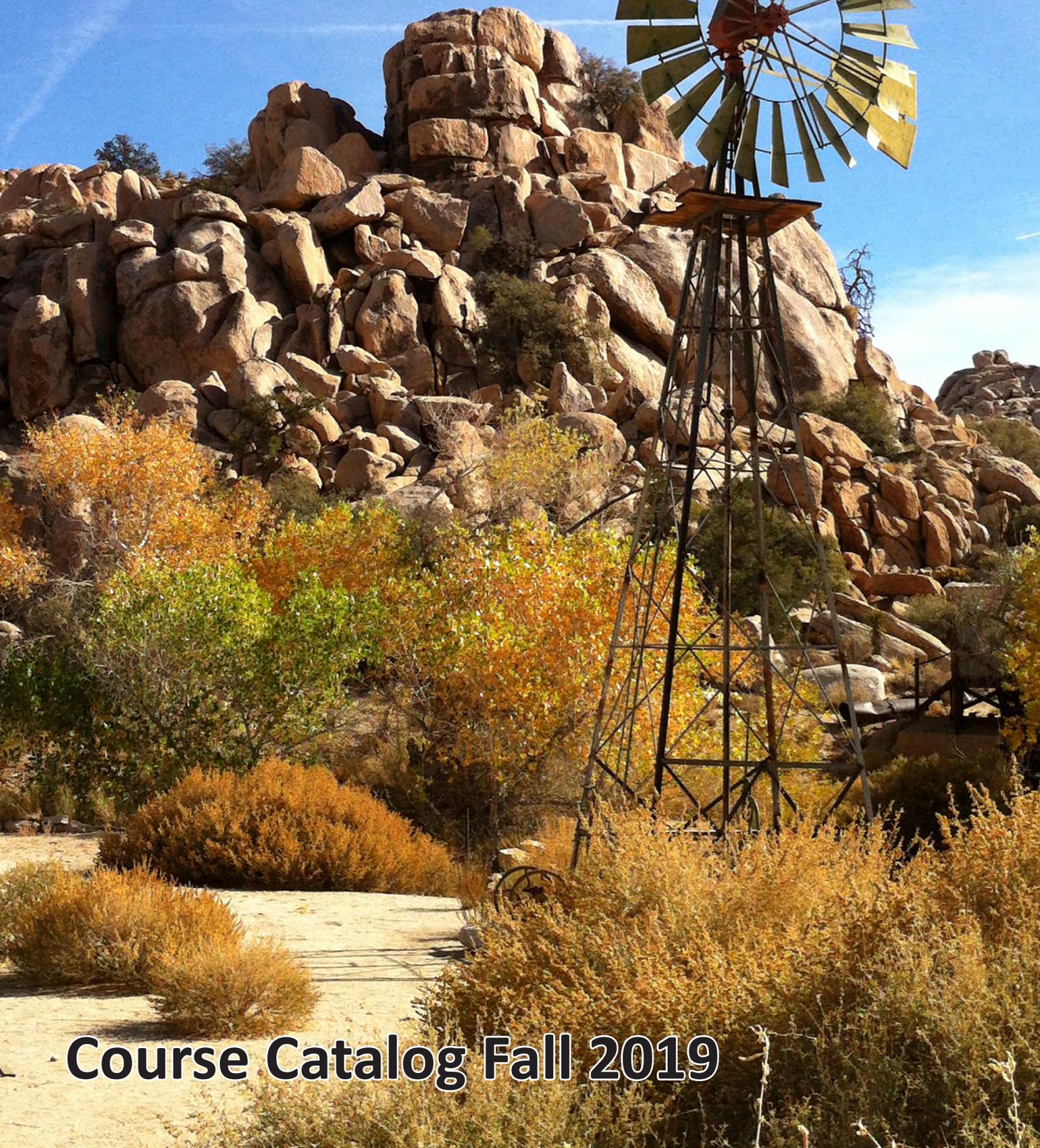


Desert Institute

at Joshua Tree National Park



Course Catalog Fall 2019



Welcome to Desert Institute at Joshua Tree National Park

I think we all can take a cue from our kids—fall is a great time to return to school and start learning again. I wish Desert Institute had been an option when I was in school. Being able to be outside and learn about the people and resources that made up my community would have made high school someplace I wanted to attend and not something to escape.

As I get older, my view on education has evolved. Now, more than at any other time in my life, I crave the opportunities that allow me to challenge my preconceptions and learn about the world around me. The opportunity to learn and stretch my mind is a joy. This is what Desert Institute does—it takes you out of your comfort zone and challenges you to learn. As part of my work managing the park, I need to be challenged. Thoughtful research on Joshua trees as well as the other animals and plants in our local environment keep me informed and help me better protect this park from fire and the other dynamic forces that can compromise this amazing preserve. In many of the courses that you take as part of Desert Institute, you become a partner in this process. Working with some of the finest instructors in the desert, your insight and the data you provide help me make better informed decisions. Hopefully, the time you spend in the park helps you become the stewards that will help take care of this park for another generation. Welcome back!



David Smith
Superintendent, Joshua Tree National Park

Nowhere Else We Would Rather Be!



Desert Institute conducts an educational tour of the park for high school students from Japan.

Fall 2019 Calendar

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September 15	“How-To” Identify Animal Burrows	pg. 5
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November 1 - 3	Mastering Landscape Photography NEW! 	pg. 14
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December 7	Geology and Cultural History of Cottonwood Spring	pg. 8
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CAMPING OPTION

* OFFERED FOR UNIVERSITY CREDIT

Registration Information

How Fit Do You Need To Be?

If you take part in a guided hike in Joshua Tree National Park, you will need to carry a backpack—with food, clothing, water and other essentials—that generally weighs up to 15 pounds. You will be exercising with either heat or cold, typical of the Mojave Desert and elevation gain. And, you may need to scramble over large boulders along the route. To help you decide on which course is best for you, please take into account the “Hike Level” ratings and note that these ratings are only guidelines. What is labeled “strenuous” might be routine for a very fit visitor. For the most precise information about each activity or the effects of the desert environment, please call us at **760-367-5539**.

Registration

The Desert Institute accepts registrations year round for special programming. Registrations for fall field classes start in July and registrations for spring field classes start in November. If you wish to enroll with the registration form on page 24, please enclose a check payable to **Joshua Tree National Park Association**. Of course, you can contact the Desert Institute for enrollment and for any questions about our programs:

Phone: 760-367-5539

E-mail: desertinstitute@joshuatree.org

On-line: joshuatree.org

Mail: please use the form on page 24

Please honestly assess your fitness level by reviewing the hiking level descriptions on this page and in the course descriptions.



EASY - Leisurely to moderate pace up to 3 miles per day through relatively flat terrain with frequent stops.



MODERATE - Moderate, steady pace up to 6 miles per day with some elevation gain and loss through some loose, rocky or uneven terrain.



STRENUOUS - Longer rigorous hikes at a moderate to brisk pace up to 12 miles per day with significant elevation gain and loss up to 3,000 feet through steep terrain, with possible rock scrambling.



EXTREME - Course includes rock scrambling throughout a significant portion of route. Good balance, full range of motion, and three points of contact while scrambling are necessary.



The images and written content used within this website or document are intended to represent offered courses; however weather, landscape and other conditions during the actual course may be different. Certain catalog and course content may be in the public domain and some content, such as photographs, may have been contributed or licensed by third parties and may be protected by copyright. Desert Institute course descriptions may contain links or URLs to third party websites. These sites are not under the control of the National Park Service, Joshua Tree National Park or the Desert Institute, who provide them as a convenience only and their use shall not be construed as an endorsement of, sponsorship of, or affiliation with the website; and they are not responsible for the contents.

Course dates, instructors and class content are subject to change. Contact the Desert Institute at 760-367-5539 for the most up-to-date information.

“How-To” Courses

How-to’s and step-by-step advice from the experts. Taking a cue from our course participants for more classes on “how-to” explore and enjoy Joshua Tree National Park, we are offering the following programs for those who want to develop new skills.

“How-To” Identify Animal Burrows

Date/Time: Sunday, September 15, 9 am - 1 pm
 Meet at: Black Rock Nature Center
 Fee: \$35 JTNPA member, \$45 non member
 Instructor: Candice Weber, Professor, College of the Desert
 Hike Level: Easy 

Have you ever taken a walk and noticed a hole in the ground and wondered what animal made it? Holes abound in the desert as animals seek refuge from climatic extremes and predators, or hunt for food. Candice Weber will shed light on ground holes, elevated holes, divots and mounds in this field class. Participants will learn how to identify holes and what clues can help discern which animals are living in which holes in the classroom session, and then put their knowledge to the test in the field. Curious visitors as well as seasoned naturalists will enjoy peeking into the secret lives of these subterranean dwellers and discover who’s behind all of that digging!

Campfire Cuisine with Chef Tanya Petrovna

Date/Time: Saturday, October 26, 8 am - 5:30 pm
 Sunday, October 27, 6:30 am - 2 pm
 Meet at: Joshua Tree Visitor Center
 Fee: \$150 JTNPA member, \$160 non member
 Instructor: Chef Tanya Petrovna
 Hike Level: Easy/Moderate 

Join Chef Tanya Petrovna to learn easy, creative Plant Based camp cooking on this weekend class. We will share with you many successful recipes for fun, exciting eating while camping in Joshua Tree National Park. Recipes will range from Campsite Pizza, Bourignon on Buttered Fire Pit Potatoes, Ash Roasted Vegetable Purses to Smores Dip. Fruity Fresh Dutch Oven biscuits and Dude Hash for breakfast, Trail Sandwiches and Wraps and Backpack Desserts. The course fee includes the meal ingredients.

Chef Tanya will help you to be a good camp cook based on pre-trip preparations, packing your foods correctly (no one wants water soaked sandwiches), and cooking equipment and utensils checklists. To create a good appetite, hikes with Lew Kingman are scheduled for both Saturday and Sunday.

Class size limited to 12 participants, so sign up early!

“How-To” Survive in the Desert

Date/Time: Sunday, October 6, 9 am - 4 pm
 Meet at: Joshua Tree Visitor Center
 Fee: \$70 JTNPA/PINE member, \$80 non member
 Instructor: Kelly Crawford, Joshua Tree Excursions
 Hike Level: Easy 

The ultimate goal of survival training is to prevent survival situations from occurring in the first place. However, when survival is unavoidable, mindset, skills and improvisation are key. Learn the essential considerations needed to safely explore the sometimes harsh and often challenging desert landscape of Joshua Tree National Park. This workshop will provide an introduction to the fundamental thought processes, skills and knowledge needed to survive in desert regions and the hazards associated with desert travel. In this field class at Lost Horse Campground, students will become familiar with survival considerations, decision making processes, (what works, what doesn’t and why). Concepts such as starting a fire, emergency shelters, water procurement, signaling, an overview of heat and cold-related injuries, hazards, and survival kits for car and backpack, will also be discussed. Kelly Crawford will teach the physical skills, tools and mental processes that will help prepare participants to safely discover some of the most beautiful and most dangerous habitats of the world; and survive, should it become necessary. The class will also emphasize that failing to plan or prepare and over-reliance on personal digital equipment (GPS and cell phones) can lead to catastrophic results. Learn how to be self-reliant and not become a Search and Rescue statistic. This class is not to be missed if you plan on spending any time in the desert!



Natural Science Courses

SIGN UP ONLINE
Click On Class Name

Bighorn Sheep in Joshua Tree National Park

Date/Time: Saturday, September 21, 9 am - 4 pm
 Meet at: Black Rock Nature Center
 Fee: \$85 JTNPA member, \$95 non member
 Instructor: Mark Jorgensen, Former Superintendent of Anza Borrego Desert State Park
 Hike Level: Easy/Moderate



Desert bighorn sheep is the largest native animal in the desert southwest. Mark Jorgensen will discuss the natural history of desert bighorn sheep in the southwest US and northern Mexico. He will discuss the bighorn's amazing adaptations to the desert environment, including their physical characteristics, distribution, behavior, predator relationships and diseases in this class. Participants will also learn about how the park's current preservation efforts for the bighorn sheep corresponds with the unique physiological characteristics of these animals and the park's management plan to preserve this magnificent animal, as a part of California's heritage. During the session, the class will hike into bighorn habitat and learn the key elements important for bighorn sheep survival. The field trip will highlight the importance of vast wilderness habitats, steep terrain, diverse plant communities, protection from human encroachment, and the threat of domestic livestock diseases on the native bighorn sheep.

Insects and Arthropods of the Morongo Basin*

(Entomology x405.1, 1.5 unit)

Date/Time: Friday, September 27, 6:30 pm - 9 pm
 Sat., Sept. 28, 8 am - 1:30 pm; 6 pm - 9 pm
 Sunday, September 29, 8 am - 12 pm
 Meet at: Black Rock Nature Center
 Noncredit Fee: \$145 JTNPA member, \$155 non member
 Credit Fee: \$245 JTNPA member, \$255 non member
 Instructor: Kurt Leuschner, M.S., Wildlife Ecology
 Hike Level: Easy/Moderate



This class is sponsored by the Big Morongo Canyon Preserve.

Did you know that insects can survive in temperatures over 110 degrees Fahrenheit in the shade with little or no water? Kurt Leuschner will explore the lives of the largest group of animals in the world through a study of insect anatomy, survival traits, habitats, and behaviors. Participants will learn to identify and distinguish insects from other arthropods and then practice their skills in the field. Field observations will include desert, dune, and riparian habitats, as well as a special night session with black lights at the Big Morongo Canyon Preserve. Leuschner will share amazing stories of insects like the yucca moth, the ant lion, and the world they inhabit.

I have been thrilled with the quality of classes from the Desert Institute. The Biological Soil Crusts class really stretched me and I felt new worlds open. What an experience. I need several more lifetimes to pursue all my interests. Thank you for providing these quality experiences!

Desert Snakes: Mystery and Intrigue*

(Biology x414.51, 0.5 unit)

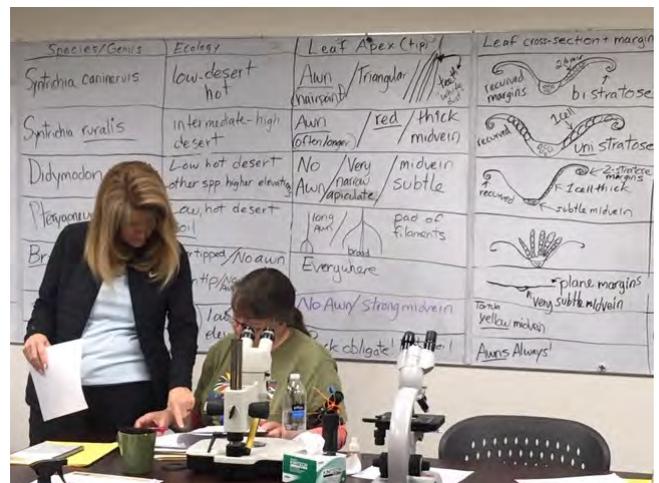
Date/Time: Sunday, September 29, 9 am - 4 pm
 Meet at: Black Rock Nature Center
 Noncredit Fee: \$85 JTNPA member, \$95 non member
 Credit Fee: \$120 JTNPA member, \$130 non member
 Instructor: William Hayes, Ph.D., Zoology, Physiology Professor of Biology, Loma Linda University
 Hike Level: Easy/Moderate



Feared and respected by many for their potential to inflict harm, snakes have long captured the fascination of humanity. William Hayes will introduce participants to a remarkable variety of venomous and non-venomous snakes that inhabit Southern California's deserts in this all-day field class. Starting in the classroom, Dr. Hayes will discuss the many adaptations that are essential for snakes to survive in the desert ecosystem including unique morphological, physiological, behavioral, and ecological traits. Snake venom will also be discussed in detail providing answers to the following questions: What, exactly, is venom? How is it made and how is it delivered? Can venoms be beneficial? The class will explore the surrounding desert to identify reptile habitat and hopefully see some snakes!

A review from our inaugural Teacher Development Workshop, "Demystifying the Park: Student Agency and Joshua Tree National Park":

Every element in this one was strong and engaging for all 3 days!! I have been teaching science for over 30 years and this training was definitely in the top 5 of the hundreds of trainings I've done over the years. The standards connections were right on, the interactivenss of this was a major strength, where we worked in teams inside and outside!! The whole training had a smooth flow that kept us engaged the whole time.



Birds of the Mojave Desert*

(Biology x404.2, 2 units)

NEW!

Date/Time: Friday, October 4, 7:30 pm - 9:30 pm
Sat., October, 5, 7:30 am - 4:30 pm
Sunday, October 6, 7:30 am - 12:30 pm

Meet at: Desert Studies Center, Zzyzx

Noncredit Fee: \$255 JTNP member, \$265 non member

Credit Fee: \$385 JTNP member, \$395 non member

Instructor: Kurt Leuschner, M.S., Wildlife Ecology

Hike Level: Easy/Moderate



Oases in the Mojave Desert are used by a wide variety of bird species every fall as stopping points during their southward migration. You will be amazed by the numbers and kinds of species we will encounter at this time of year. Beginning on Friday evening we will examine the important role of these stopover areas in the conservation of neotropical migrant birds and learn the techniques used to identify the common families of birds found in the vicinity of the Desert Studies Center. After slides and a brief lecture we will take a short night hike to look for nocturnal species. On Saturday we will travel by car to nearby sites in Death Valley, Tecopa, Baker, and Soda Springs that serve as migrant "traps." Some of these sites are marshes and others are merely small islands of green in a sea of desert. As we observe both migrant and resident birds in their natural habitats, we will learn about their ecology, natural history and special adaptations to the harsh desert environment. Sunday's activities will center around the Desert Studies Center where over 240 bird species have already been recorded.

Geology: Creation of Joshua Tree Landscape*

(Geosciences x460.4, 1 unit)

Date/Time: Saturday, November 2, 9 am - 5 pm
Sunday, November 3, 8 am - 12 pm

Meet at: Oasis Visitor Center

Noncredit Fee: \$145 JTNP member, \$155 non member

Credit Fee: \$210 JTNP member, \$220 non member

Instructor: Tor Lacy, M.S., Geology, Professor, Cerritos College

Hike Level: Easy/Moderate



Investigate the natural architecture and origin of Joshua Tree National Park's landscape with Tor Lacy, geology professor, Cerritos College. Starting in the classroom participants will be introduced to basic geologic principles including major rock groups, plate tectonics, mountain building, and the impact of weathering. Lacy will discuss how these processes worked together to form the fantastic desert landscape of the park. The class will venture into the field on two excursions to observe and identify monzogranite, gneiss, aplite, and more. For those new to geology or experienced geologists, Lacy will make learning about this complex and unique landscape comprehensible and fun.

Suggested Reading: *Joshua Tree National Park Geology* by Trent & Hazlett, found in the Visitor Centers or order at joshuatree.org/store.

Geology and Geomorphology of Death Valley*

(Geosciences xTBD, 2 units)

NEW!

Date/Time: Friday, October 18, 9 am - 5 pm
Saturday, October 19 9 am - 5 pm
Sunday, October 20 9 am - 3 pm

Meet at: Furnace Creek Visitor Center

Fee: \$225 JTNP member, \$235 non member

Credit Fee: \$355 JTNP member, \$365 non member

Instructor: Alessandro Grippo, Ph.D., Geological Sciences

Hike Level: Moderate



In this below-sea-level basin, steady drought and record summer heat make Death Valley a land of extremes. Yet, each extreme has a striking contrast. Towering peaks are frosted with winter snow, but the valley bottom can reach almost 130°F in summer. While rainstorms maybe uncommon, they bring many dramatic changes to the landscape. Join instructor Alessandro Grippo in the exploration of the geology and landscape of Death Valley. This course takes the students through the geologic highlights of Death Valley National Park. The class meets at Furnace Creek Visitor Center on Friday morning and, after an introduction to the geology of the Basin and Range desert and its natural physical processes, students will travel south by car to hike the Natural Bridge trail. They will then head back to the valley bottom to explore the playa lake at Badwater, with further stops during the day at Devils Golf Course and Artists Palette. On Saturday the class will meet at Stovepipe wells, from where the students will visit Devils Cornfield and then wander through the Mesquite Flat Sand Dunes. After lunch, students will hike and explore Mosaic Canyon. Finally, on Sunday the class will drive to the westernmost part of the park by entering the Panamint Valley and later go for an easy hike at Darwin's falls to complete their exploration.

Class size limited to 12 participants!

Geology of the San Andreas Fault

**NEW
FORMAT!**

Date/Time: Saturday, November 2, 9 am - 4 pm

Meet at: Coachella Valley Preserve

Fee: \$85 JTNP member, \$95 non member

Instructor: Ted Reeves, B.A., Professor of Earth Sciences, University of the Pacific

Hike Level: Moderate



California is a state defined by plate tectonics, motion, continental drift, and subduction zones. Join Ted Reeves as he explains the origin and effects of the San Andreas Fault system. Reeves will unfold the geologic story of the Indio Hill, the Mecca Hills and the Salton Trough in this all-day field class. Participants will meet at the Coachella Valley Preserve and walk a short distance to see fault features. We will then travel to Box canyon and Painted Canyon and observe spectacular faults and folds where the Pacific plate is forcing up the Mecca Hills. Reeves will illuminate fault-related features in the field with special emphasis on physical deformations of the landscape. Don't miss this unique opportunity to explore the San Andreas Fault zone and the palm oases!

Natural Science Courses

SIGN UP ONLINE
Click On Class Name

Geology & Cultural History of Cottonwood Spring

Date/Time: Sunday, December 7, 9 am - 4 pm
Meet at: Cottonwood Visitor Center
Fee: \$85 JTNPA member, \$95 non member
Instructor: Ted Reeves, Instructor, University of the Pacific
Hike Level: Moderate



Stretch your legs and enjoy the spectacular scenery of the Cottonwood Mountains with Ted Reeves in this all-day field class. Reeves will discuss the rocks and minerals of Cottonwood Mountains and tell stories of the people who eked out a living in the Cottonwood Spring area during the late 1800s. Participants will walk six miles through the rolling hills of the Colorado Desert to see mills, mines, and more. Along the trail, Reeves will share the history of the cowboys, miners, and teamsters who depended on Cottonwood Spring for their livelihood. The route will follow a portion of a prominent freight road built in the 1880s. Don't miss the opportunity to learn how geology is connected to cultural history at Cottonwood Spring!

Biological Soil Crusts of Joshua Tree National Park*

(Biology x412.28 1.0 unit)

Date/Time: Saturday, November 23, 9 am - 5 pm
Sunday, November 24, 9 am - 4 pm
Meet at: Oasis Visitor Center
Noncredit Fee: \$145 JTNPA member, \$155 non member
Credit Fee: \$210 JTNPA member, \$220 non member
Instructors: Nicole Pietrasiak, Ph.D., Plant and Environmental Sciences, New Mexico State University
Theresa Clark, Ph.D, Ecology and Evolutionary Biology
Hike Level: Easy/Moderate



The desert floor may look like dirt and rocks but it is full of living small and microscopic organisms vital to the park's ecosystem. Many of these organisms live in biologically active soil crusts that cover the first inch of the desert soil surface. In this field class Nicole Pietrasiak will introduce crypto-biotic soil crusts with an emphasis on soil algae, lichens, and mosses. Participants will study the secret life of these microscopic organisms as they demystify this thin layer of soil. Nicole will discuss the components of crusts such as cyanobacteria (one of the oldest known life forms on earth), green algae, diatoms, bacteria, fungi, and lichens. Theresa Clark will discuss arid land moss survival. The instructors will also discuss why these organisms are important to biodiversity and ecological function in arid lands. During the lab session, participants will see the biodiversity of the park's crusts up close through two different types of microscopes. On the second day, the class will go into the field to identify and assess the condition of several types of algal, moss and lichen soil crust communities found in JTNP.

I am grateful for everything the Institute has given me and I rave about it to anyone who will listen. I am sure I will be back for more workshops as travel allows.

Desert Invertebrates: Microscopy Primer

Date/Time: Saturday, December 7, 9 am - 5 pm
Sunday, December 8, 9 am - 4 pm
Meet at: Oasis Visitor Center
Fee: \$145 JTNPA member, \$155 non member
Instructors: Paul DeLey, Ph.D., Zoology, UC Riverside
Hike Level: Easy/Moderate



Participants will be introduced to the diversity of the microscopic fauna of California's deserts, including an overview of their various roles in food webs, life cycles, physiological adaptations enabling them to survive extreme temperatures and prolonged desiccation, as well as other surprising ecological and biological aspects. Two half-day lab sessions will provide hands-on opportunities for learning how to use simple tools and techniques for isolating microscopic invertebrates from different materials, transferring them to microscope slides with the aid of a dissecting microscope, and operating a compound microscope for observing them at high magnification with advanced optics.



Teachers

Our credit courses are designed to meet the professional development needs of educators for career and salary advancement. Come for a weekend of inspiration, education and fun in Joshua Tree National Park! Course credit is offered through UC Riverside Extension. Teachers may apply for Professional Career Development through their school district. Fall credit courses:

Insects and Arthropods of the Morongo Basin
Desert Snakes: Mystery & Intrigue
Birds of the Mojave Desert
Geology and Geomorphology of Death Valley
Geology: Creation on the JT Landscape
Biological Soil Crusts of JTNP

New Natural Science Courses

The Desert Institute will be expanding our “normal” geographic range to include the northern areas of the Mojave desert. The class “Birds of the Mojave Desert” will be conducted at the Desert Studies Center at Soda Springs, just off of Highway 15 near Baker. Overnight accommodations and meals will be provided.

Birds of the Mojave Desert*

(Biology x404.2, 2 units)

NEW!

Date/Time: Friday, October 4, 7:30 pm - 9:30 pm
Sat., October 5, 7:30 am - 4:30 pm
Sunday, October 6, 7:30 am - 12:30 pm
Meet at: Desert Studies Center, Zzyzx
Noncredit Fee: \$255 JTNPA member, \$265 non member
Credit Fee: \$385 JTNPA member, \$395 non member
Instructor: Kurt Leuschner, M.S., Wildlife Ecology
Hike Level: Easy/Moderate

Oases in the Mojave Desert are used by a wide variety of bird species every fall as stopping points during their southward migration. You will be amazed by the numbers and kinds of species we will encounter at this time of year. Beginning on Friday evening we will examine the important role of these stopover areas in the conservation of neotropical migrant birds and learn the techniques used to identify the common families of birds found in the vicinity of the Desert Studies Center. After slides and a brief lecture we will take a short night hike to look for nocturnal species. On Saturday we will travel by car to nearby sites in Death Valley, Tecopa, Baker, and Soda Springs that serve as migrant “traps.” Some of these sites are marshes and others are merely small islands of green in a sea of desert. As we observe both migrant and resident birds in their natural habitats, we will learn about their ecology, natural history and special adaptations to the harsh desert environment. Sunday’s activities will center around the Desert Studies Center where over 240 bird species have already been recorded.

This course is perfect for ornithology students of all levels and for those interested in general desert ecology. Teachers will also learn useful ideas for the classroom. Bring binoculars, camera, sturdy walking shoes, hat, reusable water bottle, and sunscreen. The instructor will bring a spotting scope, field guides, and radios for car to car communication. High clearance vehicles are recommended but not required. The course fee includes two nights’ lodging at the Desert Studies Center, a snack Friday evening and five meals beginning with breakfast on Saturday. Enrollment is limited.



Geology and Geomorphology of Death Valley*

(Geosciences xTBD. 2 units)

NEW!

Date/Time: Friday, October 18, 9 am - 5 pm
Saturday, October 19, 9 am - 5 pm
Sunday, October 20, 9 am - 3 pm
Meet at: Furnace Creek Visitor Center
Noncredit Fee: \$225 JTNPA member, \$235 non member
Credit Fee: \$355 JTNPA member, \$365 non member
Instructor: Alessandro Grippo, Ph.D., Geological Sciences
Hike Level: Moderate

In this below-sea-level basin, steady drought and record summer heat make Death Valley a land of extremes. Yet, each extreme has a striking contrast. Towering peaks are frosted with winter snow, but the valley bottom can reach almost 130°F in summer. While rainstorms maybe uncommon, they bring many dramatic changes to the landscape. Join instructor Alessandro Grippo in the exploration of the geology and landscape of Death Valley. This course takes the students through the geologic highlights of Death Valley National Park. The class meets at Furnace Creek Visitor Center on Friday morning and, after an introduction to the geology of the Basin and Range desert and its natural physical processes, students will travel south by car to hike the Natural Bridge trail. They will then head back to the valley bottom to explore the playa lake at Badwater, with further stops during the day at Devils Golf Course and Artists Palette. On Saturday the class will meet at Stovepipe wells, from where the students will visit Devils Cornfield and then wander through the Mesquite Flat Sand Dunes. After lunch, students will hike and explore Mosaic Canyon. Finally, on Sunday the class will drive to the westernmost part of the park by entering the Panamint Valley and later go for an easy hike at Darwin’s falls to complete their exploration.

Class size limited to 12 participants!

Important note: Camping is available at Stovepipe Wells Campground. Other first come/first serve campgrounds include Sunset, and Texas Springs. Reservations can be made at Furnace Creek campground through Recreation.gov. Non-camping accommodations include Stovepipe Wells Village Hotel. **Don’t wait to make your reservations!**



IF YOU LOVE observing nature and learning about Joshua Tree National Park, expand your knowledge through the **Joshua Tree Master Naturalist Series**. Twelve comprehensive courses on key Joshua Tree topics are designed to broaden your understanding of the ecology, plants, geology, wildlife, and history of the park. Through field-based excursions and lectures, you'll cultivate observations skills that are the hallmark of a good naturalist. By documenting field observations through sketches, journaling, photography and more, you'll learn how to make a deeper connection to nature. When you complete eight courses, of your choice, from our twelve science classes that we offer annually, you will receive your "Joshua Tree Naturalist" certification and a Joshua Tree National Park hoodie. Courses will be offered yearly and certification may be completed over time. These twelve courses in the **Joshua Tree Master Naturalist Series** are also approved for credit from UC Riverside Extension. UC Riverside credit is **not required** for the Joshua Tree Master Naturalist certificate.

NATURALIST SERIES

Desert Snakes: Mystery and Intrigue
September 29

Insects and Arthropods of the Morongo Basin
September 27 - 29

Birds of the Mojave Desert
October 4 - 6

Geology and Geomorphology of Death Valley
October 18 - 20

Geology: Creation of the of Joshua Tree Landscape
November 2 - 3

Biological Soil Crusts in Joshua Tree National Park
November 23 - 24

Spring 2020 Classes:

Rocks and Minerals of Joshua Tree National Park

Birds of Joshua Tree National Park

Ecology of Joshua Tree National Park

Flora of Joshua Tree National Park

Desert Tortoise Conservation Biology

Citizen Science: Phenological Monitoring in
Joshua Tree National Park



Explore Crown Prince Lookout

Date/Time: Saturday, November 9, 8 am - Noon
Meet at: Oasis Visitor Center
Fee: \$35 JTNPA member, \$45 non member
Instructor: Kevin Powell, Author, Photographer
Hike Level: Easy - 2.6 miles round trip



Clamber to the top of an old military lookout via an easy cross-country ramble and a very short section of technical rock scrambling. Once on top, there will be a short discussion on the history of this long-forgotten, and little known World War II artifact. As well, the views down into the Pinto Basin to the east and back to the west of Queen Valley and its surrounding peaks are especially memorable from this high, but infrequently visited mesa-like feature situated near the Jumbo Rocks Campground. Roundtrip distance is 2.6 miles with a total elevation gain of 200 feet. **Please note: some technical rock scrambling will be required to reach the location where the old lookout once stood.**

Discover the Wonderland of Rocks

Date/Time: Saturday, November 16, 7:30 am - Early Afternoon
Meet at: Joshua Tree Visitor Center
Fee: \$35 JTNPA member, \$45 non member
Instructor: Kevin Powell, Author, Photographer
Hike Level: Moderate - 5 miles round trip



The jumbled mass of the Wonderland of Rocks covers twelve square miles of intriguing landscape. On this mostly off trail, cross country hike we will explore historical sites, be exposed to geologic oddities in the form of arches, patterns of patina rock patches resembling ancient figurines, a mosaic wall of quartz and the classic Astro Dome and "Fang Rock". Bighorn Sheep may be sighted as well. Please come prepared for some easy rock scrambling as we navigate through uneven, rocky terrain during the exciting exploration of this unique and special landscape.

How Fit Do You Need To Be?

If you take part in a Guided Hike in JTNP, you will need to carry a backpack - with food, clothing, water and other essentials - that generally weighs up to 15 pounds. You will be exercising with either heat or cold, typical of the Mojave Desert and elevation gain. And, you may need to scramble over large boulders along the route. To help you decide on which course is best for you, please take into account the "Hike Level" ratings. Please note that these ratings are only guidelines. What is labeled "strenuous" might be routine for a very fit visitor. For the most precise information about each activity or the effects of the desert environment, please call us at **760-367-5539**.

Summit Monument Peak

Date/Time: Saturday, December 7, 8 am - Late Afternoon
Meet at: Cottonwood Visitor Center
Fee: \$35 JTNPA member, \$45 non member
Instructor: Kevin Powell, Author, Photographer
Hike Level: Strenuous/Extreme - 6.4 miles round trip



This strenuous, cross country hike takes you to the top of the seldom visited high point of the Hexie Mountains, Monument Mountain (elev. 4814'). The Hexie Mountains are a small range of west to east running mountains within the Park. They begin at the southern end of the sprawling Queen Valley along the Geology Tour Road and end near the Cottonwood Visitors Center. They are rugged and seldom visited. This 6.4 mile round trip hike follows the southeast ridge of the mountain up to the base of the rocky, cone shaped summit, where an easy rock scramble leads to the top. Along the route of ascent you may see bighorn sheep, a non-native game bird known as a chukar (similar to a quail) and a unique geologic feature in the form of a white quartz dike that has fragmented into a million little pieces. Once on top there is a commanding 360 degree view that includes the Cottonwood, Eagle and Pinto Mountains, and portions of the vast Pinto Basin. Total elevation gain is 1700'. **Participants will need a high clearance vehicle for the 5 mile drive to the trail head. Car pooling will be necessary due to the very small parking area.**

Explore Queen Mountain West

Date/Time: Saturday, December 14, 7:30 am - Late Afternoon
Meet at: Joshua Tree Visitor Center
Fee: \$35 JTNPA member, \$45 non member
Instructor: Kevin Powell, Author, Photographer
Hike Level: Strenuous - 8.5 miles round trip



Venture forth to the remote and seldom visited, west side of Queen Mountain where water has carved the underlying quartz monzonite rock in to a series of sculpted, polished potholes and other unique natural features similar to its down stream counterpart, Rattlesnake Canyon. Along the way, participants will get a unique view of the expansive and complex Wonderland of Rocks that lies below. The hike leader will also point out important geologic landmarks that may prove useful on future hikes that participants may choose to do on their own. Of special note: This hike is entirely off-trail and involves short sections of easy to moderate rock scrambling.



Archaeology of Joshua Tree National Park

Date/Time: Saturday, October 26, 9 am - 5 pm
Sunday, October 27, 8 am - 3 pm
Meet at: Oasis Visitor Center
Fee: \$120 JTNPA member, \$130 non member
Instructor: Daniel McCarthy, M.S., Anthropology
Hike Level: Easy



Discover the ancient peoples who were defined by the arid landscape of what is now Joshua Tree National Park. Daniel McCarthy will discuss how archaeologists study human culture through material remains and environmental landscapes. The class will begin with an archaeological overview including an exclusive visit to see the artifacts and archival collections at the Park's Research Museum. The field sessions will focus on the pre-historic and historic peoples who lived in this area and will provide students with new insights into the park's cultural heritage.

Hike to Samuelson's Rocks

Date/Time: Saturday, November 2, 8 am - Late Afternoon
Meet at: Joshua Tree Visitor Center
Fee: \$35 JTNPA member, \$45 non member
Instructor: Lew Kingman, Archaeology Site Steward
Hike Level: Moderate - 4 miles round trip

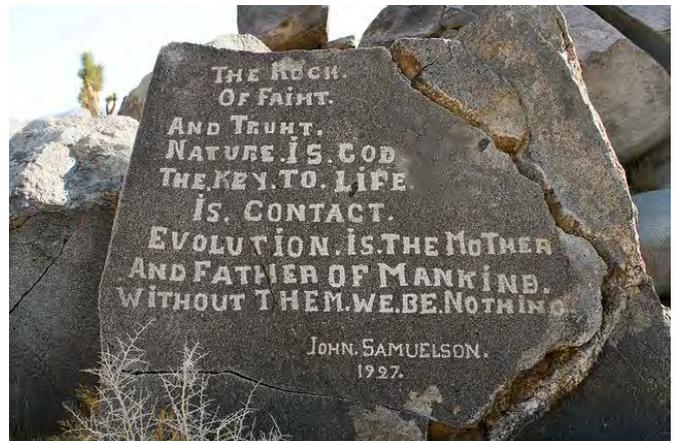


Samuelson's Rocks: chances are good that most visitors to Joshua Tree National Park have never seen them, let alone even know they exist. Inspired by religion, politics, nature and solitude, John Samuelson, a homesteader, set about to use the ancient rocks as a canvas to express his "eternal verities of existence," as he referred to them, along with his views on the Great Depression. His words are still quite visible today, looking much like they did when he carved them nearly 100 years ago.

Military Scholarships

Through a grant provided by the Marine Corps Air Ground Combat Center Officers' Spouses' Club, the Desert Institute offers a limited number of scholarships for our educational programs to active and retired Marines and their family members on the 29 Palms MCAGCC. For more information and qualification requirements, please call 760-367-5539.

"This was hands down the best class I have ever taken. That was due to your thorough knowledge of the subject and willingness to share. Thank you!"



Keys Ranch Nightscape Photography Workshop

Date/Time: Saturday, August 31, 6:30 pm - midnight
 Meet at: Oasis Visitor Center
 Fee: \$160 JTNPA member, \$170 non member
 Instructor: Scott Klinger, Artist, Instructor
 Hike Level: Easy



With new digital camera technologies, night time has become the right time to make spectacular images! Unlock your creativity and take your photography to a new place in this one-night workshop on the photographic techniques after dark including wide-field astro-photography, light painting and light drawing. Learn how to photograph the night sky with your DSLR camera. Light painting and light drawing are photographic techniques in which images are made using long shutter speeds as the photographer uses a hand-held light source, such as a flashlight, to create the exposure. The photographer either points the light source directly at the camera to “draw with light” or “paints with light” by shining the light source on an object or scene to create the illumination. From Ansel Adams to Pablo Picasso, these seemingly magical techniques have long inspired photographers and artists alike with their ability to make visible the invisible and to play with time.

This class will take place in the access restricted historic Keys Ranch and participants will have the opportunity to photograph the cosmos amongst the historic ranch buildings and artifacts.

Class size limited to 8 participants, so sign up early!

Field Sketching for Non Artists

Date/Time: Saturday, September 28, 8:30 am - 3:30 pm
 Meet at: Black Rock Nature Center
 Fee: \$85 JTNPA member, \$95 non member
 Instructor: Fran Calvert, Artist, Instructor
 Hike Level: Easy



Would you like to enjoy the beauty of Joshua Tree National Park more fully? Are you a person who “could never draw?” This class will teach you the basics of field sketching, focusing on using the simplest most light-weight tools, methods and materials to streamline the process for non-artists. You will learn how to focus your natural powers of observation to complete a finished sketch that is accurate in detail, scale, and proportion using easy-to-learn skills that you can practice anytime and anywhere. All materials are provided.

Class size is limited to 8.

Capturing Joshua Tree Landscapes with Acrylics

Date/Time: Saturday, October 5, 8:30 am - 4 pm
 Meet at: Black Rock Nature Center
 Fee: \$85 JTNPA member, \$95 non member
 Instructor: Janis Commentz, Artist, Instructor
 Hike Level: Easy



Few destinations offer a landscape as unique as Joshua Tree National Park. Spend a day painting in beautiful Joshua Tree NP. In this one-day class, you will focus on observation, setting an intention for the day, and learning the process of acrylic landscape painting. Janis Commentz is known for her color-intense palette and loose brush strokes. The morning will begin with basic instruction on the process and introduction to materials. Topics will include laying out your palette, color mixing, how to observe the landscape and translate it into an image, tips to see patterns of lights and darks, and planning a successful composition. Participants will move outdoors to observe, sketch, and learn what to look for in a potential landscape. The afternoon will include a demonstration on starting your painting, blocking out your sketch on canvas and time needed to developing your painting. This class is for beginning to intermediate painters.

Night Sky Photography

Date/Time: Saturday, October 19, 1 pm - 10 pm
 Sunday, October 20, 9:30 am - 12:30 pm
 Meet at: Oasis Visitor Center
 Fee: \$120 JTNPA member, \$130 non member
 Instructor: Dennis Mammana, M.S., Astronomy, Sky Photographer, Syndicated Columnist
 Hike Level: Easy



If you enjoy photography and are fascinated by the desert night sky, this two-day hands-on workshop is for you! Noted TWAN sky photographer Dennis Mammana will teach participants how to use even the simplest of cameras to create magnificent celestial portraits without resorting to composites and fakery. The class will begin with tips for setting up and shooting the night sky including a few personal tricks of the trade. That evening, participants will head to the Hidden Valley Picnic Area to try out their new knowledge under the real night sky. The next morning, the class will look at images from the previous night, discuss their pros and cons, and try out some basic image processing techniques in Adobe Lightroom that will make your photos pop. Any camera, digital or film, will work, if it can be adjusted manually, used with a tripod, remote control, and can take exposures of 15, 30, or more seconds. Students need to provide their own camera, tripod, camera equipment, and dress in layers as the nights can be cold.

Please bring a flash drive to share a field class image or two with the class on Sunday, if you'd like to get some personal tips.

Creative Arts Courses

SIGN UP ONLINE
Click On Class Name

Drawing the Natural World With Charcoal and Pastel

NEW!

Date/Time: Saturday, October 19, 9 am - 4 pm
Meet at: Joshua Tree Visitor Center
Fee: \$85 JTNPA member, \$95 non member
Instructor: Monica L. Mahoney, Instructor, Artist
Hike Level: Easy



Join Joshua Tree based artist Monica L. Mahoney in an immersive field sketching walk-about in the heart of Joshua Tree National Park. Known for her expressive drawing style and knowledge of the native flora of the region, Monica will lead participants on a journey to capture the shapes, forms, and vistas of the natural world using graphite, charcoal, and neutral tone soft pastel. Sharing her wealth of knowledge, Monica will guide an easy and informative natural-history walk in a spectacular private location in search of the objects and vistas that students will choose to draw. Students will explore the power of line quality, shading techniques, and using foreground, middle ground, and background shapes for creating strong, believable compositions. The class is designed for all levels and students will be given one to one attention as needed. The goal of the workshop is to sharpen our natural observation skills while having fun and exploring how drawing brings us closer to Nature and ourselves. The skills learned in this class are complimentary to the upcoming watercolor painting workshop on November 9 (see page 15).

This class will be conducted at the exclusive Lost Horse Campground.



Mastering Landscape Photography

NEW!

Date/Time: Friday, November 1, 7 pm - 9 pm
Saturday, November 2, 5 am - 6 pm
Sunday, November 3, 5 am - 3 pm
Meet at: Oasis Visitor Center
Fee: \$170 JTNPA member, \$180 non member
Instructor: Ralph Nordstrom, Photographer, Instructor
Hike Level: Easy/Moderate



What goes into making a great landscape photograph? You can find scores of articles that promise you will master landscape photography in 10 steps or take your photography to the next level in 5 steps or shoot like a pro in 7 steps. These articles keep on appearing. And most offer valid tips. But it's not that easy. We can't promise you that you will be a master landscape photographer at the end of this course. What we can promise is you will have a much clearer idea of what is involved in pursuing this journey. We will provide practical guidelines on the gear you need and how to get the most out of it, the creative use of exposure and sharpness, the use of composition and light to create a mood or convey what inspired you to take the photograph, the magic that happens in the digital darkroom and how to unleash the artist within you.

This class offers an optional but exciting camping experience in the pristine Lost Horse Campground. Call 760-367-5539 for more information on the camping option.



I am an artist, but I chose to do this class as a way to re-awaken my eyes. I had not previously used these techniques, so I found it refreshing to follow her lead. Fran was so thoughtful with each student, helping everyone to feel they had something to contribute. Though the subject matter of JTNP can be intimidating, she broke down the landscape, so that it was, less chaotic. She simplified the process so that I noticed everyone came away with a credible sketch. Listening to everyone talk about their experience was a great way to see how we all experience the landscape in front of us differently!

Watercolor Field Painting: Exploring a Sense of Place

NEW!

Date/Time: Saturday, November 9, 9 am - 4 pm
Meet at: Joshua Tree Visitor Center
Fee: \$85 JTNPA member, \$95 non member
Instructor: Monica L. Mahoney, Instructor, Artist
Hike Level: Easy



Join Joshua Tree based artist Monica L. Mahoney in a watercolor field painting immersion in the heart of Joshua Tree National Park. Known for her Plein air watercolors of sweeping desert vistas and knowledge of the native flora of the region, Monica will guide participants in capturing the “Genius loci” or spirit of this special place. Students will tap into their natural observation skills and paint the landscape in field journals using basic watercolor and water-based pencil techniques. To warm up, Monica will guide students in recording sensory observations during an easy and informative natural-history walk in a spectacular private location. Students will then practice gesture and thumbnail painting as well as basic color mixing techniques while using value, tone, line, shape, and depth to capture the essence of the landscape. This workshop is perfect for artists, novices, naturalists, campers, hikers and backpackers and all who are interested in developing their watercolor painting skills in the field. From beginner to intermediate and advanced, the class is designed to have fun and explore how painting, sketching and journaling in Nature helps us see the world—and ourselves—with new eyes. Some previous drawing experience will be helpful but not required. All students will be given individual attention as needed.

This class will be conducted at the exclusive Lost Horse Campground.

Photographing the Hi-Desert

Date/Time: Saturday, November 23, 8 am - 4:30 pm
Meet at: Big Morongo Canyon Preserve
Fee: \$85 JTNPA member, \$95 non member
Instructor: Craig Fucile, Photographer, Instructor
Hike Level: Moderate



This class is sponsored by the Big Morongo Canyon Preserve.

Grab your camera and put on your hiking boots for this intensive all-day photo shoot in Joshua Tree National Park! Craig Fucile will guide the class in seeing the natural beauty of the park through the camera lens. The class will begin with early morning light at the Big Morongo Canyon Preserve followed by a mid-morning instructional program at Black Rock Canyon Visitor Center. The afternoon session will relocate to a special “photographers only” session at Keys Ranch, focusing on how to capture the buildings and historic remnants at this remarkable homestead. Fucile will share tips on how to record unique rock formations and vast views of the park. Participants are encouraged to bring a tripod with their camera(s). **Class size limited to 12 participants, so sign up early!**

Winter Light: Photographing Desert Preserves

NEW!

Date/Time: Saturday, December 7, 8 am - 4:30 pm
Meet at: Whitewater Exit off of Highway 10
Fee: \$85 JTNPA member, \$95 non member
Instructor: Craig Fucile, Photography Instructor
Hike Level: Moderate



Join us for a day of photography in two special desert places off the beaten track: Whitewater Preserve and Thousand Palms Oasis Preserve. From the Whitewater River to McCallum pond in an oasis of California fan palms, you’ll experience the beauty of water in the desert. Winter is an excellent season to photograph the low desert, with its cool temperatures, longer shadows and views of distant peaks.

The day consists of photographic field sessions, group instruction and one-on-one assistance from your instructor. Your questions will be answered! You’ll learn tips and techniques for controlling sharpness, exposure, making panoramic photographs, and using lenses, along with creative exercises in photographing the desert landscape. Class begins in the morning close to the rugged cliffs of Whitewater Preserve. After lunch, we relocate to Thousand Palms Oasis Preserve for afternoon field sessions among stately palms. Hiking at each preserve is easy-to-moderate; we’ll be walking on trails that are mainly level. Participants are encouraged to bring a tripod with their camera(s).



Women's Programs

SIGN UP ONLINE
Click On Class Name

Women who love the outdoors have a new way to get outside together. The Desert Institute at Joshua Tree National Park offers two weekend getaways this fall, created by and for women who love the outdoors. The Desert Institute programs brings women together to try something new. Whether your skill level is advanced or you just want to get out and enjoy the outdoors with a great group of other women, this is for you!

Beginning Backpacking for Women in Mission Creek Preserve

**NEW
FORMAT!**

Date/Time: Friday, October 11, 5 pm
Saturday, October 12, all day
Sunday, October 13, back to car by 3 pm
Meet at: Mission Creek Preserve, Desert Hot Springs
Fee: \$120 JTNPA member, \$130 non member
Instructors: Pam Kersey, Hiking & Backpacking Instructor
Robin Balch, Hiking & Backpacking Instructor
Hike Level: Moderate



Spend a weekend in the Mission Creek Preserve back country! This is a perfect opportunity for women who want to learn how to backpack and camp overnight to get away from the noise of car camping, but may be afraid to go backpacking alone. This class is for women interested in backpacking. We will carry everything we need for an overnight adventure in our backpacks. You will enjoy the company of other women who love exploring the outdoors. You will learn new ideas for what to eat while camping on the trail. Your instructors will also go over trail safety, backpacking gear and how to set up and tear down camp efficiently. You must be able to carry approximately 30 pounds of weight in your backpack while hiking approximately 5 miles per day in the desert with the group. If you are able to hike up to 7 miles with a daypack then you should be fine. The class will include two days of hiking and one night on the trail. We will camp near our cars on Friday night then start the overnight backpacking trip on Saturday morning and hike out on Sunday. There will be an intermediate level backpacking class in the future for those who want more experience and may want to move at a faster pace than this beginning class. **Class size limited to 6**, so sign up early!



Photograph by Claire Coignard

Women's "Get Away" Weekend

**NEW
FORMAT!**

Date/Time: Saturday, November 16, 8 am - 5 pm
Sunday, November 17, 8 am - 4 pm
Meet at: Joshua Tree Visitor Center
Fee: \$120 JTNPA members, \$130 non member
Instructors: Gabriella Moreno, Hiking & Camping Instructor
Caroline Amberson, Hiking & Camping Instructor
Hike Level: Moderate



Spend a weekend with the Desert Institute at Joshua Tree National Park where you can go to unplug, to get away, to learn new skills and to enjoy the company of like-minded women. Trade in your computer, cell phone, Instagrams, clocks, schedules and workplace jargon for an off-the-grid weekend with the ladies - two days of pure unadulterated fun and education! Join Gabriella and Caroline on hikes, creative exercises, learn camping, hiking, and backpacking tips and strategies, and explore new ways of appreciating nature through overviews of Joshua Tree National Park's natural and cultural history. This weekend of classes will be held at the Lost Horse Campground, a beautiful exclusive location that is perfect for this program!

Camping is optional, but highly recommended.



Photograph by Fran Calvert

Meet Our New Instructors



GABRIELA MORENO is a conscious creative nomad with a passion for ethical business practices and consumerism, as well as for preserving mother earth. Her business is centered on web design and business consulting for conscious entrepreneurs. - guiding them through the complexities of starting/running a business while also encouraging them to be socially engaged in their business practice. Her life mission is to inspire people to engage with the great outdoors responsibly. Find her on instagram @gabaccia

Gabriela Moreno is co-teaching the class **“Women’s Get-Away Weekend”** on November 9 - 10.



MONICA LYNN MAHONEY, BFA, studio art, MLA Landscape Architecture, is a multidisciplinary artist, educator and native plant naturalist living and working in Joshua Tree, CA. Mahoney’s diverse artistic practice includes drawing, painting, sculpture & installation, landscape design, ecological restoration, and award-winning public engagement and civic art programs that integrate art and the environment. She believes that no matter the skill level, the practice of painting and drawing in nature provides a unique portal into the natural world, which helps us to see and connect with Nature—and ourselves—in new and profound ways.

Monica Lynn Mahoney is teaching the classes **“Drawing the Natural World With Charcoal and Pastel”** on October 19 and the **“Watercolor Field Painting - Exploring a Sense of Space”** on November 9. These classes can be found on pages 14 and 15 of this catalog.



CAROLINE AMBERSON is a GATE educator and Program Specialist with a passion for nature and wildlife, and she has taught in San Bernardino for seventeen years. She enjoys surfing, skiing, camping, hiking/backpacking, and trying all possible outdoor activities across six continents. She is completing Naturalist and Environmental Studies programs through both UCR and UCLA.

Caroline Amberson is co-teaching the class **“Women’s Get-Away Weekend”** on November 9 - 10.

The Desert Institute at Joshua Tree National Park accepts class proposals on a year round basis. Our classes are not limited to Joshua Tree National Park as we conduct classes in both the Mojave and Colorado deserts. To submit a class proposal, please contact Kevin Wong, Director, at 760-367-5539 or desertinstitute@joshuatree.org.



Celebrating Twenty Years

Twenty years ago, the Desert Institute, the educational program of the Joshua Tree National Park Association, began its adult education programming with five weekend classes which included early mining, geology, flora, birds and archaeology. The Association and the Natural Science department of University of California Riverside Extension collaborated to establish a curriculum, brochure and marketing plan for a field institute with course offerings that could confer academic credit. Within two years, the program had grown to allow the Association to assume the full operational aspects of the Desert Institute with all of the registration, marketing, course design and recruitment of instructors. UCR Extension continues to provide important academic credit for our natural science classes and teacher development workshops.

Today, twenty years later, we conduct almost 100 classes per year with attendees coming from all over the United States and from Canada. Our geographic range of classes is no longer limited to Joshua Tree National Park and now includes much of the Mojave and Colorado deserts of the California southwest. New class programming include the class "Birds of the Mojave" which will be conducted at the Desert Studies Center, the field station of the California State University, located within the Mojave National Preserve, at the oasis of Soda Springs. Another far-ranging class will be "Geology and Geomorphology of Death Valley".

We have invited a few of our instructors and staff who have been with us since the beginning to express their views on the growth and maturation process of the Desert Institute at Joshua Tree National Park:



Craig Fucile, who began teaching with the Desert Institute in 1999

From the beginning, teaching photography for Desert Institute has been a rewarding experience for students and for me. We both love the desert and delight in the opportunity to devote an entire day to photography in the company of others with similar interests. Where better to learn about photography and explore creative ideas while recording seasonal and enduring desert beauty, than Joshua Tree National Park? Students of all experience levels are welcome in my classes. This means I give general instruction to the group and more specific instruction to individuals. It's an arrangement that works especially well because several Desert Institute

volunteers accompany each class. Since teaching my first class, I've been impressed with the important support volunteers provide. They help keep the class on schedule by making sure we get from one location to the next, and keep track of where students are throughout the day. In addition, volunteers have an intimate knowledge of the park that I can access as needed so we can adapt to changing weather or park conditions. Because of Desert Institute volunteers, I am able to spend more time directly assisting students in the field. This makes for an enjoyable and productive day for all.



Kurt Leuschner, who began teaching with the Desert Institute in 2002

Like you I've been taking Desert Institute classes since the late 90's and soaking up as much information about the desert as I can! I started teaching classes in 2002. So I think I have worked with every director beginning with Gene Rothstein. I remember Gene also owned a hardware store in Morongo Valley where we all used to shop. Back in those days imagining one million visitors to Joshua Tree National Park per year seemed like an awful lot! (We are up to almost 3 million now—yikes!) Directors have come and gone over the years, sometimes due to military obligations, but each one of them has been a pleasure to work with. I'm still in touch with

or three of them on a regular basis. We all share a common love of the desert and of Joshua Tree no matter where we end up working. The Desert Institute is like family to me. If they ask me to teach something I just say yes and I'm happy to help-or I find someone who can do the job. I've taught classes on birds, botany, wildflowers, insects, butterflies, the Salton Sea, animal burrows, and countless lectures on various aspects of desert natural history. I wish I had more time to take all of the other wonderful classes now being offered! Kevin Wong, our current long-standing director, has quite an impressive slate of courses in the most recent catalog, including some new classes outside of the very busy park. I encourage you all to take as many classes as you can. It's the best way to learn about our deserts and our special park we call Joshua Tree.



Erin Adams, Desert Institute Program Director from 2003-2006 and past Association Board Member

The Desert Institute had humble beginnings, offering a dozen classes a year to a few dozen students. Its loyal and local followers from the high and low deserts kept the program alive. As the program matured, the class offerings broadened and diversified. A few classes, such as Wildflower Wanderings, were very popular and required multiple offerings a season. For the first decade, the Desert Institute survived with a Program Director and a volunteer or two. With the popularity Joshua Tree National Park has recently experienced, the Desert Institute saw the opportunity and increased it. With a brilliant leadership style and marketing plan, the current

Desert Institute Director has grown this humble institute into a full fledge program reaching over 750 students each year. The Desert Institute now requires a staff of employees and volunteers to meet the demands of the program.

Community Lectures

Bringing Nature and Science to our Community

The Desert Institute's community outreach program brings cutting edge presentations on the cultural history, natural science and the arts pertaining to Joshua Tree National Park, to the Morongo Basin and the Coachella Valley with various partners.

The Desert Institute partners include Joshua Tree National Park, the Twentynine Palms Historical Society, the Palm Springs Public Library, UC Riverside Extension and Copper Mountain College in Joshua Tree.

Old Schoolhouse Lecture Series 2019/2020

September 13	Laura Misajet, "East Mojave Cultural History Museum"
October 11	Dawn Davis, "Desert Lady Diaries"
November 8	Thurman Carson, "The History of the Carson Family in 29 Palms"
December 13	Cane Williams, "Joshua Tree: A Place in the American West"
January 10	Kyle Sullivan, "Adventures in the Mojave Trails National Monument"
February 14	"Postcards from Mecca: The California Desert Photographs of Susie Keef Smith and Lula Mae Graves"
March 13	Marina West, "History of Water in the Morongo Basin - Perspectives on an Underappreciated Resource"
April 10	Guadalupe Lomeli, "The History of the Lomeli Family in Amboy"
May 8	Mike Wells, "Natural History of Anza Borrego"
June 12	Chris Frasher, "Grandfather Burton Frasher, Photographer, 1907 Through the Decades"

New Home of the Old Schoolhouse Lecture Series



Custom Adventures

If your group, large or small, is searching for a special Joshua Tree National Park experience tailored to your interests, the Desert Institute will design an educational class expert instruction just for you. We'll ensure that the activity level and optional field component will perfectly match your needs for one-day or multi-day excursions.

Day with a Desert Naturalist

Learn the secrets of Joshua Tree National Park in an all-day field class with a desert naturalist. Groups will explore the unique landscape of the park focusing on an area of interest to them. Common topics to be covered are: geology, cultural history, flora, and ecology found in the vast valleys, rock mazes, desert cactus gardens, and Joshua tree forests. Most programs cover eight miles at a moderate pace with uneven terrain and moderate elevation gain. A "sample" Day with a Desert Naturalist could include **Discover the Wonderland of Rocks**.

The Wonderland of Rocks is a large labyrinth of granite formations and meandering corridors. It's an easy place to get lost, but it's also full of secret, picture-postcard settings, panoramic vistas, and any number of natural surprises. Spend an enjoyable day hiking and scrambling through this rare place, feeling the rough texture of its timelessness underfoot and in the finger tips. More than just a day of outdoor adventure, this Desert Institute hike includes introductory instruction in how the Wonderland formed, why it looks the way it does, and how this unique environment helps support a diverse and interesting community of plants and animals. Come prepared to hike seven to ten miles, depending on conditions, with occasional stops for rest, lunch and teachable moments. The route is cross-country and requires some scrambling and rock-hopping, none of it extended or technical.



Sunrise or Sunset Photographic Workshops with a Master Photographer

Let us show you where and how to take stunning sunrise or sunset images in Joshua Tree National Park! We can create a customized program to spend four hours in the morning or evening photographing the iconic boulders and Joshua trees. This workshop is perfect for those photographers looking to improve on composition and creating unique and original imagery. Working with our instructors will help you make sense of the landscape and begin to understand how to make effective images in this truly bizarre and wonderful terrain. If you're just a beginner, no problem! This workshop will provide you with beginning instruction in landscape photography, filter use, and sunset or sunrise silhouettes.



Photograph by Dion Wong

PROGRAM COST

1 - 6 people	Half Day	\$300
1 - 6 people	Full Day	\$500
7 + people		call

Rates effective through December 2019

Joshua Tree National Park Association

Your support is critical to maintaining the beauty and integrity of Joshua Tree National Park's unique ecosystems. The Joshua Tree National Park Association has been the park's non-profit cooperating partner since 1962, with a mission to assist with natural and cultural resource preservation and educational activities of Joshua Tree National Park. Programs and projects that cannot be achieved through federal funds and personnel are made possible through the Joshua Tree National Park Association. We offer several ways for friends of Joshua Tree National Park to get involved and make a valuable contribution toward preserving this national treasure for future generations.

MEMBERSHIP

As a member of the Joshua Tree National Park Association, you will help the park achieve its education, interpretive and research goals. Your membership supports education materials for students, the park's library and historical collection, and scientific research.

Membership benefits include:

- 15% off merchandise at Joshua Tree National Park Association Visitor Center bookstores
- \$10 off Desert Institute classes
- Invitations to special events
- Reciprocal discounts at association bookstores at most other National Parks
- Membership sticker to show your support
- *Keys Views* newsletter

Additional premiums come with our appreciation for your support as a Supporting, Patron, Contributing, Sustaining and Benefactor levels. Full details are available on our website and membership brochure, or by calling our office at 760-367-5535.

VISITOR CENTER BOOKSTORES

Joshua Tree National Park Association operates bookstores in each of the Park's four Visitor Centers. Sales in our stores account for a significant portion of the Association's revenues, and our non-profit mission means that proceeds from our sales support natural and cultural resource preservation and educational activities of Joshua Tree National Park.



Joshua Tree Visitor Center



Oasis of Mara Visitor Center



Cottonwood Visitor Center



Black Rock Nature Center



Desert Institute Instructors

CAROLINE AMBERSON is a GATE educator and Program Specialist with a passion for nature and wildlife, and she has taught in San Bernardino for seventeen years. She enjoys surfing, skiing, camping, hiking/backpacking, and trying all possible outdoor activities across six continents. She is completing Naturalist and Environmental Studies programs through both UCR and UCLA.

ROBIN BALCH is a Desert Institute lead volunteer and loves being around people. She has hiked several portions of the Pacific Crest Trail and is a Forest Service Fire Lookout at Black Mt. Fire Tower in Idyllwild, CA. She loves the outdoors, hiking and backpacking and has been mentored by the best, learning the ins and outs of backpacking. Robin is also a member of Joshua Tree Search and Rescue (JOSAR).

FRAN CALVERT has lived near Joshua Tree National Park for nine years. She enjoys sketching, riding horses, hiking, and backpacking year-round in the park. She is a retired technical writer with a B.A. in fine arts and art history from Columbia University. She has been a Desert Institute volunteer since 2014.

JANIS COMMENTZ is a southern California native who grew up near the coast and began drawing and painting early in life. Janis moved to the Mojave Desert in 1977 to teach high school art and English. At the University of Redlands, she earned a B.A. in art and English. She holds an M.A. in Education from California State University at San Bernardino and teaches youth art classes at the 29 Palms Art Gallery and has facilitated life drawing in Joshua Tree for eight years.

THERESA CLARK is a moss (bryophytes at large) ecologist from Maine, but much of her research has been in the American Southwest. She earned an M.S. at Northern Arizona University, studying the taxonomy and ecology of bryophytes in Grand Canyon National Park, AZ and just finished her Ph.D. at the University of Nevada, Las Vegas, researching the ecophysiology of arid land moss survival in the face of a changing climate. The heart of her dissertation and upcoming post-doctoral research at UNLV seeks to predict the capacity for desert mosses to “hide” from climate change in protected microhabitats which create stronger controls on moss hydration periods than does the ambient macroclimate.

KELLY CRAWFORD is the founder/CEO of Joshua Tree Excursions. He served honorably in the U.S. Army National Guard and the United States Marine Corps for 23 years. Kelly has traveled extensively around the world exploring and discovering the hidden wonders of our amazing environment. He lives by the motto that, “Life is a journey and not a destination.” He possess a wealth of leadership experience, is an avid outdoorsman and an expert in survival, navigation and backcountry expeditions.

PAUL DELEY obtained his Ph.D. in Invertebrate Zoology at Ghent University, Belgium in 1994 and moved to Riverside in 2000 to join the Department of Nematology at UCR as a

faculty member. His research focuses on ecology, diversity and systematics of nematodes in arid ecosystems, using methods that combine light microscopy observations with DNA sequence analyses. He is an avid nature photographer with particular interest in macro photography as a tool for exploring biodiversity of southern Californian deserts and ranges.

CRAIG FUCILE, B.A., Physical Geography, teaches photography for University of California, Riverside Extension. A longtime instructor, Fucile has taught numerous photography workshops in western landscapes that he enjoys photographing including: Joshua Tree, Death Valley, Eastern Mojave, Owens Valley, Grand Canyon, Bryce Canyon, Anza-Borrego, Kings Canyon, and Sequoia.

ALESSANDRO GRIPPO, Ph.D., Geological Sciences, has done research and taught geology, oceanography, stratigraphy, environmental geology and field classes at Santa Monica College and several California State University campuses. Alessandro has a keen interest for the geology of the American southwest and loves being out there exploring, learning, and sharing his passion for Earth and its history.

WILLIAM HAYES, Ph.D., Zoology and Physiology, Professor of Biology, Loma Linda University. Hayes specializes in the ecology of venoms and venomous animals, behavioral ecology and conservation of lizards, and behavioral ecology, taxonomy, and conservation of birds. He has published numerous works, taught and organized conferences and workshops, and has given multiple television interviews. Hayes currently teaches classes in behavioral ecology, herpetology, ornithology, and conservation.

MARK JORGENSEN has been intrigued by desert bighorn sheep since he was 11 years old and has spent five decades studying and pursuing them throughout their range. He became a State Park Ranger for California State Parks after four summers studying desert bighorn for Anza-Borrego Desert State Park in southern California. He went on to become the last Park Naturalist for California State Parks at Anza-Borrego, as well as a Resource Ecologist, and he finished his 36-year park career as the Superintendent of Anza-Borrego. He is the author of the book *Desert Bighorn Sheep: Wilderness Icon*.

PAM KERSEY, Ed.D., M.S.N, R.N. is the Dean of Science, Math and Engineering at Cuyamaca College in San Diego. She is an archaeological site steward, volunteers for the Desert Institute at Joshua Tree and has also volunteered as a camp nurse. She has completed three marathon hikes for children’s cancer fundraising. She has camped, backpacked, and hiked for many years including summits over 14,000 feet 5 times.

LEW KINGMAN is a retired fire fighter and worked for the Palm Springs Desert Museum as a hike leader for 8 years. He volunteers with the Riverside County Sheriff’s Search and Rescue for 25 years and Joshua Tree National Park as an archaeological site steward and a lead field class leader for the Desert Institute.

Desert Institute Instructors

SCOTT KLINGER is a professional photographer, filmmaker and educator with over 15 years of experience. Scott's photographs and films have been exhibited throughout the world. Recent screenings include 66th Festival de Cannes and the Hollywood Reel Independent Film Festival. Recent exhibitions include LAXART in Los Angeles, Anfiteatro Arte in Milan, and La Generale en Manufacture in Paris. His work is held in the permanent collection of the Kiyosato Museum of Photographic Art. He currently lives in La Quinta, CA is an Associate Professor of Photographic Technology at Palomar College.

TOR LACY, M.S., Geology, is a tenured instructor at Cerritos College teaching Physical Geology, Introduction to Earth Science, Geology of the Western National Parks and Monuments, Natural History of Southern California and Field Methods of the Earth Sciences.

KURT LEUSCHNER, M.S., Wildlife Ecology, Professor of Natural Resources, College of the Desert. Leuschner's specialties include ornithology, entomology, and desert ecology. He has led hundreds of field trips both locally and as far afield as Africa. He teaches natural history courses for the Bureau of Land Management, UC Riverside Extension, the Desert Institute, the Living Desert, California State Parks, Riverside County Parks, and many other conservation organizations.

DANIEL MCCARTHY, M.S., Anthropology, has worked at Anza-Borrego Desert State Park, Joshua Tree National Park, San Bernardino National Forest and throughout southern California compiling photographic inventories of the rock art of this region. His research interests include desert archaeology, Native American uses of plants, aboriginal trail systems, material culture of the Cahuilla and Serrano Indians, and rock art.

DENNIS MAMMANA, M.S., Astronomy, has delivered the wonder and mystery of the cosmos to audiences for over three decades and is a syndicated newspaper columnist with Creators Syndicate and author of six books on popular astronomy. Having photographed the night sky for more than 50 years, Mr. Mamma is an invited member of TWAN—an international team of the most highly acclaimed sky photographers on the planet. Mr. Mamma continues to photograph the heavens from around the world, but mostly from his desert home in Borrego Springs. His work can be enjoyed online at dennismamma.com.

MONICA LYNNE MAHONEY, BFA, studio art, MLA Landscape Architecture, is a multidisciplinary artist, educator and native plant naturalist living and working in Joshua Tree, CA. Mahoney's diverse artistic practice includes drawing, painting, sculpture & installation, landscape design, ecological restoration, and award-winning public engagement and civic art programs that integrate art and the environment. She believes that no matter the skill level, the practice of painting and drawing in nature provides a unique portal into the natural world, which helps us to see and connect with Nature—and ourselves—in new and profound ways.

GABRIELA MORENO is a conscious creative nomad with a passion for ethical business practices and consumerism, as well as for preserving mother earth. Her life mission is to inspire people to engage with the great outdoors responsibly.

RALPH NORDSTROM has had several careers in education, along the way teaching the full gamut from pre-school to adult, and handicapped to gifted. Branching into photographic workshops was a very natural path for him. His philosophy on workshops is simple: They are successful when the attendees return home with a few great photographs and feeling that they have expanded what he likes to call their "Creative Vocabulary", that is, their ability to express themselves through their photography.

TANYA PETROVNA is the Chef and founder of the all plant-based, Chef Tanya's Kitchen in Palm Springs, CA, a fresh deli and take-out concept. She was the visionary founder of Native Foods Café (1994-2012). Chef Tanya currently resides in Palm Springs, California where she teaches cooking classes and Iyengar Yoga. She is an avid naturalist and is currently moderating the Facebook page "Keep Open Space Open" in hopes that current and future generations will be left space to breath and enjoy nature.

NICOLE PIETRASIAK received her Ph.D. in the Soil and Water Program at UC Riverside. She is an Assistant Professor for Environmental Soil Microbiology, Plant & Environmental Sciences Department, New Mexico State University. Her research interests include soil science, botany, algal biodiversity, and desert ecology. Nicole has conducted extensive research on cryptobiotic crusts across western U.S. and has made major contributions to the study of abundance, distribution, and diversity of cryptobiotic crusts at Joshua Tree National Park.

KEVIN POWELL, local author and photographer, was intrigued at an early age by the quiet complexity of this unique desert playground. As a result of this intrigue, he has spent forty-six years hiking, rock climbing, photographing and exploring within Joshua Tree National Park. His first book, *40 Classic Day Hikes of Joshua Tree National Park*, is available at Park Visitor Centers.

TED REEVES, B.A., Geology, taught sciences at Chaffey High School for 37 years. He is presently teaching for University of the Pacific and believes that a relevant Natural History class requires an outdoor experience. In 2000, he received the National Association of Geology Teachers Outstanding Earth Science Teacher Award.

CANDICE WEBER, M.A., is an adjunct professor of natural resources at College of the Desert, teaching courses in Conservation and G.I.S. and leading students abroad to the cloud forests of Costa Rica. She majored in environmental studies and has extensive experience working with animals of all kinds (wild and domestic), including many years as a zookeeper and animal trainer at the Living Desert, the Long Beach Aquarium, and other marine parks.

Class Registration Form

You may register for a course by phone, mail, or online at joshuatree.org. Before participating in any of the field activities provided by the Desert Institute, and as a condition to being accepted for such activities, you must sign, for yourself and, if applicable, for your minor child who is a participant, a waiver and release of claims, including of negligence, arising from your or the minor's enrollment or participation.

NAME(S) _____

ADDRESS _____

CITY, STATE, ZIP CODE _____

PHONE _____ CELL PHONE _____

EMAIL ADDRESS _____

- Check here if you would like to receive Desert Institute information and updates on merchandise, lectures, classes, and custom-designed programming via email. We do not share your contact information without your prior approval.

Membership Information

Current JTNPA membership qualifies me for a \$10 discount on every Desert Institute class

- I am a current member of JTNPA!
 I would like to renew my membership or join
 I am a member of a PINE or OSHER organization

_____ (please fill in organization name)

DATE	CLASS NAME	FEE	CREDIT FEE	TOTAL

Make checks payable to: Joshua Tree National Park Association

Membership Fee (Optional)	\$25
Total Enclosed	

How did you hear about us? _____

PAYMENT BY: CHECK AMERICAN EXPRESS DISCOVER MASTERCARD VISA

Name on Credit Card _____ Security V-Code _____

Credit Card # _____ Exp. Date _____

Authorized Signature _____

General Information

REGISTRATION

You may register by phone, mail, or on-line at joshuatree.org. Please register early, our classes have limited sizes. You may also register using the registration form found on page 24.

COURSE INFORMATION PACKET

Upon receipt of your registration, we will send you a course itinerary, map, enrollment confirmation/entrance fee waiver, and information on clothing and equipment needs. Local lodging and camping information is available upon request.

CANCELLATION POLICY

If you need to cancel, notify us at least seven days prior to the start of the course and we will process your request minus a \$25 cancellation fee. No refunds, transfers, or credits will be granted if cancellation occurs within the seven day period. Please note that we cannot make any exceptions to this refund policy for any reason, including but not limited to medical reasons, illness, travel delays, personal situations, emergencies, or weather. This program depends on registration for its funding. While inconvenient, please understand that this policy enables us to sustain our programs even with last minute cancellations.

COURSE CANCELATIONS

Classes are held rain or shine. However, we reserve the right to change the course instructor, itinerary or meeting location due to weather or other conditions. Sometimes it may be necessary to cancel a course due to instructor illness, low enrollment, NPS requirements or other reason. If that happens, we will notify you and provide a full refund based upon your registration information.

WAIVER AND RELEASE OF CLAIMS

Before participating in any of the field activities provided by the Desert Institute, and as a condition to being accepted for such activities, you must sign, for yourself and for your minor child who is a participant, a waiver and release of claims, including of negligence, arising from your or the minor's enrollment or participation. Your information is confidential. Participants must provide their own health and accident insurance. Please obtain a doctor's clearance if you have any condition that may impact your ability to participate in a class.

DISCOUNTS

There is a \$10 discount per class for **JTNPA, OSHER or PINE members**, including those who join when they register. Discounts may not be combined.

SAFETY, INSURANCE AND PHYSICAL FITNESS

Every effort is made to ensure safety on Desert Institute courses. However, participants are responsible for their own safety and accident insurance. JTNPA does not accept responsibility for lost, stolen, or damaged property or any bodily injury incurred during the courses. You must sign a liability waiver in order to participate in the courses. Participants must be in good physical condition for courses/activities in a desert that may be hot, dry, windy, and sometimes surprisingly cold.

CHILDREN AND PETS

Our courses are designed for adults. An adult must accompany children under 16; the minimum age is 14. Pets are not permitted on courses, on National Park trails, or unattended in vehicles.

ACADEMIC CREDIT

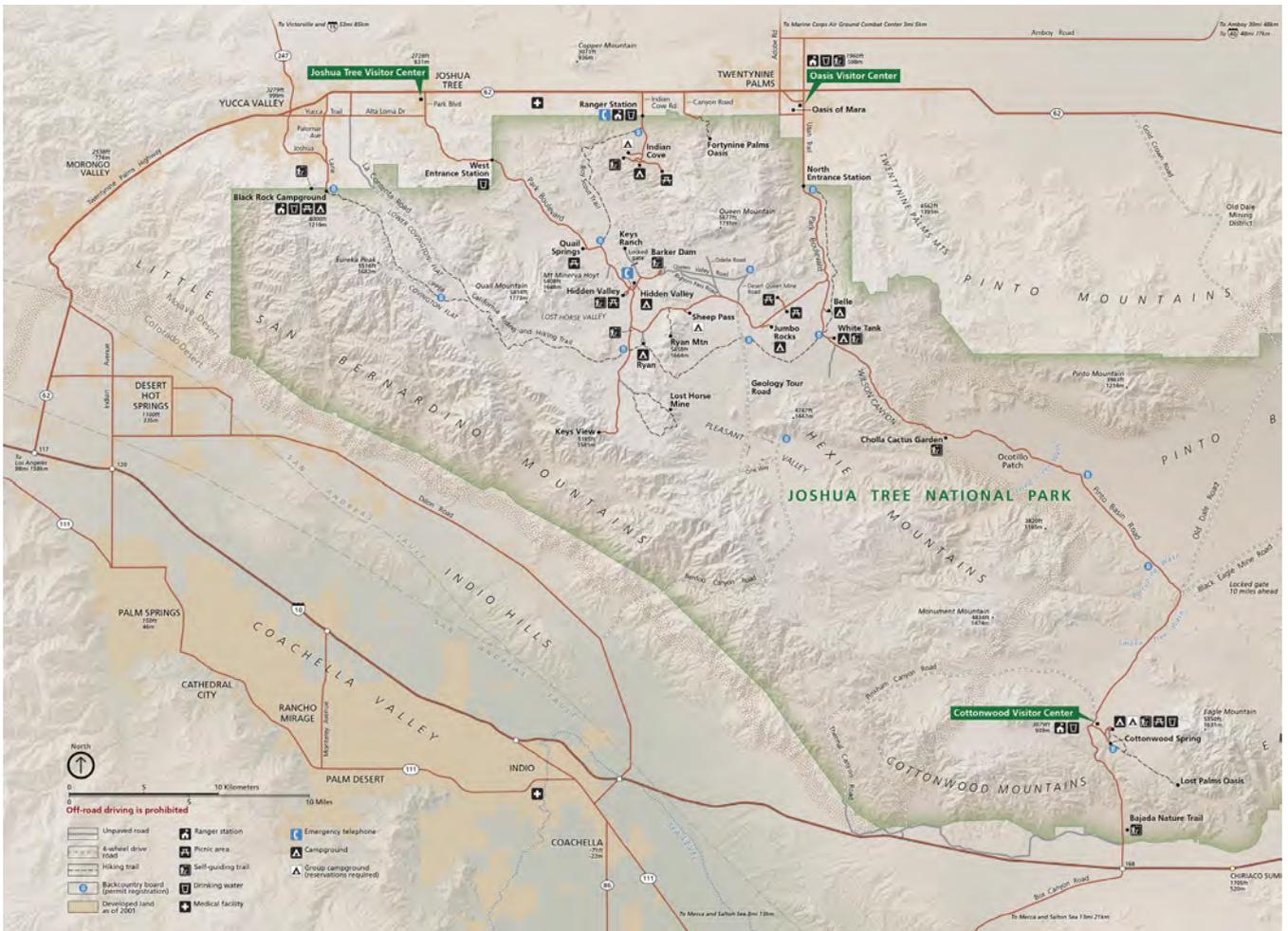
Credit is available from University of California, Riverside Extension. Optional credit courses are marked by the symbol found on page 3. The number of units are listed with each class. Credit fees are listed separately from noncredit fees. Credit units are based on a quarter system. Credit students may be required to successfully complete assignments or exams. Teachers may apply for Professional Career Development through their school district.

CAMPING AND PARK INFORMATION

Camping and fees for Desert Institute overnight courses held at Lost Horse Campsite are included in registration. For other courses, campsites may be reserved online through recreation.gov, by calling 877-444-6777. All campsites in the park are by reservation only. Visit the park website at nps.gov/jotr or the JTNPA website at joshuatree.org for more camping information.

WEATHER, CLOTHING, AND EQUIPMENT

Students should be prepared for a variety of desert weather conditions, including cold and windy days. Appropriate clothing, footwear, and sun protection are very important. Clothing and equipment needs will be identified in your course information packet. Be prepared—bring plenty of water!



From Los Angeles: Take Interstate 10 East to Highway 62 to Yucca Valley, Joshua Tree or Twentynine Palms. You may enter Joshua Tree National Park through the **North Entrance**, Utah Trail, Twentynine Palms (south from 62); **West Entrance**, Park Blvd., Joshua Tree (south from 62); or the **South Entrance** at Cottonwood (take Interstate 10, Exit 168 north.)

Big Morongo Canyon Preserve, Morongo Valley: Turn southeast off Highway 62 onto East Drive. Turn left into the Preserve.

Black Rock Nature Center, at Black Rock Canyon Campground, Yucca Valley: From Highway 62, take Joshua Lane going south, right turn at intersection onto San Marino Dr.; turn left onto Black Rock Canyon Rd.; turn right into the nature center parking lot.

Cottonwood Visitor Center: Take Exit 168 north off Interstate 10 and turn right into the visitor center parking lot.

Joshua Tree Visitor Center, Joshua Tree: From Highway 62, take Park Blvd. south and turn right into visitor center.

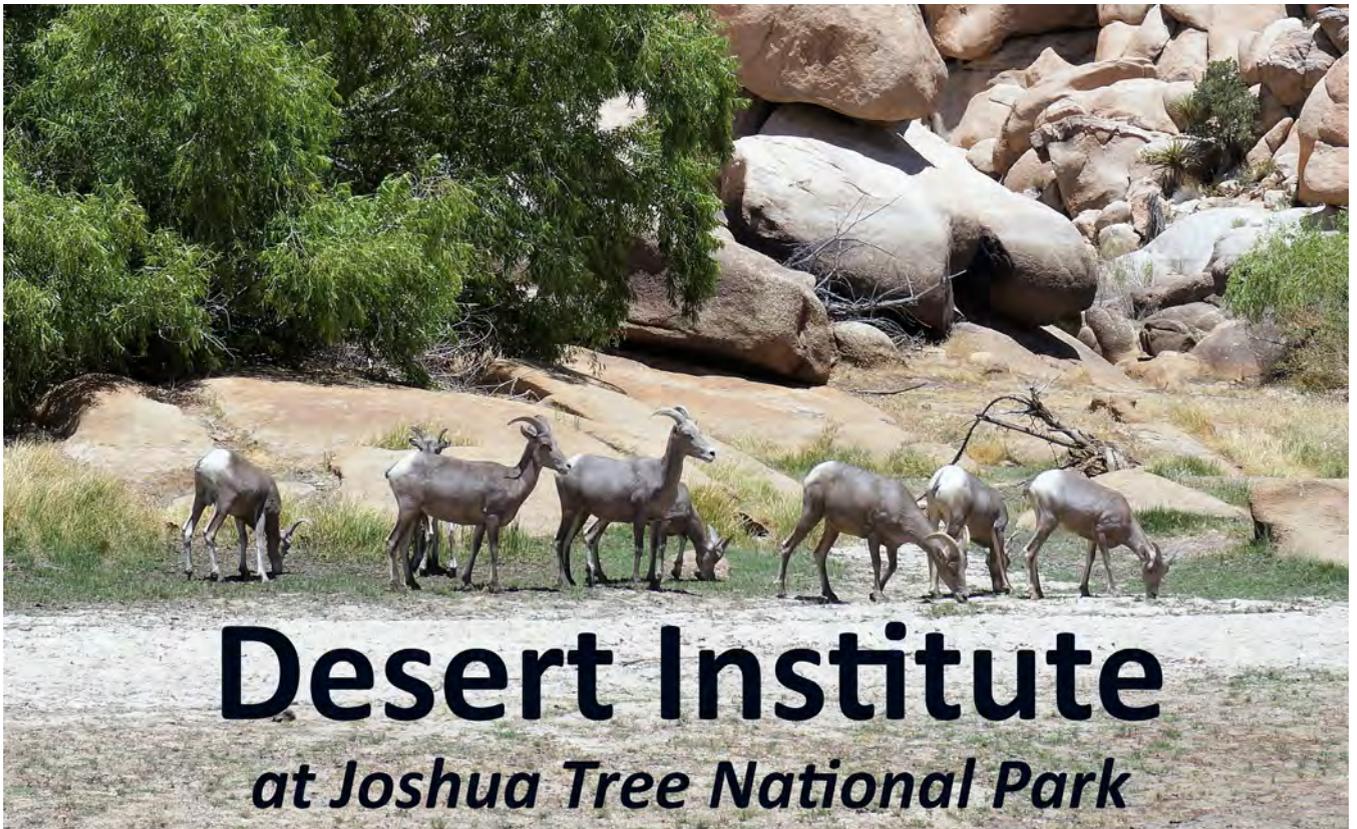
Oasis Visitor Center, Twentynine Palms: Turn south off Highway 62 onto National Park Drive and turn right into visitor center.

Campbell House, Twentynine Palms: Turn north off Highway 62 onto Utah Trail, turn right at Joe Davis Drive.

Coachella Valley Preserve: Exit Highway 10 at Ramon Road, turn East, turn left on Thousand Palms Canyon Road.

Mission Creek Preserve: Exit Highway 62 at Mission Creek Road in Desert Hot Springs, head west to the gate.

Whitewater Preserve: Exit Highway 10 at Whitewater to meeting site.



Desert Institute

at Joshua Tree National Park



Photo by Richard Arnold

Volunteer Opportunities

Combine your passion for the Joshua Tree National Park and education by joining the Desert Institute volunteer team.

We are recruiting candidates for the following program:

Field Class Representatives

training to be held on

August 24 - 25, 2019

Please call 760-367-5539 for more information on volunteer programs with the Desert Institute.



Photograph by Gabriela Moreno

"I began taking Desert Institute classes for professional development purposes. I immediately fell in love with every aspect from the expertise of the instructors, to the attentiveness of the volunteers and the high quality and variety of subjects the classes cover! Every class has exceeded my expectations.

I have a newfound appreciation and sense of wonder for not only Joshua Tree National Park but also the desert."



Desert Institute at Joshua Tree National Park
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joshuatree.org

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Joshua Tree National Park Association is a private, not-for-profit Cooperating Association working in partnership with Joshua Tree National Park to help in its achievement of programming goals in education, interpretation, scientific and historic research and activities.

