



# Superintendent's Annual Report

## FY2010



## SUPERINTENDENT'S OFFICE

Fiscal Year 2010 was kicked off with another base budget increase and increased visitation. Many great accomplishments were realized during this year and will be mentioned in the various subsections in this report. Park Superintendent Curt Sauer participated in the RLC throughout the year as the Representative for the Mojave Network, and was also the Chairman of the Mojave Network Superintendents Committee.

Meetings with First Solar and correspondence with the Eagle Mountain Hydro –Electric Pumped Storage Project proponents took up much time and energy, particularly from the Resource staff, with much oversight from the Superintendent. At the close of FY2010, park staff was considering becoming ‘cooperators’ with the BLM to guarantee open communications with regards to alternative energy projects. Preparing responses to alternative energy proposals is taking an enormous amount of staff time.

Legislation that affected the park includes two bills including Senator Feinstein’s California Desert Protection Act of 2010, and an NPS Omnibus Lands Bill. Time was spent on coordinating language, maps, definitions and recommendations for both bills.

As of the close of FY10, neither bill has moved forward. The NPS bill is languishing in OMB, and the Senator’s bill has gone through many changes and may move late in calendar year 2010.

### **Planning**

The park kicked off its GMP planning in October of 2009 with a Foundation Workshop. The park staff met with the Denver Service Center GMP Planning team to review and refine the existing park purpose and significance statements and to develop the fundamental resources and values. In April 2010, the GMP/EIS Scoping Newsletter #1 was prepared and printed. In May, the park met again to review the conclusions gained from the October workshop, and the public meetings were held throughout the week of May 17<sup>th</sup>, in 5 different communities, Palm Desert, Palm Springs, Twentynine Palms, Yucca Valley and Joshua Tree with less than a total of one hundred members of the public attending. A tour of the park was held in May and included the DSC Planning Team, and representatives from the ACCESS Fund, since climbing management and resource degradation is an ongoing issue, and 15% of park visitors are here to climb. The Federal Register notice was posted, in Vol. 75, No. 96 / Wednesday, May 19, 2010. A follow up postcard was prepared and distributed in August reminding the public that the comment period ended on August 31, 2010. During the fall of FY2010, the Foundation Statement was in the Draft stage. At the end of FY2010, with the retirement of Superintendent Curt Sauer and until a new Superintendent is named and on site in February 2011, coupled with the fact that a national budget cut in planning offices would force the JOTR GMP to be put on the back burner, until a determination is made if funds are available midyear in FY2011, or the GMP would be placed in the queue for FY2012.

In March 2010, the Superintendent’s office became involved with community members who wished to create a committee to collaboratively plan for, and organize events surrounding the park’s 75<sup>th</sup> anniversary, which occurs in 2011. The committee became a diverse group with membership spanning the length of the Morongo Basin, with a significant variety of events being planned.

**Safety**

The Safety Committee remains active and meets at least once per month. Most divisions have representatives present on a regular basis. The Safety Committee coordinated several events, including: the annual fire extinguisher inspections and training, another very successful Wellness day event, BloodBorne Pathogen and Hazardous Communications training was provided to the DesertArc employees, participation in the annual Great California Shakeout occurred and an Employee Perception Survey was conducted with results being analyzed for how to implement improvements to the safety program for FY11.

**Lands**

Participation in lands meetings with the regional office continued, with excellent and active working relationships with the Mojave Desert Land Trust, the Conservation Land Acquisition Work Group which is a subcommittee of the Desert Managers Group, and the Morongo Basin Open Space Group. A major accomplishment was the Mojave Desert Land Trust acquiring 955 acres of pristine land, known as the Quail Mountain Project. This project was a collaborative effort with the MDLT, and the United States Marine Corps, Community Liaison Office out of the Marine Corps Air Ground Combat Center. Funding for this project included grants that the Mojave Desert Land Trust secured, mitigation funds from the Copper Mountain College and funds from the USMC program known as the Readiness and Environmental Protection Initiative, (REPI). The nexus with the USMC REPI is the fact that this land is under the USMC air corridors, and they wish to have their training routes protected from development.

**Geographic Information Services Office**

The park's GIS Specialist, Sean P. Murphy continues to work with a number of partners to help analyze land use issues, and assists the creation of modeling scenarios for many of the park's resource issues. Additionally, he held a class about JOTR Aerial Imagery, initiated a partnership with Natural Resources GIS employees at the 29 Palms Marine Base, assisted with the Ewasko search in June, the Keys Fire in August, and the Rosenthal search in September. Sean continued his excellent partnerships with the University of Redlands and working with the Morongo Basin Open Space Group.



At the close of FY2010, we celebrated the retirement of Superintendent Curt Sauer after 35 years of government service.

## ADMINISTRATION

The Administrative Division experienced the retirement of both the Budget Analyst and the Administrative Officer during the fiscal year. The position of AO was not filled until late in September and the budget analyst was filled from within the park with an employee new to the level of fiscal responsibility assigned to the position. The administrative staff received supervision from two acting assignments one within the Business Center staff and one from the senior park staff. This was year of change, growth, new staff and new assignments.

### **Budget and Finance**

The operating budget of the park received an OFS increase of \$498,000 for Visitor Safety and additional FTE and the remainder of the FY09 OFS increase for Enhancement of Natural and Cultural Resource Preservation for a final ONPS allocation of \$6,271,615. The park supported the M&M SHRO with \$22,016.

ARRA projects were accomplished with final road projects taking place in the early fall. The park worked hard to reduce the FLERA excess balance and returned approximately \$470,000 funds to the regional pool for redistribution.

Joshua Tree met the travel ceiling for FY10 with travel expenditures of \$108,774. Backcountry travel vouchers and associated GOVtrip fees totaled \$568.

Fiscal year end closing went remarkably well considering the experience level of the Business Center administrative staff. ONPS closed within the required ¼ of 1% of allocation. The budget technician and the program assistants are to be congratulated for the dedication and hard work they accomplished to meet that target. The experiences learned will provide the basis for a smoother and more technically proficient fiscal close during FY11.

### **Housing**

The park housing program ran without any major issues. The park was able to house all seasonal staff within existing park housing and did not need to lease space in the private sector. Housing revenue for the year was \$34,014.12.

### **Human Resources**

The one constant this past year was change. The HR staff faced day to day challenges associated with the transition from SPO's to SHRO's, learning how to navigate SROC, HROC Phase I and Phase II, e-OPF's, USA Staffing, categorical ratings, QuickTime, and e-QIP.

The HR program at JOTR continued to provide park staff and managers with support in all areas of human resources, i.e., classification of positions, position management, employee relations, staffing and placement, benefits, pay administration, ethics, etc. The team implemented several new processes over the past year to include learning and utilizing USA Staffing, eOPF's, SROC, HROC and the M&M SHRO procedures.

The HR staff completed in excess of 373 personnel actions, 21 vacancy announcements, purged and prepared more than 130 OPF's for shipping and scanning for implementation of eOPF's, 6 Retirement cases, numerous employee relations cases including one removal for cause.

Two FERS Retirement courses and an Exceptional Leadership in the NPS course were offered at Joshua Tree.

In addition to the work performed by the Joshua Tree staff the HRO provided supervision for one full-time and one part-time WASO employees. She with her WASO staff provided the personnel security and suitability adjudication program for all NPS positions that handle government money and worked with WASO staff to develop, write and review bulletins and policies related to human resources and suitability issues. This past year, this office handled nearly 2500 background investigations for the National Park Service.

### **Information Technology**

The IT function at Joshua Tree experienced a transition during FY10, supervision of the IT specialist was shifted from Administration to Maintenance and all Information Technology processes were handled through the Maintenance Division.

### **Administration's Networking**

Support of Mediterranean and Mojave (M&M) Network IT work group

Support of M&M SHRO for Servicing Human Resource Office

Support of MABO for Major Acquisition Buying Office

Business Center administrative staff held routine information sharing meetings to keep each one informed of due dates, lessons learned and issues to be resolved. The team effort was what made the park meet its fiscal yearend closing goals.

### **Procurement**

The Contracting Officer completed over 200 procurement actions during FY10, including construction contracting. Lost and Found property was managed by the Contracting office with the support of a new STEP employee receiving cross-training in personal property management. Business Center administrative staff were cross-trained in IDEAS purchase request creation and receivers.

Charge card program met the agency auditing requirements with the Contracting Officer auditing 1/3 of the employee statements. Statements were processed and filed per policy.

## FACILITY MANAGEMENT

FY10 was a dynamic year in the FM division at JOTR. With the primary focus of the Facility Manager being the management of the Pre-Design and Schematic Design for the Oasis of Mara VC and Administration Building, much of the standard O&M of the park was entrusted to the branch supervisors and maintenance administration team. To compound the diversity of tasks being accomplished within the division, the Chief of Maintenance performed a number of shadowing assignments associated with participation in the USDA Graduate School Executive Potential Program. This allowed for a myriad of developmental opportunities for a number of individuals within the division.

### **Maintenance Administration**

During Fiscal Year 2010, Marilyn Lutz, Vic Scott, Samantha Coots, and Britta Murphy provided Maintenance Management support.

### **FMSS**

Marilyn provided park-wide support for the Facility Management Software System (FMSS), by entering information on park assets and deferred maintenance. Condition assessment work orders were created for 479 locations. Work orders for projects and project components were generated and entered in the Project Management Information System (PMIS) through the Project Scoping Tool (PST). Deferred maintenance work orders were generated and costed as needed. Work was documented in FMSS for park operations and maintenance projects.

### **Operations**

Vic and Marilyn, assisted by TPP Student, Samantha Coots, and emergency hire, Britta Murphy handled administrative tasks for the Maintenance Division, including budget programming, payroll, purchasing, and travel. Marilyn coordinated GSA Motorpool for the park fleet of 54 vehicles. This year, with the large number of personnel changes in the division of Administration—and in Maintenance Administration, Marilyn and Vic played a major role in the business center, especially during fiscal year-end closing. Vic took a job promotion in July and left Maintenance permanently for Administration.

### **Sustainability**

Vic tracked the DesertArc recycling program, which logged over 2,010 volunteer hours, and collected 55,521 pounds of recyclable materials, redeemed for \$12,266.48 that went back into the DesertArc program. Marilyn compiled data on photovoltaic power generation, propane usage and other facility information for the annual energy report. Marilyn and Vic also participated in the “Green Team” for the Climate Friendly Parks program.

### **Budget**

We tracked ONPS budget, including housing and Centennial Initiative funding, and soft money accounts, including four ARRA, 9 cyclic accounts, two FY09-10 repair/rehab accounts, 2 FY10-11 repair/rehab accounts, an equipment replacement account, about 25 on-going fee accounts and other monies including two YCC accounts, PLC accounts, and several other special accounts.

## **Safety**

Vic was a member of the safety committee, and Marilyn promoted office safety, GSA motor vehicle safety, and implemented the Maintenance Safe Driver of the Month program.

## **Buildings and Utilities**

### **Cyclic Maintenance**

**Replace Refrigerated Appliances with Energy Star Rated Appliances** consisted of replacing and recycling eight “Energy Star” rated refrigerators and one ice making machine. This project brought the parks refrigerated appliances up to current energy efficient standards. Total project cost was \$7,753.

**Interior Painting** consisted of cyclic interior painting on 5 assets in the park. Total square footage was approximately 30,000 SF. The Indian Cove Ranger Station, West Entrance Fee Office, Black Rock Restrooms 302, and Black Rock Maintenance shop received the low VOC latex coating. Additionally 26 interior doors in vault toilets throughout the park were painted. Total project cost was \$48,600.

**Museum Climate Control and HVAC Maintenance.** Two New 5 ton condensers with heating elements were retrofitted in the Artifact storage building, along with a humidifier and digital controls for temperature by contract. All coils, condensers, and evaporative cooling systems in the HQ area were cleaned and serviced by day labor. Total project cost was \$25,500

**Perform Cyclic Floor Maintenance** consisted of cyclic floor maintenance on 4 assets in the park. Approximately 3200 SF of environmentally compliant carpeting and composite flooring was installed in the artifact Storage Bldg, Cottonwood Interp Office and Maintenance Office. Flooring that was not replaced was cleaned and or re-grouted and sealed. Approximately 5000 SF of tile was cleaned and sealed. Total Project cost was \$57,510.

### **Repair/Rehab**

**Repair and Rehabilitate Pinto Wye Septic System,** addressed replacement and removal of a 1200 gallon concrete septic tank and inspecting the leach field and piping. During excavation it revealed that the septic tank was in fact approximately 500 gallons and improperly installed. A new 1200 gallon tank was installed and is back on line. Total Project cost was \$7,170.

**Emergency Replacement of Cottonwood Photovoltaic System Inverter** was an emergency R&R project that funded the replacement of the Cottonwood photovoltaic system inverter that failed. No replacement parts for the inverter were available. The system had to be reconfigured to single phase using stacked inverters and charge controllers to operate the system. A new back-up generator was also installed as the existing generator was not compatible with the new inverters. The system was online for a number of months and then had a main hub and inverter failure. The system is now back online with new components provided by the vendor under warranty. The system was installed by contract. Using day labor a battery watering system was installed to reduce maintenance on the systems batteries. The total project cost was \$106,459.13 which included fuel, rental generator, PV system, and generator.

**Housing Funds** The Regional Housing Program provided funds to install electric meters on non metered housing units in the park. Five residences at Cottonwood received new digital meters and sub panels. Total project cost \$13,468.18.

### **Buildings and Utilities ARRA Projects**

**Clean and Paint Water Tank Interiors to Prevent Deterioration** provided for the cleaning and coating of the parks two potable water tanks. Underwater divers were utilized in the inspection process that revealed 4 small blisters in the Cottonwood water tank. A contractor was procured to repair the areas with a rubberized coating specifically designed for underwater applications. A safety cage for the tank ladder was also installed in the contract. Total project cost \$5,941.

**Decommission Lost Horse Well** consisted of sealing a water well in the Lost Horse District of the park. The water well was sealed and decommissioned in conformance with California Well Standards, Chapter II, Section 23, Requirements for destroying wells. Total project cost \$2,856.

### **FLREA Projects**

**Purchase Additional 7.2 kW PV Grid Tied System**, this project consisted of purchasing one 7.2 kW grid tied photovoltaic system and installing them on the Resource Management building. The system was purchased from Sunwize Technologies and installed by park staff. Total project cost \$67,900.

**Replace Failing Wooden Site Markers in Cottonwood and Black Rock Campgrounds**, B&U assisted the Campground Division installing 162 site markers at Black Rock and Cottonwood campgrounds.

**Retrofit West Entrance Restroom Fixtures, Partitions and Handrails to Meet ADA Guidelines**, this retrofit included four toilets, two sinks, two urinals, partitions and proper handrails to meet ADA guidelines. Doors were painted and tile sealed as part of the project. Total project cost \$24,665

**Upgrade, Repair and Replace Damaged Waterlines Serving the Cottonwood Visitor Area.** This project was re-started this year with actual replacement of valves and piping occurring. All major valves and piping have been replaced and campground water sources (spigots) are being installed.

**Construct Visitor Patio, Walks, Retaining Walls and Planters.** This project was completed after many phases of construction in the upper HQ complex. All new planters, retaining walls, ADA sidewalks, patio structures, irrigation systems and landscaping were included. Total Project Cost \$279,300.



New planters, sidewalks, retaining walls, patio structure and landscaping at the south end of the Headquarters Complex in Twentynine Palms CA.

**Replace 50 Cracked Concrete Seating Benches at the Indian Cove Amphitheater** consisted of demolition of the existing concrete seating benches that were cracked and deteriorating with new concrete reinforced seating. Included in the project was walkway and perimeter lighting to the area for safety during night time programs. Total Project Cost \$78,796.

### **Operations**

- Retrofitted the existing worn out evaporative cooler at the Black Rock Nature Center with a more efficient unit.
- Retrofitted the existing worn out evaporative cooler at the Cottonwood Visitor Center with a more efficient unit.
- Installed a new split system HVAC unit to the Black Rock BLM office.
- Assisted in remodeling the interior of the Black Rock BLM office
- Installed a new electric line supplying the Cottonwood VIP pads.
- Assisted IT and Protection with the installation and design of fiber optic cable for the Cottonwood VC and Residential area.
- Performed a complete remodel of the Administrative Officers office.
- Installed new doors and windows in areas of the Administrative office.
- Constructed a new main valve box in the upper complex out of concrete block.
- Procured a new 40 kW trailer mounted generator for park operations.
- Installed a digital Park Safety sign in the upper headquarters complex.
- Upgraded the outdoor amenities at the Lost Horse Artist Residence.
- Installed 12 new batteries at the Lost Horse Artist Residence to increase the stored battery capacity.
- Installed electrical switch gear for the Cottonwood PV system.
- Retrofitted two HVAC units on the Protection and Visitor Center buildings.

### **Campgrounds**

#### **Alaska Transition Partnership Program**

Joshua Tree National Park partnered with Alaska Region in their transition program for recruitment of the disabled persons. We attended our second recruitment day on March 10th, at the University of California, Riverside-Palm Desert Campus. Attendees came from Riverside County Transition Partnership Program, Twentynine Palms High School Transition Partnership Program, California Department of Rehabilitation, Alaska Regional Office-NPS, Denali National Park and Preserve, and the Irvine Transition Partnership Program. Through this program the maintenance division successfully filled two positions under the special hire using Centennial Initiative Dollars.

#### **DesertArc Partnership Program**

Joshua Tree National Park has partnered with DesertArc: the mission of DesertArc is to enhance the quality of life for people with developmental disabilities. Services include supported employment, on-site vocational training and employment, respite, supported living services, and partnerships with many organizations and businesses throughout the Coachella Valley and Morongo Basin.

DesertArc offers community employment services to persons with developmental disabilities regardless of the type of disability. The Supported Employment Department assumes that all

people, regardless of disability, are capable of productive, meaningful work in any setting if they are given the necessary support, which they feel is the key to job success.

Our maintenance division placed 5 individuals as back-up to accomplish custodial work at the headquarters area, cleaning 1 Visitor Center, 5 office buildings and 11 comfort stations. The custodial personnel have also assisted in other projects such as, the Joshua Tree Annual Art Show, seasonal rental housing, the Parks Artist Residence, restrooms at the Black Rock Fire Dorm and the Indian Cove Residence.

### **DesertArc Recycle Partnership Program**

The park has partnered with DesertArc volunteers for collection of the park's recycling materials. The DesertArc Recycle Partnership Program will meet the commitment of the Park's sustainable park operations as outlined in the Integrated Solid Waste Alternatives Program



### **Recycle Totals**

Aluminum-2218 lbs., CRV Glass-26639 lbs., Plastic #1-5156 lbs., Plastic #2-2937 lbs.,  
Scrap Paper-3513.5 lbs., Scrap Metal-1.8 lbs., Scrap Glass-7804.5 lbs., Cardboard- 7630.9 lbs.  
Total lbs-55521.4

### **Campground ARRA Projects**

The California Conservation Corps partnered with the JOTR maintenance division campgrounds branch to accomplish multiple projects in the park.

**First Spike:** At Indian Cove Campground, California Conservation Corps cleaned ashes from 36 fire rings and groomed each campsite. Twenty-one damaged metal fire rings were removed from various campsites, loaded onto a park dump truck and hauled to an approved recycling center. CCC personnel installed 21 new fire rings at sites where rings were removed, anchoring each ring in concrete. Eleven obsolete and damaged concrete picnic tables were removed and replaced and positioned with one-piece ADA concrete picnic tables. CCC's broke down 56 obsolete and deteriorating concrete tables, separating concrete from rebar. At Hidden Valley Campground, 45 campsites were cleaned of ashes and areas groomed. Hidden Valley Day Use picnic areas, 5 picnic sites were cleared of ashes and 7 campsites fire rings were cleared at Sheep Pass. At all campgrounds and day use areas CCC's performed litter pick-up.

**Second Spike:** At Black Rock Horse Camp, California Conservation Corps personnel removed 7 obsolete wooden picnic tables and 6 old fire rings. They assembled and positioned 6 ADA concrete tables and installed 6 new fire rings anchoring them in concrete. A damaged information sign was removed and replaced with a new sign. In the Black Rock Campground CCC's cleared 100 fire rings of ashes, reset 7 fire rings and replaced 1. Indian Cove Campground, 65 campsite fire rings were cleared of ashes and 1 was replaced and anchored in concrete at site #76. Belle Campground had 18 campsites cleared of ashes. White Tank Campground was cleared of ashes at 18 campsites. CCC's cleared ashes from 124 fire rings at Jumbo Rock Campground. Eight fire grates were cleared at Quail Springs, 7 picnic areas at Live Oak and 7 picnic areas at Split Rock Day Use Area. CCC's performed litter pick-up in all the above areas.



2010 California Conservation Crew

**Third Spike:** At Indian Cove Campground, California Conservation Corps removed 8 obsolete deteriorating concrete tables, replacing them with 8 one-piece ADA concrete picnic tables. Campground staff and CCC personnel installed 118 barbecue mounting posts in designated sites, anchoring each post in concrete and later installing the grill tops to the mounting post. Litter pick up was performed at Hidden Valley Campground, Barker Dam and Keys View.

**Fourth Spike:** The California Conservation Corps personnel staged fire rings for installation at Jumbo Rock Campground. Ninety-nine fire rings at Jumbo Campground and were replaced and concreted in designated campsite areas. 124 campsites were groomed, and cleared of litter at Jumbo Rock Campground. 17 new fire rings were installed in Indian Cove Campground. Day Use areas had their BBQ grills cleaned, and areas were raked out and groomed.

#### **Replacement of campsite markers**

This project consisted of the replacement of campsite markers at park campgrounds. This project was accomplished with the combined efforts of personnel from Campgrounds, Building

and Utilities and Trails. Jerry Utterback cut all the engineered plastic site markers to size. Trail personnel Matt Stevens made all the designated number site markers at the Trails sign shop. Andy Garvin removed 62 obsolete site markers at Cottonwood Campground, replacing and anchoring with 62 new plastic site markers. Steve Taylor and Steven Bratts removed 100 obsolete site markers at Black Rock Campground, replacing and anchoring with new plastic site markers. Duane Vigar and Bill White replaced faded site marker numerals at the following campgrounds: Belle Campground 1-18, White Tank Campground 1-15, Jumbo Rock Campground 1-124, Ryan Campground 1-30, Hidden Valley Campground 1-45, and Indian Cove Campground 1-101.

### **Replacement of Picnic Tables**

Campground personnel replaced 24 one-piece ADA concrete picnic tables at Indian Cove borrow pit. They removed 24 deteriorated concrete tables at Indian Cove Family Sites and installed and positioned 25 new ADA concrete picnic tables.



New one-piece ADA compliant picnic table

### **Campground Operations**

The campground personnel exceed all production goals for calendar year 2010. On a daily basis and through individual dedication and extra effort, each of our 4 employees maintained a robust and vigorous maintenance schedule of operations that include: 7 overnight campgrounds, 25 day-use areas, 92 vault toilets, 86 trash dumpsters, 27 recycling bins and also managed to provide routine custodial operations at the Park's Visitor Center and 9 comfort stations.

Line-X West applied a graffiti protective coating on the exterior and interior of the recycling container at the Echo T Day Use.

Campground personnel removed ash from fire rings and groomed 18 campsites at Belle Campground, 15 at White Tank Campground, 31 at Ryan Campground, 45 at Hidden Valley Campground and 101 sites at Indian Cove Campground.

Other general maintenance work throughout the park included the repair and replacement of unserviceable lights, comfort station door adjustments, replaced 20 door hinges, 4 new locks, 60 damaged or worn toilet seats and toilet paper holders in the vault toilets. Graffiti was removed from vault toilets, doors, windows, tables and boulders.

Campground personnel assisted SAV-ON (Contract) in the pumping of 67 vault toilets and 7 septic tanks, 106,660 gallons of waste, 7 septic tanks 15,760 gallons and 67 vault toilets 90,900 gallons were transported and disposed by SAV-ON Plumbing.

## Trails

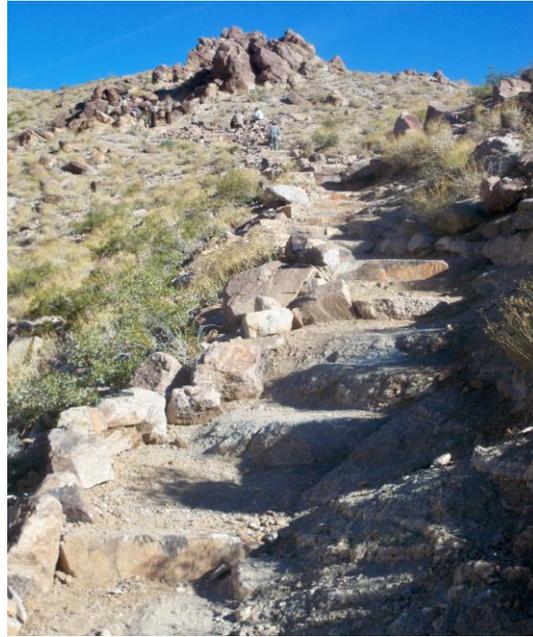


The park's successful Youth Conservation Corps program with 25 enrollees

- Facilitated over 15 hours of tailgate safety meetings.
- Input 7 new project during the SCC through the PST and into PMIS
- Facilitated construction and installation of 112 directional and information trail signs
- Completion of ARRA project, Repair Damaged Section of 49 Palms Canyon Trail Facilitated installation of resource protection fencing and social trail mitigation measures at Barker Dam Parking Area
- Met with resource management to assist with the coordination of an ongoing plan for mitigation of social trails throughout the Park
- Installed and designed 12 climber access signs
- Facilitated graffiti removal on 5 areas in the Park
- Replacement of 26 road signs
- Supervised up to 30 employees with no lost time accidents in FY10.
- Completed 7 JHA's



Before work on the 49 Palms Canyon Trail



After work was completed on the 49 Palms Canyon Trail



Before trail stabilization occurred



After trail stabilization was completed

- Provided NPS Fundamentals I & II, AOTR Training, Risk Management training, ARC View GPS training, Green Purchasing training, for employees
- Assisted City of Twentynine Palms in developing a trail plan
- Contributed to the JTNP General Management Plan
- Recruited disability/diverse hires for JTNP and Alaska region.

- Supervised VIPs performing trail work with 1300 documented hours.
- Responded to 2 separate SAR incidents in the Park
- Acquired funding and purchased new sign making equipment
- Competed Leadership/Teambuilding training
- Developed new visitor trail map for Black Rock
- GPSd 19 miles of trail for park archive

### **Trails Partnership projects**

**Mojave National Preserve:** The crew assisted the maintenance of an interpretive trail at the 'rock cabin' site. The crew assisted the American Hiking Association volunteers with maintaining 1 mile of trail. The crew completed 400 linear ft. of trail delineation. The crew also installed 7 stone steps for 38 sq. feet of rock improvements. The crew also installed a retaining wall for 16 sq. feet of rock improvements.

**Urban School of San Francisco:** The crew worked with over 75 volunteers from the San Francisco based high school to perform repairs to Sheep Pass Connector trail. They installed 9 stone step/checkdams for a total of 82 sq. ft. of rockwork. They also redefined tread on 1500 linear feet of trail and repaired 9 waterbars along the route.

**Big Morongo Canyon Preserve:** The NPS trail crew and the JTNP YCC crew traveled to the preserve to provide trail maintenance assistance on Mesquite trail and West Canyon trail. The crew trimmed approx. 11,900 linear ft. of trail.

**Hidden Valley Trailhead Restoration and Trail Realignment Project Planning:** The trail crew assisted National Parks and Conservation Association staff with a project that was funded with grant money from Arrowhead Water. Planning for this volunteer event has occurred throughout FY2010, but the actual event will occur during FY11.

### **Roads**

#### **Roads Operational Projects**

Our Operational projects consisted of hauling water to all of the Parks non potable water storage tanks twice a month covering approximately 80 miles in a single day using over 2000 gallons each time we filled the tanks. That equates to 160 miles round trip and 4000 gallons of water delivered per month.

In the winter of 2010 Joshua Tree National Park experienced a significant snow storm. Approximately 9 inches of snow dropped at the higher elevations with nearly 6 inches of snow accumulating at the lower elevations. Typically in JOTR the snow melts a day or two after the storm but this year the temperatures remained at or just below freezing keeping the roads iced up and the desert landscape covered for about 2 weeks after. The JOTR Road crew spent the week clearing snow and ice from approximately 25 miles of paved and non-paved surfaces.

Additional operational needs that were met in fiscal year 2010 were grading and maintaining 96 miles of paved and 109 miles of unpaved surfaces. We re-stripped crosswalks, stop bars, stop symbols and parking stalls, repaired and replaced signage park wide, removed litter from roadsides, campgrounds and parking lots. In addition we aided the Protection division with the cleanup of Park boundary dump sites.



Grading one of many unpaved roads

### **Equipment Replacement Program**

Under the Equipment Replacement Program we were able to purchase a brand new 2000 gallon water distribution truck and a 4 ton compaction roller. With the support from our Regional ERP Coordinator we were able to replace the outdated equipment sooner than anticipated.



New 2000 gallon water distribution truck

### Recreational Fee Projects - Roads

- Repaired or replaced deteriorated, damaged or obsolete road signs, posts & mounting hardware.
- Completed planning, design and flood study work for the rehabilitation of Black Rock Campground.
- Rehabilitated 0.474 Mile of Indian Cove Campground Road Route #212D & 1 mile of Route #212E. Placed a 5 inch lift of class II road base on a prepared surface, water, grade, shape and compact surface.
- Designed and built a 12,846 square foot paved parking lot that will accommodate up to 30 vehicles. This included engineer work (setting grades); provide adequate drainage, placing a single 3 inch lift of hot mix asphalt and striping all traffic controls and incidentals, (2 coats white traffic paint with reflective beading, ADA parking stall and directional signage).



Grading the new parking area at HQ.



The new parking area, striped at HQ.

### Regular Cyclic maintenance Projects - Roads

- Regular Cyclic maintenance repair and replacement of park gates and barricades. This cyclic project consisted of fabricating, repairing and replacing damaged gates and at the Indian Cove Campground.
- Perform Curb and Gutter Maintenance. This project consisted of repairing structural cracks and sealing curb seams at various locations on Barker dam Road Route #101.
- Perform Cyclic Maintenance Restripe Roads and Parking areas.

### ARRA Projects - Roads

Pavement Preservation Project, ARRA stimulus 2009 and 2010 Funding. This project was to provide pavement preservation for various roads in Joshua Tree National Park. The project work included the placement of a chip seals, modified slurry seals and the installation of pavement markings.

### Repair Rehab Projects

This project consisted of armoring roadways and shoulders on Route 12 with erosion control devices. Class one, two and three riprap rock was placed on road shoulders to help reduce and control heavy volumes of water from undermining the road surface.

## CULTURAL RESOURCES

### Archeology

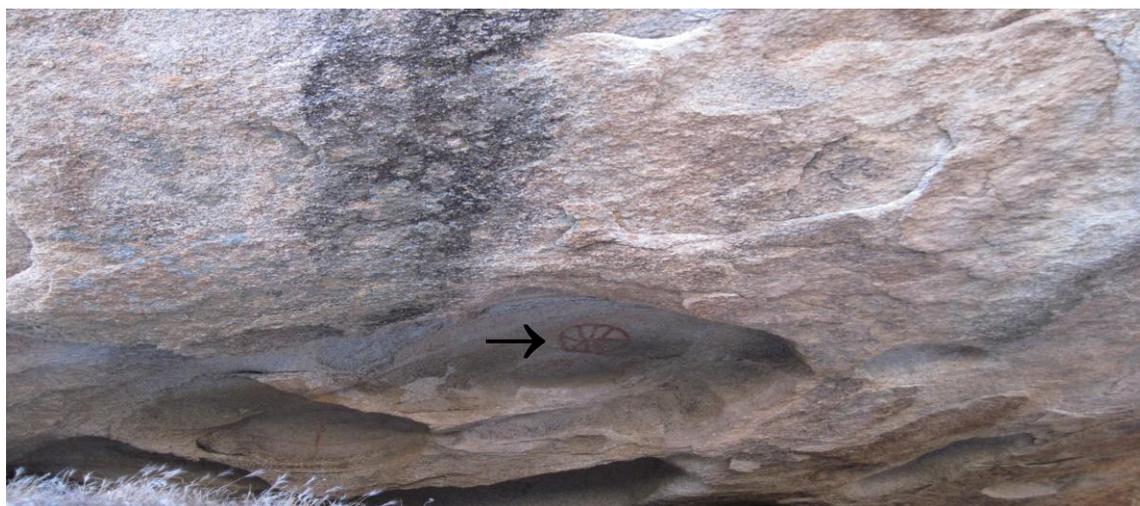
#### Bouldering Project

This is a multi-year, multi-branch project aimed at documenting visitor impacts to park resources as they pertain to bouldering activities. This project will establish baseline data for both natural and cultural resources for bouldering areas published in Robert Miramontes' 2003 guidebook, *A Complete Bouldering Guide to Joshua Tree National Park*. The immediate results from this project will be the creation of base maps documenting impacts in bouldering areas as of 2008 (when this project began) and an updated park brochure to educate visitors and raise awareness of resource impacts caused from climbing activities (specifically bouldering).

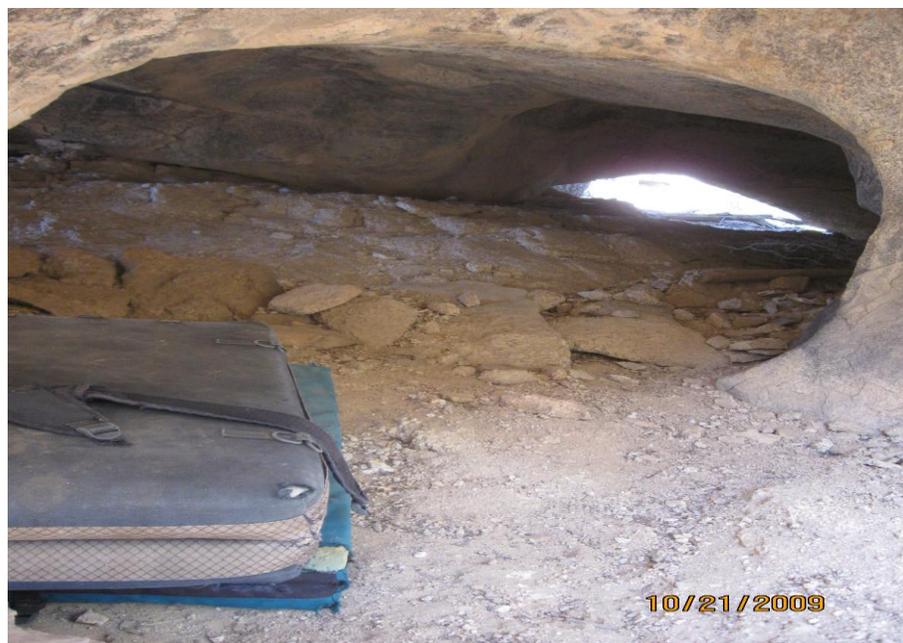
The cultural resources portion of this project was to inventory all boulder problems published in the guidebook. This inventory involved surveying each boulder formation containing published routes, 20 meters around the base of the boulder, and recording/updating archeological site records. Areas nearby were also inventoried if they were likely to contain cultural resources.

During FY10 inventory was completed on all 262 bouldering formations and all but five identified sites were recorded. The park's climbing brochure has been updated and is in the process of being finalized. A map book documenting baseline resource impacts has been partially created and will be finalized in FY11, as will the final report documenting this project for both cultural and natural resources.

Initial findings have determined that 20 percent of bouldering problems listed in the guidebook were found to be in close proximity to cultural resources. The findings varied significantly from a single pottery sherd to bedrock milling sites, a light artifact scatter, subsurface deposits, and—of most concern to staff—rock art sites. One percent of the bouldering problems were found to contain rock art; these sites will be closed to climbing. Other significant non-rock art sites are currently being well documented to determine if bouldering is impacting the archeological resource and to see if closures are warranted.



Bouldering problem with red pictographs being directly impacted



Bouldering crash pads being stored in rockshelter with pictographs

### **Park Boundary Survey**

The archeology staff began the first phase of a three-year project to survey park boundaries, which are increasingly under threat from encroaching urbanism. This initial effort focused on the southern boundary of the park, north of Desert Hot Springs. This survey revealed cultural resources along the boundary and assessed the impact that pedestrian and unauthorized vehicular traffic is having on these wilderness resources. Crew members consisted of park archeological technicians, the museum curator, and trained volunteers. Transects were 10-40 meters apart, depending on the topography. The survey was conducted over the course of 11 days between late February and late April 2010. Logistics were complex and wilderness access difficult.

The primary issues addressed were the impacts of vandalism, illegal off highway vehicle traffic, illegal dumping, and pedestrian traffic on cultural resources. As suspected, many of the sites located were associated with the 1933-1941 construction of the Colorado River Aqueduct, which parallels the park's southern boundary. With this phase of the project, the park now has good baseline data for what cultural resources are present along the previously unsurveyed western portion of the southern boundary, and can now monitor these sites for future disturbances, whether they be environmental or cultural (vandalism and looting).

This phase of the project resulted in the inventory of 2075 acres in portions of Long, East and West Wide, Berdoo, Fan, Pushwalla, and Pinkham Canyons. Eight new archeological sites and over 300 isolated artifacts were recorded and information has been added to the park's databases. The addition of this data will allow the park to better understand site type and distribution and potential impacts on cultural resources for upcoming projects or unforeseen incidents occurring along the park's southern boundary. A partial draft report has been started; there will be one final report for the three-year project.



Archeologist recording a site along the southern park boundary.

### **Archeological Site Stabilization**

Archeological site stabilization was conducted in April at three prehistoric sites, CA-RIV-900, -902, and -903. All three sites are located in high visitor use areas along drainages. They suffer direct damage to midden and rock art, and are threatened by channelized water, vandalism, trampling from unauthorized social trails, and illegal climbing. Work was conducted by park staff and Student Conservation Associate (SCA) volunteers.

Soil from at least 70 holes located just outside of site boundaries was screened and a limited number of artifacts recovered and cataloged. All three sites are being monitored and live plants are being watered by an SCA with a current survival rate over 70%. More native plants are available for out-planting in FY11 to replace non-surviving plants.

By implementing this project, park management hoped to reduce site degradation from heavy visitor use with appropriately placed signage; and by live planting and vertical mulching, to block social trails and discourage climbing; as well as possibly mitigate channelized water by reducing visitor foot traffic. The use of water barriers is also being considered. Post treatment visits reveal a 70-75 percent reduction in use of unauthorized social trails in CA-RIV-902 and -903 and nearly an 85-90 percent reduction in CA-RIV-900. In addition to signage, removing visual cues for off-trail use via live planting and vertical mulching, and removal of fire rings and graffiti materials such as charcoal and climber's chalk, is making a noticeable reduction of visitor impact on these sites. Continued cyclic maintenance should continue to assure these sites remain in good condition.

Small-scale site treatments, such as removing fire rings and climber's chalk, and spot vertical mulching, were also initiated at other sites in FY10. All visitor-caused damage continues to be reported to the Protection Division.



Live planting just outside of site boundary

### **Section 106**

The park acquired a permanent archeological technician in FY10. In particular she has been focused on conducting National Historic Preservation Act Section 106 work on various unfunded undertakings at the park to assure site identification and protection.

### **Cultural Landscapes**

The Cultural Landscape Inventory for the Lost Horse Mining District, located in the Middle Piñon Mining District, was begun in FY10. The study was conducted by the regional cultural landscape staff.

### **Historic Structures Stabilization**

In FY10 Cultural Cyclic Maintenance funding was received for stabilizing interpreted mill structures near Cottonwood Springs that lie along the Mastodon Loop Trail. The Cottonwood Arrastra was stabilized in-house by cleaning sand out of the interior and then replacing missing masonry elements. The bulk of the funding was committed to the University of Arizona, Drachman Institute, under a CESU Task Agreement. A field school is planned for March 2011 and detailed documentation of the Mastodon ore bin/stamp mill and the "office" will be conducted. Stabilization will also be conducted on the ore bin/stamp mill.

### **History and Ethnography**

At the beginning of FY10, the Cultural Resources division hired an ethnographic and environmental historian on a four-year term appointment. Under her guidance, Joshua Tree National Park has launched a multi-year oral history project entitled "*Desert Voices: Joshua*

*Tree*” to capture the stories of people who have helped shape, and whose lives have been shaped by, this desert land. The project has two goals: to deepen and enrich historical understanding of human interactions with this place over time using information that is otherwise not available in the documentary record; and to create a high-quality audio-visual oral history collection for use by researchers and staff in future interpretive functions such as museum exhibits, living history programs, multimedia presentations, webcasts, and podcasts.

Building on 63 interviews conducted between 1966 and 1995, *Desert Voices* is seeking input from people who have had long-term, significant interactions with these lands: native peoples, miners, cattle ranchers, homesteaders and private land owners, residents of neighboring communities, monument and park employees, NHA employees, volunteers (e.g. SAR, VIP, SCA), and recreationists (e.g. climbers and tourists). Themes being explored include land use and management, work and leisure, technological and environmental change, the development of park operations and administration, and community interactions.

Project staff rely on professional-quality, high-definition audio-visual equipment. The oral history team is mobile: interviews can be conducted not just on site, but in other locations convenient for narrators (home, office, community center, school). All recorded sessions are being professionally indexed and transcribed before being placed, along with any supporting documentation or materials, in the park’s permanent archives. All materials donated and designated by their narrators as available for unrestricted use will also be available for park staff and researchers.

The historian will also initiate two traditional cultural property studies: one on Queen Mountain and another on the Oasis of Mara. Very little in-depth research has been done on the historical relationships tribal peoples have had with the lands now known as JTNP or with Euroamericans who began arriving here in the mid-19<sup>th</sup> century. As a result, in current park interpretive and management efforts, native peoples tend to be relegated to the prehistoric period while settlers dominate the park’s modern cultural history. These two-year studies offer an opportunity to document traditional practices in a manner corresponding to tribal wishes and standards at every step of the research and write-up process, while also allowing the park to begin to develop more collaborative relations with tribal members.

A key goal of the history and ethnography program at JTNP is to create a solid, historically accurate, and culturally diverse base of information upon which staff and management can rely in outreach and planning activities, and to build the operational resources and methods by which that work can continue. Input from oral history narrators, staff, the public, and tribal members is now being sought and engaged on a daily basis. In order to facilitate a closer dialogue between park staff and current scholarship, auditing interpretive programs is occurring to determine what historical information is most needed and is creating themed packets of information for the interpretive staff and library patrons. Nine undergraduate and graduate students, one intern, and several volunteers are assisting with conducting research for the history or ethnography program.

### **Museum Projects**

The museum curator took the lead on developing the first issue of the cultural resources newsletter “Communicating Cultural Resources” which discussed the topics of archeology, historic structure stabilization, oral history, and museum collections. The intention is to produce issues twice a year.

Compact shelving, primarily used to house archival records, was installed in the collections storage facility.

The JOTR museum curator continues to act as the curator of record for MOJA. Cataloging continued at both parks.

Three ollas were returned to the park after undergoing stabilization and preservation treatments by the objects conservators at the Western Archeological and Conservation Center in Tucson, Arizona.

### **Paleontology**

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) is continuing paleontology and geology research investigations in the eastern region of Joshua Tree National Park. A report that was completed in FY10 focused on recovery of significant paleontologic resources and more detailed documentation of the geologic and stratigraphic context of geologic formation exposed in the Pinto Basin.

Investigations included detailed stratigraphic and lithologic documentation as well as recovery of exposed fossils and sampling for microfossil remains; this is the first time that concerted sampling for microfossils has been attempted. More than 354 cataloged specimens have been recovered from JOTR. The majority of fossils identified were recovered from sediments of the informally named “Pinto Formation,” which occurs on either side of the eastern Pinto Wash. Fossils from this unit date to the Pleistocene Epoch, and recent discoveries of skeletal of *Bison* (bison) suggest that these vertebrates are late Pleistocene in age.

New discoveries of vertebrate fossil remains in sediments below  $\leq 7.8$  mya Tertiary basalts in the northeastern 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. Additionally, fossil remains of green algae (*Chara* sp., Charophyta) were identified from sediments located below  $\pm 4.5$  mya Tertiary basalts in the Coxcomb Mountains, east of Pinto Wash, documenting the presence of fossil remains in this area for the first time. These lake-dwelling algae provide the first biological information on the paleoenvironment of the Tertiary sedimentary units of the region.

Two more new contracts were awarded in FY10, for work in more western reaches of the Pinto Basin and for parkwide fieldwork.

## **NATURAL RESOURCES**

### **Vegetation Management – Basic Operational Overview**

The vegetation branch of Joshua Tree National Park is divided into five program areas each of which contributes to the overall mission and management of the Park. The vegetation branch programs include: restoration, climbing and bouldering, native plant nursery operations, invasive species, and rare plant/botany. Together these programs have been called the Center for Arid Lands Restoration. These programs are highly integrated and function together to produce lasting meaningful results.

### **Restoration Program Summary**

Restoration of disturbed arid lands remained an active component of the Vegetation Branch in FY10. Projects and activities included:

- Revegetation with native plants in Lost Horse Burned Area (Lost Horse BAR Plan); Cultural sites at Squad Tank, Indian Cove Picnic area and Barker Dam; and Landscape project in Headquarters buildings complex
- Monitoring and maintenance of ongoing restoration projects; Burned area Rehabilitation (Lost Horse BAR, West Complex BAR Plan, Central Complex BAR), Cultural sites (Squaw Tank, Indian Cove Picnic Area, Barker Dam) Federal Highways Project 291 (Keys View Road) and Social trails (Left hand of darkness)
- Social trails restoration: Left Hand of Darkness (climbing area)

### **Fire Restoration**

In 2009 and 2010, Joshua Tree National Park had 564 acres of high elevation vegetation burned from two separate fires. While the Lost Horse and the Keys fire represent relatively small acreages they are contributing to a trend of increased fire within the Park. Each of these fires impacted slow growing, long-lived plant species, which may take decades or longer to recover. A major concern with fire in desert ecosystems is they may convert from perennial shrubland to annual dominated grasslands prone to burning, further emphasizing the need for efficient restoration of burned areas. In FY10, Joshua Tree was aided in our attempt to turn the tide of fire and invasives with assistance from Burned Area Emergency Response (BAER) and Burned Area Rehabilitation (BAR) funding. The Lost horse fire burned in May 2009 and was submitted to the Pacific West Regional Office for BAR consideration. A total of \$319,337 was requested to perform non-emergency rehabilitation treatments and activities on the Lost Horse Fire from FY10 - FY12. In September we installed a temporary fence and signs at Keys View to minimize foot traffic into the Keys Fire burned area. Using FY10 funding, nineteen species of native shrubs were successfully propagated.

Additional seed collection occurred in late spring and summer of 2010 to replenish the seed in the Center for Arid Lands Restoration seed collection and to establish new seed stock for the Lost Horse fire restoration project. To date 120 plants have been planted across four sites with an additional 346 plants ready to be planted during the fall and winter of 2010-2011.



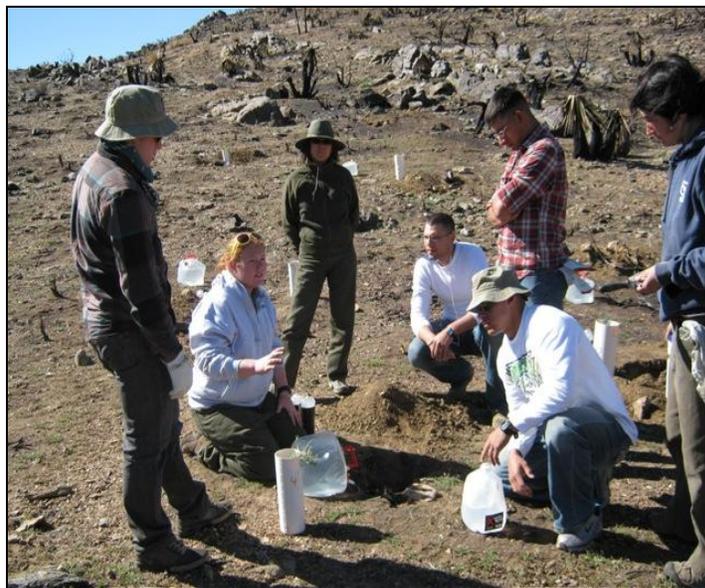
Joshua tree seedlings at JOTR's Center for Arid Lands Restoration propagated for the Lost Horse fire.

List of plants outplanted in April 2010 and plants available in the JOTR's Center of Arid Land Restoration to outplant fall 2010

Plant species	Number of plants Out-planted in April 2010	Number of plants available to out-plant in fall 2010
<i>Acacia greggii</i>		20
<i>Coleogyne ramosissima</i>	28	44
<i>Ephedra californica</i>	3	
<i>Eriogonum fasciculatum</i>	4	23
<i>Ericameria linearifolia</i>	1	44
<i>Grayia spinosa</i>	5	
<i>Hymenoclea salsola</i>	3	
<i>Lycium andersonii</i>	18	
<i>Lycium cooperi</i>	12	47
<i>Mirabilis bigelovii</i>		21
<i>Nolina parryi</i>		43
<i>Prunus fasciculata</i>	15	
<i>Salazaria Mexicana</i>	1	
<i>Salvia mohavensis</i>	1	
<i>Sphaeralcea ambigua</i>	2	
<i>Tetradymia spinosa</i>	2	
<i>Thamnosma montana</i>		24
<i>Yucca brevifolia</i>	25	37
<i>Yucca schidigera</i>		43
<i>Total</i>	<i>120</i>	<i>346</i>



Vegetation staff, coordinated with Law Enforcement and Fire personnel to helicopter plants, equipment, and water to strategic locations, where vegetation staff, SCA interns, and a group of Marine volunteers outplanted the native plant resources.



This operation required five helicopter trips and more than 500 labor hours. In addition to implementation we are monitoring the outplanting success and the long-term restoration of the Lost Horse burn; as of August 2010, 95% of the original 120 plants are alive and surviving.

Plant survival percentage from May to August 2010 in the Lost Horse BAR.

Plant species	Total number	# Alive by 05/17/2010	# Alive by 07/12/2010	# Alive by 08/23/2010	Survival % by August, 2010
<i>Coleogyne ramosissima</i>	28	28	27	26	92.86
<i>Eriogonum fasciculatum</i>	4	4	4	4	100.00
<i>Ericameria linearifolia</i>	1	1	1	1	100.00
<i>Ephedra californica</i>	3	3	3	3	100.00
<i>Grayia spinosa</i>	5	5	4	4	80.00
<i>Hymenoclea salsola</i>	3	3	3	3	100.00
<i>Lycium andersonii</i>	18	18	18	18	100.00
<i>Lycium cooperi</i>	12	12	12	12	100.00
<i>Prunus fasciculata</i>	15	15	15	15	100.00
<i>Salazaria mexicana</i>	1	1	0	0	0.00
<i>Salvia mohavensis</i>	1	1	1	1	100.00
<i>Sphaeralcea ambigua</i>	2	2	2	2	100.00
<i>Tetradymia spinosa</i>	2	2	2	2	100.00
<i>Yucca brevifolia</i>	25	25	24	24	96.00
<i>Total</i>	<i>120</i>	<i>120</i>	<i>116</i>	<i>115</i>	<i>95.83</i>

Watering of these plants has occurred every 6-8 weeks and requires nearly two and a half gallons of water for each plant. We owe a great deal of gratitude to our equestrian volunteers who assisted with this effort delivering water to the plants.



### **Cultural sites rehabilitation at Squaw Tank and Indian Cove Picnic area**

In 2007, Squaw Tank and Indian Cove Picnic areas were closed to prevent ongoing degradation to cultural resources. Along with the closure, with nearly 250 plants from the Center for Arid Lands Restoration, placement of boulders, fencing and signs were used to delineate sites construct a trail to improve access at Squaw Tank. This year 47 plants at Squaw Tank and 25 plants at Indian Cove were outplanted to replace dead original transplants.

### **Barker Dam Cultural Sites**

This site stabilization project was performed near three archeological sites in the Barker Dam area of Joshua Tree National Park; Crystal Cave, Red Lady and Disney Site. The objective of this project is to slow the rate of damage to these cultural sites by restoring the vegetation surrounding these areas to a more natural condition. This included the outplanting of living plants and vertical mulch in some of the illegal social trails that lead into the cultural sites and in some of the visibly bare areas caused by foot traffic. The vegetation crew assisted by the nursery volunteers outplanted 70 living plants in the Barker Dam area closed to the cultural sites Red Lady and Disney Site. The vegetation crew planted vertical mulch around the cultural site Crystal Cave. All restoration activities were supervised and performed in conjunction with Cultural resources branch crew members and volunteers. Since planting these plants are watered every two weeks to increase restoration success.



Before vertical mulch at Crystal Cave



After vertical mulch.

### **Burned Area Rehabilitation West Complex Fire (Whispering Pines)**

The West Complex was comprised of two lightning-ignited fires that burned approximately 1,525 acres entirely within the park during July 2006. During FY10 the out-planted species and Driwater® were monitored at approximately monthly intervals. The level of Driwater® left in tubes was measured to assess uptake at different times of the year. Driwater® gels were replaced as necessary. Plant survival and percent of foliar cover was also monitored at monthly intervals. Outplants will be monitored for survival until fall 2010. Driwater® tubes, cages and rebar will be removed in Fall/Winter 2010. Plants will be permanently marked with an 8 inches spike nail and their original tags for future monitoring.

Summary of plant survival rates by restoration site in the Whispering Pines fire

Site	Total # Plants	Total # Dead Plants	Percent Mortality per Site	Percent Survival per Site	Date Planted
A Frame	42	15	35.71	64.29	April, 2009
House W/ Chimney	77	24	31.17	68.83	December 9, 2008
Debris	22	16	72.73	27.27	April, 2009
Homesite	36	16	44.44	55.56	December 9, 2008
Octagon	77	7	9.09	90.91	February 3, 2009
Water Tank	82	22	26.83	73.17	December 11, 2008
<i>Total</i>	<i>336</i>	<i>100</i>	<i>29.76</i>	<i>70.24</i>	

**Burned area Rehabilitation Central Complex (Geotour Road)**

The Central Complex was comprised of three lightning-ignited fires that burned approximately 2,940 acres entirely within the park during July 2006. Two of those fires, the Pushawalla and Berdoo, have been combined and named the Pushawalla Complex. All fires were contained/controlled by July 11, 2006. In FY09 a total of 425 native plants from the Center for Arid Lands at Joshua Tree National Park were out-planted. By February 2010 only 271 plants were alive, this represent only a 63.76% plant survival. In March 23, 2010 the vegetation crew assisted by the UCI alternative spring break crew (about 14 members) replaced 128 dead plants in the Central Complex restoration area.



Vegetation staff and UCI alternative spring break crew members planting at Geotour Road.

### **Federal Highway Project #292 (Keys View Road)**

Keys View Road is a popular five mile road corridor in the Mojave Desert section of Joshua Tree National Park. The road passes through some of the park's finest examples of Joshua tree woodland in the Lost Horse Valley, passes into higher elevation Blackbrush-Juniper woodland, and ends at a panoramic overlook of the Coachella Valley. From April to November 2007, Keys View Road was reconstructed to rehabilitate an aging road surface, improve drainage along the roadway to control erosion and flash-flooding, and to protect native vegetation by preventing illegal off-road driving and soil compaction from social trails. Salvaged and outplanted plants were watered and monitored by vegetation staff every two months until spring '09. In late spring 2009 plant cages and T-posts from salvaged Joshua trees were removed.

### **Climbing/Bouldering Program summary**

#### **Social Trail Restoration**

Social trails created by Park visitors cause significant impacts to a variety of park natural resources including native plant communities, rare and sensitive plant species, wildlife species, scenic values, and cultural resources; by through destruction of cryptobiotic crusts, soil disturbance, soil compaction, and subsequent erosion. Social trails have lasting impacts and are difficult and expensive to restore.

In 2010 the Park has taken several steps toward resolving the increase of social trails and continues to work on restoring heavily impacted areas. Joshua Tree NP has charged Bernadette Regan with taking the lead on social trail issues. We anticipate a need to work with community organizations and individuals to identify practical, effective solutions to the problems created by social trails. Currently the program works with volunteers to restore popular areas and hosts Climber's Coffee every Saturday and Sunday starting in October running through May.

Education and outreach to user groups are critical components of restoration success. During FY10, Friends of Joshua Tree and UC Irvine provided volunteers that helped with 4 Social Trail Restoration Events:

### **Backside of Hall of Horrors**

*Climbsmart / Friends of Joshua Tree*

October 2009

- Restored 4.02km of social trails
- Place rocks to line trails
- Planted vertical mulch
- Inserted carsonite posts at key locations

## Hemingway

*Climbsmart/Friends of Joshua Tree*

October 2009

- Fine tuned previous restoration with additional rocks and vertical mulch.



Hemingway before restoration



Hemingway after restoration

## Left Hand of Darkness

Corner of Lost Horse Road and Park Rd 12

*UC Irvine*

March 2010

- Restored 4.25km of social trails
- Outplanted 100 live plants
- Placed rocks to line trails
- Planted vertical mulch
- Installed carsonite posts



Left Hand of Darkness after restoration. Cages are used to protect plants from herbivory

## Watanobe Wall

East side of Park Road 12 near mile 17

*Friends of Joshua Tree*

May 2010

- Restored .69km of social trails
- Vertical mulch
- Carsonite posts
- Rocks to line trails

## Climbers Coffee

Beginning in October and running through May, the park hosts Climbers Coffee, a weekly program, at the Hidden Valley campground area near Intersection Rock. Climbers Coffee is a relaxed, open forum that invites climbers to interact with all types of park rangers. Climbers ask questions and can find out about park policies, access, weather, and climbing. Free coffee, tea, and cocoa are supplied by the *Friends of Joshua Tree* and are available to visitors. We also display a number of posters demonstrating how to leave less of a trace while climbing or bouldering are displayed. Often a Fees Ranger or a Protection Ranger will stop by for a few minutes to chat. In fiscal year 2010, Joshua Tree National Park hosted 63 Climbers Coffee events and made 4582 visitor contacts (aka cups of coffee served).

Example of the Climbers Coffee outreach

## Native Plant Nursery program

### Volunteers

The Joshua Tree National Park Nursery has staff dedicated to plant production; however we owe a great deal of gratitude to the extremely dedicated, hard-working our core of volunteers. Ruth Lozano, Sharon Resnick, Lorraine Leach, Carol Reid, Eric Kramer-Webb, and Martha Miller greatly contributed to the overall nursery operations. These six volunteers put in a total of 778 hours throughout the year.

### **Propagation & Plant Production**

In FY10 the nursery propagated 6,936 plants to meet the needs of four in-house Park projects and an agreement with Fort Irwin National Training Center.

- Fort Irwin: 5,825 plants in half-tall pots
- BAR West (Whispering Pines): 202 plants in four-inch pvc pots
- BAR project near Lost Horse Mine: 683 plants in 3x3 plant bands
- JOTR Headquarters: 77 plants were grown for revegetation around the area where the trench was dug for seismic assessment
- JOTR Landscaping: 149 plants were grown to supplement purchased plants and plants remaining in the nursery from other projects in finishing the landscaping around the Resources, Maintenance, and Protection buildings.
- Numerous additional plants were started and will be used for restoration projects in 2011.

### **Visitors & Tours**

The long-standing reputation of the nursery consistently generates interest both locally and regionally. This year we hosted six tours. Representatives from local communities and concerned citizens visited the nursery three times as part of the park sponsored "Town Tours". Additionally the BLM Palm Springs office, our neighbors to the south, toured the facility twice to generate propagation and restoration ideas for Dos Palmas; and last, but not least, an American couple living in Kuwait stopped by the Park and nursery to gather ideas with the goal of starting a National Park/Preserve in Kuwait.

### **Seed Collection**

2010 was a good year for perennial shrub seed. We concentrated our efforts on campgrounds slated for restoration work and locations along Pinto Basin Road, slated for future maintenance work. Thousands of seed for twenty-eight species were collected and will allow the Park to restore locations with local varieties of native plant species.

### **Projects & Outplanting**

In April 2010, we assisted with implementing planting the landscape area around the Resources, Maintenance and Protection buildings. We placed rocks, planted, and put the drip emitters in the irrigation tubing.

### **Invasive Species Program**

In FY 2010 the vegetation crew actively managed three invasive species in Joshua Tree National Park, *Tamarix sp.*, *Pennisetum setaceum*, and *Brassica sp.* Twenty four days or 813 hours; 479 staff hours, 334 volunteer hours were spent surveying and treating for *Tamarix sp.* in the park. Approximately 1613.5 acres were surveyed and 3.82 acres were treated. This year we focused on the Coxcomb Mountains, Munsen canyon, Pinkham spring, Barker Dam, Adobe Mine, Stubbe springs, Johnny Lang canyon, 49 Palms Oasis area, Long canyon, Berdoo canyon, Pushawalla canyon, Smithwater canyon, Garret canyon, Quail springs, Pine City guzzler, Rattlesnake springs and Willow Hole. While we are reluctant to cite eradication, the Coxcomb Mountains, Munsen canyon, and Stubbe springs have been lowered on our priority list based on a lack of *Tamarix sp.* over a several years.

One of our more pernicious weeds, *Pennisetum setaceum* or fountain grass, required we devote seven days and 312 labor hours; 286 staff hours, 26 volunteer hours for survey and treatment. Approximately 1064.43 acres were surveyed and 126.75 acres were treated. The Exotic Plant Management Team (EPMT) visited JTNP for four days (April 15-19, 2010) specifically to assist in the control of *P. setaceum* in 49 Palms Oasis area and Berdoo Canyon. Their crew was comprised of approximately 10 people. These areas need to be revisited annually in order to control the populations.



Exotic Plant Management Team Treating fountain grass.

We also spent 18 days or 758.5 total labor hours; 169 staff hours, 589.5 volunteer hours surveying and treating *Brassica sp.* Approximately 3310.83 acres were surveyed and six community weed pulls and one citizen science group were mobilized to help remove *Brassica* from the Park, primarily in the Pinto Basin and along Geology Tour Road.

### **Rare Plant/Botany Program**

#### **Herbarium Curation**

The Joshua Tree National Park Herbarium continued to grow this year with more than 300 vouchers identified, cataloged, mounted, and added to our collection. In addition, many botanical surveys and collecting events occurred during flowering periods to provide the herbarium with additional specimens to further our goal of a complete, synoptic collection of the park's flora. These surveys resulted in vouchering and adding 8 new species (including two new families) to our park's plant list, range extensions for at least 2 species, the discovery of multiple new rare plant populations, and the survey and documentation of 14 previously un-surveyed areas of the park. Efforts to inventory and organize the park's plant photo library are underway in preparation for the Web-Based Flora of Joshua Tree National Park, to be completed by end of next year.

### **Vegetation Mapping Program**

In August 2009, JOTR staff, Erin Babich, Sean Murphy, and Tasha La Doux, met with Todd Keeler-Wolf (California Department of Fish and Game Senior Vegetation Ecologist), Debbie Johnson (AIS), Ed Reyes (AIS), and John Menke (AIS), in Redlands, CA. At the meeting, Todd presented a new analysis incorporating the 2009 Rapid Assessment data, which focused on 15 problematic vegetation types. Although the additional data was helpful in clarifying some of the issues, more data will be needed for several of the associations. For example, Creosotebush – Brittlebush- Indigo Bush (*Larrea tridentata*- *Encelia farinosa* – *Psoralea arborescens*) Eastern Pediment Type, which is not a published Association, now has 10 vegetation plots supporting the uniqueness of this type, but more data will be needed in order to establish a robust description for this Association.

Each Association and/or Alliance was discussed at the meeting and a determination of the correct name and code was determined, as well as any action items necessary. In many cases, two or more Associations were lumped into one, in which case a global recoding was done by AIS on the map as well as a refining of the key and description by Todd Keeler-Wolf. In a few cases, all polygons of a particular Association were reviewed (photo-interpretation was redone) by AIS to determine which Association, according to the new classification, it should be called. For example, *Coleogyne ramosissima* - (mixed shrub) Super Association had approximately 100 polygons on the old map. In the 2009 rapid assessment field effort we visited 10 of these polygons, shedding some light on the issue and leading to a discussion of which Associations might better suit many of these polygons. Again, many of these polygons could not be addressed due to lack of data; these would be targeted in future efforts.

As a result of the decisions made at the meeting, Todd Keeler-Wolf provided an updated version of the Classification, including keys and descriptions, that corresponds to the National Vegetation Classification System. In addition, AIS provided an updated version of the map. Erin Babich and Tasha La Doux have been reviewing these draft reports, ensuring that all changes were made correctly and that the map, classification, and key all correspond to one another. Erin Babich left the park in May after creating a first draft of the Final Report for this effort, Tasha is continuing this effort with assistance from Chris Lea on the Accuracy Assessment summary and statistics. The goal of this report is to describe the accuracy assessment effort and provide an overview of the history of the Vegetation mapping project at JOTR. The final products within this report will include a vegetation map, descriptions of each vegetation type, a diagnostic key that can be used in the field, a crosswalk of vegetation types, an accuracy assessment, and all related data and metadata files. We hope to have this Final Report completed by December 30, 2010.

Future work for JOTR includes additional field work to compliment the dataset for problematic associations/alliances, incorporating any new JOTR field data into the Mojave Network legacy datasets, and updating the vegetation maps, keys, and descriptions accordingly. The field effort for this year will focus on adding a minimum of 10 Rapid Assessment plots to the following Associations: *Larrea tridentata* Undifferentiated Playa Association, Red brome – Schismus (*Bromus rubens* – *Schismus arabicus/barbatus*) Semi-natural Stands, *Coleogyne ramosissima* - (mixed shrub) Super Association, Creosotebush – Brittlebush- Indigo Bush (*Larrea tridentata*- *Encelia farinosa* – *Psoralea arborescens*) Eastern Pediment Type, and Desert sunflower –

California Buckwheat - Jojoba – (*Viguiera parishii*- *Eriogonum fasciculatum* –*Simmondsia chinensis*) Association. In addition, there are a few polygons currently only called to the Alliance level, however by visiting these and recording plot data we should be able to refine them to the Association level. Specifically, the following will be visited: 1 polygon of “*Pinus monophylla* Woodland Alliance”; 1 polygon of “Exotic Vegetation”; and 4 polygons of *Prosopis glandulosa* Woodland Shrubland Alliance. In addition, the budget for this year will secure the necessary time to complete the Final Report for the Accuracy Assessment effort by the end of the calendar year (December 2010).

### **Rare Plant Program**

Accomplishments for 2010 include continuing surveys and monitoring of rare and endangered plants throughout the park. Four species, *Monardella robisonii*, *Polygala acanthoclada*, *Calachortis striatus*, and *Astragalus tricarinatus*, were targeted for more extensive monitoring. Fifty individuals of both *M. robisonii*, and *P. acanthoclada* were identified, measured, tagged, and observed on a weekly basis for baseline phenological data collection. Fruits and flowers of both species were collected, and are to be dissected and analyzed in order to get a better understanding of the reproductive ecology of these rare species. Potential pollinators of both species were also collected for identification. A permanent plot of the rare lily *C. striatus*, which was discovered north of Key’s Ranch in 2005, was set up in order to estimate population size and observe phenological changes of this rare perennial bulb from year to year. An intense 3-day survey for the federally endangered *A. tricarinatus* was performed in the steep, rocky terrain of the Little San Bernardino Mountains. This search yielded the discovery 7 new populations, one of which is the largest population to date in the park, consisting of over 175 individuals. The data collected was added to the existing rare plant database and shapefile. Six permanent plots along the north boundary of the park were re-visited to continue the investigation of population changes and fecundity of *Linanthus maculatus*. We added a rare plant species to our list this year after surveys near the north boundary of the park revealed a population of *Nemacaulis denudata* var. *gracilis*. We found a healthy population of this species growing on the sand ramps along the Pinto Mountains, near Clarks Pass along Highway 62.

### **Physical Sciences**

#### **Air Quality**

Air quality monitoring continued year round at the Black Rock & Cottonwood air stations. During FY2010 the physical science branch requested funding to continue with year-round air quality monitoring at Pinto Well. The Pinto Well air quality monitoring station is a critical source of air quality data relating to encroachment on the eastern part of Joshua Tree National Park. The Pinto Well air station will begin the fourth year of data collection; a three-year database is considered the minimum required for a baseline study.

The physical science branch in conjunction with NOAA conducted a surface to upper stratosphere ozone study by launching ozonesondes from May through June. A total of 36 ozonesondes were launched from the Black Rock Fire Center. Preliminary results indicate that upper-level ozone (approximately 10,000 feet) spiked approximately 20% compared to surface level readings. A likely source for the upper level increase may be from off shore sources as far away as the Pacific Rim.

### **Encroachment Issues Relating to Energy Development**

Physical Scientist Luke Sabala, has now served for two years as an active member of an interdisciplinary team of natural resource scientists that have been responding and providing input for the Environmental Impact Statements/ Environmental Impact Reports relating to energy development along the eastern boundary of the park. Projects of concern include to the Eagle Mountain Hydro-pumped Storage project, First Solar fast-track solar developments and other proposed energy projects within a few miles of Joshua Tree's wilderness. Significant concerns for Joshua Tree National Park are impacts to groundwater, night sky/light pollution, and air quality and soundscape preservation.

### **Abandoned Mine Land Program (AML)**

During FY 2010 the physical science branch (Luke Sabala, Stacy Manson, Bridgett Jamison and Max Zielinski) closed 11 mine openings at 9 sites under the American Recovery and Reinvestment Act. Sites closed include the Cactus Blossom (S77), Contact Mine (S132), Site S78, Last Chance Mine (S174), Site S172, Site S92, Site S100, Site S105, and Site S123. A total of 8 helicopter operations were safely completed by the physical science staff, fire staff and Dan Messaros (Aviation Manager).

Physical Science staff work with the Denver Service Center to finalize details for the contracted sites that will be closed under the American Recovery and Reinvestment Act beginning in October of FY 2011.

During 2010 prefabrication production of subassemblies continued at the Pinto Wye machine shop. Throughout the year enough parts were fabricated to close 15 adits and 09 copulas.

### **Geologic Research**

Physical Scientist Luke Sabala, completed his graduate research project, "Exhumation and Uplift of the Little San Bernardino Mountains (LSBM)." Results of the study indicate that the LSBM are a fault bounded set of mountains that are uplifting at differing rates. The southern section of the LSBM (nearest the San Andreas Fault) is uplifting at a rate that is 10 times faster than the northern end of the mountain range. The data supports a northern tilt of the LSBM to accommodate the young low-temperature thermochronometer ages near the San Andreas Fault. This research is the first of its kind in the LSBM and is a cornerstone component in understanding the deformation history of the LSBM and will support seismic hazard analysis in this complex tectonic region.

### **Support for Other Divisions**

Physical scientist Luke Sabala, assisted the wildlife branch by securing funds to conduct bat surveys at abandoned mines slated for closure in 2011. Luke Sabala also assisted the interpretive branch by volunteering to speak at the Joshua Tree Public Library about a variety of issues relating to encroachment, light pollution, groundwater and impacts Joshua Tree National Park.

## Wildlife

**Desert Tortoise** – Biological technicians and SCAs continued to track tortoises using radio telemetry and with the addition of one tortoise near the North entrance area, “Vernon,” our number of transmitted tortoises is up to 15. From the multiple years of data, the tortoises tend to avoid high traffic roads and only cross them a few times a year. Tortoises do tend to cross roads that don’t have as much vehicle traffic much more frequently.



General Sherman courts a female, 2009

The wildlife staff continues to monitor and track these tortoises throughout the year. Information gathered helps tortoise biologists better understand this threatened desert dweller.

A tortoise bite count project was implemented in spring to record dietary preferences of the transmitted tortoises. After analyzing the data, it was found that the tortoises heavily favor desert dandelion (54%) and *Bromus spp.* (15%).

The Wilson Canyon-Pinto Basin road project and Indian Cove picnic area tortoise surveys were completed this spring for federal highways projects and subsequent reports were submitted. Recommendations for the Indian Cove project include having a biological monitor on all ground breaking activities and having new employees and contractors go through tortoise sensitivity trainings. The results from Wilson Canyon-Pinto Basin Route 11 survey were submitted in a report to the US Fish & Wildlife Service. Their recommendations based on these findings will be written in the Biological Opinion for this project.

The park funded USFWS tortoise population surveys again this past spring. The wildlife staff assisted with the effort by providing data for a detectability index calculated from tracking our transmittered tortoises.

Staff attended the annual Desert Tortoise Council symposium this past spring in Ontario, CA.

### **Raptors**

Charlie Truettner did a wonderful job organizing volunteers to help survey climbing routes for raptor nests. Working together, they found three active hawk and owl nests in climbing areas including a Golden eagle nest in Rattlesnake Canyon. The areas adjacent to the raptor-occupied rocks and cliffs were closed temporarily to all recreational activity to allow the birds to complete their nesting season undisturbed. A report was completed for the project and all recorded nesting locations were documented in ArcGIS to aid in the continuation of the project each spring.

### **Bats**

The Wildlife branch worked closely with the Physical Science staff by completing surveys on mines scheduled to be closed. The mines were surveyed for the presence of bats along with determining if the mines had suitable bat habitat. From these surveys, recommendations for appropriate closures were made.

The majority of the mine openings were “closed” to exclude visitors for safety reasons with bat-compatible gates which allow bats and other wildlife to freely utilize the habitat inside. Several of the mines showed evidence of bat activity and the high-activity sites will continue to be monitored.



Wildlife BioTech Kristen Lalumiere captured this photo of a California leaf-nosed bat in the Old Swede mine, 2009

With the spread of White-Nosed Syndrome (WNS) across the United States, park biologists are working to collect baseline data on our bat populations before WNS hits the west coast. This fungus, which surfaced in 2006 in New York (*Geomyces destructans*) has decimated bat populations in the Northeast and along the east coast and is spreading westward. Scientists know very little about this fungus, but have discovered that it thrives in cold temperatures. Due to this, the impact it will have on bats in the southwest is unknown.

The wildlife staff attended the “Southwestern Desert Bats” class in Zyzyx, CA this past spring.

### **Ravens**

A Raven survey continued this past spring via point count surveys to gauge the effectiveness of raven proof dumpsters. No correlation was found to support a reduction in Raven numbers with the installation of the dumpsters. However, a clear correlation between raven presence in human developed zones versus “natural” areas continues to exist. In other words, Ravens tend to hang out in areas where visitors go. Several nesting locations were also recorded and mapped this year.

### **Bighorn Sheep**

Staff continued to monitor guzzlers located throughout the park for wildlife use and any signs of deterioration. Motion-sensor cameras placed at guzzlers and natural seeps captured many photographs of wildlife using the water sources.



A ram at the Pine City guzzler, 2009

Surveys of visitor impacts in 49 Palms Canyon Oasis showed that signage placed just outside the oasis was helpful in deterring visitors from entering the sensitive area. Plans are being developed to further protect the area while allowing visitor access.

**Tree frogs**

JOTR biologists have been monitoring the park's California treefrog (*Pseudacris cadaverina*) populations over the last five years. Information gathered through these surveys were compared to past population studies. The results show treefrogs have disappeared from several drainages over the last several decades. Wildlife staff proposed to reintroduce treefrogs back to historic or suitable riparian areas using tadpoles collected from an existing, healthy source population. Following the recommendations of a Cooperative Ecosystems Study Unit (CESU) study done by UC-Riverside, the healthiest population to utilize was from Rattlesnake Canyon in Indian Cove. In the spring approximately 20 tadpoles were collected from desiccating puddles in Rattlesnake Canyon as candidates for reintroduction. In an effort to avoid the possible spread of Chytrid fungus (a fungus that is causing amphibian population decline worldwide), the tadpoles were placed in a tank and the water temperature was slowly increased to kill any Chytrid spores that may have been present on the tadpoles. The project was not successful and therefore the staff will reevaluate the process and try again next spring if conditions are favorable.

**Wildlife Observations**

The SCA interns were busy entering the backlog of wildlife observation cards into an electronic database. By the end of 2009, 12,003 records had been entered over several years. As more observations continue to come in weekly, they're also added to the database. These records are extremely helpful in our efforts of mapping bighorn sheep sightings, reports on tortoise survey findings and also help us document the presence of rare and unique wildlife.



## **DIVISION OF RESOURCE AND VISITOR PROTECTION**

During 2010 the Resource and Visitor Protection Division continued to provide support to the park mission, park staff and park visitors through law enforcement patrols and investigations, emergency medical care, search and rescue response, wildland fire suppression, backcountry and wilderness management, cultural resource monitoring, campground management and fee collection, special park use permits, public outreach projects, and safety awareness. The division maintained program compliance through the completion of PEB testing, firearms qualifications, mandatory training, medical review exams, background investigations, and internal audits. The staff was supported with career development through training such as Fundamentals, FLETC, detail assignments, committee/project participation, and supervisory skills training.

The Division received an ONPS base increase of \$499,000 in FY 10. This provided funding to increase the Ranger staff by 1 Protection Specialist and 2 Park Ranger (Permanent Subject-to-Furlough) positions. At the close of FY10, the protection specialist position description has not been submitted for review or classification.

Four rangers attended and completed the Basic Law Enforcement Training at FLETC. Two rangers were hired through the Federal Internship Program.

### **Disturbed Land Rehabilitation**

The staff coordinated the removal of 1,222 lbs of trash and debris from Section 23 in the Black Rock Canyon area. This cleanup project resulted in restoration of 10 acres of disturbed lands.

Despite continued trespass and vandalism to boundary fencing along the northwest sections of the park, the staff repaired boundary fence and signs to maintain public notification. Several off-road vehicle incidents occurred in the new section of Nolina Peak. Staff repaired and maintained the gate and fencing in this area and committed patrol efforts to reduce the impacts. The staff has identified and posted the boundary of the Nolina Peak section. Work has started on placing barriers in areas where historic ORV use has occurred.

### **Protection Operations**

The law enforcement program documented 585 case incidents during the year. This included the following:

15 Larcenies	27 MVAs reported
4 Weapons possessions	15 Driving off road
9 DWIs	13 Natural Resource Violations
6 Liquor Law Violations	1 Poaching (Vegetation) case
5 Drunkenness Violations	1 Molesting/Bothering/Possession of wildlife case
25 Vandalism cases	17 ARPA incidents
8 Disorderly conduct violations	
119 Traffic Incidents	

Staff responded to 18 Search and Rescue incidents. Two major land searches were conducted in cooperation with the county sheriff's departments: the Juniper Flats SAR and Rosenthal SAR. The Juniper Flats SAR remains unresolved with the park continuing to work with local SAR teams who wish to use their practice exercises as part of the ongoing search. The Alan Rosenthal search was initiated immediately upon notification of the missing person, which was two days after Mr. Rosenthal went missing. Mr. Rosenthal was found alive, after 6 days without food or water.

The staff provided emergency medical care on 29 incidents which coordination with local ambulance, helicopter transports and fire departments. The EMS program provided training to 1/3 of the park staff in CPR/AED skills. Opportunities for park staff to be trained in 1<sup>st</sup> Aid and 1<sup>st</sup> Responder was provided by the EMS coordinator.

Patrol operations successfully investigated and obtained charges on three local men who are suspected of poaching trees in the northwest portion of the park and selling the wood to local residents. The trial is pending.

### **Wilderness**

The staff continues to provide coordination for the Wilderness Steering Committee. The committee processed no Minimal Tool Analysis for wilderness activities.

### **Fee Collection & Special Use Program**

The division continues to manage the park's fee collection and special use program by staffing and supervising the collection entrance and recreational use fees. The staff continues to provide information to park visitors while continuing to manage the five entrance station collection sites and nine honor system or reservation campground collection sites. In addition to staffing in-park collection sites, the fee staff is providing weekend support for the California Welcome Center in Yucca Valley, CA.

During 2010, the Fee program continued to manage the collection and remit program according to Standard Operating Procedures and in conjunction with Director's Order and Reference Manual # 22. Internal audits are conducted throughout the year.

To facilitate the security of government monies, the park entered into a contract with an armor car company who transports funds from the collection stations to the remit office. This has enabled the park staff to focus on campground management and has enhanced the safety of the operation.

As of October 1<sup>st</sup> the park has had 1,074,334 visitors. This reflects a 12% increase in the visitor pattern over 2009. \$3,217,500 was collected through the fee program.

The park's special use program issued seventy three Commercial Use Authorizations. There were twenty six commercial filming and photography permits. There were twenty five special use permits including weddings, ceremonies and fundraisers. The Special Use program collected \$45,800 in cost collection and location fees. The program manager worked with the Resource staff to develop a programmatic NEPA compliance document which evaluates commercial climbing services. The SPU Manager, Don Roberts, retired July 31, 2010.

**Wildland Fire**

The park experienced several severe weather events this summer which included multiple lightning strikes. During these events, small fires (single Joshua trees) occurred which the fire crew suppressed. One event resulted in a 110 acre fire in the Keys View area in August. The fire was managed by a Type 3 Incident Command and included hand crews from other agencies. A BAER analysis was completed and the area closed until fencing could be placed along the parking lot at Keys View overlook.

**Partnerships and Outreach**

The staff participated in the Yucca Valley Ready Aim Fire Coalition. This is a community group that works with teens who have alcohol and drug issues. We assisted this group by providing information related to underage drinking which occurs in the park and offered educational ideas for working with teenagers in the community.

Staff participated in the Copper Mountain College Job Fair and the Indio Job Fair. We provided assistance to numerous individuals that were interested in working in the National Park Service.

We provided support personnel for the International Boy Scout Jamboree in Washington DC.

Ranger Melanie Lloyd and Firefighter Sam Meza were recognized as a Morongo Basin Law Enforcement officer of the Year and Fire Fighter of the Year.

## DIVISION OF INTERPRETATION

### Overview

The Division of Interpretation at Joshua Tree National Park enjoyed a highly successful year in FY10 with a number of notable achievements. Temporary funding allocations from Centennial money, the Youth Partnership Program, and Federal Lands Recreation Enhancement Act (FLREA) project funds enabled the park to establish a number of additional temporary positions resulting in over 21 FTE for the Division and 27 temporary positions.

An all-time record high of 318,457 was set for visitor center traffic this year. This was due in part to the second highest total ever for park-wide visitation, 1,425,430. A good spring wildflower season, periodic closures at state parks, and numerous fee free days brought large numbers of Californians to the park. As a consequence many visitor services saw very high attendance. Attendance at traditional ranger programs was the second highest reported.

### Division of Interpretation, Visitor Use Statistics, FY2010

#### Number of Contacts

Visitor Center Traffic	<b>318,457</b>
Ranger-led Programs	<b>20,457</b>
Roving	<b>21,253</b>
Education Programs	<b>22,886</b>
Junior Ranger Program	<b>4,252</b>
Special Events/Community Programs	<b>8,151</b>
Materials Distributed	<b>381,000</b>
Web-site Use	<b>N/A</b>

Loan Materials

N/A= figure not available. Red indicates a record high total.

Two brand new interpretive services were developed in FY10. A living history tour program was created and launched for the Keys Ranch area. Living history and traditional ranger-guided tours were operated on the same days giving visitors a choice of tour experiences. Recreation fee dollars enabled the creation of a new NPS-offered Night Sky program to replace a long-term volunteer effort that stopped in November after many years of operation. The new program uses rangers and volunteers to conduct night sky presentations and operate video astronomy equipment. The public response has been overwhelmingly positive.

Informal Interpretation (commonly called ‘roving’) recorded its highest total due in part to support from a Volunteer Rovers program. Demonstrations and Performing Arts contacts are higher than ever due to a series of in-park art exhibits developed by the park’s Artist-in-Residence program.

Much attention was placed on the Recreation Fee (FLREA) program in FY10 resulting in a number of projects to improve visitor services. Two FLREA projects related to curriculum-based education enabled the park Education program to expand into new schools with large Title I student populations. The ongoing financial crisis in California is having major impacts on school services so that without support from NPS, many schools would drop participation in NPS education services. Nonetheless, JOTR achieved a new high of 22,886 students attending park-provided curriculum-based programming. These gains remain very fragile and could decline dramatically as the present California school fiscal crisis deepens.

The new Junior Ranger program inaugurated last year continues to prove popular. The 4,252 new Junior Rangers completing the program in 2010 are the highest total since 2003. Interpretive media also enjoyed a busy year in FY10.

Twenty-one FLREA projects totaling almost \$570,000 were in progress. A new travelling exhibit was produced in FY10 and all free publications produced park-wide are now funded through the fee program. All park interpretive media were entered into Facility Management Software System (FMSS) in FY10, a major focus in the first half of the year.

A series of .pdf trail maps was produced, printed, and placed on the park website providing much improved trail information services to park hikers. A podcast on visiting Keys Ranch, the park’s first, was written and produced in FY10. Planning continued in FY10 for a major rehab for the park’s Oasis Visitor Center, and a project for creation of new exhibits at the Joshua Tree Visitor Center was written and approved to start in FY11.

The Joshua Tree National Park Association (JTNPA) enjoyed a very strong year. For the first time, Association revenues topped \$1,000,000. More than 200 new members were added to the JTNPA membership program. A number of new agreements with the Joshua Tree National Park Association were finalized in FY10. These include the new Five-Year general agreement, a 3rd part fee agreement for Interagency Pass sales at the Joshua Tree Visitor Center, and a cooperative agreement with the Desert Institute. The Institute also had a successful year. Fifty-five weekend classes were offered to 476 participants, and 37 evening lectures were presented to 1,336 attendees.

Joshua Tree finished up its oversight of a four-year interagency public outreach program on the desert tortoise operated in partnership with the Desert Managers Group. After successful creation of a California version of the Mojave Max Emergence Contest, the park is passing leadership for the desert-wide tortoise outreach effort to a partner organization, The Living Desert.

Groundwork was undertaken in FY10 for a major park public outreach in FY11 to celebrate the park’s 75th anniversary. A logo was developed through a partnership with a Los Angeles area

design and marketing firm, and an anniversary coordinator position was established to spearhead the anniversary. A local citizen committee is working with the park on planning upcoming anniversary events and activities.



The 2010 Volunteer Program featured many new milestones and highlights. A total of 1,059 volunteers contributed 41,899 hours at a value to the government of \$873,594.15. Volunteers made a total of 12,398 visitor contacts. Perhaps, the most remarkable fact about the 2010 volunteer program is that not a single accident by a volunteer was reported for the entire year! The campground rover program that has been in preparation in the past went operational this year and recorded 5,398 visitor contacts. The park recycling program, managed in the past by local Veterans of Foreign Wars volunteers, was taken over in 2010 by the DesertArc program. DesertArc is a nonprofit assistance program that provides jobs, training, and support to people with developmental disabilities. DesertArc volunteers collected 55,217.5 pounds of recycled materials in 2010— more than 27.6 tons! With the current Servicewide emphasis on youth outreach and engagement, it is worth noting that 9 Student Conservation Association interns and 210 Boy and Girl Scouts participated in volunteer activities.

## **Partnerships**

Joshua Tree National Park continues to work in a number of formal and informal partnerships for the major goals of networking, regional problem solving, and effective land use planning

ACCESS Fund

Basinwide Foundation

Coachella Valley Mountains Conservancy

Copper Mountain College

DesertARC

Desert Managers Group – the park continues to participate in quarterly managers meetings.

Desert Regional Tourism Association – the park continues to attend regular meetings.

Friends of Joshua Tree

Joshua Tree National Park Association

Joshua Tree Search and Rescue

Mojave Desert Land Trust

Morongo Basin Conservation Association

Morongo Basin Open Space Group

Morongo Basin Regional Economic Development Consortium

National Parks Conservation Association

National Park Foundation

Riverside Art Museum

Service First Agreement with other Federal Agencies, BLM & USFS

University of Redlands – GIS Program

Participated in community meetings with the Town, City and County-wide Councils, Planning Commissions, local and regional water districts and regional and local tourism organizations.