

Environmental Site Tours

Sunday, April 21, 2002

Each year, the NHEC Conference offers our students – America’s future environmental professionals and leaders – the opportunity to visit a variety of environmental sites. These tours have spanned a range of environmental and natural resource interests, including environmental engineering, water management and reclamation, natural resource management, pollution abatement and environmental remediation, park management, wilderness/wildlife conservation, historical and cultural preservation, and more.

During the site tours, students have the opportunity to see the latest techniques and to learn from experts in the field. The tours are also an opportunity to explore and value – up close – America’s scientific, natural, cultural, and historical treasures. They are designed to be substantive and educational – but also fun.

The site visits will begin around 9 am and depart from the Radisson City Center Hotel. **Most tours last all day.** Students will travel by bus, and we will provide a box lunch and bottled water. All students will be back at the hotel by 5:30 pm at the latest. Some tours have size limits, so be prepared to go to your second choice. Most tours actually begin once you board the bus; you may see a video along the way, or your guide may speak on the drive to the site.

All students will be escorted to and during their site visit. All tours have been planned by professionals, with your safety in mind. **Always follow their instructions.**

Please remember – step lightly and respectfully on the earth. And most important, take only pictures and memories – do not disturb, damage, or take home with you any artifacts, rocks, plants, or anything else without the express permission of your tour guide. (Take note: when on federal land, you must obey federal law. In many places, especially national parks, it is illegal to disturb or damage natural resources).

Regarding dress, keep several things in mind. First, all tours include time outside, so bring sturdy walking shoes, and be sure to watch your footing. Shorts are fine, but no tank tops or other inappropriate clothing. Dress like you’re going on a hike.

Regarding the weather, it will be in the high 80’s to low 90’s during the day, **so prepare for it to be hot!** However, it’s a dry heat, which often feels more comfortable than hot, humid weather. **Be sure to bring a hat, sunscreen, and sunglasses! And drink plenty of water. This is extremely important when outside in desert conditions.**

Finally, remember to bring your camera and binoculars. You will see some of America’s most spectacular scenery and historical sites. Listen, learn and enjoy!

* **CULTURAL, ANTHROPOLOGICAL,
AND NATURAL RESOURCE TOUR**
—sponsored by the National Park Service
(NPS)

This site tour will give students a good look into the diverse world of the National Park Service – their responsibilities in preserving and protecting many of America’s cultural,

sociological, and natural resource treasures. Three sites illustrate the nature of their work: San Xavier del Bac Mission; the NPS Western Archeological and Conservation Center; and the Arizona – Sonora Desert Museum.

San Xavier del Bac, one of the oldest, best-preserved, and most beautiful missions in the Southwest, offers visitors a look into

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the past. Founded by Jesuits in the 1700's, the Mission was later taken over by the Franciscans. They began construction on the present church in 1783, replacing two earlier Jesuit churches on this site. Completed in 1797, the church is currently undergoing major restoration.

The Mission, fondly named the "White Dove of the Desert", for its white paint and stunning architecture, is still an active church that serves the spiritual needs of the local community. This means San Xavier is a real church – not a museum! As you will be visiting on a Sunday, please be respectful of worshipers who may be present. There is a small museum at the mission explaining San Xavier's significance to the people and history of Arizona. Although San Xavier is not an NPS park, it offers a fascinating look into Southwestern and Hispanic culture and history, and of the work necessary to preserve this beautiful treasure.

NPS Western Archeological and Conservation Center (WACC) is a federal archeological and museum service center for the National Park Service. The WACC's mission is to preserve our heritage for the future, through the use of science, technology, and research.

The center has a professional staff of archeologists, curators, and museum specialists working on projects for America's national parks, monuments, historic sites, recreational areas, and national preserves. The Museum Collections Repository has over 1.9 million archeological, ethnographic, historical, and natural history objects from over 40 national parks and monuments. Students will have a unique chance to see the NPS at work, in a location not ordinarily open to the public.

The Arizona – Sonora Desert Museum is a world-renowned facility where "the desert comes alive". It is one of the best places in the region to learn about the Sonoran Desert ecosystem – one of the most diverse, complex, and interesting in the world. The Museum, located in the Tucson Mountains, has a zoo (with many native wildlife just feet away); a botanical garden, featuring some of the extraordinary flora of the Sonoran Desert; a natural history museum, and a gift shop/education center.

Visitors have the opportunity to view 300 animal species and 1,200 types of plants. There are interactive nature displays and close-encounter animal habitats. There are also over 2 miles of nature paths to explore. The Museum will offer those interested in the wonderfully rich ecosystem of the Arizona-Sonoran desert an eye-opening experience. While the Museum is not run by the National Park Service, NPS operates many parks with equal or greater ecological diversity. All three components of this Tour will give students a close look into the range of possibilities with NPS. Be sure to thank the Museum staff, as they have generously agreed to waive the entrance fee for NHEC student attendees.

* **DESERT ECOSYSTEM AND PARK MANAGEMENT TOUR**

—sponsored by the National Park Service

The Saguaro giant cactus has been described as the "king" of the Sonoran Desert. It is an icon – its curved arms, pointing upwards, have come to symbolize, whether in movies or magazine covers, the desert regions of the U.S. and Mexico. Typically, the Saguaro is solitary, with much space (often many yards) between each cactus. In the Sonoran desert, it stands tall, proud — and usually alone.

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Now imagine a forest of Saguaro's – and that is Saguaro National Park. Created in 1933 precisely because of the extraordinary number of the giant cacti located close to one another, Saguaro National Park is a remarkable treasure. It preserves many other members of the Sonoran desert community, including a great diversity of other cacti, trees, shrubs, and wildlife. In lushness and variety of life, the Sonoran Desert far surpasses all other North American deserts. While largely a wilderness park, the park is actually in two separate sections, one on either side of the city of Tucson.

The tour will begin at the “west unit” of the Park, which includes the Tucson Mountain District. Students will explore the new Red Hills visitor center (to see a video and the exhibits) and then have lunch at the Signal Hill Picnic Area. Optional hikes are available, guided by rangers, which will include stops at some of the “petroglyphs” (ancient rock carvings etched by Native Americans) in the area.

This portion of the tour will focus on natural resource and park management issues, including discussions on how NPS manages the many challenging aspects of this diverse park. In addition to the rangers, the Superintendent of Saguaro National Park will be present to answer questions.

Following the tour of Saguaro National Park, students will travel a short distance to the Arizona – Sonora Desert Museum, located next to the park. Students will spend the rest of the tour in the museum, which has been described above, to learn more about the ecosystem of the Sonoran desert. The Museum will be another opportunity to see how NPS manages a complex environment throughout the 395 national park system.

* MARICOPA AGRICULTURAL CENTER TOUR

—sponsored by the USDA Natural Resources Conservation Service (NRCS)

The Maricopa Agricultural Center (MAC) is a 2,100 acre experimental farm located 20 miles south of Phoenix. MAC is a place where scientists and engineers from the University of Arizona and USDA come together with industry scientists and growers. Students should note that this tour is located about one hour north of Tucson.

The purpose of the MAC's collaborative effort is to transfer technology to increase production efficiency, manage air, soil and water resources better, and to protect the environment for the benefit of producers and consumers. The Center is an integral and essential part of the research, extension and teaching resources of the College of Agriculture at the University of Arizona in Tucson.

The tour will begin and end with a trip across the Upper Sonoran Desert, where the tour guide will identify natural landmarks visible to students. The MAC visit will feature explanations and demonstrations of various natural resource management techniques and research projects that are developing products and technology. These include irrigation techniques; irrigation water measurement and hydraulic structures; alternative and exotic crops (for fiber, food consumption, pharmaceutical, and drought situations); commercial fish operations (aquaculture); and various NRCS conservation planning and management practices.

Students will interact with NRCS, university, and local specialists employed in the natural and resources sciences fields such as soil science, engineering, agronomy, rangeland, and irrigation water management.

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This tour will increase student's knowledge of how NRCS works collaboratively with local, state, and federal agencies, and with private landowners, to manage and conserve our natural resources.

* **SABINO CANYON, A SONORAN DESERT OASIS**

—sponsored by the USDA Forest Service

On Tucson's northeast edge lies the Sabino Canyon Recreation Area, one of Tucson's most popular and beautiful outdoor recreation destinations. Located on the Santa Catalina Ranger District, a part of the Coronado National Forest, Sabino Canyon features one of the area's few remaining near-perennial streams — Sabino Creek. This scenic creek flows nine to twelve months of the year, with its headwaters high in the nearby Santa Catalina Mountains, and supports a wide variety of plant and animal species, many of which depend on the creek for their survival.

The creek, cascading for miles, is an excellent example of a creek/river ecosystem in the Sonoran desert, and of the interlocking relationships that define this environment. Sabino Canyon features many famous desert species, such as the saguaro, prickly pear, ocotillo and chollo cacti, plus much wildlife. Take a tour of this desert canyon, with its spectacular views and curving streambed, and learn about the history of Sabino, its culture, history, and natural heritage.

This will be a great opportunity to learn more about the USDA Forest Service, and how it manages a complex ecosystem for multiple uses, including habitat preservation, recreation, and tourism. The tour will include some short hikes on nearby trails. Find out why more than one million people visit Sabino Canyon each year, and how these impacts are managed. NOTE: This tour has a size limitation of 20 students maximum — strictly first come, first served. Sign up early.