

# **Sonoran Desert National Monument National Landscape Conservation System**



**Butterfield Overland Stage Route and Anza National Historic Trail - Maricopa Mountains**

## **FY 2009 Annual Manager's Report**



## **FY 2009 ANNUAL MANAGER'S REPORT**

### **Introduction**

**Site Name:** Sonoran Desert National Monument (SDNM)  
**Acres:** 486,600 Acres  
**Manager:** Richard B. Hanson (Monument Manager)  
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**Offices:** Lower Sonoran Field Office, Phoenix District, Arizona State Office  
**Visitation:** 35,000 visits (estimates derived from field reports and RMIS)

**Establishing Authority:** Presidential Public Proclamation # 7397, enacted under Sec. 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), established January 17, 2001.



**Campers on Border of South Maricopa Mountains Wilderness**

# 1. Natural and Heritage Resources Conditions

## *Overview*

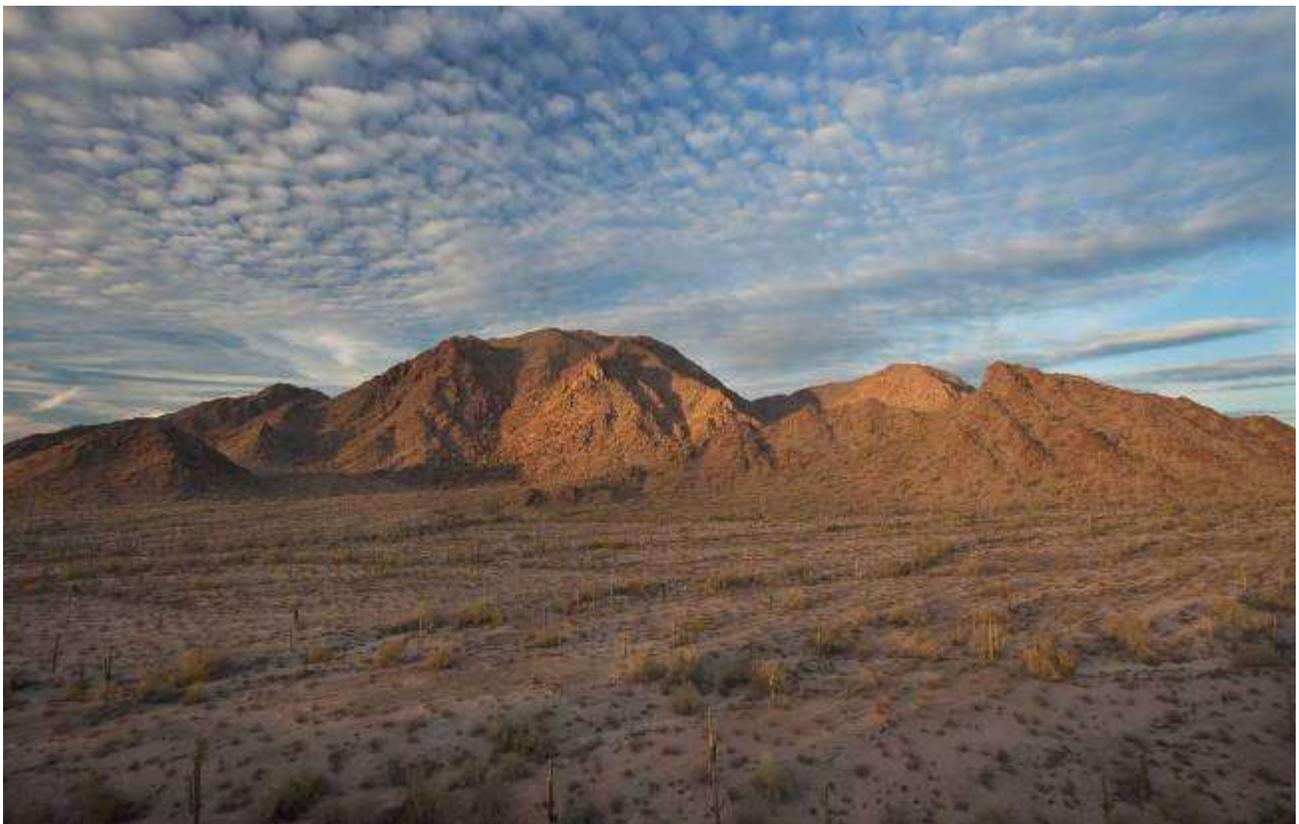
The Sonoran Desert National Monument (SDNM):

- Established to protect a large intact area of diverse Sonoran Desert landscape and ecosystem. The SDNM includes large saguaro cactus forests, diverse plant communities and wildlife populations, and an array of cultural sites.
- Encompasses four other National Landscape Conservation System (NLCS) units: North Maricopa Mountains Wilderness, South Maricopa Mountains Wilderness, Table Top Wilderness, and Juan Bautista de Anza National Historic Trail (Anza NHT).

## *Natural Resources Trends (Overall upland, biological diversity, special status species, air and water, and other natural resource trends.)*

- Natural resources trends on the SDNM vary. In some locales, the trends are steady or up. In others areas the trend is down. Chiefly, the upward trend applies to natural resources and monument objects discrete from roads, grazing concentration areas around waters and corrals, intensive recreation use sites, and separated from the effects from criminal smuggling corridors south of Interstate 8 (I-8). The most notable and noticed impacts on natural resources are next to vehicle travel routes and foot trails; thus they are decidedly visible to staff and most visitors. Bear in mind however; the adverse effects on natural resources, monument objects and functioning ecological processes summarized below affect relatively small parts of the SDNM.
- While the overall condition of the resources and monument objects across the SDNM is good, the various stressors described in this section are having a cumulative negative impact with one exception. Youth corps hand crews and volunteers are restoring lands within the temporary closure area. Early feedback on the projects indicates the work has been successful.
- On a landscape level, the trends for upland vegetation and wildlife communities, overall biological diversity, special status species, monument objects and air and water resources are generally static. Conditions are similar to those present in 2001 when the monument was established. The most dynamic change at the landscape level over the past decade is the immense increase in the types and intensity of smuggling and the degree of criminal sophistication.
- Natural resource trends are static to improving north of I-8. The primary reason for improving conditions north of I-8 is ongoing and successful reclamation efforts within the 55,000-acre temporary motorized closure area.
- Natural resources and monument objects trends on the 230,000 acres south of I-8 are experiencing unchanging to downward trends.

- Recreation effects are localized, and usually on or near roads and trails. Camping, OHV staging and OHV play, and target shooting are the main contributors to slight downward trends. These uses affect scenic, soil and plant, desert wash and cultural resources in some areas.
- Drug and human smuggling have widespread effects on natural resources trends. Illegal border-related drug smuggling and undocumented immigrant crossings generate natural resource damage, primarily to soils, plants, wildlife habitats and washes. Impacts include cross-country vehicle travel, new roads, abandoned cars, bicycles, horses, cut fences, dumped trash, camps and rest areas, hilltop lookout posts, drug load-out areas, and communication sites. Law enforcement interdiction activities also contribute.
- Long-term drought in the Southwest continues to stress the monument's plant and animal communities with about three inches of rain throughout 2009, and a poor summer monsoon. Some parts of the monument received no rain. Heavy rains in January 2010 will alleviate some of this stress over the short term. Long-term Southwest drought remains the major contributing factor to a decline in wildlife populations and some plant die-off.



**North Maricopa Mountains Wilderness at Sunset**

***Heritage Resources Trends (Overall cultural and paleontological, National Trails, and other heritage resources trends.)***

- The overall condition of the cultural resources is difficult to assess with much accuracy due to the limited number of acres inventoried to date. Arizona State Parks Site Stewards, BLM Law Enforcement Officers, and BLM Park Rangers monitored 19 sites on the SDNM in FY 09. Based on known sites, the condition trend seems stable with the exception of lands south of I-8.
- In 2009, about 15 miles of the Juan Bautista de Anza National Historic Trail within the SDNM were not meeting acceptable trail standards due to vehicle-related damage. Damage to the Anza NHT included disturbed soils and destroyed vegetation, and changes to the character and physical condition of the trail. NHT restoration and conservation trends shifted significantly upward in FY 2009 with successful reclamation efforts by the Southwest Conservation Corps (SCC), Boy Scouts, Anza Foundation and the Arizona Wilderness Coalition. Ongoing restoration and deployment of an American Recovery and Reinvestment Act (ARRA) funded Student Conservation Association (SCA) restoration crew in 2010 will accelerate restoration efforts to fully acceptable conditions by FY12.
- The Butterfield Project closure continues to protect 15 cultural sites from further degradation while restoration occurs. One of the sites is the Butterfield Overland Stage Route, which overlays the Juan Bautista de Anza National Historic Trail. The trend is excellent for this resource.
- The trend for cultural sites located south of I-8 is downward due to year-long Borderlands smuggling activity. Illegal border-related activities have damaged cultural sites, particularly on hilltops due to placement of smuggling “look-outs”. Lookouts or drug spotters have moved petroglyphs or made the rocks part of lookout walls. Cross-country vehicle travel, smuggler footpaths, and construction of smuggling roads through a culturally rich area of the Table Top Wilderness have, in all likelihood, damaged cultural sites on the desert floor.



**Big Horn Station - ARRA Restoration Project**

- The Lewis and Clark Trail Heritage Foundation, Grand Canyon Chapter, brought national historians and authors to Arizona for a spring ceremony on the Anza National Historic Trail. The Anza NHT extends through the SDNM and the Phoenix District. The trail includes the Juan Bautista de Anza National Trail, the Mormon Battalion Trail and the Butterfield Stage route. Considered by many historians as one of the most incredible feats ever accomplished by an American military unit, the Mormon Battalion march route draws thousands of visitors every year.

### *Land Health Assessments*

- Land Health Assessments addressing 256,000-acres of the SDNM north of Interstate 8 were drafted in FY09 and submitted for peer review. As of February 2009, all 230,000-acres of the SDNM south of Interstate 8 were closed to grazing when the remaining grazing permit expired.
- Standard 1 for Upland Range Sites (upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type; climate and landform (ecological site) is being met.
- Comparisons between the rangeland survey data and current data, at key areas with trend data, indicate an upward trend for six of 19 key areas, a static trend for six key areas, and a downward trend at seven key areas. Findings are based on ecological site evaluations conducted between 1979 and 2009. The draft Lower Sonoran Field Office/Sonoran Desert National Monument RMP will present full rangeland health assessment findings for public review in 2010.
- A compatibility determination will be completed in February 2010 to evaluate if grazing is compatible with the paramount purpose of protecting the objects of the SDNM. The determination will be released to the public with the draft RMP in FY10.



Boy Scout Project and Papago Indian Chief Mine - Sand Tank Mountains

### ***Notable Issues or Trends Involving Invasive, Non-native, or Noxious Weeds***

- Completed 4,200-acres of noxious and invasive weed inventories in FY 2009. Invasive species are of increasing concern on the SDNM. An invasive species inventory conducted in 2002-2003 found invasive species, though present, were not a major component of the monument's vegetation communities.
- Documented populations of invasive species, particularly Sahara mustard, continue to be detected along Interstate 8, along primary and tertiary dirt roads, and within the North Maricopa Mountains Wilderness.
- Documented isolated tamarisk populations were identified in active and inactive livestock waters.
- Isolated buffelgrass plants were detected by range inventory crews north of I-8. The plants were mapped and destroyed. The crews did not find buffelgrass south of Interstate 8. There appear to be no colonizing or contiguous stands of buffelgrass at this time. Buffelgrass, while still not widespread, is more prevalent based on 2007 and 2008 inventories.
- Marijuana was detected in one stock tank south of Interstate 8, growing from seeds dropped during narcotic smuggling.

### ***Natural and Heritage Resource Inventories***

- Completed 4,200-acres of noxious and invasive weed inventories.
- Completed 10 water resource inventories for quantification of SDNM water rights.
- Assessed and developed report on condition of two-miles of the Anza NHT.
- Inventoried 14,000 acres for Tucson-shovel nosed snake habitat.
- Surveyed 16,000 acres of desert tortoise habitat in the Maricopa Mountains.
- Completed three assessments of Big Horn Station, Butterfield Overland Trail, and Anza NHT.
- One hazardous material site was assessed and mitigated.

### ***Restoration Projects Initiated, Continued or Completed***

- Annual natural and heritage resource damage is more than \$1 million annually based on adjusted 2004 figures developed in 2004. Although we have had remarkably good success with road and landscape rehabilitation, restoration, and trash removal, we cannot keep pace. The SDNM receives about \$250,000 to \$325,000 annually in Southern Arizona Project funds for the repair and restoration of landscapes damaged by Borderland criminal activities.
- In response to ongoing damage due to inappropriate recreation use, BLM initiated the Butterfield Project on June 13, 2008. The project included temporary closure of 88 miles

of roads in the area north of Highway 238, rehabilitation of damaged areas, and development of a draft plan to manage recreation use to avoid future damage. Restoration activities in this area are described below.

- Our Park Rangers implemented the SDNM's Temporary Closure Project Excel Work Lists and Borderlands Project Excel Work Lists in FY09. They spent the summer of 2009 staking, photographing, and planning this year's restoration efforts. Each group of volunteers and youth corps crew will receive an info packet, a detailed project plan, and a guide with techniques for successful implementation of reclamation projects.
- SDNM staff wrapped-up record-setting restoration and trash removal projects in the temporary OHV closure area for FY09. During FY09, over 151 restoration and trash removal projects were completed with help from contracted youth corps crews and volunteers.
- A total of 166,073 pounds (83 tons) of trash, shooting debris, tires, smuggling flotsam and jetsam (backpacks, ice chests, food, batteries), and abandoned undocumented immigrant property were removed from the SDNM.
- Youth corps crews and volunteers restored 144 acres of land damaged by off-road motor vehicle use, installed signs, and restored or closed five miles of illegal vehicle trail along with countless spur routes and redundant routes.
- Target shooting, youth-culture raves, and trash dumping damaged lands around a petroglyph site monitored by site stewards near Espanto Mountain. The site was cleaned by the Southwest Conservation Corps (SCC) and BLM staff. The SCC and BLM Force Account installed five miles of protective fencing and signs. The site now is now unmolested.
- The Butterfield Project closure curtailed all damage to the Anza NHT. This has allowed BLM to initiate significant rehabilitate projects in the area with volunteers, Boy Scouts, youth corps and ARRA funds.
- Landscape restoration work directly on the SDNM's border benefitted the monument and yielded over 100,000 pounds (50 tons) of trash. SDNM Park Rangers saved the BLM \$5,000 in May securing the volunteer services of Waste Management, Inc., in a large-scale trash removal project. The Butterfield Landfill removed and transported illegally discarded household trash, litter, asphalt, construction waste and Border-related trash from BLM-managed lands bordering the SDNM.
- Six weeks of SCC crew time were directed to rehabilitation of illegal roads in the Butterfield Stage area, including sign installation and removing several dump areas. Rehabilitation included digging out ruts and raking, smoothing track and surfaces, and using vertical mulching techniques. All tracks not part of the route inventory were reclaimed. Crews raked out vehicle tracks in washes at road crossings.

Fiberglass posts were installed in dozens of locations where routes could not be completely obliterated and in washes where tracks have been raked out.

- Law Enforcement removed all abandoned vehicles in the SDNM related to illegal smuggling activities and theft.
- Force account crews repaired OHV and closure barrier fences damaged by off-road travel and smugglers, and installed and repaired permanent and temporary access control devices including fences, gates, trailheads, portals, and other structures/facilities. Repair of the 13 gates leading into the restricted areas of the Sand Tank Mountains was suspended as the gates are immediately destroyed by smugglers.

### *Successful Reclamation*

- Rehabilitation of off-road tracks, staging areas, OHV play areas and camping impacts, while labor-intensive, have been quite successful in addressing damage caused both by smuggling and recreation activities. However, full rehabilitation is dependent on adequate rainfall to begin the recovery of vegetation in the area. In 2004, early 2005, and 2008, after above-average rainfall, rehabilitation of illegal off-road tracks was highly successful, with many off-road tracks nearly disappearing. Since that time, rehabilitation efforts have masked the damage, stabilized the soils, and stopped further use of the areas. However, vegetation recovery will likely not occur without increased and timely rainfall.



**Boy Scout Troop Restoration Project - Feb. 2009**



**Twisted Saguaro Cactus**

## **2. Recreation Facilities, Roads and Trails Conditions**

### *Overview*

- The general condition of the recreation facilities on the SDNM is good. All facilities are fully ADA compliant.
- Recreation facilities on the SDNM consist of four vault toilets, 10 picnic tables and 8 grills at four trailheads, wilderness information kiosks at seven trailheads (seven trailheads total on the SDNM), two kiosks related to the Juan Bautista de Anza National Historic Trail, fifteen portal signs, four hiking trails comprising 26 miles, numerous vehicle barriers primarily at wilderness boundaries, and 595 miles of vehicle routes.
- Facilities include three surviving historic sites (Bighorn Station, Farley’s Cabin, Papago Indian Chief Mine), the Juan Bautista de Anza National Historic Trail (unimproved, 18.1 miles), and three public information displays (“kiosks”) installed at primary monument access points to provide information on a closure to motor vehicles enacted during fiscal year 2009.
- The “Fiscal Year 2009 Comprehensive Asset Business Management Plan” reports 74 assets, of which 57 (77%) are in “quadrant 1,” or adequate condition and of high priority; 2 assets (3%) are in “quadrant 2,” or poor condition and of high priority (Bighorn Station and Border Safety Signing); zero assets in “quadrant 3”, or poor condition and of low priority; and 15 (20%) in “quadrant 4,” or adequate condition and of low priority.

## *Construction*

- No new or ongoing construction is occurring on the SDNM.

## *Maintenance*

- Grading and maintenance of the 15-mile Vekol Valley Road is the only annual deferred maintenance project annually conducted on the SDNM. This road is popular with visitors and critical for Borderland's law enforcement and border patrol activities.
- Annual deferred maintenance has been meeting the needs of the SDNM.
- The Table Top Trail (4-miles), Lava Flow Trail (7-miles), Brittlebush Trail and Margie's Cove Trail were inspected and monitored in FY09. No maintenance was needed.
- Funding through the ARRA was secured to repair and maintain two SDNM assets: The Juan Bautista de Anza National Historic Trail and the Bighorn Station. This work will be initiated in FY10.
- Juan Bautista de Anza National Historic Trail: Work will be completed during November 2009 through May 2011. The work will encompass development and installation of auto touring and non-motorized touring options, visitor welcome areas, delineated parking and staging areas, and motor touring facilities and signage. SDNM will also design and set up interpretive materials (signs, broadcast, and handouts).

Restoration and protection efforts will be conducted for the trail's historic landscape damaged by inappropriate public use (off-road motor vehicle use). Up to 13-miles of ARRA project trail repair and reconstruction will be completed. Trail and restoration work consists of removing berms, shoring upslope or downslope bank erosion, repairing/replacing all signs, restoring damaged soils, removing illegal roads, vertical soil mulching, and transplantation of native plants into damaged areas.

- Bighorn Station: Work will be completed during September 2010 through February 2011, and will include repair and reconstruction of adobe, stone, and masonry units, and other building components. Interior finish components including flooring will also be repaired. Site hazards will be addressed, fencing and barriers will be installed across openings to hazardous areas, and warning signs will be installed at public access locations. Interpretive signs will be developed.

## *Signage*

- The SDNM travel system was fully signed in 2008. All OHV travel routes are marked with numbered signs and mapped as part of a travel management system.
- A formal sign plan will be completed upon plan completion.

- All wilderness information displays (kiosks) were maintained in fiscal year 2009.
- Weathered information and regulatory signs were replaced with new signs procured through a grant from Arizona State Parks.
- All portal and information display signs are in good condition and attractively present appropriate information to the public.

### **3. Outreach, Environmental Education, Interpretation, and Volunteers**

#### ***Outreach***

- In FY09, we continued to focus substantial efforts toward providing information and education to the recreational users per the temporary closure. Increased law enforcement and park ranger patrol, and installation and updating of signs to request visitors not drive off-road, continued yearlong.
- SDNM provided 23 on- and off-site interpretation and environmental education sessions/presentations, including development of new outreach materials. Staff presentations on natural and cultural issues included sessions with archaeological groups, environmental organizations, Boy Scout Troops, local clubs, and at Valley Forward and Arizona State University sustainability conferences.
- Park Rangers collectively attempted to contact all visitors and ensure that information in register boxes and kiosks was up-to-date.
- A new one-page information sheet was developed and printed in FY09.

#### ***Visitor Centers***

- There are no visitor centers associated with this unit.

#### ***Environmental Education***

- No outreach to K through 12 educational institutions was provided in FY 2009 due to lack of staff.
- Colorado State University led a weeklong field-based course in the North Maricopa Wilderness Area of SDNM. The course focused on ecological resources, wilderness, leave no trace, and ethical behavior.

#### ***Interpretation***

- Primary messages include visitor Borderlands safety, wilderness and backcountry use ethics, OHV use ethics and regulations, and Tread Lightly.

- Interpretation and user ethics information is provided by signs and kiosks located at trailheads, along the Juan Bautista de Anza National Historic Trail, at entry points for roads and trails leading into the temporary closure area, and at most dispersed entrances to the monument.
- OHV ethics signs are installed at nearly all entrances into the monument.
- Kiosks and signs presenting the purpose of the Butterfield OHV Temporary Closure Project are posted at seven primary entry points.

### *Volunteers*

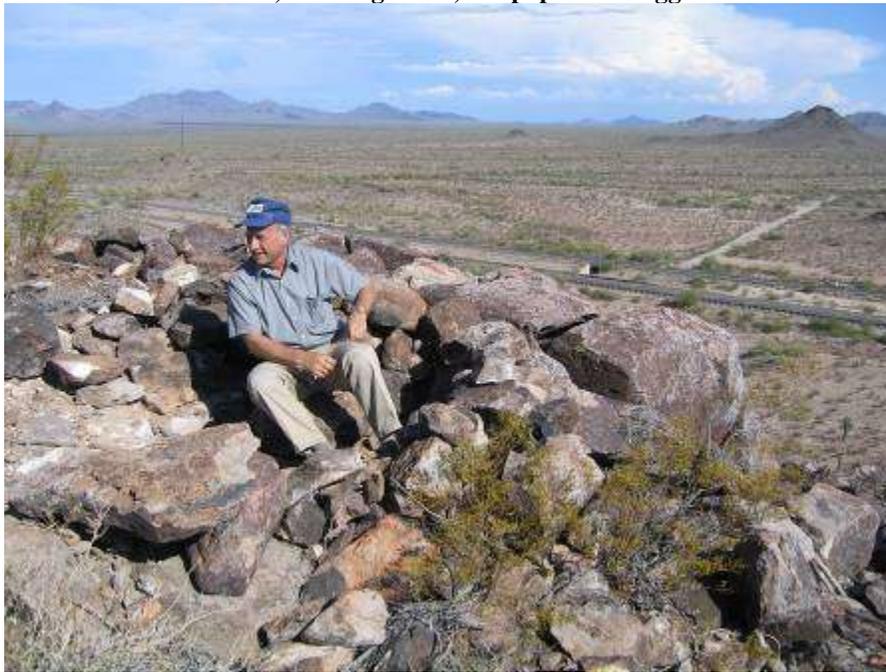
- Volunteers from organizations included numerous troops of Boy Scouts from the Grand Canyon Council, the Mormon Battalion Association, and the Arizona Wilderness Coalition. There were 1,545 volunteers, contributing approximately 3,586 hours of volunteer service; their work was valued at \$72,617. Over 44 acres were restored and 6,870 pounds (3.4 tons) of rubbish removed.
- Tohono O’odham Nation members assisted in restoration of rangelands damaged by border smuggling by repairing fences and rounding up livestock. Drug smugglers have destroyed fences, resulting in the loss of valuable tribal livestock, and livestock entering parts of the SDNM closed to grazing. The SDNM supplied fencing materials through Borderland’s Southern Arizona Project funding to the tribal volunteers. In addition to the occasional tribal livestock roaming the monument, there are a number of horses abandoned after smugglers use them to carry drugs over the border and then discard the animals in the desert.
- Officers and members of the Oregon California Trail Association and the Arizona Anza Coalition volunteered in 2009 to assist in recordation and documenting trail resources and restoration work.
- Arizona Site Steward Program volunteers contributed to SDNM site monitoring and protection and assisted in monitoring 20 sites. The Site Steward Program received challenge cost share funding at the statewide level through the BLM Arizona State Office. The Phoenix District provided labor for oversight and coordination at a cost of about \$1,000.
- One park ranger volunteer inspected and cleaned restrooms, maintained and collected visitation records, restocked information materials, completed general maintenance and dispersed clean up, and patrolled sensitive areas. Over 128 hours of labor were contributed to BLM with a value \$2,580.

### *Other Outreach Efforts*

- Congressman Steve King of Iowa's 5th District inspected three hill-top drug smuggling lookouts or "spotter" locations and two-associated I-8 drug load-out areas on the SDNM in July 2009. Representative King initiated the visit and specifically requested to see the observation posts on hills north of I-8's Freeman Road exit. Situated along drug and human smuggling corridors, these observation posts are 70 miles north of the border and within the South Maricopa Mountains Wilderness. Spotters sent by the cartels guide drug smugglers and human traffickers past U.S. law enforcement and hinder drug interdiction work. Representative King, the Ranking Member on the Judiciary Subcommittee on Immigration, Citizenship, Refugees, Border Security & International Law, introduced and passed an amendment targeting \$1 million to combat observation posts used by drug cartels to evade law enforcement interdiction. The need for security was demonstrated just prior to the Congressman's arrival. BLM Law Enforcement Rangers visited the load-out areas to be inspected by Representative King, to ensure the sites were secure. At one of the sites, the Rangers made an arrest and captured a drug haul of eight backpacks with 280 pounds of marijuana.
- Tours of SDNM sites and issues were conducted for the Arizona State Leadership Team, for members of the Arizona Resource Advisory Committee, the BLM radio and communications group, and for the General Accounting Office.
- Jim Murkin, BLM Deputy Director of the National Landscape Conservation System (NLCS), toured the SDNM's 55,000-acre temporary Butterfield OHV closure area and examined sites impacted by target shooting and cross-country OHV travel. He trekked the monument's Butterfield Overland Stage and Anza National Historic Trail segments, both of which are within the temporary closure. Briefings were also conducted on the grazing compatibility/determinations, and the need to purchase grazing improvements on closed grazing allotments south of I-8. Law Enforcement personnel briefed the NLCS Deputy Director about the demanding safety, natural resource and other issues on the Borderlands.
- SDNM is the site of yearly Boy Scout Eagle projects and treks from September to April every season. Projects are usually focused on the Mormon Battalion Trail, which parallels the Juan Bautista de Anza National Historic Trail. Projects focus on historic awareness, restoration, Tread Lightly, historic trek re-enactments, and community responsibility.
- The SDNM manager is a member of the Borderlands Management Task Force (BMTF), the Barry M. Goldwater Air Force Range Executive Council (BEC), and the Intergovernmental Executive Committee (IEC).



**Law Enforcement Rangers discuss borderland crime with BLM Deputy Director. Lost Horse Peak, in background, is a popular smuggler lookout.**



**Congressman King of Iowa inspects smuggler hilltop lookout post within the South Maricopa Mountains Wilderness. The site is north and has a good view of I-8.**

## **4. Science**

### *Overview*

Several scientific studies are in progress on the SDNM. These include studies of recreation impacts and monitoring; urban interface impacts; the effects of off-highway-vehicles on mammals; and desert tortoise population monitoring.

### ***Recreation Impacts and Monitoring***

- Research continues on assessing recreation impacts and user behavior through rapid site assessments (RSA) and monitoring. This project, by Dr. Pam Foti of Northern Arizona University (NAU), has provided a comprehensive baseline of recreation uses and associated impacts.

This research and monitoring project was initiated shortly after designation of the SDNM and has been continued since. Staff from Northern Arizona University inventoried all sites with recreation impacts. A suite of variables such as saguaro damage, barren core area, target shooting impacts, litter and rock outcrop damage were noted, and the sites were categorized into classes of impact (extreme, heavy, moderate, light, unimpacted).

Sites classified as extreme, heavy, and moderate are monitored on a three-year interval for changes in level of impact. Additionally, these data are used to determine management standards to be incorporated into the land use plan for the SDNM, and are used to analyze the suitability of the monument for continued recreational target shooting.

- An urban growth and air pollution study on desert ecosystems was initiated in 2006. This is a long-term study, expected to last 20 or more years, to assess air pollution changes in an urbanizing area.

### ***Urban Interface Impacts***

- This study was an outgrowth of the recreation impacts and monitoring study. A masters-level candidate designed a controlled study to inventory and analyze the impacts to the fringe of the SDNM resulting from residential development adjacent to the monument. Two new components of this RSA-related monitoring were initiated. *How far does the “urban effect” extend into natural areas and Wilderness Areas as urban uses and users move closer to the SDNM? How do we recognize Borderland impacts resulting from criminal and illegal immigrant activity in context to recreation uses?* A thesis proposal has been submitted for project work to begin in 2010.

### ***Effects of Off-Highway Vehicles on Mammals***

- The Arizona Game and Fish Department initiated this study during 2009. The SDNM was identified as a good study area to analyze the potential impacts of motor vehicle use on desert mammals because it provided the opportunity to compare potential differences in impacts between areas that are closed to use by motor vehicles and areas that remain open to such use.

### ***Desert Tortoise Population Monitoring and Science***

- A monitoring plot for desert tortoise was established in the North Maricopa Mountains prior to monument designation, and has been periodically examined by researchers from the Arizona Game and Fish Department.
- There are numerous opportunities for new research addressing the end of grazing south of I-8, developing desert-landscape restoration practices, the effects of drought, effective dust management and sustainable recreation uses in the SDNM. We are pursuing these opportunities.
- The latest desert tortoise research was presented to monument staff in June 2009 by Dr. Jeff Lovich. Dr. Lovich, Deputy Director of the Southwest Biological Science Center in Flagstaff, described research and advice in a seminar entitled, "*Lessons Learned from Desert Tortoise Research at a Wind Farm Near Palm Springs, California*". Currently, the Wild Earth Guardians and Western Watersheds have petitioned the U.S. Fish & Wildlife Service to list the Sonoran Desert tortoise as a threatened or endangered species. The tortoise is found throughout the SDNM.

### ***Air Pollution***

- An urban growth and air pollution study on desert ecosystems was initiated by Arizona State University in 2006. This is a long-term study, expected to last 17 more years, to assess air pollution changes in urbanizing areas.

### ***Buffelgrass Planning and Mitigation Project on Federal Lands - Inventory and Eradication***

- The SDNM currently threatened from the south by an invasion of buffelgrass that could lead to the loss of objects that the monument was created to protect. The BLM is proposing to use an integrated approach to controlling the expansion of the buffelgrass through inventory, treatment and eradication. We are working with USGS and other partners. This pilot project would help identify integrated strategies to attack remote infestations before they become seed sources. The knowledge and skills gained from this project will be shared and utilized by the partners in the southern Arizona Buffelgrass Coordination Center as well as the other NLCS units. This would be a year round effort to curtail the spread of buffelgrass into the monument

### ***New Research Opportunities***

- There are numerous opportunities for new research addressing the effects from ending livestock grazing south of I-8, developing desert-landscape restoration practices, the effects of drought, effective dust management, and sustainable recreation uses in the SDNM. We are pursuing these opportunities.



NAU student measuring affects at a SDNM recreation site

## 5. Partnerships and Collaborative Relationships

### *Overview*

- The SDNM is initiating an Advisory Council. The Advisory Council will consist of fifteen members representing recreation users, environmental groups, tribes, local communities, county and state governments, and scientists. The Advisory Council will provide advice to the SDNM Manager on issues of concern in the SDNM. We expect charter approval, Advisory Council membership appointments, and scheduling a first meeting in late 2010 or early 2011.
- The SDNM now has a nascent Friends Group. The Friends Group has a website and Board of Directors. Groups and individuals interested helping to initiate Friends Group include the National Conservation System Foundation, the Public Lands Foundation, the Sonoran Institute, and the Arizona Wilderness Coalition.
- The SDNM has an assistance agreement with Northern Arizona University through the Cooperative Ecosystem Studies Unit (CESU) for research as described above.
- The SDNM has completed an agreement with the Boy Scouts of America, Grand Canyon Council and The Mormon Battalion Association through the Special Recreation Permitting regulations of 43 CFR 2930 to provide for group events and ongoing volunteer restoration projects. The results of this partnership are described in the section on volunteers.

- SDNM and PDO staffs are working closely with the Anza Foundation to build partnership organizations to support efforts to interpret, identify, assess condition, and mark the Juan Bautista de Anza National Historic Trail. SDNM has contributed to training and field sessions designed to build volunteer capacity and partnerships.

## **6. Planning and Business Practices**

### *Planning*

- The Lower Sonoran Field Office/SDNM Draft Resource Management Plan (RMP) has a release date of May 2010. SDNM and PDO staff have worked closely with Washington Office Planning and Arizona State Office resource specialists in range, wildlife, recreation, wilderness, NLCS, lands, minerals, archaeology, and planning to construct a sound science-based draft RMP.
- Major RMP issues include protection and conservation of monument objects, recreation and travel management, natural and cultural resource protection and interpretation, grazing management compatibility analysis, and utility rights-of-way. The most challenging activities are OHV use and associated camping and staging activities, urban interface/public access demands, and improper target shooting practices. SDNM staff is preparing a target shooting analysis and a Livestock Grazing Compatibility Analysis for inclusion in the draft RMP.
- *The North Maricopa Mountains - Anza National Historic Trail - - Recreation Restoration and Enhancement Plan* was finalized for public release in 2009. The plan would guide recreation projects and restoration efforts in the Butterfield Project area. The lands and management actions addressed in the plan were put on hold and incorporated into a potential litigation settlement agreement with the Western Watersheds Project over SDNM livestock grazing. Management actions presented in the plan will be considered upon RMP completion.

### *American Recovery and Reinvestment Act (ARRA) of 2009*

- Anza NHT Restoration Project (\$53,800). The Student Conservation Association was awarded a youth assistance grant to restore damaged segments of the Anza NHT. The project was awarded in early fall of 2009 and implemented January 20, 2010. All work will be completed by March 1, 2010.
- Historic Bighorn Station Site Restoration Project (\$598,000). This project includes the restoration and repair of a historic homestead. The first contract of \$48,300 for a Design/Build Procurement package with a statement of work, schematics, sketches, drawings, as-built drawings and construction estimates has been let.

**Budget**

- The SDNM budget was essentially unchanged between FY08 and FY09. Allocation sources did vary year to year due to the funding basis. Planning was a big contributor to the FY09 SDNM budget.
- 79% of SDNM funding was allocated to labor costs, 12% to contracts, services and agreements, 7% to supplies/materials, 0.8% to vehicles, and 0.2% to travel.
- Travel and vehicular operational costs were an exceptionally low 2% in FY09.

<b>Comparison of FY2009 and FY2008 Budget Allocations</b>			
<b>FY09 Base Budget</b>	<b>FY08 Base Budget</b>	<b>FY09 Change from Prior Year (FY08) Base Budget</b>	<b>% FY09 Change from Prior Year (FY08) Base Budget</b>
\$517,296	\$800,547	(- \$283,251)	(-35%)
<b>FY09 Flex Budget</b>	<b>FY08 Flex Budget</b>	<b>FY09 Change from Prior Year (FY08) Flex Budget</b>	<b>% FY09 Change from Prior Year (FY08) Flex Budget</b>
\$280,577	\$13,000	+ \$267,577	+ 2,158%
<b>FY09 Total Budget</b>	<b>FY08 Total Budget</b>	<b>FY09 Change from Prior Year (FY08) Total Budget</b>	<b>% FY09 Change from Prior Year (FY08) Total Budget</b>
\$797,873	\$813,547	(- \$15,674)	(-1.9%)

- For the previous 5 years, SDNM has received funding through the Southern Arizona Project to mitigate areas damaged by border-related illegal smuggling and migration. FY09 funds totaled \$325,500. Funds are mainly applied to youth employment (Southwest Conservation Corps, Southwest Conservation Corps – Valley of the Sun Corps, and the Student Conservation Association) and restoration activities (cleaning and restoring trash dump sites, reclaiming roads, and repairing signs, fences, plants and soils).

**7. Manager’s Corner**

**Challenges and Resource Threats**

- **Overview.** Challenges to long-term management of monument resources derive principally from four sets of circumstances, three human-caused and one weather-related. These are: 1) unsustainable recreation uses and intense urban interface burdens, 2) changing recreation use patterns, 3) Borderland security issues, and 4) long-term drought/climate change trends. While the overall condition of the resources across the SDNM is static, these four stressors are having a cumulative negative impact.
- **Recreation and Urban Interface.** The unit’s proximity to the Phoenix metropolitan area and three million potential visitors focuses intense recreation and urban-interface pressure on the SDNM. Off-highway vehicles, camping, staging and target-shooting pursuits, along with tire and trash dumping from nearby communities, are chief concerns.

- ***Changing Recreation Use Patterns.*** We have noted several changes in recreation use patterns and seasons of use. In the past, many recreation users would visit SDNM for the weekend, camping on site. Now, many users are repeat day users, coming to SDNM weekly or more often.
  - Use on the SDNM is now year-round. One weekend in June 2009, 17 target shooting parties were plinking in 110-degree heat. Other shooting parties were walking one-quarter mile or more into the Butterfield Project closure area to reach backdrop locations. OHV use is following a similar use pattern expanding to year-round use, most heavily early morning and in late afternoon.
  - Changes are attributed primarily to: 1) increases in the number of people who live in close proximity to the SDNM; 2) higher fuel costs restricting travel to outlying popular OHV-use areas in California and Mexico; and, 3) economic conditions as individuals and families have less money and time for recreation.
  
- ***Borderland Criminal Activities.*** Borderlands-related criminal activity, chiefly drug and undocumented immigrant smuggling, remain unabated and a major concern. These activities raise apprehension about employee, law enforcement, and public safety.
  - The smugglers use backpacks, pack-strings, bikes, all-terrain vehicles, full-sized SUVs, pickups and ultra light motorized hang gliders. Drugs are driven out of the monument or taken to vehicle pick-up points at mileposts along I-8.
  - Drug loads are now universally escorted by armed individuals. Smugglers commonly attempt to force law enforcement rangers off the road to protect their drug or human cargos.
  - These criminal activities create new roads, cause plant and soil damage, present health and safety issues, and generate copious amounts of abandoned cars, bicycles, horses and trash. Rehabilitation of illegally built seven-mile roads in the Table Top Wilderness has proven unproductive, as smugglers re-open routes or build new ones quickly.
  - BLM Law Enforcement Officers have encountered dangerous situations. They have been rammed by smuggler vehicles, recovered abandoned vehicles, and dismantled drug-runner observation posts. Capturing guns and confiscating large quantities of marijuana is commonplace.
  - To date non-law enforcement employees and the public have not been threatened by these activities. The risk of such an occurrence continues, however. All employees must coordinate with and be accompanied by BLM Law Enforcement rangers if working south of I-8.
  - Fences are continually cut between the SDNM and the Tohono O’Odham Indian Nation, leading to Native American cattle, horses and burros entering SDNM’s

closed grazing areas. Moreover, smugglers are now abandoning horse pack trains and equipment in the SDNM.

- BLM installed new Borderlands warning signs for public safety in FY09.



**New travel caution sign in SDNM**



**Stolen vehicle discovered during RAC tour of SDNM**



**Petroglyph moved by smugglers for use in lookout post - Table Top Wilderness**



**Smuggler-developed and frequently used drug haul road entering Table Top Wilderness**

- ***Long-Term Drought and Global Warming.*** The Sonoran Desert and monument continue to experience a long-term drought dramatically influencing vegetation communities, wildlife populations and soil stability. The drought has been underway for 15 years and long-range forecasts predict drier and warmer conditions. The SDNM received no respite in FY09 due lower than average winter rains and erratic summer monsoons.

### ***Youth Initiatives***

- Southwest Conservation Corps (SCC) and Valley of the Sun (VOS) youth corps crews restored smuggling-related cross-country vehicle routes, cleaned up dozens of ad hoc target shooting sites and associated debris fields, and removed major and minor dumps (some of them recurring eyesores), and policed and cleaned dispersed trash, dump and litter sites throughout the monument. These crews tackled large projects on the SDNM. About 2,160 youth corps work hours were accomplished, with a BLM cost of \$37,200. The two youth corps also constructed fencing, raked and repaired damaged landscapes, closed vehicle routes, and erected signs.
- The SDNM sponsored three Boy Scout Eagle Projects in FY09. The projects focused on the SDNM, the Juan Bautista de Anza National Historic Trail, the Mormon Battalion Trail, and the Butterfield Stagecoach Route. Mr. R.T., Troop 547, Mesa, Mr. R.V., Troop 553, Mesa, and Mr. B G., Troop 300 of Phoenix, brought 68 participants and contributed over 200 service hours (worth over \$4,000) towards restoration efforts within the SDNM closure area. Vertical mulching techniques were used to restore three routes to their natural conditions.



**Southwestern Conservation crew member, working on reclaiming vehicle tracks within the temporary OHV closure area, are visited by a desert tortoise**

## ***Wilderness***

- Largely, two out of three Wilderness Areas in the SDNM remain in good to excellent condition. The objectives in the Maricopa Complex Wilderness Plan primarily are being met. Nearly all management actions in the plan have been completed.
- The naturalness, solitude and primitive recreation opportunities within the Table Top Wilderness continue to be impacted by foot, horse, bicycle, and vehicle-related border intrusions, including building new roads, cutting down saguaro cactus, developing smuggling foot trails, and the depositing of trash, bicycles, and vehicles. Moreover, there are continual caches of abandoned drug carrying equipment, along with makeshift camps, hold up areas, and hilltop lookouts. We conducted no Table Top Wilderness reclamation efforts in FY09 due to safety concerns.
- The central core of the Table Top Wilderness is in better condition than its perimeter. However, the impacts of smuggling activity on the eastern, southern and western desert bajadas are increasingly degrading the wilderness characteristics in the core area.
- The North Maricopa Mountains Wilderness historically was impacted in certain areas by vehicle intrusions; this behavior has been nearly 100% curtailed by the temporary route closure. Overall, the Wilderness remains in good condition and vehicle intrusions are rehabilitated quickly and successfully. The wilderness plan's grazing standards are not being achieved on some ecological sites. This will be addressed in the land health assessment.
- The South Maricopa Mountains Wilderness is in excellent condition, although Borderland vehicular intrusions and smuggler foot traffic are now documented. This circumstance bears close watching.

## ***Western Watersheds Project (WWP) Lawsuit***

- The WWP alleged in a lawsuit in federal court (Western Watersheds Project vs. BLM, Case No.: 08-cv-1472-MHM) that BLM has unduly and unreasonably delayed a grazing compatibility determination decision for grazing allotments in the northern part of the SDNM north of Interstate 8. This lawsuit is being settled in 2010 with an agreement between BLM, the Department of Justice and WWP. The case is managed by the DOI solicitor, the Department of Justice, and SDNM staff.
- The agreement stipulates the following: 1) BLM will have until December 15, 2011 to complete the RMP/EIS for the SDNM. 2) WWP (Plaintiff) agrees to forego suing BLM regarding Monument management until the Monument RMP/EIS is complete. 3) Plaintiff will be able to sue during this time to enforce the terms of the agreement, and will be able to file protests, etc., as part of its involvement in the RMP/EIS process. 4) BLM and WWP agree to craft and release a joint public statement regarding BLM's decision to complete a RMP/EIS for the Monument by the agreed date. 5) ORV restrictions presented in the 55,000-acre Butterfield OHV Temporary Closure area (*North*

*Maricopa Mountains – Anza National Historic Trail Recreation Restoration and Enhancement Plan*) will remain in place until the RMP/EIS is completed. 6) BLM will not authorize any new permanent range improvements or reinstate abandoned permanent range improvements until the RMP/EIS is completed. 7) In the event that BLM authorizes ephemeral grazing before completion of the Monument RMP/EIS, BLM will provide WWP with ephemeral grazing monitoring reports. 8) BLM agrees to pay Equal Access to Justice Act (EAJA) fees, reflecting recovery.

### ***GAO Audit***

- The General Accounting Office continues inquiries on the subject of the SDNM’s law enforcement and OHV management efforts. A new examination or audit may commence in FY10.

### ***Enhanced Radio Communications Environmental Assessment (EA)***

- SDNM has completed an EA addressing impacts from installing a portable communication system in the Javelina Mountains, upon Maricopa Peak. The device will resolve a critical radio dead spot in the south and southwestern parts of the monument. This area is subject to considerable criminal activity. Lack of radio communication creates serious safety concerns for rangers, staff and visitors. The radio repeater system is small, portable, and can be quickly removed with no surface impacts if other technologies come forward. The EA will be signed early in 2010 and the repeater installed shortly thereafter.



**Before volunteer and youth corps reclamation**



**After reclamation**

