin Wilson, aquatic ecologist for Death Valley National Park, said. “Climate change is threatening the already small population size.”

The scientists combined climate projections, models of water circulation in the deep, water-filled fissure, and food web ecology to understand how climate change could affect the ecosystem within the pool.

“The techniques used to model the impacts of climate change for the Devils Hole pupfish can be applied to other species in other desert locations to see how they might respond to the changing climate,” Tyler said.

## Biologists Try to Rescue Pupfish

Considered the world’s rarest fish, with one of the smallest geographic ranges of any wild vertebrate, the tiny Devils Hole pupfish (*Cyprinodon diabolis*) neared extinction in spring 2013 when populations dropped to an all-time low of 35 observable pupfish. While more recent fish counts showed some recovery, the species is considered critically endangered.

The dire situation spurred the U.S. Fish and Wildlife Service to open the Ash Meadows Fish Conservation Facility, which is less than a mile from Devils Hole. Previous attempts to establish refuge populations of pupfish have not fared well, either because the transplanted fish did not survive or because they cross-bred with other species of pupfish. Biologists from the agencies managing the pupfish captive breeding program wanted a risk assessment to determine which methods have the highest chance of success.

A risk analysis by Steven Beissinger, UC Berkeley professor of environmental science, policy and management, found that when it came to reducing impact on the wild population, it was better to transfer pupfish eggs to a captive breeding facility rather than adults, and that it was preferable to transfer fish in the fall, when the population tends to be larger, rather than in the spring.

In addition, Beissinger found that moving more than six adults per year for three consecutive years rapidly increases the risk of extinction. The results showed that the wild pupfish faces a 28 to 32 percent risk of extinction over the next 20 years.

Beissinger also calculated that if the wild Devils Hole pupfish numbers become small enough, it may be necessary to remove the entire

population into a captive breeding program, an extreme measure he called a “California condor moment” because such a controversial action was used to rescue the condor from extinction in 1986.

He noted that, unlike the slow-reproducing condor that does not breed until 5 or 6 years of age, the Devils Hole pupfish has the potential for faster population growth because it matures quickly and can reproduce multiple times in its short life span of 8 to 16 months.

“Somehow, this handsome little fish has heroically persisted in the harsh desert environment through thousands of years of drastic climate warming and droughts,” said Beissinger. “Should the human condition ever arrive at this point after another century of increasing carbon dioxide emissions and climate warming, we may need someone to help us out of our hole.”

## Tourism to Death Valley National Park Creates \$75 million in Economic Benefits

A new National Park Service report shows that close to one million visitors to Death Valley National Park in 2013 spent more than \$75 million in communities near the park. That spending supported 883 jobs in the local area.

“Death Valley is proud to welcome visitors from across the country and around the world,” said Superintendent Kathy Billings. “We are delighted to share the story of this place and the experiences it provides and to use the park as a way to introduce our visitors to this part of the country and all that it offers. National park tourism is a significant driver in the national economy - returning \$10 for every \$1 invested in the National Park Service - and it’s a big factor in our local economy as well. We appreciate the partnership and support of our neighbors and are glad to be able to give back by helping to sustain local communities.”

The peer-reviewed visitor spending analysis was conducted by U.S. Geological Survey economists for the National Park Service. The report shows \$14.6 billion of direct spending by 273.6 million park visitors in communities within 60 miles of a national park. This spending supported more than 237,000 jobs nationally, with more than 197,000 jobs found in these gateway communities, and had a cumulative benefit to the U.S. economy of \$26.5 billion.

According to the 2013 economic analysis, most visitor spending was for lodging (30.3 percent) followed by food and beverages (27.3 percent), gas and oil (12.1 percent), admissions and fees (10.3 percent) and souvenirs and other expenses (10 percent).

The largest jobs categories supported by visitor spending were restaurants and bars (50,000 jobs) and lodging (38,000 jobs).

To download the report visit <http://www.nature.nps.gov/socialscience/economics.cfm>. The report includes information for visitor spending at individual parks and by state.



## Recycling Fuel Bottles

For your convenience we have placed these baskets in our campground for the recycling of empty propane and white gas canisters. Please do not dispose of canisters in the trash or recycle dumpsters. If you have a partially full canister that you do not wish to take with you, please leave it with the campground host so they may pass it on to anyone who is in need.

# Park News

## Racetrack Playa's Moving Rocks Mystery Solved

Racetrack Playa is home to one of Death Valley's most enduring mysteries. Littered across the flat, dry surface of this dry lake, also called a "playa", are hundreds of rocks – some weighing as much as 700 pounds (320 kilograms) – that seem to have been dragged across the ground, often leaving synchronized trails that can stretch for hundreds of feet.

What powerful force could be moving them? Researchers have investigated this question since the 1940s, but no one has ever seen the process in action – until now.

In a new paper published in August 2014, a team led by Scripps Institution of Oceanography, UC San Diego, paleobiologist Richard Norris report on first-hand observations of the phenomenon. Because the stones can sit for a decade or more without moving, the researchers did not originally expect to see motion in person. Instead, they decided to monitor the rocks remotely by installing a high-resolution weather station capable of measuring gusts to 1 second intervals and fitting 15 rocks with custom-built, motion-activated GPS units. (The Park Service could not let them use native rocks, so they brought in similar rocks from an outside source.) The experiment was set up in Winter 2011 with permission of the National Park Service. Then they waited for something to happen.

But in December 2013, Norris and co-author James Norris arrived in Death Valley to discover that the playa was covered with a shallow pond no more than 3 inches (7 cm) deep. Shortly after, the rocks began moving.

"Science sometimes has an element of luck," Richard Norris said. "We expected to wait five or ten years without anything moving, but only two years into the project, we just happened to be there at the right time to see it happen in person."



*Windowpane "Ice"*  
photo by Neal Nurmi

Their observations show that moving the rocks requires a rare combination of events. First, the playa fills with water, which must be deep enough to allow formation of floating ice during cold winter nights but shallow enough to expose the rocks. As nighttime temperatures plummet, the pond freezes to form sheets of "window pane" ice, which must be thin enough to move freely but thick enough to maintain strength. On sunny days, the ice begins to melt and break up into large floating panels, which light winds drive across the playa pool. The ice sheets shove rocks in front of them and the moving stones leave trails in the soft mud bed below the pool surface.

"On December 21, 2013, ice breakup happened just before noon, with popping and cracking sounds coming from all over the frozen pond surface", said Richard Norris. "I said to Jim, 'This is it!'"

These observations were surprising in light of previous models, which had proposed hurricane-force winds, dust devils, slick algal films, or thick sheets of ice as likely contributors to rock motion. Instead, rocks moved under light winds of about 10 miles per hour (3-5 meters per second) and were driven by ice less than 0.25 inches (5 mm) – too thin to grip large rocks and lift them off the playa, which several papers had proposed as a mechanism to reduce friction. Further, the rocks moved only a few inches per second (2-6 m/minute), a speed that is almost imperceptible at a distance and without stationary reference points. "It's possible that tourists have actually seen this happening without realizing it," said Jim Norris. "It is really tough to gauge that a rock is in motion if all the rocks around it are also moving".

Individual rocks remained in motion for anywhere from a few seconds to 16 minutes. In one event, the researchers observed that rocks three football fields apart began moving simultaneously and traveled over 200 feet (60 m) before stopping. Rocks often moved multiple times before reaching their final resting place. The researchers also observed rock-less



*Racetrack Playa and moving rock*  
photo by Bob Greenburg

trails formed by grounding ice panels – features that had been thought to be the result of people stealing rocks.

"The last suspected movement was in 2006, and so rocks may move only about one millionth of the time," said Lorenz. "There is also evidence that the frequency of rock movement, which seems to require cold nights to form ice, may have declined since the 1970s due to climate change."

So is the mystery of the sliding rocks finally solved?

"We documented five move events in the two and a half months the pond existed and some involved hundreds of rocks", says Richard Norris, "So we have seen that even in Death Valley, famous for its heat, floating ice is a powerful force driving rock motion. But we have not seen the really big boys move out there....does that work the same way?"

**The Racetrack is located in a remote area of the park and road conditions are variable at best, requiring high clearance vehicles and heavy duty tires. Do not attempt a trip to the Racetrack without a plenty of fuel and water. There is no cell phone service in the area. Be prepared for the possibility of spending the night if your vehicle becomes disabled.**

## New Conditions for Sporting Events

The moratorium on permitted sporting events in Death Valley National Park issued on October 1, 2013, has been lifted. The NPS also released the findings of its safety assessment report and the required conditions on future permitted sporting events at the park.

The safety assessment was conducted to evaluate risks associated with permitted sporting events at Death Valley National Park. Safety conditions will be included in future permits and are focused on decreasing risks and providing a safer and more enjoyable experience for participants, visitors, and employees, visitors.

Specific requirements for future permits include increasing visitor awareness of events taking place, increased traffic control, strategic locations for aid stations, increased warning signs, specific conditions for medical support teams, restrictions on time of year and time of day, and increased monitoring and enforcement of permit conditions.

Previously, park employees who monitored these events and responded to emergency situations were exposed to unsafe conditions, including extreme weather and locations of events on high-speed roads. Visitors to the park experienced increased congestion and traffic conflicts with participants during events. Additional risks noted during events included limited visibility of participants on some sections of roads; cyclists and runners participating in events side-by-side on narrow, two-lane park roads, causing traffic back-ups and dangerous passing situations; extreme temperatures and other weather conditions; and events held at night with limited and low visibility.

Sporting events within National Parks are a conditional use that may be allowed with the issuance of a Special Use Permit. In the past ten years, Death Valley National Park averaged ten large scale sporting events per year with up to 300 participants, plus support teams, for each event.

A copy of the safety assessment report is available at [www.nps.gov/deva/parkmgmt/businesswithpark.htm](http://www.nps.gov/deva/parkmgmt/businesswithpark.htm).

## Please Share the Road.

Many cyclists and runners come to Death Valley to enjoy the solitude and relatively empty roads to enjoy their respective sports. Effective 1 January 2014, California passed regulation AB 1371 which established the "Three Foot for Safety Act" which requires drivers to allow at least a 3-foot distance between their vehicle and a cyclist when passing. When 3 feet cannot be provided because of traffic or roadway conditions, drivers must slow and pass only when they will not endanger the safety of the cyclist. Please respect cyclists and runners by slowing and keeping a safe distance when passing.



# Ranger Programs



## Explore With a Park Ranger

Park Rangers can introduce you to a new canyon, explore the night sky with you, guide you across the moonlit sand dunes, take you back in time or just answer your questions. A variety of Ranger-led programs are offered throughout the winter months (November 13, 2014 – April 18, 2015) that are designed to help you experience the park in a myriad different ways. For a complete list of programs and opportunities to visit with a ranger, refer to the weekly **Ranger Program Schedule** available at visitor centers, online at [www.nps.gov/deva](http://www.nps.gov/deva), and posted throughout the park. Tours are free except for Scotty's Castle and Lower Vine tours. Some tours require advance registration. Programs may change for special events or cancelled due to inclement weather.

- Want to sit in a warm, comfortable auditorium and listen to a park ranger? Then join us for an **Indoor Evening Program**. 7 PM Thu–Sun (check schedule for topics)
- Prefer to be out under the moon or stars? Attend an **Outdoor Evening Program**. 7:30 or 8 PM, Thu–Sun (check schedule for location, topic & time)
- While exploring popular sites, such as Badwater or Golden Canyon, look for **Roving Park Rangers** who can answer questions and point out features you might not notice on your own. 2 PM–4 PM, Thu–Sun (weather permitting)
- Want to learn more about the park, but not lose precious exploring time? Bring your lunch to the Furnace Creek Visitor Center Patio and **Picnic with a Ranger**. 12 Noon–1 PM, Thu–Sun.
- Check the weekly Ranger Program Schedule for **additional programs** available Thursday–Sunday. A more limited number of programs are offered Monday–Wednesday.

## The Moon and the Stars

Twice a month something magical happens in Death Valley; a full moon and a new moon. During full moons rangers explore the sand dunes and/or Badwater by the wondrous light of the moon, view moonrises through binoculars and provide opportunities to learn more about this orb that impacts our lives in ways we never think about. During new moons, when the moon can't be seen and the sky marches out all its stars, rangers set up telescopes and help you explore the wonder of the dark night sky, a disappearing resource that also impacts our lives. Check ranger program schedules for full moon and telescope events and come experience the magic of Death Valley nights.

## Paleontology Tours

Millions of years ago, Death Valley's landscape and lifeforms appeared very different from the harsh desert of today.

On the Paleontology Tour, a park ranger will lead you into the wilderness through a dramatic canyon with high cliff walls opening into a multi-colored basin. There you will have a close up encounter with well-preserved fossilized tracks of bird, horse, camel, and mastodon-like creatures.

Although this fragile paleontological resource area is usually closed to the public, there will be three ranger-led tours on selected dates. Each hike is limited to 15 people.

The free hike is an all day, seven-mile round trip with a 1,500 foot elevation gain. Due to the loose footing and rugged nature of the terrain, this hike is considered moderately strenuous and not recommended for anyone with mobility or breathing difficulties. The hike is appropriate for older children, age 10 and up.

To enter the tour lottery, phone 760-786-3280 or email [deva\\_information@nps.gov](mailto:deva_information@nps.gov) (use Paleo Hike Lottery in tagline) on sign-up dates ONLY. Leave a message clearly stating your name, the number of people in your party (limit of 4 including yourself), your phone number and email address.

### 2014 - 2015 tours:

- Friday, November 28, 2014 (lottery sign-up on November 2-4, 2014)
- Saturday, January 17, 2015 (lottery sign-up on December 17-19, 2014)
- Saturday, February 7, 2015 (lottery sign-up on January 7-9, 2015)

## Scotty's Castle Tours

The grounds of this 1920s era, Spanish-style mansion may be toured on your own, but visitors must join a park ranger to tour the castle's gorgeous interior, its system of tunnels, or Scotty's ranch.

### House Tour

General Admission ..... \$15

### Underground Tour

General Admission ..... \$15

### House & Underground Combo

General Admission..... \$25

### Lower Vine Hiking Tour

General Admission..... \$20

### Individual Discounts

Youth (ages 6-15) ..... 50%

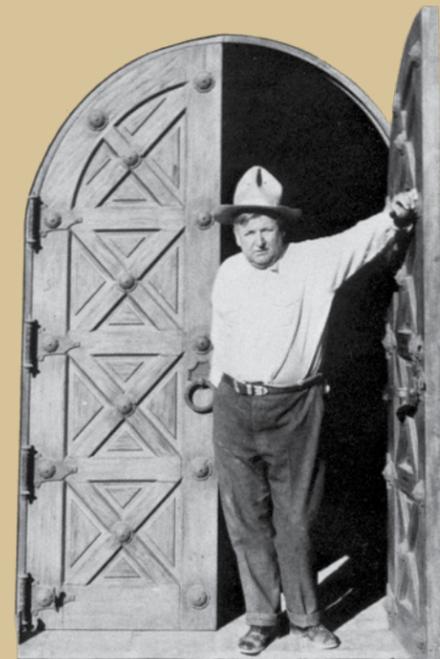
Children 5 and younger ..... Free

Interagency Senior Pass holder .... 50%

Interagency Access Pass holder ... 50%

## House Tour

Best tour for first-time visitors. Tours are led by National Park Service Rangers, dressed in 1939 clothing. The guide will share stories about the heyday of the Castle in the late '30s, the construction in the 1920s, and the curious relationship between the Johnsons and Scotty. The house is fully furnished with the Johnsons' original decorations. Some of their clothing even hangs in the closets! A highlight of the program is listening to the Welte Mignon theater organ. Tours offered daily, times vary. One hour. Wheelchair lift may be available.



## Underground Tour

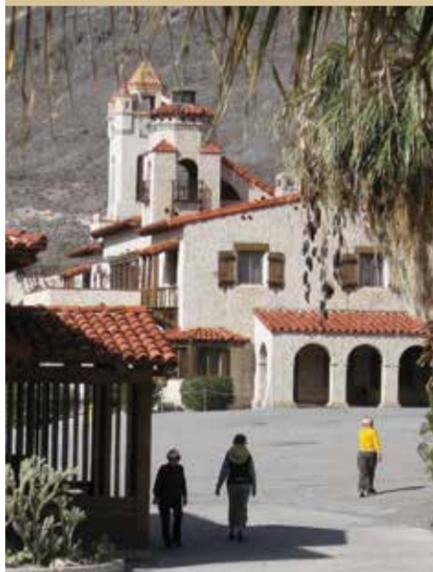
Scotty's Castle was very remote when it was built in the 1920s. The underground tour focuses on how the Johnsons built a comfortable vacation home in Death Valley. The tour sees the basement, underground tunnels, heating system, original pipes, original power generation and power storage systems. A highlight is the demonstration of electrical generation using an original Pelton water wheel. Offered most days from November through April, times vary. One hour. Tour involves stairs, no lift available.

## Lower Vine Hiking Tour

Scotty's Castle was not Scotty's home. Albert and Bessie Johnson had the structures at Lower Vine Ranch built partly as a residence for Scotty and partly to lock up water rights near the Castle. Scotty's modest cabin and out buildings are seen on this 2-mile, 2½ hour round trip ranger-guided hike over uneven surfaces. Offered occasionally. Reservations are strongly recommended.

## Tour Suggestions

- Reservations are not necessary for House and Underground Tours, but can reduce wait time once you arrive. Reservations are strongly recommended for Lower Vine Hiking Tours.
- Tickets may be purchased at least one day in advance from [www.recreation.gov](http://www.recreation.gov) or by calling 1-877-444-6777. On the day of the tour, tickets may only be purchased in person at the Scotty's Castle Visitor Center.



- Visitors are encouraged to enjoy the picnic area and to walk outside the buildings freely during business hours. Pre-packaged sandwiches, soft drinks, snacks, books and souvenirs are available. No gasoline or lodging.

# Dark Night Sky



photo by Dan Duriscoe

"You have never really seen the stars till you have seen them in Death Valley. The clear, limpid atmosphere brings them very close. You feel you could reach up and pull them down." – Bessie Johnson

Very little has changed about the Death Valley sky since Bessie Johnson wrote these words. The night skies in Death Valley are very dark and minimally impacted by city lights.



The modern world is losing its dark skies. Due to growing cities, a vast majority of Americans cannot see the Milky Way from their homes, and many children born today will never see a truly dark sky. Death Valley is an oasis of dark nights in a bright world. Ninety-one percent of Death Valley National Park is designated wilderness. Permanent developments are prohibited within wilderness, and the few park developments outside wilderness are small and isolated.

Thanks to reduced lighting inside the park, and limited city lights outside the park, our eyes can see many wonders in the dark the night skies. On moonless nights, bright planets like Jupiter and Venus dominate the view. You can also see the Milky Way, star clusters like the Pleiades, and even the distant Andromeda Galaxy – 2.5 million light years away – all with the naked eye. Conversely, when the moon is full, it outshines all but the brightest stars. Exploring Death Valley by the light of the full moon is like seeing a completely different place as the moon casts dramatic shadows on a once-familiar landscape.

Image by Dr. Tyler Nordgren

## Death Valley: International Dark Sky Park

Death Valley National Park harbors some of the darkest night skies in the United States. That dark sky led the International Dark-Sky Association to designate the park as the third and largest International Dark Sky Park.

"The Dark Sky Park designation represents not only the efforts of the park and its partners, but the dedication of avid amateur astronomers who have sought the park's world-class starry skies for decades," said Dan Duriscoe, of the National Park Service's Natural Sounds and Night Skies Division.

To qualify for the dark sky designation, the park improved external lighting at facilities in the Furnace

Creek and Stovepipe Wells areas, reducing energy consumption, sky glow, and glare. The designation requires the park to sustain its efforts to protect night sky resources and visitor education. Implementation of the park's lighting guidelines will improve the natural character of the night and leave the stars untarnished in other areas of the park.

Park rangers offer night sky programs and hold stargazing events. Using high-powered telescopes or naked-eye viewing visitors can explore the mysteries of Death Valley's dark, night skies.

"At Death Valley the sky literally begins at your feet," said Tyler Nordgren, Associate Professor

of Physics at the University of Redlands (Calif.) and International Dark-Sky Association board member. "When my students and I look up at night from our southern California campus, we can usually count 12 stars in the sky. However, less than a five hour drive from Los Angeles there's a place where anyone can look up and see the universe the way everyone could 100 years ago."

For more information about the National Park Service's Night Skies Program, visit [www.nature.nps.gov/night/](http://www.nature.nps.gov/night/).

The International Dark-Sky Association is online at [www.dark-sky.org](http://www.dark-sky.org).

## Night Sky Almanac

### OCTOBER 2014

#### Planets visible

- ★ Mercury: East before dawn, late Oct
- ★ Mars: SW in the evening
- ★ Jupiter: East after 1 am
- ★ Saturn: West after sunset

#### The Moon

- ★ Full Moon: October 8
- ★ New Moon: October 23

#### Partial Solar Eclipse

- ★ October 23, 2-4 pm
- ★ use solar viewing glasses

#### Orionid Meteor Shower

- ★ Peak: October 21-22

### NOVEMBER 2014

#### Planets visible

- ★ Mercury: East before dawn, early Nov
- ★ Mars: SW in the evening
- ★ Jupiter: South to SE at dawn

#### The Moon

- ★ Full Moon: November 6
- ★ New Moon: November 22

#### Leonid Meteor Shower

- ★ Peak: November 17-18

### DECEMBER 2014

#### Planets visible

- ★ Venus: SW at dusk, late December
- ★ Saturn: SE before dawn
- ★ Mars: SW at dusk
- ★ Jupiter: East after 9:30 pm

#### The Moon

- ★ Full Moon: December 6
- ★ New Moon: December 21

#### Winter Solstice

- ★ December 21

#### Geminid Meteor Shower

- ★ Peak: December 13-14

### JANUARY 2015

#### Planets Visible

- ★ Mars: West after sunset
- ★ Jupiter: East after 9 pm
- ★ Saturn: SE before dawn

#### The Moon

- ★ Full Moon: January 4
- ★ New Moon: January 20

#### Quadrantids Meteor Shower

- ★ January 4, Midnight to dawn

### FEBRUARY 2015

#### Planets Visible

- ★ Mars: West after sunset
- ★ Venus: West after sunset
- February 20-23 Venus & Mars close
- ★ Jupiter: East after sunset
- ★ Saturn: SE before dawn

#### The Moon

- ★ Full Moon: Feb 3
- ★ New Moon: Feb 20

### MARCH 2015

#### Planets Visible

- ★ Venus: West after sunset
- ★ Jupiter: High in SE after sunset
- ★ Saturn: South before dawn

#### The Moon

- ★ Full Moon: March 5
- ★ New Moon: March 20

#### Spring Equinox

- ★ March 20

### APRIL 2015

#### Planets Visible

- ★ Venus: West after sunset
- ★ Jupiter: High in South after sunset
- ★ Saturn: SW before dawn

#### The Moon

- ★ Full Moon: April 4
- Partial lunar eclipse: maximum 5 AM
- ★ New Moon: April 18

#### Lyrids Meteor Shower:

- ★ April 23 Midnight to dawn

### MAY 2015

#### Planets Visible

- ★ Venus: West after sunset
- ★ Jupiter: High in SW after sunset
- ★ Saturn: Early May SW before dawn; late May east after sunset

#### The Moon

- ★ Full Moon: May 3
- ★ New Moon: May 17

#### Eta Aquarids Meteor Shower

- ★ May 6, Midnight to dawn

# Visitor Services

Location	Contact	Services
<b>Furnace Creek Visitor Center</b> National Park Service Death Valley Natural History Association	760-786-3200 www.nps.gov/deva	Park information, exhibits, park film, bookstore, ranger talks, drinking water and restrooms. Pay park entrance fees and purchase passes.
<b>Scotty's Castle Visitor Center</b> National Park Service Death Valley Natural History Association	760-786-2392 reservations: 877-444-6777 or recreation.gov	Tours daily (fee charged), park information, bookstore and restrooms. Soft drinks, sandwiches and snacks are available. Pay park entrance fees and purchase passes.
<b>Stovepipe Wells Village</b> Death Valley Lodging Company (park concession)	760-786-2387 escapetodeathvalley.com	Lodging, restaurant, bar, gift shop, convenience store, ATM, gas station, showers, swimming pool, paved airstrip, RV hookups, NPS campground, and ranger station.
<b>Panamint Springs Resort</b> (privately owned)	775-482-7680 panamintsprings.com	Lodging, restaurant, bar, gas station, campground, RV hookups, and showers.
<b>Furnace Creek Inn &amp; Ranch Resorts</b> Xanterra Parks & Resorts (privately owned)	760-786-2345 furnacecreekresort.com	Lodging, restaurants, bars, general store, gift shops, ATM, gas station (gasoline, diesel, propane, tire repair) post office, showers, laundromat, swimming, bike rentals, horse rides, RV hookups, borax museum, golf course, tennis courts, and paved airstrip.
<b>Farabee's Jeep Rentals</b> Farabee's is located across the street from the Furnace Creek Inn. (privately owned)	760-786-9872 877-970-5337 DeathValleyJeepRentals.com	Four-wheel-drive Jeep rentals and guided tours.

*photo by Carole Wendler*

CAMPGROUNDS	Season	Elevation	Fee	Sites	Water	Tables	Fire pits	Toilets	RV Hookups	Dump Station
<b>Furnace Creek</b> (NPS)	all year	-196'	\$18*	136	yes	yes	yes	flush	18*	yes
<b>Furnace Creek Ranch</b>	all year	-218'	\$32	12	yes	no	no	flush	yes	yes
<b>Sunset</b> (NPS)	Oct 15-Apr 30	-196'	\$12	270	yes	no	no	flush	no	yes
<b>Texas Spring</b> (NPS)	Oct 15-Apr 30	sea level	\$14	106	yes	yes	yes	flush	no	yes
<b>Stovepipe Wells</b> (NPS)	Sept 15-early May	sea level	\$12	190	yes	some	some	flush	no	yes
<b>Stovepipe Wells RV Park</b>	all year	sea level	\$31	14	yes	some	no	flush	yes	yes
<b>Panamint Springs Resort</b>	all year	2000'	\$7.50-\$30	76	yes	some	yes	flush	yes	no
<b>Mesquite Spring</b> (NPS)	all year	1800'	\$12	40	yes	yes	yes	flush	no	yes
<b>Emigrant</b> (NPS) tent only	all year	2100'	free	10	yes	yes	no	flush	no	no
<b>Wildrose</b> (NPS)	all year	4100'	free	23	yes	yes	yes	vault	no	no
<b>Thorndike**</b> (NPS)	Mar-Nov	7400'	free	6	no	yes	yes	vault	no	no
<b>Mahogany Flat**</b> (NPS)	Mar-Nov	8200'	free	10	no	yes	yes	vault	no	no

\*Additional \$12 Utility Fee for electric, water, and sewer hook-ups; Utility Fees are not subject to Lifetime Pass discounts.

\*\*Accessible to high-clearance vehicles only. 4-wheel drive may be necessary.

- **RESERVATIONS:** for Furnace Creek Campground (up to 6 months in advance) and group campsites (up to 12 months in advance) for the camping season between October 15 to April 15 may be made at [recreation.gov](http://recreation.gov) or by calling 1-877-444-6777.
- **Generator hours** are from 7 am to 7 pm, unless otherwise posted. Generators are not allowed at Texas Springs Campground.
- **Sunset Campground:** To assist us in the event of an emergency, please back in your RV unit or use a pull-through site.
- **Texas Springs Campground** (Upper Loop) Limits on RV site use may apply in springtime to accommodate increased demand for tent camping space. No generators allowed.