



Mesquite Flat Sand Dunes
photo by Dan Mottaz

Surviving Summer in Death Valley

Every summer, park visitors suffer from the effects of heat and sun exposure. Ill effects range from cramps, headache and nausea to fainting, seizures, and even death. Follow these precautions to ensure your safety during your visit.

Be Prepared and Travel Safely

- Make sure your vehicle, including the spare tire, is in good condition. Carry a jack and tire-changing tools.
- Carry enough water in your vehicle to survive should you have to wait for help. Rangers recommend one gallon per person per day.
- Stay on paved roads. Dirt roads are patrolled infrequently during the summer.
- Cell service is available only in the Furnace Creek area.
- If you have car trouble, stay with your vehicle. Flag down another car and ask them to send help. Wait in the shade of your vehicle.

Hike early or not at all

- Know the predicted high temperature for the day.
- On hot days, finish hikes before 10 am.
- Tour by car or visit Scotty's Castle.

- Higher elevations are cooler. Visit places like Dantes View, or the Charcoal Kilns in Wildrose Canyon.
- If it's very hot, stay within sight of your vehicle while walking around.

Tips for safe hikes

- Carry water & sports drinks. Don't ration water; drink freely and often.
- Wear a loose shirt, sturdy shoes, sunglasses, and a hat.
- Take advantage of evaporative cooling: wet down your shirt and hair, or wear a wet bandanna around your neck.

Recognize signs of trouble

- Thirst is an early warning and means you are already dehydrated. It's time to drink water.
- If you feel dizzy, nauseous, or develop a headache, get out of the sun immediately, wet your clothing, and take small sips of water.

Danger in the Dunes

Of the eighteen heat-related fatalities in Death Valley since 2000, three occurred at Mesquite Sand Dunes. Sand hills quickly block views of the parking area and it's easy to become disoriented: keep your car in your line of sight. Although the tallest dunes appear to be close, they are actually over a mile (1.6 kilometers) away: do not try walking to the high dunes in the summer heat.



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Safety & Park Rules

ENGLISH

Safety

- **Water:** Drink at least one gallon (4 liters) of water per day. Carry plenty of extra drinking water in your car.
- **Heat & Dehydration:** If you feel dizzy, nauseous or have a headache, get out of the sun immediately and drink plenty of water. Dampen your clothing to lower body temperature. Heat and dehydration can kill.



- **Summer Driving:** Stay on paved roads in summer. If your car breaks down, stay with it until help comes. Be prepared; carry plenty of extra water.

- **Stay alert and slow down:** The most common cause of death in the park is single car vehicle accidents. A moment of inattention can send you, your car, and your loved ones flipping into the rocky desert.

- **Do not rely on technology!** Your cell phone will not work in most of the park. GPS devices frequently tell Death Valley visitors to turn off well-traveled roads, and take "shortcuts" over the desert and into canyons. Common sense and good judgment are far more reliable.

- **Hiking:** DO NOT hike in the low elevations when temperatures are hot. The mountains are cooler in summer.

- **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 road dips.

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

Rules

- **Entrance fees apply to all visitors!** Please see page 4 for the exact amount you should pay.
- **Pets and Bicycles** are not allowed on trails or in Wilderness which covers over 90% of the park.
- **Do not enter mine tunnels or shafts.** Mines may be unstable, have hidden shafts, pockets of bad air and poisonous gas.
- **Do not feed birds or animals.** This is for your safety and the health of our wildlife. Plus, it is against the law!
- **Driving off roads is prohibited.** Stay on established roads.
- **Do not take anything!** Leave rocks, plants and historic objects where you find them for everyone to enjoy.

DEUTSCH

Sicherheit

- **Wasser:** Trinken Sie mindestens vier Liter Wasser pro Tag. Führen Sie immer noch zusätzliches Trinkwasser im Auto mit sich

- **Hitze & Flüssigkeitsverlust:** Wenn Sie sich schwindelig fühlen, Ihnen übel ist oder Sie Kopfschmerzen bekommen, gehen Sie sofort aus der Sonne und trinken Sie reichlich Wasser. Feuchten Sie Ihre Kleidung an, um Ihre Körpertemperatur zu senken. Hitze und Flüssigkeitsverlust können tödlich sein.

- **Fahren im Sommer:** Bleiben Sie auf befestigten Straßen. Wenn Ihr Auto liegenbleibt, bleiben Sie vor Ort und warten Sie, bis Hilfe kommt. Seien Sie vorbereitet: nehmen Sie immer reichlich Wasser in Ihrem Auto mit.

- **Bleiben Sie wachsam und fahren Sie langsam:** Die hauptsächliche Todesursache im Death Valley ist ein einfacher Autounfall. Ein Moment der Unachtsamkeit kann Sie, Ihr Auto und Ihre Lieben dazu verdammen, in der steinigen Wüste zu enden.

- **Verlassen Sie sich nicht auf die Technik!** Ihr Handy wird im größten Teil des Parks nicht funktionieren. GPS Geräte weisen Besucher des Death Valleys häufig an, die viel befahrenen Straßen zu verlassen und "Abkürzungen" durch die Wüste und die Canyons zu nehmen. Gesunder Menschenverstand, eine Karte des Death Valley und ein gutes Urteilsvermögen sind sehr viel sicherer.

- **Wandern:** Wandern Sie im Sommer NICHT in den tieferen Lagen. Die Berge, welche das Death Valley umgeben, sind kühler und dort gibt es viele Wege.

- **Sturzfluten:** Meiden Sie die Canyons während eines Sturms mit Regen und bereiten Sie sich darauf vor, jederzeit einen höher gelegenen Ort aufsuchen zu können. Achten Sie während der Fahrt auf Wasser, das in Pfützen und Schlaglöcher läuft.



- **Gefährliche Tiere:** Setzen Sie nie eine Hand oder einen Fuß an eine Stelle, die Sie vorher nicht sehen konnten. Klapperschlangen, Skorpione oder Schwarze Witwen (Spinnen) könnten dort Unterschlupf gefunden haben.

Regeln

- **Eintrittsgebühren müssen von allen Besuchern gezahlt werden!** Bitte informieren Sie sich auf Seite 4 über die genaue Höhe der Gebühren.
- **Hunde und Fahrräder** sind nicht erlaubt auf Pfaden oder in der Wildnis, die 90% des Parks umfasst.
- **Betreten Sie keine Minentunnel oder Schächte.** Minen können instabil sein, versteckte Schächte haben und Einschlüssen von schlechter Luft und giftigem Gas enthalten.
- **Füttern Sie keine Vögel oder wilden Tiere.** Dies dient Ihrer Sicherheit und der Gesundheit unserer Tierwelt.
- **Fahren abseits der Straßen ist verboten.** Bleiben Sie auf den ausgewiesenen Straßen.
- **Nehmen Sie nichts mit!** Lassen Sie Steine, Pflanzen oder historische Objekte dort, wo Sie sie finden, damit jeder sich an Ihnen erfreuen kann.

FRANÇAIS

Sécurité

- **Boire de l'eau:** Buvez du moins un gallon (4 litres) d'eau par jour. Apportez beaucoup d'eau potable supplémentaire dans votre voiture.

- **La chaleur et la déshydratation:** Si vous ressentez des étourdissements, des nausées, ou des maux de tête, mettez-vous à l'abri du soleil et buvez beaucoup d'eau. Humectez des vêtements afin de baisser votre température corporelle. La chaleur et la déshydratation peuvent vous tuer.

- **La conduite en été:** Restez sur les routes pavées. Si votre voiture tombe en panne, restez là jusqu'à ce que les secours arrivent. Soyez prêt; apportez beaucoup d'eau supplémentaire.



- **Rester vigilant et freiner la voiture:** La principale cause de décès à Death Valley est un accident impliquant un seul véhicule. Un moment d'inattention peut faire se retourner votre voiture, lançant vous-même et vos proches dans le désert rocailleux.

- **Ne pas dépendre de la technologie!** Votre téléphone cellulaire ne marchera pas dans quasiment tout le parc. Les dispositifs GPS indiquent aux visiteurs de quitter les grands chemins et de prendre des «raccourcis» à travers le désert et dans les canyons. Le bon sens, une carte de Death Valley, et un jugement éclairé sont beaucoup plus fiables.

- **La randonnée:** NE faites PAS de la randonnée dans les zones à basse altitude en été. Les montagnes qui entourent Death Valley sont plus fraîches et il y a beaucoup de sentiers.

- **Les inondations soudaines:** Evitez les canyons pendant les orages et soyez prêt à vous déplacer en terrain plus élevé. En conduisant, soyez attentif aux puissants débits d'eau et aux eaux dans les creux de la route.

- **Les animaux dangereux:** Ne placez jamais vos mains ou vos pieds là où vous ne pouvez pas d'abord voir. Des crotales, des scorpions, ou des veuves noires peuvent s'y cacher.

Règles

- **Les droits d'entrée s'appliquent à tous les visiteurs!** Veuillez consulter la page 4 pour le montant exact que vous devez payer.
- **Les chiens et les vélos** sont interdits sur les sentiers ou aux milieux sauvages, ce qui couvre plus de 90 pour cent du parc.
- **Ne pas entrer dans les tunnels ou les puits de mine.** Les mines peuvent être instables, avoir des puits cachés, ou des poches d'air de mauvaise qualité et de gaz toxique.
- **Ne pas alimenter les oiseaux ou les animaux sauvages.** C'est pour s'assurer votre sécurité aussi bien que la santé de notre faune et flore.
- **La conduite hors route est interdite.** Restez sur les routes établies.
- **Ne rien prendre!** Laissez les pierres, les plantes, et les objets historiques là où vous les trouvez pour que tout le monde puisse en profiter.

ITALIANO

Sicurezza

- **Acqua:** Bevete almeno un gallone (4 litri) d'acqua ogni giorno. Portate più acqua nella vostra macchina in modo da averne abbastanza se finite l'acqua che portate con voi.

- **Caldo e Disidratazione:** Se avete la testa che gira, la nausea o mal di testa, trovate subito dell'ombra o un posto dove non c'è il sole e bevete molta acqua. Inumidite i vestiti per abbassare la temperatura del corpo. Il caldo e la disidratazione possono uccidervi.

- **Guidare durante l'estate:** Rimanete sulle strade asfaltate. Se la vostra macchina si guasta, rimanete con la macchina finché arrivano i soccorsi. Siate preparati; portate tanta acqua.

- **State in allerta e rallentate:** La causa di morte più comune nella Death Valley è un incidente di una sola macchina. Un momento di disattenzione può ribaltare la vostra macchina nel deserto roccioso, con voi e i vostri cari dentro.

- **Non fate troppo affidamento sulla tecnologia!** Il vostro cellulare non funziona nella maggior parte del parco. I GPS dicono spesso ai visitatori del parco di prendere una "scorciatoia" attraverso il deserto e nei canyon, lontano dalle strade molto trafficate. Il buon senso, una mappa della Death Valley e decisioni assennate sono più affidabili della tecnologia.

- **Escursionismo:** Non fate escursione a basse altitudini durante l'estate. Le montagne intorno alla Death Valley sono più fredde e ci sono molti sentieri.

- **Allagamenti:** Evitate i canyon durante i temporali e siate preparati a muovervi verso un punto più elevato. Mentre guidate, state attenti all'acqua che corre attraverso la strada.

- **Animali Pericolosi:** Non mettere mai le mani o i piedi dove non potete vedere. Crotali, scorpioni, o vedove nere potrebbero esservi nascosti.

Regole

- **Le tasse di entrata si applicano a tutti i visitatori!** Per favore, controllate a pagina 4 per il costo esatto che dovrete pagare.

- **Cani e Biciclette** non sono permessi sui sentieri o nell'area selvatica che copre 90% del parco.

- **Non entrare nei tunnel delle miniere o nei pozzi.** Le miniere potrebbero essere instabili, avere pozzi nascosti e sacche di aria o gas tossici.



- **Non dar da mangiare agli uccelli o agli animali selvatici.** Questa regola è per la vostra protezione e la salute della nostra fauna.

- **È vietato guidare fuori dalle strade.** Rimanete sulle strade segnalate.

- **Non portate via niente!** Lasciate i sassi, le piante, e gli oggetti storici dove li avete trovati in modo che tutti possano goderne.

What to See & Do: Summer



Zabriskie Point
photo by Robert Jacobs

Auto Touring

- **Zabriskie Point:** Surrounded by a maze of wildly eroded and vibrantly colored badlands, this spectacular view is one of the park's most famous. Zabriskie Point is a popular sunrise and sunset viewing location. The viewpoint is a short walk uphill from the parking area.
- **Twenty Mule Team Canyon:** Winding through otherworldly badlands, this 2.7 mile / 4.3 km, one-way loop drive is unpaved, but accessible to vehicles other than buses, RV's, and trailers.
- **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 / 14.5 km paved road is one-way and is only drivable with vehicles less than 25 ft / 7.6 m 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.
- **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.
- **Dante's View:** The most breathtaking viewpoint in the park, this mountain-top overlook is more than 5000 ft / 1524 m above the floor of Death Valley. Cooler temperatures at that elevation allow for short walks along the ridge. The paved road is open to vehicles less than 25 ft / 7.6 m in length.
- **Mesquite Flat Sand Dunes:** Tawny dunes smoothly rise nearly 100 feet / 30 m 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.
- **Ubehebe Crater:** Just a few hundred years ago a massive volcanic explosion caused by steam pressure when hot magma contacted the underground water table, shattered the silence of northern Death Valley. When the cinders and dust settled, this 600 foot / 183 m deep crater remained.
- **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.

Panamint Mountains

The higher the elevation, the cooler it will be. The Panamint Mountains are the highest in the park and often snow-covered in winter, but summer is the perfect time to visit. While the valley swelters, wildflowers may be blooming on the tallest peaks. This area is accessible only to vehicles less than 25 ft / 7.6 m in length.

- **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.
- **Wildrose Peak Trail** (4.2 miles/ 6.7 km one-way) A good high peak (9,064 ft/2762 m) to climb in the summer. Trail begins at north end of Charcoal Kilns with an elevation gain of 2,200 ft/670 m. Spectacular views beyond 2 mile/3.2 km point.
- **Telescope Peak Trail** (7 miles/ 11.2 km one-way) This strenuous trail to the highest peak in the park (11,049 ft/ 3368 m) with a 3000 ft/ 914 m elevation gain. Trail is usually snow-free by June. Start at Mahogany Flat Campground at end of Wildrose Canyon Road. Steep road after Charcoal Kilns; high-clearance vehicle recommended.

Scotty's Castle Tours

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, Albert & Bessie Johnson. Tours are led by National Park Service Rangers, dressed in 1939-style 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. One hour. Wheelchair lift may be available.

Tickets

House Tour	
General Admission	\$15
Individual Discounts	
Youth (ages 6-15).....	50%
Children 5 and younger.....	Free
Interagency Senior Pass holder ..	50%
Interagency Access Pass holder..	50%

Hours

Scotty's Castle is open Friday through Monday from mid-May through late August, and every day after that.
 Grounds: 9 am to 3:45 pm
 Visitor Center: 9:45 am to 3:15 pm
 House Tours: 10 am, 12 pm & 2 pm

Reservations

Reservations are not necessary for tours, but can reduce wait time once you arrive. Tickets may be purchased at least one day in advance from 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.



Scotty's Castle

Other Cool Things

- **Furnace Creek Visitor Center:** The main park visitor center has new exhibits, park film, bookstore, and rangers on hand to answer questions. Free WiFi 10 am to 3 pm
- **Borax Museum:** A privately-owned museum located in the Furnace Creek Ranch. Exhibits include a mineral collection and the history of borax in Death Valley. Behind the museum building is an assembly of mining and transportation equipment.
- **Swimming Pools:** Did you bring your swimsuit? Stovepipe Wells Resort and Furnace Creek Ranch have pools available to use for a fee.
- **Nighttime Walks:** After the blazing sun sets, you may see more stars than you ever imagined or the desert bathed in moonlight. Although it can still be hot in the evening, night is when desert wildlife becomes active.



Panamint Mountains

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

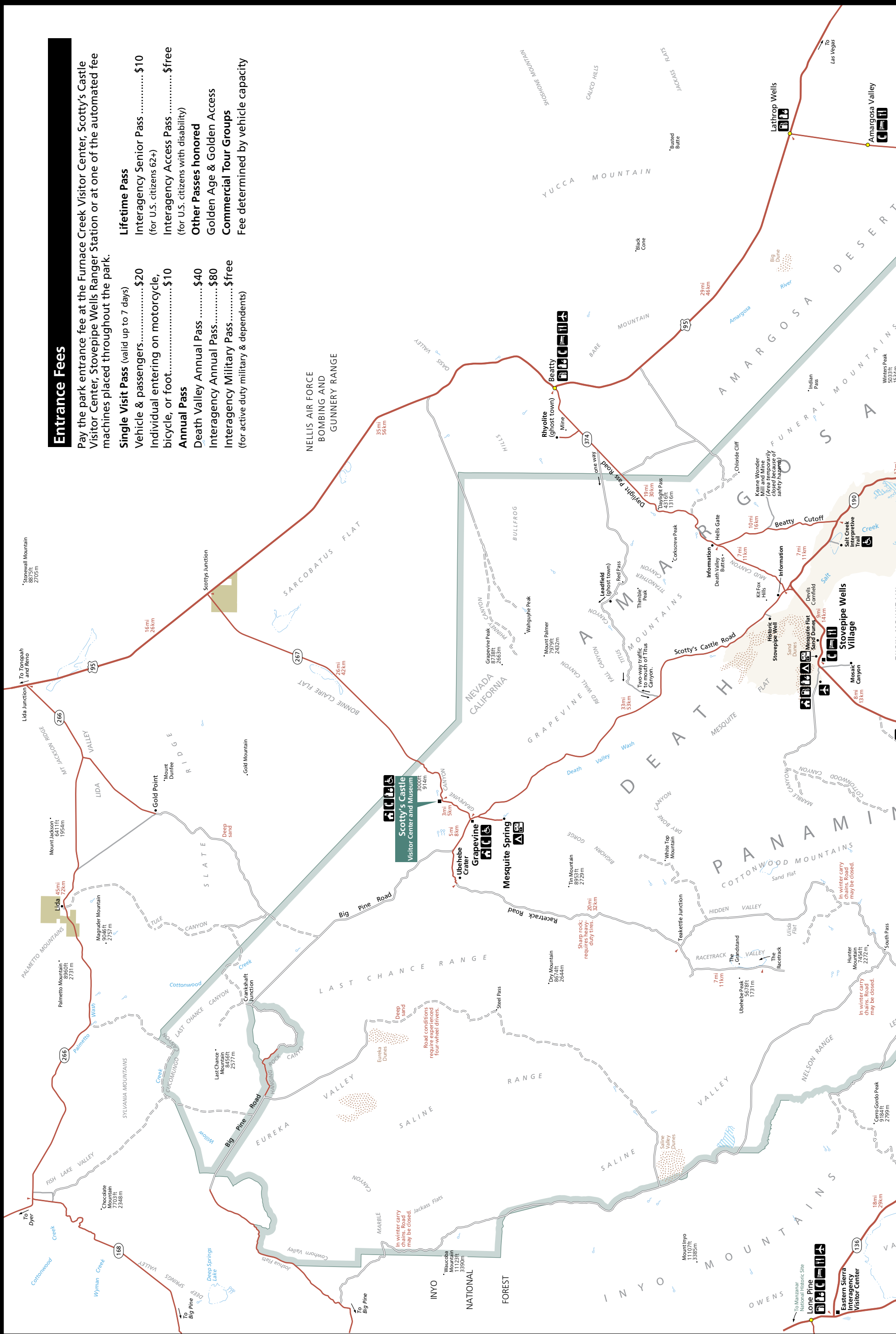
Death Valley Annual Pass.....\$40
 Interagency Annual Pass.....\$80
 Interagency Military Pass.....\$free
 (for active duty military & dependents)

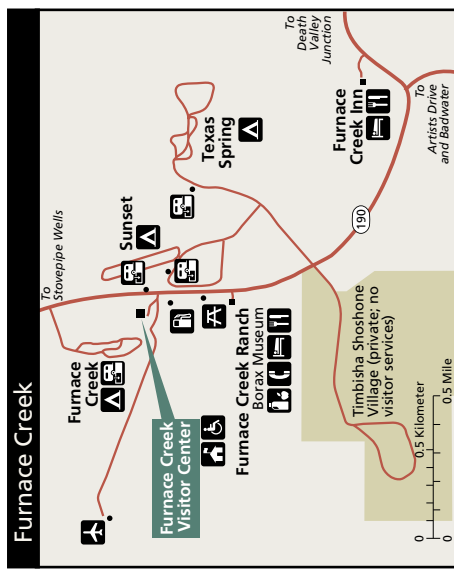
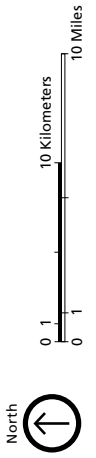
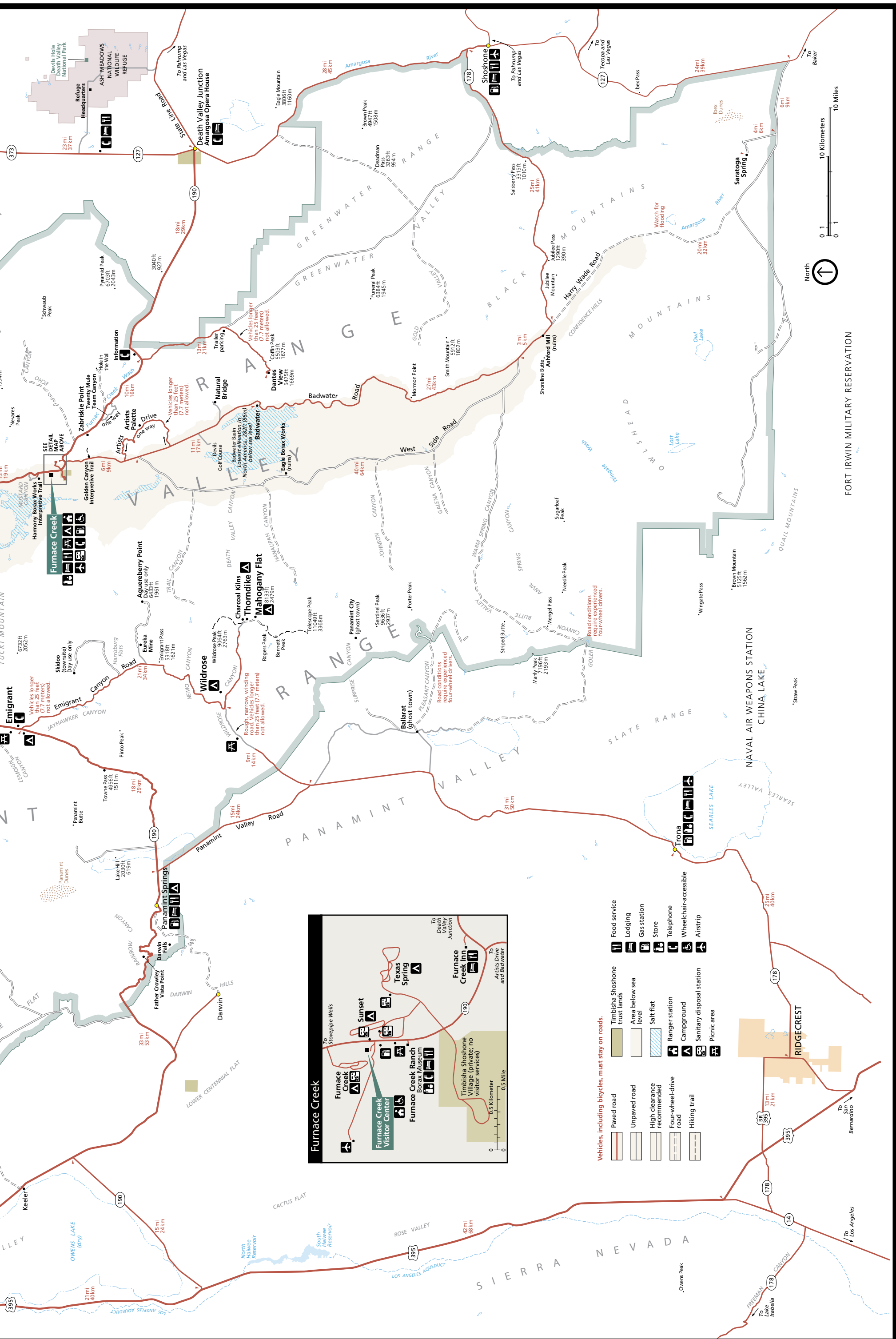
Lifetime Pass

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

NAVAL AIR WEAPONS STATION
CHINA LAKE

RIDGECREST

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. In February 2013, the International Dark Sky Association certified Death Valley National Park as a “Gold Tier” International Dark Sky Park. This means 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.

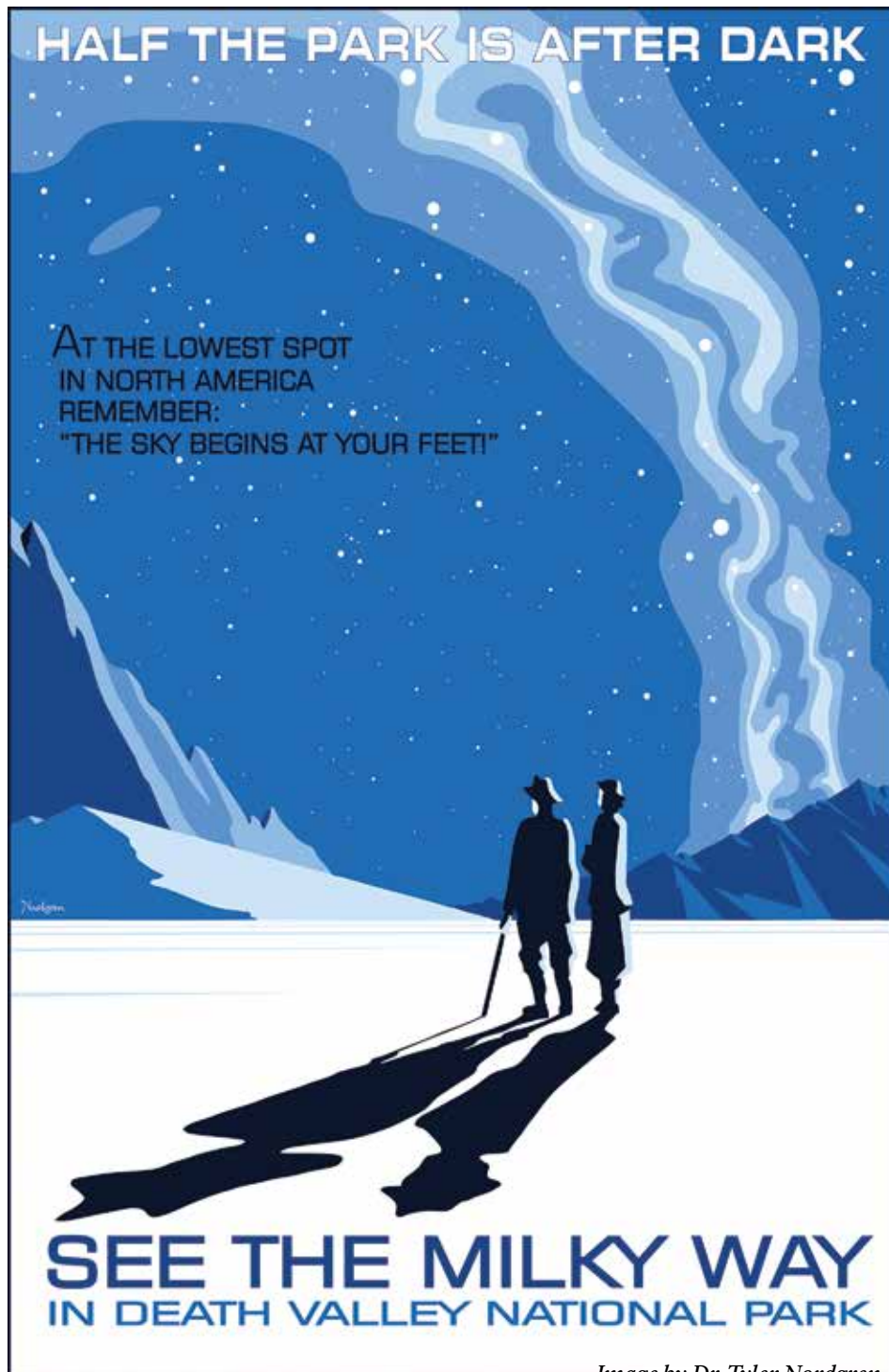


Image by Dr. Tyler Nordgren

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 monthly night sky programs and hold stargazing events with astronomy organizations. Using high-powered telescopes, 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.”

The park’s actions to reduce unnecessary lighting also tie in with “Starry, Starry Night,” one of the goals in A Call to Action—the National Park Service’s stewardship and engagement priorities for its second century.

For more information about the National Park Service’s Night Skies Program, visit www.nature.nps.gov/night/.

The International Dark-Sky Association is online at www.dark-sky.org.

Night Sky Almanac

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

JUNE 2015

Planets Visible

- ★ Mercury: east just before sunrise, best on June 24
- ★ Venus: West after sunset
- ★ Jupiter: High in SW after sunset
- ★ Saturn: East after sunset

The Moon

- ★ Full Moon: June 2
- ★ New Moon: June 16

Summer Solstice

- ★ June 21

JULY 2015

Planets Visible

- ★ Mars: Late July, East before dawn
- ★ Venus and Jupiter: West after sunset, close together July 1
- ★ Saturn: SE after sunset

The Moon

- ★ Full Moon: July 1, July 31
- ★ New Moon: July 15

Delta Aquarids Meteor Shower

- ★ Midnight to dawn of July 29 (full Moon, difficult viewing)

AUGUST 2015

Planets Visible

- ★ Mercury: Low in west after sunset
- ★ Mars: East before dawn
- ★ Venus: Late Aug, east before dawn
- ★ Jupiter: Early Aug, west after sunset; close to Mercury on August 6
- ★ Saturn: SW after sunset

The Moon

- ★ New Moon: August 14
- ★ Full Moon: August 29

Perseids Meteor Shower:

- ★ Midnight to dawn of August 13
- ★ (No Moon, excellent viewing)

SEPTEMBER 2015

Planets Visible

- ★ Mercury: Early Sept, low in west just after sunset
- ★ Mars: East before dawn
- ★ Venus: East before dawn
- ★ Jupiter: After mid-Sept, east before dawn
- ★ Saturn: SW after sunset

The Moon

- ★ New Moon: Sept 12
- ★ Full Moon: Sept 27
- ★ Lunar Eclipse: Sept 27, Moon rises in partial eclipse, max eclipse 7:47 pm

OCTOBER 2015

Planets Visible

- ★ Mercury: Mid-Oct low in east before dawn
- ★ Mars: East before dawn
- ★ Venus: East before dawn
- ★ Jupiter: East before dawn
- ★ Saturn: Low in SW after sunset
- ★ October 9: Mars, Jupiter, & Moon grouped in east before dawn
- ★ October 17-30: Venus, Jupiter & Mars grouped in east before dawn

The Moon

- ★ New Moon: Oct 12
- ★ Full Moon: Oct 27

Draconids Meteor Shower:

- ★ Early evening Oct 8
- ★ Quarter Moon, difficult viewing

Orionids Meteor Shower:

- ★ Midnight to dawn of Oct 22
- ★ No Moon, excellent viewing

Life in Death Valley

How Wild Animals Survive the Summer

The extremes of summer in Death Valley pose the ultimate test of survival for wildlife. Animals must have special adaptations of both their bodies and their habits to thrive in the severe climate. The Kangaroo Rat, Sidewinder and Pupfish are among the most successful, but each in their own unique way.

Kangaroo Rats are perfectly adapted to the dryness and heat of Death Valley's summer. In this place famous for its lack of water, Kangaroo Rats can live their entire lives without drinking a drop of liquid. All of the water they need to survive can be metabolized within their bodies from starch and fats in the dry seeds they eat. They are also masters at conserving moisture; their kidneys have the ability to concentrate urine 4 to 5 times that of humans.

Kangaroo Rats avoid the intense heat of the day, as most desert animals do, by restricting their activity to the night. Days are spent deep underground in burrows that are both cooler and higher in humidity than outside. The water vapor contained in the humid air is reclaimed by special membranes in their nasal passages, and is also absorbed by the food stored within the den. They may even plug the burrow's entrance with dirt to keep out heat and intruders.

Too Hot for Cactus?

Death Valley is hot! How hot is it? The lower elevations of Death Valley are so hot, that it is even too hot for cactus to grow!

Plants, like animals, need to breathe. They do this through their pores, called stomata, and like us, every time they breathe they lose water through transpiration. Cactus have found a way to minimize these losses, by keeping their pores closed all day and only opening them at night, when it is cooler, so they won't lose as much water. This unusual form of photosynthesis is called crassulic acid metabolism, aka CAM photosynthesis. But to make this work, they need relatively cool nights, not something you'll find at Furnace Creek in the summertime! That is why you don't find any cactus in the lower elevations of Death Valley National Park.



Kangaroo Rat

The Sidewinder may be one intruder the Kangaroo Rat is trying to keep out of its den. This small rattlesnake is best known for its odd looping motion as it travels, but it, too, is well adapted to the extremes of Death Valley's climate. Like the Kangaroo Rat, the Sidewinder does not need to drink water.

All the moisture it requires comes from the juicy animals it eats. The Sidewinder also is nocturnal and spends the hot days in underground dens. Rather than digging its own burrow, it simply moves into one previously occupied by the unlucky rodent it ate for dinner. Like all reptiles, the Sidewinder is cold-blooded (ectothermic). Warm-blooded (endothermic) animals such as Kangaroo Rats and humans metabolize body heat from food, but ectothermic animals must absorb heat from their environment. Deserts have lots of heat, but little food, so ectothermic animals such as reptiles are excellent as desert dwellers.

The tiny Pupfish found in Salt Creek on Death Valley's arid floor are also ectothermic, yet they cannot escape the high temperatures of solar-heated pools. Pupfish are among the most heat tolerant of all fishes. They have been known to survive in water temperatures of 112 degrees F.

Some Pupfish species in the Death Valley area actually live in hot springs. The Pupfish of Salt Creek are so adapted to warm water that they must burrow into the mud and become dormant when the shallow stream becomes cold in the winter. Another obstacle these

fish face is high salinity. Pupfish can survive in water 2 to 3 times saltier than sea water. When Salt Creek evaporates in the summer, the dissolved salts become even more concentrated. Fish living in fresh water can absorb water through their body by osmosis, but Pupfish and other salt water fish must drink to get their necessary water. Excess salts are then excreted through their kidneys and gills.

Human beings must also drink water, but our bodies can only process fresh water. People perspire, allowing the evaporating water to pull the heat away from our bodies, but then we must replace the lost water. Our activity can also be timed to avoid the hottest part of the day. We may share some habits with desert wildlife to beat the heat and dryness, but our real success comes from our ability to change our surroundings to meet our needs.

Timbisha Shoshone, the Native American people who have lived in Death Valley for centuries, did the most logical thing when summer arrived—they left for higher and cooler country. In the early history of the valley, almost everyone else followed their example. Only a few hardy souls stayed behind to face the intense heat of summer. Miners working the Keane Wonder Mine in 1908 complained that even eating became difficult—the silverware was too hot to handle. Original caretakers of the Greenland Ranch at Furnace Creek slept in the irrigation ditches and devised a water-wheel powered fan to cool themselves. Today, with electric air conditioners and evaporative coolers, we human beings can find shelter from Death Valley's heat.

Technology has now brought an influx of summer visitors never before known to this area. During your visit, keep in mind that only an artificial shelter allows you to be here in relative comfort. You are not as physically adapted to survive in Death Valley's summer as its wildlife residents.

When is the Best Season to Visit Death Valley?

Death Valley National Park is usually considered a winter park, but it is possible to visit here all year. When is the best time to visit? It all depends on what you're looking for.

- **SUMMER** starts early in Death Valley. By May the valley is too hot for most visitors, yet throughout the hottest months, visitors from around the world still flock to the park. Lodging and camping are available, but only the most hardy will want to camp in the low elevations in the summer. Most summer visitors tour by car to the main points of interest along the paved roads but do little else due to the extreme heat. Those wanting to hike will find the trails to Telescope and Wildrose Peaks are at their best in summer.

- **AUTUMN** arrives in late October, with warm but pleasant temperatures and generally clear skies. The camping season begins in fall and so do the Ranger Programs, which continue through spring. Although it is relatively uncrowded at this time of year, the weeks leading up to Death Valley '49ers Encampment (second week in November) and the Thanksgiving holiday are busy.

- **WINTER** has cool days, chilly nights and rarely, rainstorms. With snow capping the high peaks and low angled winter light, this season is especially beautiful for exploring the valley. The period after Thanksgiving and before Christmas is the least crowded time of the entire year. Peak winter visitation periods include Christmas to New Year's, Martin Luther King Day weekend in January, and Presidents' Day weekend in February. Reservations will be helpful.

- **SPRINGTIME** is the most popular time to visit Death Valley. Besides warm and sunny days, the possibility of spring wildflowers is a big attraction. If the previous winter brought rain, the desert can put on an impressive floral display, usually peaking in late March to early April. Check our website for wildflower updates. Spring break for schools throughout the west brings families and students to the park from the last week of March through the week after Easter. Campgrounds and lodging are usually packed at that time, so reservations are recommended.

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



Sidewinder

Visitor Services

location	contact	services
Furnace Creek Visitor Center 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.
Scotty's Castle Visitor Center 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 also available.
Stovepipe Wells Village Death Valley Lodge 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.
Panamint Springs Resort (privately owned)	775-482-7680 deathvalley.com/psr	Lodging, restaurant, bar, gas station, campground, RV hookups, and showers.
Furnace Creek Inn & Ranch Resorts Xanterra Parks & Resorts (privately owned)	760-786-2345 furnacecreekresort.com 760-614-1018 Stables	Lodging, restaurants, bars, general store, gift shops, ATM, gas station (gasoline, diesel, propane, tire & minor auto repair) post office, showers, laundromat, swimming, bike rentals, horse rides, RV hookups, borax museum, golf course, tennis courts, and paved airstrip.
Farabee's Jeep Rentals Farabee's is located across the street from the Furnace Creek Inn.	760-786-9872 877-970-5337 DeathValleyJeepRentals.com	Four-wheel-drive Jeep rentals and guided tours.

CAMPGROUNDS	Season	Elevation	Fee	Sites	Water	Tables	Fire pits	Toilets	RV Hookups	Dump Station
Furnace Creek (NPS)	all year	-196'	\$18**	136	yes	yes	yes	flush	some**	yes
Sunset (NPS)	Oct 15-Apr 15	-196'	\$12	270	yes	no	no	flush	no	yes
Texas Spring (NPS)	Oct 15-Apr 15	sea level	\$14	106	yes	yes	yes	flush	no	yes
Furnace Creek Ranch RV	all year	-218'	\$38	26	yes	no	no	flush	yes	yes
Fiddler's (Xanterra)	all year	-218'	\$18	35	no	no	yes	flush	no	no
Stovepipe Wells (NPS)	Sept 15-early May	sea level	\$12	190	yes	some	some	flush	no	yes
Stovepipe Wells RV Park	all year	sea level	\$31	14	yes	some	no	flush	yes	yes
Panamint Springs Resort	all year	2000'	\$7.50-\$30	76	yes	some	yes	flush	yes	no
Mesquite Spring (NPS)	all year	1800'	\$12	40	yes	yes	yes	flush	no	yes
Emigrant (NPS) tent only	all year	2100'	free	10	yes	yes	no	flush	no	no
Wildrose (NPS)	all year	4100'	free	23	yes	yes	yes	vault	no	no
Thorndike* (NPS)	Mar-Nov	7400'	free	6	no	yes	yes	vault	no	no
Mahogany Flat* (NPS)	Mar-Nov	8200'	free	10	no	yes	yes	vault	no	no

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

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

- **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.

- **RESERVATIONS** for Furnace Creek Campground (up to 6 months in advance) and group campsites (up to 12 months in advance) for the camping season of October 15 to April 15 may be made on-line at recreation.gov or by calling **877-444-6777**.