

Joshua Tree

National Park Service
U.S. Department of the Interior

Joshua Tree National Park



Superintendent's Annual Report *A summary of park operations during 2008*





Superintendent's Office

Nolina Peak, a 639-acre parcel acquired by the Mojave Desert Land Trust, was successfully donated to the park.

Lands

Communications regarding alternative-energy projects proposed for areas east and north of the park are being handled by the NPS Regional Lands Resources Office, with David Reynolds managing the cumulative NPS desert parks' responses. (Mojave, Death Valley and Joshua Tree)

The Eagle Mountain Landfill lawsuit is still in litigation. There was only one lawsuit still pending at the close of the fiscal year, however, much has changed in the waste business since the landfill was proposed. A reduction in waste generated because of recycling has made a new landfill less urgently needed. In addition, the Los Angeles Sanitation District has purchased another landfill site in adjacent Imperial County that is fully licensed and ready to go.

Along the southern edge of the park, the Paradise Valley Development Project continues. The Coachella Valley Multiple Species Habitat Conservation Plan was approved and Paradise Valley acreage falls into their mandates. Regardless, the developers believe they can mitigate as necessary.

The developers of Palmdale in Desert Hot Springs, which would have negatively affected the Long Canyon area of the park, went bankrupt in FY08.

The Big Morongo Canyon Preserve, 31,000 acres managed by the Bureau of Land Management, is being threatened by a Los Angeles Department of Water and Power proposal to run 500KV power lines from the I-10 corridor north through the Preserve and on to Hesperia. U.S. Representative Jerry Lewis opposes the project as do both San Bernardino and Riverside County Boards of Supervisors, as well as cities and community organizations all along the route. The National Parks Conservation Association submitted a proposal to Senator Dianne Feinstein for the Preserve to be added to Joshua Tree National Park to provide greater protection for the area. This proposal was opposed by BLM.

The Town of Yucca Valley, which has a six-mile contiguous connection to Joshua Tree

National Park, received fewer development proposals due to the real estate slump. The large developments that continue to concern the park include Century Vintage Homes, with over 1,600 homes on 476 acres, two miles from the park boundary along La Contenta Road and Sky Harbor Ranch, 428 homes on 640 acres contiguous to the park boundary northwest of Black Rock. Numerous smaller developments are proposed within three miles of the park's northern boundary.

Nolina Peak, a 639-acre parcel acquired by the Mojave Desert Land Trust, was successfully donated to the park. The boundary revision was published in the Federal Register on October 3, 2008. With the inclusion of Nolina Peak within the park boundary, the first piece of the plan to protect the Quail Mountain ecosystem, which originates inside the park and extends into the community of Joshua Tree, was put into place. This habitat is home to bighorn sheep, mule deer, bobcat, and the federally- and state listed desert tortoise. Through various mechanisms, the funding and acquisition of many of the parcels within the ecosystem may become a reality in the future.

Steven Katz presented a plan for the development on Section 33, south of Highway 62 and east of La Contenta, at a Joshua Tree Municipal Advisory Council meeting in 2008. The plan calls for a walled community of 2,700 homes with storefronts along the highway. The plans involve scraping the entire parcel then replanting hundreds of Joshua trees and other native plants. About 100 community members were present. The park superintendent spoke and invited Katz on a tour of the park. Mr. Katz continues to move forward with his plan.

The NuWu Casino was scheduled to break ground on a 160-acre site contiguous with the park boundary in Twentynine Palms. Initially the 29 Palms Band of Mission Indians announced that they were going to build a Kampgrounds of America camping facility. Later the tribe expanded its plans to include a casino, as well as the campground, in phase one, then a dining facility and hotel in phase two, and finally a golf course in a third phase. Prior to ground-breaking, and the third time a

Cover: Volunteers revegetating the fire-damaged Whispering Pines area.

Left: Transplanting a Joshua tree along the realigned Keys View Road.

tortoise survey was completed, tortoise were found on the site. That plus the economic slump have put a halt to the development for the time being.

The Mojave Desert Land Trust was able to close on 26 tracts of land totaling over 2,000 acres during FY08. The stewardship program created by the MDLT will ensure the land is kept in pristine condition during the process of transferring these parcels to the NPS. The Resources Legacy Fund Foundation is ending its "Preserve Wild California" program, which has been the primary funding source for the Mojave Desert Land Trust.

The Desert Managers Group created a work group to collaborate on land acquisition activities; Joshua Tree will be represented. The military are concerned with encroachment, CalTrans has mitigation funds, other entities are acquiring lands. The Conservation Land Acquisition Work Group will meet quarterly to discuss how to coordinate contacting land owners and acquiring lands.

Safety

From a safety standpoint, FY08 was a rather troubling year. Employee injuries rose by 70 percent from the previous year (from 7 to 12 respectively), and the number of recordable injuries more than tripled from three cases in 2007 to 10 cases in 2008. DART (days away from work or assigned to light duty) remained the same at three cases. Visitor injuries and vehicle accidents were 40 each, a slight increase over last year.

The safety office and safety committee conducted 2,286 hours of training, including OSHA for managers, fire extinguisher use, hazcom, and flammable liquids. The safety officer completed Operational Leadership (formerly ORM) facilitators training. The safety committee completed two inspections of each facility in the park and made recommendations for corrective action.

The park retained its status as a small-quantity generator of hazardous materials, which it first earned in FY07. Production of hazardous waste was reduced by utilizing "Green Boxes" for battery disposal, returning small quantities of oil and vehicle batteries to auto-parts vendors, and replacing fluorescent light bulbs

with environmentally friendly ones.

In addition to safety training and wellness day activities, employees participated in the statewide, multi-agency Shakeout. At the designated time on 13 November, 100 percent of JOTR's employees, including field personnel, simulated a devastating earthquake and the emergency procedures that would follow. The exercise pointed out some interesting scenarios as well as some deficiencies in our response plans.

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Administration

Centennial Commitment Funding, which increased seasonal hires for interpretation, protection, and maintenance operations, was most welcome, even though it increased the budget and human resources workload.

A reassessment of how administrative work is done in the park led to the establishment of a business center with staff specialized by functional area. Rather than have program assistants assigned to each division to handle multiple tasks, administrative functions are addressed at the center. Problems are expected and will be worked out as much as possible with the resources available.

This has been the year of networking: sharing resources within a functional area to capitalize on individual expertise for the benefit of the group. Not only has the park continued to participate in the Mediterranean and Mojave (M&M) Network IT work group, now we have a closer relationship with the Contracting and Acquisition Group of the Major Acquisition Buying Office. Another work group, the M&M SHRO for Servicing Human Resource Office, is still in the organizational stage.

Budget

Base funding for FY08 was \$5,035,900. Centennial Commitment Funding, which increased seasonal hires for interpretation, protection, and maintenance operations, was most welcome, even though it increased the budget and human resources workload.

Employee housing rentals generated \$36,682.95. A large portion of these funds were used to refurbish the Indian Cove residence that was used for office space during construction of the resource building.

Human Resources

Seventy-one appointments and reassignments were made during the year and 280 personnel actions were completed.

The Mojave Desert Network Centennial Recruitment and Staffing Implementation Plan was finalized. Network parks scrambled to fill over 30 Centennial seasonal positions.

Background investigations were initiated and completed for all employees, volunteers, and SCAs. Eighty-five backgrounds were conducted. Thirty-four were initiated in eQIP.

Staff provided guidance on the use of eQIP to regional and field offices and continued to

adjudicate cases for DEVA, MOJA and LAME. Guidance regarding the background-investigation process was provided to regional and park HR staff and supervisors throughout the service.

The HR staff adjudicated and processed 1,905 background investigations, prepared and issued 155 caution letters and 10 statement of reason to deny letters, and responded to a larger than normal volume of phone calls and emails for advice, assistance, and information pertaining to backgrounds.

Contracting & Property

The contracting officer passed an Acquisition Management Review with a satisfactory performance. She also completed the training and applied for a Federal Acquisition Certification, and is expected to receive this warrant in FY09. JOTR staff assisted the regional contracting office with the Acquisition and Agreements Management Review of Mount Rainier and in supporting other parks with year-end procurement needs.

Disposal of excess electronic property (47 items) was completed through the UNICOR Federal Prison Industries recycling program. Work was initiated to verify that the property report is current, correct, and in compliance with applicable rules and regulations.

The park started transitioning to the JP Morgan credit card and experienced major setbacks. We look forward to improvements in the coming year.

Information Technology

Telephone and network services installed in the newly built Resource Management building required 7,500-feet of cable and over 90 network connections.

Joshua Tree hosted a physical-security audit of IT equipment. Focusing on disaster recovery, contingency planning, data backups, and PII, the park was able to reduce the number of items not aligned with federal regulations.

Facility Management

Joshua Tree continues to lead the NPS in renewable energy research, leadership, and implementation.

Staffing

In an effort to avoid overloading an already “stretched” HR department, maintenance supervisors coordinated the hiring of seven Centennial seasonal positions. Working with the special needs advocacy group, Desert Arc, and utilizing the “persons with disabilities hiring authority,” four individuals were appointed to perform much needed custodial work and one was hired into the campground crew. Taking this approach helped the park integrate with the community and an underserved segment of the population. Two individuals were hired into the trails crew. Hiring six of the seven positions under the disability authority allowed us to exceed our goal of 50% diversity hires with Centennial funding. The custodial hires allow the campground crew to perform campground maintenance during their entire shift, rather than spending two to three hours a day performing custodial work at headquarters.

Joshua Tree continues to lead the NPS in renewable energy research, leadership, and implementation. Facility Manager John Slaughter served as the liaison to SCE for a couple of key endeavors which have significantly decreased this region’s carbon footprint and have moved us closer to meeting the regional director’s goal of becoming “energy neutral” by 2016.

SCE donated 25 kW of solar PV panels to the NPS. JOTR facilitated the distribution of those panels to CHIS (5kW) and DEVA (20kW). Those systems were installed at the HQ complexes of each park in net-metered, grid-tied fashion to off-set electrical usage.

JOTR coordinated the replacement of inefficient lighting throughout SCE serviced parks. To date, JOTR, DEPO, SAMO, SEKI, CHIS and DEVA are either scheduled to or have been completely retrofitted with high efficiency lighting, saving PWR approximately \$200K in capital improvement costs and about \$100K in annual operations costs. The annual kWh savings are expected to be in excess of 750,000 kWh. CO2 emissions are estimated to be 1,125,000 pounds fewer per year.

JOTR is moving closer to our goal of

becoming energy neutral. Staff installed a 7.2 kW grid-tied solar PV system on the roof of the maintenance building in Black Rock Campground. This system will offset nearly 50% of the electrical load throughout the BR facility.

With Fee funds, JOTR purchased an additional 14.4kW solar PV system that will be installed on the new resource management building and interconnected with the existing 64kW system at the headquarters complex.

A \$1M appropriations earmark came to the park to “construct a joint visitor center” with the City of 29 Palms. The earmark was based on an old PMIS project in the system which was developed from a charette performed in 1996. The project called for the construction of a \$5M visitor center on land to be acquired by the city near the existing Oasis of Mara VC. Since the earmark was only for \$1M and since the property proposed in the previous charette was “not for sale”, the park needed to react quickly to maintain dialogue and ensure collaboration between the city, regional office and Congressman Lewis’ office. Listed below are some milestones:

1. The park, regional office, city, and congressional office created a successful dialogue to re-align the proposed \$1M “construction” earmark into a \$300K “design” earmark.
2. The park entered into an agreement with the DSC to perform design management services throughout the process. Roesling, Nakmura, Terada Architects, Inc. (RNT) was selected to perform programming, pre-design, schematic design, and construction design services.
3. An initial stakeholders meeting was held to discuss overarching goals and objectives. Stakeholders included the City of 29 Palms, US Marine Corps, 29 Palms Band of Mission Indians, Joshua Tree National Park Association, RNT, DSC, and various park staff.
4. A Memorandum of Agreement was developed between the City of 29 Palms and the NPS to accept an additional \$382,974 from the city HUD redevelopment funding towards extended design services.

5. The entire process from start to finish took less than 90 days due to the outstanding dialogue and partnership developed with the regional agreement office, particularly Lilette Baltodano.
6. In June, 2008, the City of 29 Palms issued a check in the amount of \$382,974.
7. The park is planning to take the schematic design package to the national Development Advisory Board (DAB) in June 2009.

This was a successful and productive year for personal development, increased project funding, decreased overall park Facility Condition Index (FCI), safety, and general well being. The following list is not meant to be all inclusive of some other great accomplishments in the division, all of which were accomplished as a TEAM and significantly contributed to the Joshua Tree Initiative:

Management / Team Activities

- » developed a mission statement for the division. The acronym STRIVE, which stands for Service, Trust, Respect, Integrity, Value(s) & Excellence, embodies all those things we in the maintenance division hold in high regard.
- » held over 150 safety meetings. This was written into all supervisor performance plans.
- » reviewed/performed over 50 Job Hazard Analyses.
- » completed the Asset Management Plan.
- » participated in a WASO Pavement Preservation Database pilot program.

In-Park Projects

- » completed the \$9,372,000 Keys View Road reconstruction project, on-time and within budget.
- » slurry sealed and striped the parking lot at Black Rock VC.
- » slurry sealed and replaced delineation boulders throughout loop A & B in Cottonwood Campground.
- » removed three structures in the Whispering Pines area.
- » removed nearly 150 tons of debris from various boundary areas.
- » repaired storm damage to route 12, including securing emergency funding, installing low-water crossing, and repaving—all within 30 days of the event.
- » cleared invasive plants along approximately

- 32,000-linear-feet of the Pinto Basin Road.
- » drafted the Hazard Tree Management Plan.
- » made the Oasis of Mara irrigation system functional.
- » rehabilitated demonstration gardens at Oasis VC and Cottonwood VC.
- » installed Phase 2 wayside exhibits.
- » worked with preservation crew from Harpers Ferry and San Francisco Maritime to restore wagons and other objects at Keys Ranch.
- » painted the Black Rock VC.
- » installed recycled carpet tiles at North Entrance and Black Rock Fire Station.
- » installed 18 metered flush valves in four campground restrooms to reduce water required to flush toilets and urinals.

Buddy/Network Projects

- » Whiskeytown: performed historic orchard pruning and irrigation repair.
- » Whitman Mission: performed hazard tree remediation.
- » Manzanar: prepared and transported a vault toilet.
- » Death Valley: assisted with crack seal cyclic project.
- » Lake Mead: performed mine safe processes throughout the park.
- » Mojave NP: installed a new 30-foot culvert; repaired trail surfacing and steps.
- » Devils Postpile: performed trail clearing for opening of the park.
- » Big Morongo Preserve: performed trail repair.
- » Oceano State Beach: re-vegetation, trail repair, educational opportunities for YCC participants.

Resource and Visitor Protection

Staff worked closely with BLM, Forest Service, mutual aid law enforcement agencies, the Assistant U.S. Attorney's Office, and the U.S. Magistrate Judge to provide emergency response in the park and to cooperators. We continued our efforts to reduce reptile poaching by working with the U.S. Fish & Wildlife Service and the California Department of Fish & Game. Staff were able to negotiate a Memorandum of Understanding with the Riverside County Sheriff's Department.

In 2008 the park welcomed 1,397,554 visitors for a 7.19% increase in visitation from 2007.

Resource Protection

Rangers responded to 52 natural resource violations, monitored critical desert tortoise habitat, and conducted specialized patrol operations targeting wildlife violations. Back-country and boundary patrols were increased as a result of the four Centennial seasonal hires. Detection of resource damage in remote areas of the park was improved. Five incidents of archaeological damage were documented; no citations were issued. Rangers investigated approximately 50 incidents of resource damage from off-road-vehicle use.

The weekend "Climbers Coffees" designed to promote stewardship and the "leave no trace" outdoor ethic among rock climbers had an average attendance of 40 people.

Three illegal dump sites were cleaned-up this year. This involved 42 people removing 42,410 pounds of trash.

World War II military ordnance continues to be uncovered and removed by military units.

Visitor Safety

High-visibility patrols were conducted in campgrounds, picnic areas, and public areas daily and in campgrounds into the evening and early morning hours on weekends. Rangers responded to approximately 500 incidents in 2008.

Rangers maintained high-profile road patrols, conducting traffic enforcement aimed at reducing the number of motor vehicle accidents. Rangers responded to over 22 requests for emergency medical services and 13 requests for rescue. One fatality occurred in the park in 2008.

The SAR team averaged 50 members throughout the year (10 NPS staff and 40 volunteers).

The volunteers provided approximately 6,000 hours of support and training. Six new members were signed up at a recruitment open-house. The team trained once a month and attended a four-day Basic SAR and Rigging for Rescue course. The park hosted a four-day Basic SAR course that focused on land-search skills. Two volunteers provided instruction on alternative anchors at a regional SAR conference.

Most rangers have maintained their national emergency technician certification. Three commissioned rangers, one fee, and two VIP staff members were certified by the Red Cross, six as instructors in CPR/First Aid/AED and three as instructors in Professional Rescue.

Special Use

Cost recovery and location fees amounted to \$50,022. Eighty-three new Commercial Use Authorizations, an increase of 15 over 2007, were issued. There were 52 commercial filming and photography permits and 21 special-use permits issued.

Don Roberts was selected as one of the top three special-use managers by the California Film Commission for Federal Lands Locations in 2008.

Fee Collection

The program collected \$3.06 million at entrance stations, visitor centers, and campgrounds. Staff administered the NPS camping reservation system. Support from the reservation system contractor was very good this year.

Fire

The park experienced four small fires with only an acre involved. The engine crew was deployed for six weeks during the Northern California fire storms. The engine crew

exhibited excellent performance at the combined NPS and BLM Readiness Review in May. The engineer and assistant fire engine operator vacancies were filled.

Communications

The Belle Mt. repeater was replaced. Repeaters for Onyx and Snow Peak were purchased and will be installed in the spring of 2009. Radios were ordered for interpretation, resources, and maintenance through a Fee Demo project, making more radios available to staff in the field.

Work continued with the Riverside County Sheriff's office to provide coverage in the park for their deputies and fire units as well as interoperability with rangers.

Visitor Use Statistics

In 2008 the park welcomed 1,397,554 visitors for a 7.19% increase in visitation from 2007. There were 3,865 overnight stays in the back-country and 234,620 campground overnight stays.

Interpretation and Education

FY08 saw a dramatic improvement in interpretive operations due to the overwhelmingly positive impact of the Centennial Initiative. Interpretation received \$195,000 to hire new seasonal ranger-interpreters. Thirteen seasonal employees were fully funded and three were partially funded with Centennial dollars. As a consequence nearly all facilitated programs showed increases in number of times presented and gains in visitor contacts.

Attendance at the Oasis, Joshua Tree, Cottonwood, and Black Rock visitor centers totaled 292,560 in 2008, an increase of over 25,649, or 9.6%.

Visitor Services

The presence of additional staff as a result of Centennial funding led to the first significant increases in programs offered to the public in quite a few years. The number of additional facilitated programs was 291, a 23.2% increase over 2007. Visitor contacts increased by 26,546, or 61.6%. New programs totaled 49. Five new Junior Ranger programs were offered in 2008. The additional staff led to better promotion of the Junior Ranger program so the number of Junior Ranger participants increased by 1,269, a 99.9% jump over 2007. Roving contacts were up 197.7%. Visitors attending formal programs increased by 49.9%. Community program contacts were up 281%. Special event contacts increased eighteen fold! Audiovisual program attendance was up 86% in 2008.

Joshua Tree was able to participate in the Riverside County Date Festival again in February after an absence of two years due to staffing limitations. This annual event is held over a 10-day period in February in the rapidly growing and ethnically diverse community of Indio, California.

Interpretation staff also prepared a series of special programs that were offered on National Junior Ranger Day to area children.

Attendance at the Oasis, Joshua Tree, Cottonwood, and Black Rock visitor centers totaled 292,560 in 2008, an increase of over 25,649, or 9.6%. All of this increase can be attributed to the strong year at Cottonwood where wildflowers were amazingly diverse and abundant from November through March across much of the eastern half of the park. In fact, the Cottonwood Visitor Center established an all-time park record for monthly visitation in March 2008: 30,701.

Education

The education program benefited from the

addition of one GS-7 seasonal position as well as additional GS-5 seasonal ranger positions in the spring and summer. The summer seasonal position was shared with visitor center operations. The number of education programs presented increased by 89 (13.9%) due to the increased staffing. Education program contacts declined slightly (2.6%) because more large, special assembly programs were given in 2007 at the request of schools.

A Joshua Tree Named Lily, an original children's book authored by Education Specialist Lorna Lange that focuses on Joshua trees and their importance to the Mojave Desert was published. As part of the project, school children from diverse, yet economically disadvantaged school districts were bused to the park to take part in activities focusing on the "Lily" story.

Education Ranger Caryn Davidson took on a collateral responsibility as the park's liaison to a reconfigured Artist-in-Residence program. Developed in partnership with the Riverside Art Museum and Morongo Basin artists Clea Benson and Audrey Gillick, the new arts program features traditional residencies for selected artists from outside the local commuting area as well as an affiliated artists program for local area artists. Each art residency comes with a commitment from the artists to donate a work to the park and share the outcome of their residency through some public venue. Caryn played a crucial role in working with the A-I-R program partners and volunteers to design and launch the program in 2008.

Interpretive Media

Installation of the park's new wayside exhibits continued in 2008. Most Phase 2 waysides were installed including 14 new backcountry registration stations to support the backcountry and wilderness management program.

Education staff tested prototype traveling trunks designed to bring the desert tortoise to the classroom. Trunks were fabricated for the Desert Discovery Center, for The Living Desert, and for teachers to use.

A completely redesigned and rewritten park unigrid folder made its debut in 2008, just in time for the busy spring season. Visual Information Specialist Sandra Kaye worked with the Publication Division staff at Harpers Ferry Center to complete editorial work on the project. The park folder redesign project was funded through the Recreation Fee program.

Joshua Tree received FY08 Exhibit Cyclic funds to replace outdated trail signs on three nature trails: Indian Cove, Cottonwood Spring, and High View. Cynthia Langguth, Robb Hannawacker, and Caryn Davidson worked on the text, and Boulder City artist Sharon Schafer was awarded a contract to develop pen-and-ink drawings for the panels. Work on this project will continue in 2009.

Work progressed on the park's image library. Over 2,000 slides have now been scanned and cataloged using Extensis Portfolio software. Searchable metadata was added to the image

database. Unfortunately the slides are in poor condition so the images will require extensive editing prior to their use.

Desert Tortoise Outreach

Anne Staley, the Desert Tortoise Outreach Coordinator for the Desert Managers Group, continued to manage the California desert-wide public education and outreach program about the threatened desert tortoise. A wide variety of media and educational products reached an estimated audience of 2.36 million people in FY08. An estimated 4,900 people participated 23 community events, 15 with Mojave Max in costume.

Education staff tested prototype traveling trunks designed to bring the desert tortoise to the classroom. Trunks were fabricated for the Desert Discovery Center, for The Living Desert, and for teachers to use.

Eight-hundred and fifty-two students went



New backcountry registration board at Twin Tanks.

online to guess when Mojave Max would emerge from his burrow. Pizza parties were held in the classrooms of the seven county winners, their classmates, and teachers. The Nevada-based Mojave Max died during the year. A new Mojave Max will live at The Living Desert. A partnership with The Living Desert to promote desert tortoise conservation through the Mojave Max Emergence Contest was established and will potentially lead to additional collaborations in the future.

Anne worked with the Joshua Tree National Park Association to develop a desert tortoise merchandise program with the theme: “one tortoise, one desert, one chance.”

Volunteer Program

The Joshua Tree Volunteers-in-Parks program achieved an important milestone with the receipt of \$48,000 in Centennial Initiative Volunteer Funds and the establishment of a subject-to-furlough volunteer coordinator position, filled by Laureen Lentz. Starting her new role in July, Laureen was able to recruit 688 volunteers to take part in the program. This is a significant increase, although there was a modest decline in hours to 23,764 (down from 26,299 in FY07). The value of the labor contributed by park volunteers in 2008 is estimated at \$43,336. By the end of the year, Laureen had developed the “39 in 09” campaign with a goal of increasing park volunteer hours to 39,000 in 2009.

With the establishment of a new Joshua Tree Artist-in-Residence program in 2008, Laureen worked closely with the A-I-R Program Liaison, Caryn Davidson, to establish check-in and orientation procedures for selected artists. Participating artists contribute their time as park volunteers.

Joshua Tree also received \$7,200 in Volunteer Special Project funds to rehab the native plant garden at park headquarters. Arborist Bob Clyde directed the installation of plants raised by volunteers in the native plant nursery.

Cooperating Association

The Joshua Tree National Park Association (JTNPA) completed its second full year of operation of the Joshua Tree Visitor Center as well as its 46th year as the park’s principal non-profit association.

The Association recorded gross revenues of \$919,911, a 3.5% increase over 2007. Net revenue was \$466,043. Aid to the National Park Service was \$140,841.

The 16th annual Art Festival was held April 4-6 with nearly 30 exhibiting artists taking part. There were approximately 1,200 additional visitors who attended the art show that weekend. Apart from enjoyment of the many artistic interpretations of Joshua Tree and its desert ecosystems and landforms, the art show raised \$3,000 in support of the Association’s activities.

The Desert Institute offered 56 field courses with a total student enrollment of 557 for the 2008 fiscal year. The field course offerings broadened with the introduction of 14 new classes. Community outreach increased with new partnerships in the Coachella Valley: California State University, Palm Desert Campus; Osher Lifelong Learning Institute, and the Rancho Mirage public library. Five lectures and one college class were offered with various partners for a combined lecture attendance of 1,066 attendees. The Desert Institute created an official volunteer program with the help of the NPS volunteer coordinator and 17 people participated. The Institute is staffed by one full-time and one part-time employee.

The Joshua Tree National Park Graduate Student Science Grant Program is funded each year through JTNPA with annual contributions of \$10,000 from the Lee Family Foundation and \$2000 from the Association. Four grants were awarded for 2008.

In March, JTNPA presented the 5th annual Minerva Hoyt California Desert Conservation Award to Mark Jorgenson, superintendent of Anza-Borrego Desert State park for his lifetime of dedication to the protection, interpretation, and management of California’s largest state park, a crown jewel of the California Desert.

JTNPA Executive Director Nancy Downer resigned at the end of the fiscal year. Office Manager Marian Tremblay assumed many of the Executive Director’s responsibilities while the Board of Directors initiated a review of the Association’s staffing.

Resources Management

We began 2008 with 13 transmittered tortoises, but ended the year with 12 tortoises.

Wildlife Ecology

Joshua Tree bio-techs and SCAs continued collecting tortoise telemetry data completing the third year of data collection on tortoises in the park. We began 2008 with 13 transmittered tortoises, but ended the year with 12 tortoises.

Two tortoises lost their radio transmitters, a Wilson Canyon tortoise in May and a Black Eagle Mine Road tortoise in December. However, two tortoises were added, one on the Black Eagle Mine Road found by SCA Erin Hailstones and one relocated by Jane Cipra near the South Entrance that had been briefly transmittered in 2007. Sadly, one of our monitored tortoises was killed near the South Entrance in August of 2008 around the time of a heavy summer downpour. The remains of this tortoise were found scattered inside a curbed pull-out and extending ~30 m down hill. Circumstantial evidence suggests this tortoise came to the road to drink runoff from the storm and was struck and killed by a vehicle.

A project was initiated and completed this year looking at the effects of wildfire on the park's vegetation and rodent communities in Covington Flats. Results of the study will be published as a thesis and later in a scientific journal.

The wildlife branch continues to participate in the development and implementation of the Raven Management Plan. Activities for this next year will include raven nest searching in the park.

A California treefrog study investigating the feasibility of reintroducing the frog to historic locations was completed this year. This study was part of a Cooperative Ecosystem Study Unit grant. Dr. Ted Garland of the University of California, Riverside was the principle investigator. Preliminary results show promise for introductions in historic locations. Plans for translocation next year are being made.

Motion-trigger cameras were again used to monitor which wildlife species are using guzzlers. Plans are being made to rehabilitate the Pine City guzzler with a new tank to replace the existing leaking tank.

The branch chief position is currently held by Michael Vamstad, a SCEP student, who also attends the University of California, Riverside in the Evolution, Ecology and Organismal Biology program under the direction of Dr. John Rotenberry. Wildlife technicians Kristen Lalumiere and newly hired Jane Cipra coordinated the field aspects of the branch very well. This year also saw two bright interns, Erin Hailstones and Jamie Hall.

Vegetation

Restoration of disturbed arid lands remained an active component of the Vegetation Branch of Natural Resources in FY08. Projects included burned-area rehabilitation of Whispering Pines, restoration of the newly rehabilitated Keys View Road corridor, volunteer restoration of social trails, and monitoring and maintenance of past restoration projects at Squaw Tank, Indian Cove picnic area, and Federal Highways Project 291.

Burned Area Rehabilitation The 2006 West Complex fire burned through several structures in the Whispering Pines inholding, leaving behind a lot of debris. Removal of debris left large denuded areas of unstable soil that were susceptible to erosion. The BAER plan specified revegetation and vertical mulching to stabilize soils and hasten the restoration.

Sixteen species of native shrubs and grasses were propagated from seed collected from unburned pockets in Whispering Pines. Outplanting of the nine burned-over building sites is scheduled for fall, 2008. Driwater[®], a slow-release irrigation supplement, will be installed with outplants to increase survival rates. Chicken wire cages will protect palatable outplants from herbivory.

Road segments and driveways were restored using vertical mulch to discourage use by off-road vehicles. Retardant lines, hand-lines, and helispots were monitored for invasive plants in October 2007 and September 2008. Colonization by red brome and cheatgrass does not appear to be associated with fire suppression activities. Monitoring of invasion in restored sites relative to unrestored sites will be informative for determining whether outplanting can improve resilience to invaders.

Overall survival of out-plants and trees moved by contract was high, more than 81%.

Keys View Road Rehabilitation The 5.0 acres of habitat disturbance from the Keys View Road construction activities in 2007 called for 0.37 acres of restoration in the project area. Specifications included topsoil salvage, and revegetation using native species from stock collected from no more than five miles from the project site. Revegetation efforts attempted to replicate natural spacing, abundance, and diversity of native plant species.

A variety of native plants were removed and relocated onto reclaimed sites during the reconstruction. More than 100 native trees (*Yucca brevifolia*, *Quercus ssp.*, and *Juniper californica*) were transplanted by contract, and 159 native shrubs and succulents were moved by park staff.

Compaction and erosion of bare soils was minimized by replacing the topsoil in disturbed locations as near to the original source location as possible. Bare soils were first treated using vertical and horizontal mulch, and then subsequently out-planted with locally sourced native plants from Joshua Tree National Park's Center for Arid Lands Restoration (CALR).

The majority of the out-planting of native plants was carried out during February and March of 2008. As an adaptive management experiment to investigate if individual plant survival and/or natural recruitment underneath shrubs could be improved, a random selection of out-plants were planted with artificially constructed shrub mounds. Shrub mounds form naturally under desert species with accumulation of dust and sediments, and from wildlife activity.

Vertical mulch was used to restore obliterated areas where we were unable to use out-planting and salvaging techniques. Volunteer labor contributed significantly to this effort. Ninety individual volunteers worked 3- to 4-hour shifts, contributing 315 volunteer hours.

A task agreement with the University of California at Riverside produced a soil health monitoring protocol for the rehabilitated roadside, which is being implemented to monitor and restore soil profiles to improve the revegetation effort. This manual is currently

under peer-review for submission as an NPS Technical Series Report.

A task agreement with the University of Nevada Las Vegas was established to develop and implement monitoring protocols to evaluate the efficacy of revegetation techniques in promoting ecosystem succession and resilience to invasive species of restored disturbed lands. The project will be focused on the Keys View Road corridor, and monitoring protocols will serve as a template for monitoring other restored sites in Joshua Tree National Park, and monitoring data will serve to inform future revegetation projects.

All salvages and out-plants were mapped using GPS/GIS, and plants were monitored and watered on a monthly schedule. Soil Moisture readings were taken at each plant to determine if supplemental water was required. Overall survival of out-plants and trees moved by contract was high, more than 81%. This high success rate is attributed to the fact that the Joshua tree, which transplants well, was the primary species moved by the contract and they were transplanted at an optimal time of year. The shrubs were transplanted in late spring, which is not an optimal time and some species do not transplant well. Their survival rate was only 43%.

The Center for Arid Lands Restoration (CALR) continued to propagate plants for Ft Irwin, delivering 2,252 plants during FY08, and began propagation of 1,734 plants for FY09 delivery. Our contract with the Bureau of Land Management in Palm Springs finished, with 89 plants delivered in December 2007. CALR also continued to supply JOTR with our own restoration needs, with 456 plants outplanted on the Keys View Road rehabilitation project, 670 plants propagated for outplanting on the Central Complex Burned Area Rehabilitation (BAR) project, and 500 plants propagated for outplanting on the West Complex BAR project.

Rare Plants We now have just over 75% of park species represented in the synoptic herbarium collection. Field surveys were successful for adding: *Lomatium parryi* and *Amaranthus torreyi* to the list. Over 20 new rare-plant localities were found and mapped. *Colubrina californica*, *Ditaxis californica*,



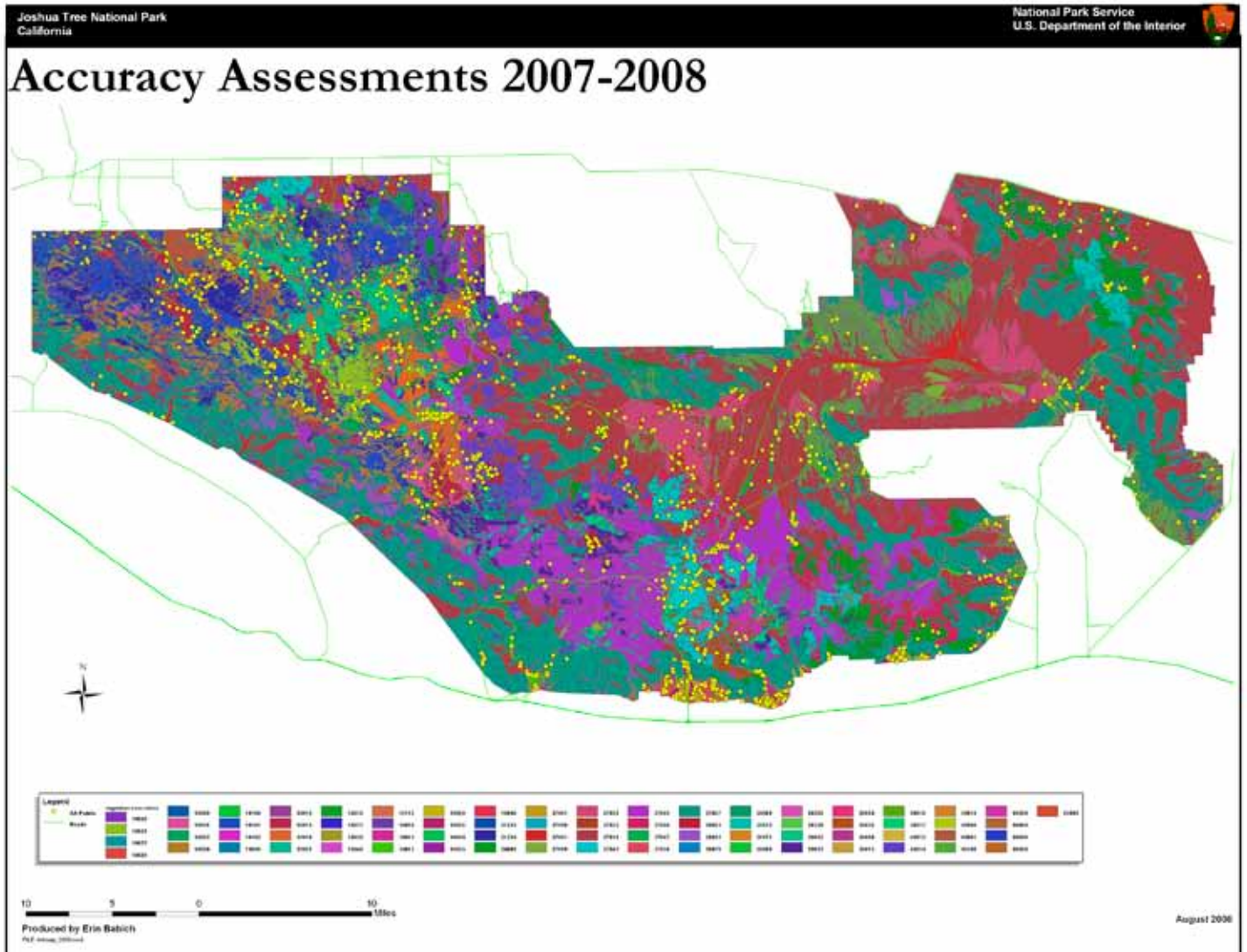
Linanthus maculatus, a diminutive annual with a flower no larger than five mm in diameter.

and *Ayenia compacta* were all found during the fall within the Eagle Mountains. In addition, several new populations of *Aloysia wrightii* were located. A large population of *Astragalus tricarinatus*, a federally endangered species, was located in the upper reaches of East Deception Canyon in spring. This was a significant find in that it represents an eastern range extension for the species, as well as the largest population within the park. We were able to relocate several populations of *Linanthus maculatus*, a diminutive annual in the Polemoniaceae family with a flower no larger than five mm in diameter. We also found two new areas with healthy populations. Another interesting find occurred in the Wonderland of Rocks, east of Willow Hole, where a unique oak hybrid was found, *Quercus x munzii*. The only other known individual of this hybrid occurs at Live Oak picnic area.

Vegetation Map Staff completed 1,315 accuracy assessment points throughout the

mapped vegetation alliances (map below). In a September meeting with Chris Lea (NPS Vegetation Inventory Botanist, Biological Resource Management Division), John Menke and Debbie Johnson (Aerial Information Systems), and Todd Keelor-Wolfe (CDFG), participants agreed on changes to the vegetation key and the GIS map that will improve the quality of both. Money to complete these changes will be provided by the Inventory and Monitoring program in FY09.

Weed Management Staff completed a roadside inventory of *Brassica tournefortii* along Route 11, assessing abundance of Brassica along the roadsides, and along transects that extended 100 meters from the road into adjacent vegetation on either side. Multiple volunteer days were coordinated during April and May to hand-pull Brassica in especially dense roadside locations, as well as at the Turkey Flats dunes area. Field observations indicate that Brassica is prevalent throughout the park



and is especially abundant along our southeast boundary. Joshua Tree National Park has been responding to invasive plant species with assistance on an ad hoc basis from Lake Mead's Exotic Plant Management Team, volunteers, and park staff. An invasive plant management plan and dedicated staff is needed for more effective management.

Staff attended bimonthly meetings of the Mojave Weed Management Area and joined the Southern Low Desert Basin Weed Management Area. Biological science technician Jason van Warmerdam assisted with uploading invasive species distribution data to a central sharepoint for the SLDBWMA Rapid Watershed Inventory of invasive species.

Bouldering/Social Trails Fee-Demo funded project 'Produce Educational Brochures and Map Visitor Impacts in Bouldering Areas' (PMIS 103996) was funded in FY08 in response to the growing popularity of recreational bouldering and the publication of a comprehensive guide to bouldering problems (Miramontes 2003). The goal of this three component, multidisciplinary project is to create a GIS of boulder problems, known social trails, and known natural and cultural resources/surveyed areas and produce an educational brochure on bouldering impacts for public outreach.

A protocol was developed for establishing permanent plots to assess impacts to vegetation and soils across the range of bouldering areas in the park, and to provide a baseline from which future impacts could be monitored. Vanessa Truitt and Mark Sappington from Lake Mead designed an Access database for storing bouldering impacts data. To assess the effect of environment (e.g. soils, vegetation community, aspect) and intensity of use on bouldering impacts, plots were established in climbed and nearby unclimbed control boulders, across the geographic and use intensity range of bouldering activity in the park. Data on site conditions, vegetation cover and composition, soil surface stability and strength, and groundcover composition were collected, and photo point monitoring on the plot and on the boulder face was established.

Half of the target number of sample plots were established between May and July 2008.

The remainder were scheduled to be completed in FY09, pending staffing.

A protocol for inventorying social trails associated with bouldering areas was developed, and a geodatabase was created by Lake Mead GIS staff. Forty-eight bouldering areas were surveyed. Erin Babich and Bernadette Regan, with the help of volunteers, mapped 65 miles of social trails using Magellan GPS units. The most extensive social trail systems occur in Real Hidden Valley (5.68 miles), Barker Dam (5.11 miles), and The Outback (4.08 miles). Relatively remote areas like Queen Mountain (Underground) and the Valley of the Kings have been impacted the least. A proposal for restoration of social trails was presented to the FY08 NRAC for Disturbed Lands Restoration Funding.

Fire/Resource Advising Erin Babich, Jason van Warmerdam, Katy Matthews, and Alice Miller completed Resource Advisor training at Lake Mead and qualified as Type 2 Firefighters. Jason acted as a GISS trainee and as a GISS for three assignments between June and August. Erin was a wilderness resource advisor on the Blue 2 and Sisykou Fires in August.

Physical Science

Air quality monitoring continued year round at the Black Rock & Cottonwood air stations and during the summer at Pinto Wells. This is the third season for data collection at the Pinto Wells air station, which will continue for at least one more season to establish a baseline near the Eagle Mountain Landfill project. Joshua Tree's air quality monitoring program underwent audits from both the California Air Resources Board and the Environmental Protection Agency.

The Black Rock air station received a new monitoring shelter that requires less electricity to maintain a constant temperature, as required by the EPA, and ozone analyzing equipment. All new meteorological equipment was installed as well, including new temperature, wind, precipitation and relative humidity equipment. This state of the art equipment is energy efficient, requires less electrical power, and is highly accurate.

Early in FY 2008 a \$90K funding request was submitted through the State of California at

the request of the Senator Dianne Feinstein's office. During the latter part of FY 2008 the funds were released and committed to close five mine sites during 2008, 2009 and 2010.

The Desert Queen Mine was identified as Joshua Tree National Park's number one priority for closure in the 2008 Office of Inspector General's Audit Report. Work began with the fabrication of subassemblies at Pinto Wye for installation in FY09.

A little over one million dollars in funding requests were submitted to the Economic Stimulus Package to close 22 mine sites throughout the park. If funded the amount will close approximately 38 hazardous mine features while preserving access to wildlife who currently occupy the sites.

Staff assisted the Needles Office of the Bureau of Land Management and the State of California with five mine closures. They provided two new portable welders and a vertical mill-drilling machine for use in the Pinto Wye machine shop.

All 24 groundwater monitoring wells were surveyed and recorded including nine at the Oasis of Mara. This is the second year of data collection. If funding permits, data collection

will continue into 2009.

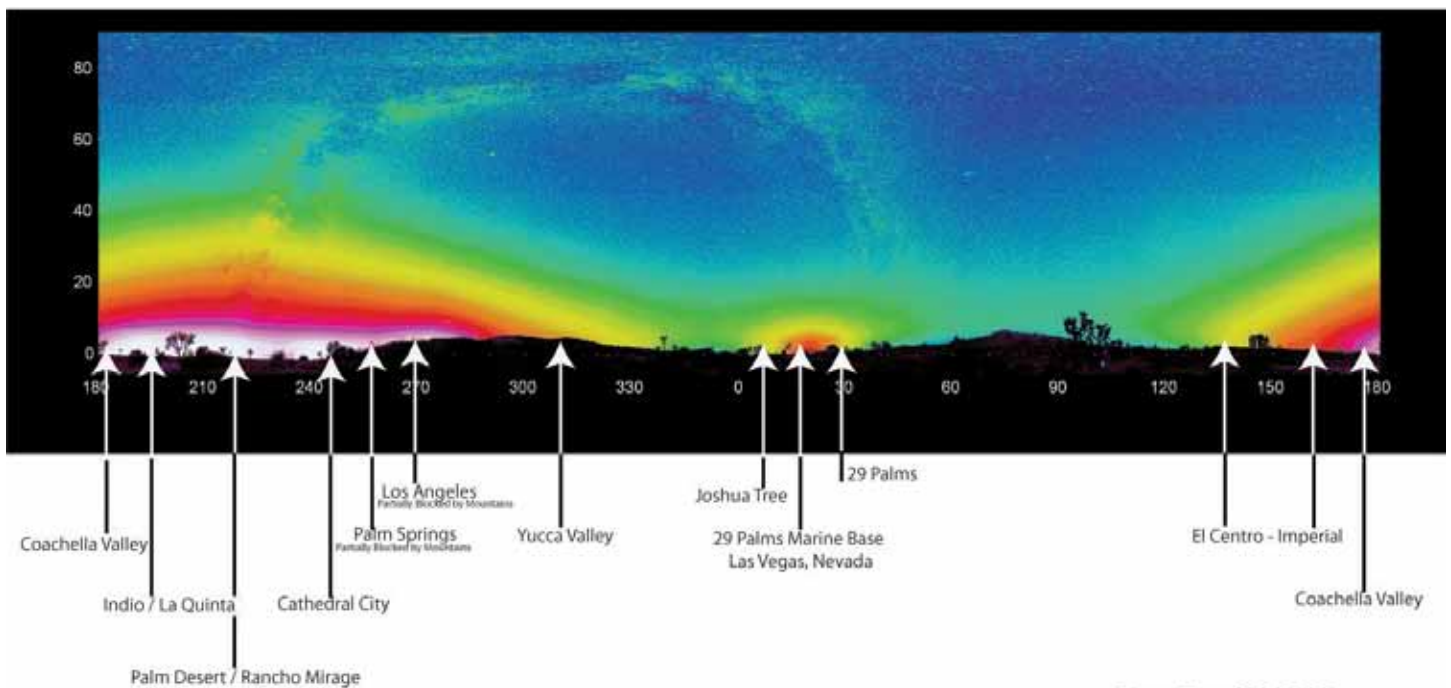
During 2007, the USGS collected seismic profiling over the Cottonwood groundwater aquifer to determine its extent. The results of that study were expected in December of 2008, however the report is delayed until the summer of 2009.

In September a set of images were taken from Keys View and photo-stitched to produce a composite depicting light pollution caused by major cities around the park. Six permanent monitoring stations will begin collecting baseline data in 2009.

Cultural Resources

Archeology Staff recorded two new archeological sites found while inventorying 43.5 acres for two projects designed to close social trails to the Hall of Horrors and Hemingway. Four new sites were recorded as a result of surveys of 53.5 acres along Mastodon Peak Loop Trail and portions of Bigfoot Trail.

Archeological monitoring for a USGS soil-mapping project was completed by John Schroeder. Most sample locations were in the Covington Flats area, while some were located west/northwest of Eureka Peak and a few in the Quail Springs drainage. John conducted



Panoramic image of night-sky light pollution taken from Keys View in September, 2008.

Prior to a redesign of the Black Rock area, 160 acres were inventoried and a 32-acre site was recorded.

training on site identification for the USGS crew and directed the work away from recorded and known archeological sites.

Prior to a redesign of the Black Rock area, 160 acres were inventoried and a 32-acre site was recorded. The site record and inventory report will be incorporated into an Environmental Assessment prior to renovation.

Year one of a two-year site-condition assessment was begun in FY08. Archeological sites lacking any condition assessments and those in developed areas were targeted. Six in-house archeologists and two contractors worked on the effort and relocated and assessed 265 sites; GPS locations were gathered and site overview photographs were taken. Data was entered into the ASMIS database. PMIS proposals for projects such as cyclic maintenance and re-recording of sites are now backed up with valid and current information on condition, needed treatments, GPS locations, additional features and artifact types, and current photographs.

Cultural Cyclic Maintenance (CCM) work to stabilize archeological sites was conducted in FY08. Caitlyn Marrs, a Student Conservation Associate, aided in stabilizing two prehistoric National-Register-eligible sites that had park developments placed on top of them many years ago. A large dirt parking lot was encroaching on a site along Geology Tour Road and a network of social trails were causing erosion. A site in Indian Cove had two picnic sites placed directly on the midden with a loop road and parking lot on-site. Both sites had been extensively trampled and water was channeling and causing erosion. To slow degradation, unnecessary park infrastructure was removed and damage caused by visitors was mitigated by planting with native plants, signing, placing barriers, and designating one trail for visitor use. Both sites are being monitored and the plants watered; survival rates are high. A draft report documenting the work was written by Lynn Robinson and Jan Keswick. More plants were propagated in the park nursery for planting at sites near Barker Dam in FY10.

Based partly on the condition assessments noted above small-scale treatments were conducted by contractor Dave Henley on

this same CCM project. Prior to treatments any human-caused offense was reported to law enforcement and Case Incident Reports (CIRs) completed. Fire rings, charcoal, and/or charred wood were removed from 25 sites; miscellaneous treatments took place at 12 sites; and treatment reports have been completed for each accomplishment and data entered into the ASMIS database.

When conducting post-treatment visits to many of these sites it has been noted that for the most part they have remained undisturbed. Removing the visual cue, and by inference the message that park staff are unconcerned, is making a noticeable positive impact on the appearance and condition of the treated sites.

Planning for archeological inventory, baseline site recording, and monitoring at published bouldering routes began in early FY08; ArcMap files were utilized extensively for this effort. Sixteen bouldering routes were inventoried to identify potential archeological resources. The survey consisted of a visual examination of the established bouldering route as well as the ground surface in a 10m swath around the route. Three sites were discovered and recorded. Six previously recorded sites at bouldering routes were re-located and four were found to have deteriorated conditions due to visitor disturbances with two of these being particularly problematic. This is a continuing, multi-year, multi-discipline project.

Work on the park's Archeological Overview and Assessment continued under a Task Agreement with Sonoma State University, Anthropological Studies Center. An excellent draft was received in FY08 and the final is expected in FY09. Year-end monies were also received and some additional tasks added to the Overview. This document will guide prehistoric archeological research in the park for many years to come.

Cultural Landscapes Fieldwork on the Heximountain (a.k.a. Silver Bell/Golden Bell) Cultural Landscape was conducted and the report completed by PWR staff. The Heximountain landscape was found eligible to the National Register of Historic Places by the California State Historic Preservation Officer.

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Historic Structures Stabilization The historic preservation crew from Tumacacori NHP was scheduled to conduct two stabilization projects: Piñon Well and Hexehedron. Unfortunately, a previous commitment took longer than they had planned and they were not able to conduct the work and no other crews were available; funds were returned to region.

Funding was received from region to conduct condition assessments on a majority of JOTR's 92 historic structures on the List of Classified Structures. This work was conducted in-house by Bob Clyde.

Historic Studies The Sonoma State University Anthropological Studies Center was contracted to prepare the Historic Resources Study for the lands added to the park in 1994 for publication. It will be printed by PWR.

A representative from the Organization of American Historians, three university scholars, the regional historian and park staff participated in several days of discussion to analyze JOTR's current interpretive and research programs as they relate to park, regional, and national historical context. The three scholars have submitted individual reports based on their expertise. The reports will be compiled and published in 2009. The long-term outcome may include substantially expanded and improved oral, written, and visual media available to the NPS, outside researchers, and public interpretation.

A term historian position was announced in August to be hired in October. The historian will work on expanding the park's oral history program and assist interpretation and cultural resources staff on projects with historical components.

Work on an administrative history of the park began this summer when geographer/historian Dr. Lary Dilsaver conducted three weeks of research in the park's administrative archives. The project will continue with research at the regional office, National Archives, and other repositories.

Museum Collections Forty-one original documents associated with mining claims were sent for preservation treatment to the Northeast Document Conservation Center.

The documents all suffer from desiccation and embrittlement as a result of being stored in metal containers and subjected to the desert environment for extended periods. Treatments will be performed in 2009.

Archival staff from Death Valley assisted Joshua Tree for several months this summer. A cataloging project resulted in the processing of 9.3 linear feet of backlogged archives covering the development of the General Management Plan/Backcountry Wilderness Plan, multi-year bighorn sheep research, water source information, and the military over-flight agreement (Environmental Assessment of VR-1257).

Paleontology The Division of Geological Sciences of the San Bernardino County Museum is continuing paleontology and geology research investigations in the Pinto Basin. The research is focused on further recovery of significant paleontologic resources and more detailed documentation of the geologic and stratigraphic context of geologic formation exposed in the region.

Investigations conducted under this cooperative agreement included detailed stratigraphic and lithologic documentation as well as recovery of exposed fossils and sampling for microfossil remains. Fossils and fossil-bearing sediments exposed during excavation were removed from the park and taken to the SBCM for preparation and identification. More than 261 accessioned specimens (2,271 total objects, including portions and fragments) have been recovered; this material will eventually be returned and placed in the museum collections. The majority of fossils recovered date to the Pleistocene Epoch; recent discoveries of fossils of Bison (bison) suggest that these remains are late Pleistocene in age. New discoveries of vertebrate fossil remains in sediments below Tertiary basalts in the eastern Eagle Mountains, south of Pinto Wash, represent a previously-unrecognized, substantially older faunal component. These older sediments contain what may be one of the oldest records of Thomomys (pocket gopher) in North America.