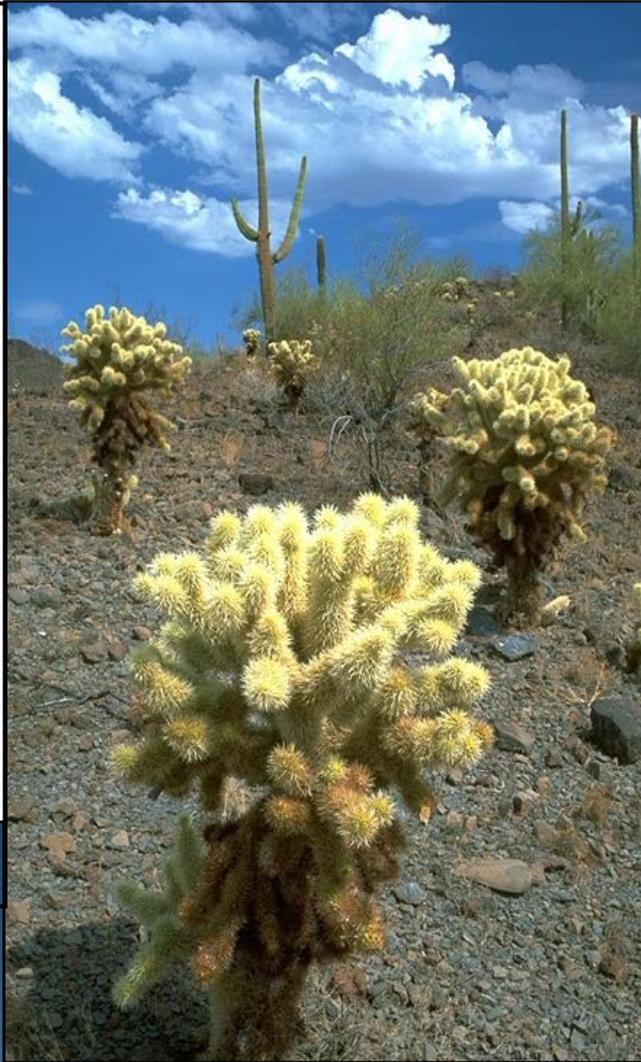


Sonoran Desert National Monument

Annual Manager's Report

October 1, 2010 -
September 30, 2011



BLM





BUREAU OF LAND MANAGEMENT NATIONAL LANDSCAPE CONSERVATION SYSTEM

Sonoran Desert National Monument FY 2011 Manager's Report

Introduction

This report provides an overview of activities and resource trends underway on the Sonoran Desert National Monument (SDNM), Arizona for the period October 1, 2010 through September 30, 2011.

❖ **Unit:** Sonoran Desert National Monument

- ◆ Lower Sonoran Field Office
- ◆ Phoenix District
- ◆ BLM Arizona State Office

❖ **Contact Information:**

- ◆ 21605 North 7th Avenue, Phoenix, AZ 85027
- ◆ 623.580.5500
- ◆ http://www.blm.gov/az/st/en/prog/blm_special_areas/natmon/son_des.html

❖ **Manager:** Rich Hanson, Monument Manager, rhanson@blm.gov

❖ **Established:** Presidential Proclamation 7397, January 17, 2001

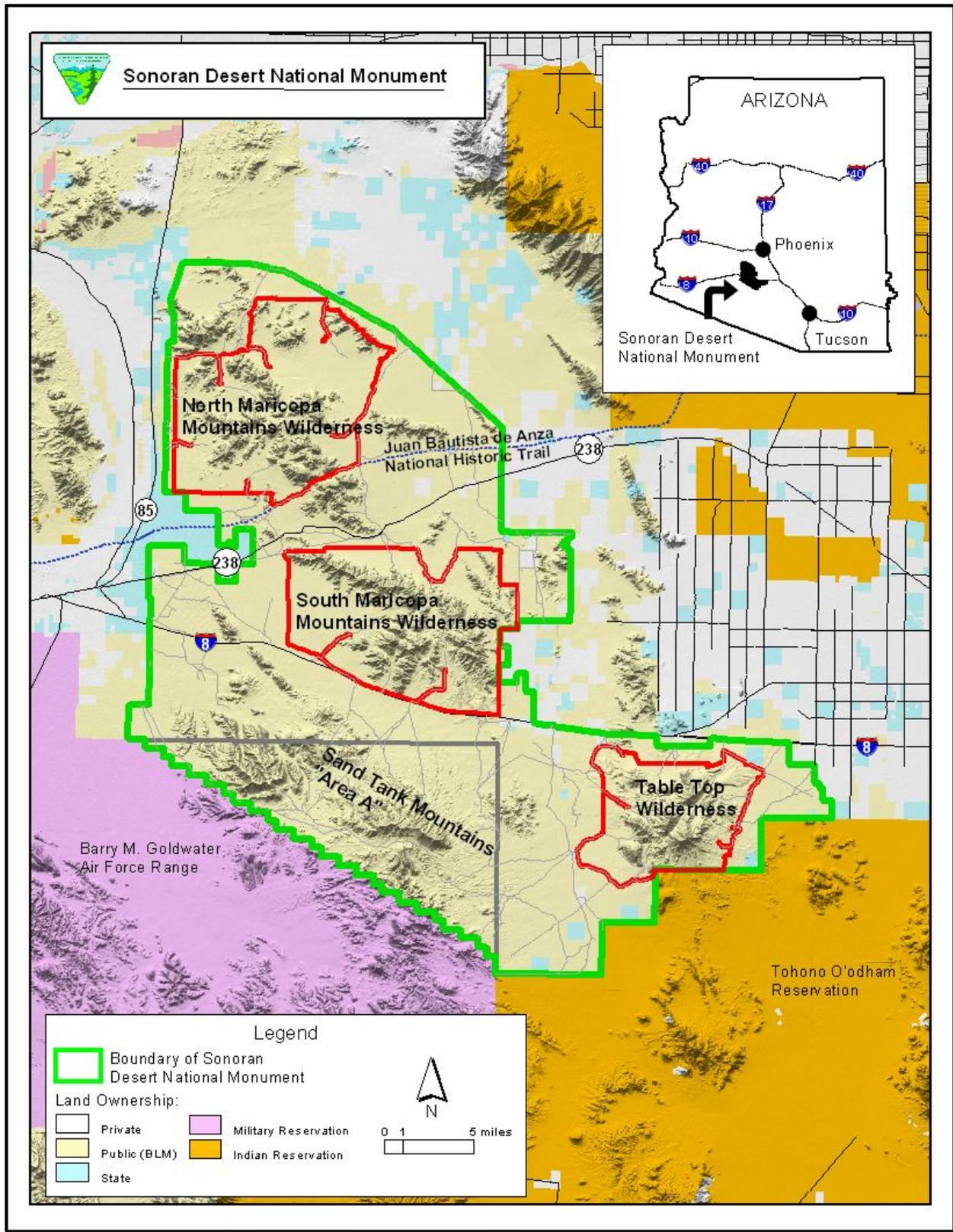
❖ **Acreage:** 486,400 BLM acres

❖ **FY11 visitation:** 30,176

*Cover photos clockwise from top right:
cholla cactus, Papago Indian Chief Mine
smelter, Table Top Wilderness*

Figure 1 – Butterfield Overland Stage Re-enactment during the SDNM 10th Anniversary Celebration





Map of the Sonoran Desert National Monument, Arizona

Natural and Heritage Resources Conditions

The Sonoran Desert National Monument (SDNM) is part of the Basin and Range geologic province, typified by expansive and sparsely vegetated alluvial valleys above which rise northwest to southeast trending low-elevation mountain ranges. The floral and faunal groupings that characterize western and south-central Arizona, including the SDNM, are the “Sonoran Desertscrub” biotic community. The monument provides habitat for a diverse desert fauna.

❖ Natural Resources Trends

- Overall, upland, biological diversity, special status species, air and water, and other natural resources trends appear to be static. Long-term climate change and the long-lasting southwestern drought remain the main dynamics in natural resource trends. Evaluating key plant sites and monitoring of plant communities, and associated analysis, will be conducted in the summer of FY12.
- Borderland human and drug smuggling activities, by vehicle, aircraft, horseback, bicycle and all-terrain vehicle continue year-around. Smuggling is creating linear resource damage from cross-country vehicle travel and the building of trespass smuggling roads. Localized areas are injured with caches, logistic and loading areas.
- Vehicle-based smuggler access is being blocked by BLM in high-value locations through pro-active management initiatives like barriers and road removal. Within our means, the SDNM is reclaiming vehicle routes and damaged landscapes. The overall Borderline trend is static at best; intuitive evidence suggests ongoing vehicle route creation and landscape damage may continue.
- Draught continues to stress desert bighorn sheep and desert tortoise populations and forage availability for other wildlife and livestock. Recently however, big horn sheep and lambs were seen in hills alongside Interstate Highway 8 and in the Table Top wilderness. This is a good sign after many years of little to no sheep presence in those areas.
- The Sonoran desert tortoise is a species of particular interest, and is petitioned for listing under the Endangered Species Act.
 - Approximately 166,167 acres (34%) of the SDNM is “Category 1,” the best or most productive desert tortoise habitat.
 - Population trends are unknown. BLM is initiating inventories using SDNM developed methodology to ascertain numbers, trend and occupied habitat.

❖ **Notable Issues or Trends Involving Invasive, Non-Native, or Noxious Weeds**

- No notable issues or trends involving invasive plants or noxious weeds were documented.

❖ **Heritage Resource Trends**

- The overall condition of the SDNM's cultural and paleontological, national trails, and other heritage resources are good to excellent. Four major projects between FY09 and FY11 greatly contributed to favorable these outcomes and positive long-term trends.
 - The entire 16 miles of the Juan Bautista de Anza National Historic Trail (NHT) remains protected within a temporary off-highway vehicle closure. Cross-country off-highway vehicle damage to the NHT was successfully reclaimed by Student Conservation Association Desert Restoration Youth Crews in FY10.
 - Potential adverse impacts from vehicle-based smuggling activities on cultural sites (petroglyphs, scatters, occupation and agricultural sites) in the southeast quarter (9,600 acres) of the Table Top wilderness was greatly lessened in FY11. Installation of a 1.3 mile vehicle barrier ended smuggling vehicle incursions throughout and let smuggling roads, caches and lookouts be removed or dismantled.
 - The historic Big Horn Station - Bender Site was restored in FY10 and FY11 using ARRA funds. This site's condition and long term prognosis shifted from poor to excellent (see Figures 2 and 3).
 - A four-mile fence along the north boundary of the SDNM, installed in FY09, continues to enhance the protection of petroglyphs and other cultural resources in the Espanto Mountain area from OHV travel, target shooting, and youth "raves".

❖ **Land Health Assessment Status**

- 52% of monument lands (252,500 acres) north of Interstate 8 have been assessed for land health standards.
- As prescribed by the Monument Proclamation, lands south of Interstate Highway 8, totaling 48% of monument lands (233,900 acres), became unavailable for grazing when leases expired in 2008 and 2009.

- The land health assessments (LHE) for the portions of the monument with livestock grazing were drafted in 2010 and will be finalized in 2012. The LHE gauges whether the Arizona Standards for Rangeland Health are being achieved.
- Arizona Land Health Objectives were addressed in the analysis by monument object at the landscape level, and with Appropriate Indicators and Applicable Standards at the site specific level.
- The LHE analysis indicated:
 - Standard 1 was being achieved throughout – upland soils exhibited infiltration, permeability, and erosion rates that were appropriate.

Figure 2 - Big Horn Station after ARRA Restoration front (left) and south (right side)



Figure 3 - West side (left) and front side (right) after restoration



- Standard 3 was being achieved on only 48% (125,000 acres) of monument lands north of Interstate 8 where lands are available for cattle grazing. Standard 3 is met when productive and diverse upland communities are present and maintained. In turn, the proper ecosystem function produces desirable forage, cover and soil protection.
 - Standard 3 was not being achieved on 52% (127,500 acres) of monument lands north of Interstate 8. The deficiencies were attributed potentially to past and present livestock grazing, fire, drought, and off-road use of motor vehicles.
 - Livestock grazing was a causal factor for non-achievement of Standard 3 on 3.4% (8,498 acres) on monument lands north of Interstate 8. This represents 3.4% of the monument's 252,500 acres north of Interstate 8 and 6.7% of the 127,550 acres not achieving Standard 3.
 - The current grazing preference for perennial forage in the SDNM was not supported by monitoring and inventory.
- The LHE and the Compatibility Analysis brought forward the following findings:
- Determined that limited and modified livestock grazing authorizations would be compatible with the paramount purpose of protecting the objects of the monument and for which the SDNM was designated.
 - Identified undesirable interactions between current livestock grazing practices and individual monument objects, and well as the underlying biological/ecological processes.
 - Proposed perennial use reductions to ensure future livestock grazing remains compatible with monument objects.
 - Recommended livestock grazing adjustments and technical recommendations be put in place to ensure future management practices are compatible with the protection of monument objects, and either achieve or maintain LHE Standard 3.
 - Determined that occasional ephemeral grazing does not appear to influence the achievement of LHE standards.
- Technical recommendations were identified by the LHE and Compatibility Analysis to ensure BLM and livestock permit holders achieve or maintain land health standards and protect monument objects. The technical recommendations proposed three principal changes in current livestock management practices:
- Reductions in the grazing preference would be made on four allotments to align the animal unit months and utilization with available forage;
 - One allotment (Conley) would become unavailable for grazing;
 - Season-of-use changes in the terms and conditions of the grazing permits would be implemented with 65% of grazing in the cool weather season (fall, winter, spring) and

35% in summer. This reduces livestock competition with special status and other wildlife species during hot weather.

- The LHE and Compatibility Analysis recommendations will be approved in September 2012 when the final land use plan and Decision Record is signed by the Arizona State Director.

❖ **Developing and Maintaining Natural and Heritage Resource Inventories**

- Buffelgrass weed inventories were finalized along 26 miles of Interstate Highway 8 and 20 miles of State Route 238.
 - 50,000 acres were inventoried in grazing allotments and along the subject highway right-of-way.
 - Buffelgrass was concentrated along both highways but does not appear to have spread much further from the right-of-way into the SDNM.
- Wilderness characteristic assessments for the Sand Tank Mountains, Blue Plateau, Butterfield Stage, South Maricopa Mountains wilderness extension and Margie's Peak areas were presented in the Draft RMP/EIS.

❖ **Restoration Projects**

- Project ROAM (Reclaim Our Arizona Monuments), a combined BLM law enforcement and resource restoration program, began in August 2010 to combat illegal drug trafficking and human smuggling, enhance public safety, reclaim and repair the ensuing resource damage, and limit future damage, on the SDNM and the Ironwood Forest National Monument.
- Restoration outcomes by the numbers:
 - 47,117: pounds of trash (23.5 tons) collected and removed;
 - 100: abandoned bikes collected and removed;
 - 87: abandoned tires collected and removed;
 - 30: abandoned or stolen cars located, retrieved and removed;
 - 7.3: miles of illegal smuggling road decommissioned and reclaimed;
 - 345: informational, caution, wilderness and boundary signs installed;
 - 1.33: miles of Normandy barrier (7,000 feet) installed to protect the Table Top wilderness and stop smuggling vehicles;
 - 18: miles of foot trail maintained or restored by youth crews;

- 23: miles of LE patrol road maintained by BLM equipment operators (Vekol Road and Smith Road);
- 194: acres of degraded lands directly restored by hand crews or mechanical means;
- 46,400: acres of SDNM, including 6,400 acres of wilderness, secondarily restored, with landscape-wide trash and restoration sweeps along 103 miles of roads and washes, a program dubbed Operation “Broken Window”;
- 93: sites identified needing repair, rehabilitation, signs, or cleanup;
- 1: Historic buildings restored and stabilized.

Figure 4 - Pinal County Project ROAM Staging yard



Figure 5 - Forklift delivers Project ROAM Normandy barrier



Figure 6 - Project ROAM Barrier after reclamation



Figure 7 - Youth Corps reclaim smuggling road



Figure 8 - Note absence of tracks from smuggler vehicles in washes



Recreation Facilities, Roads, and Trails Conditions

❖ **Percent of assets included in an Asset Business Plan:** 100%.

❖ **Assets**

- Fourteen recreation asset sites are assigned to SDNM. Includes six buildings totaling 3,160 square feet, with Big Horn Station representing 2,655 sq. ft. of this total.
- Buildings: Big Horn Station, four concrete block vault toilets and Farley’s Cabin, a historic wood, concrete and stone building
- The SDNM has nine linear assets inventoried in FAMS; five roads total 23 miles and four trails total 26.5 miles.

❖ **Percent of assets in each Asset Priority Index/Facility Condition Index Quadrant**

- 83% of the assets on the monument are in Quadrant 1, and 17% are in Quadrant 2. Quadrant 1 (Q1) consists of assets in adequate condition (good and fair) and of high priority.
- Quadrant 2 represents high priority assets (three roads and one building) in poor condition (see following Table A: Overall Condition of Physical and Recreation Facilities, Roads, and Trails).

Table A: Overall Condition of Physical and Recreation Facilities, Roads, and Trails		
Type	Description	Overall Condition & Quadrant (Q)
Recreation Facilities		
Brittlebush Trail Trailhead	Trailhead with parking, sign display, maps, & leave-no-trace info.	Good/Q1
Gap Well Site	Two-vault toilet, numerous campsites and large dispersed area.	Good/Q1
Lava Flow Trail North Trailhead	Parking, sign display, maps, & leave-no-trace info.	Good/Q1
Lava Flow Trail South Trailhead	Parking, sign display, maps, & leave-no-trace info.	Good/Q1
Lava Flow Trail West Trailhead	Parking, sign display, maps, & leave-no-trace info, one campsite with picnic table & steel fire-ring.	Fair/Q2
Margie’s Cove East Trailhead	Parking, sign display, with map of trail, & leave-no-trace info; one picnic site with picnic table;	Good/Q1*

Table A: Overall Condition of Physical and Recreation Facilities, Roads, and Trails		
Type	Description	Overall Condition & Quadrant (Q)
	single-vault toilet.	
Margie's Cove West Trailhead	Parking, sign display, with map of trail & leave-no-trace info; four campsites with picnic tables & steel fire-rings; single vault toilet.	Good/Q1*
Table Top Trailhead	Parking, sign display, with map of trail and leave-no-trace info; four campsites with picnic tables and steel fire-rings; single vault toilet.	Good/Q1*
Roads, Primitive Roads and Trails		
Maintained Roads	15 miles, Vekol Road, 2 miles, Gap Well Road	Good/Q1*
Primitive Roads	577 miles.	Fair to Poor/NA
Hiking Trails	26.25 miles; Brittlebush Trail (6.0 mi.), Margie's Cove Trail (9.0 mi.) Lava Flow Trail (7.25 mi.) & Table Top Trail (4.0 mi.).	Fair to Good/Q1*
Historic Trail Corridor	16.5 miles, Anza National Historic Trail.	Good/NA
Buildings		
Big Horn Station	Early 20 th century homestead.	Good/Q1*
Farley's Cabin	Early 20 th century mining and range line cabin.	Fair/Q2*
Sump block concrete vault toilets	Three single vault and one double vault toilets.	Good/Q1*
* = Priority Index/Facility Condition Index quadrant		

❖ Construction (new or ongoing)

- A 1.3 mile long Normandy Barrier was installed in October and November 2010 along the southeast boundary of the Table Top wilderness. The purpose of the barrier was to stop vehicle based drug and human smuggling, stop the creation of new roads and curtail landscape damage in the SDNM.
- The vehicle barrier project took three weeks to logistically prep and five weeks to install. Associated landscape restoration and road decommissioning efforts took three months.

❖ Maintenance

- **Deferred and annual maintenance.** The SDNM has no deferred maintenance backlog. Annual maintenance is meeting the needs of the BLM and our visitors.
- **Recreation sites.** All recreation sites are in good condition and regularly maintained and cleaned by BLM staff and volunteers.

- **Wilderness non-motorized trails.** All 26 miles of non-motorized wilderness trails have been maintained at least once over the past three field seasons and are inspected annually.
- **Buildings.** All four vault toilet buildings and two historic structures are inspected and maintained annually and also receive regular condition assessments.
- **Vehicle barrier infrastructure:**
 - 28 vehicle barriers (fences, gates, post/cable) installed to facilitate wilderness, national monument and OHV management;
 - 5 barriers (Normandy and fence) related to disruption of vehicle-based smuggling;
 - barrier infrastructure is inspected annually and immediately repaired if required.
- **Roads and primitive roads:**
 - 15-mile Vekol Road length was maintained in the first quarter of FY11;
 - 8-mile Smith Road, a primitive route, was spot maintained on a one-time basis in FY11 to allow for Project ROAM Normandy barrier installations;
 - no other road assets were maintained in FY11;
 - 595 miles of primitive road were not maintained.

❖ Signage

- **SDNM Sign Plan**
 - The SDNM currently has no sign plan.
 - An initial sign plan will be developed by the close of FY12 as part of the SDNM Travel Management Plan. The plan will focus on the following six sign types:
 - monument identity and portal;
 - travel management guidance;
 - visitor information signs (directional, info, regulatory);
 - wilderness signage;
 - sites and facilities; and
 - fiberglass post signage.
- **2004 BLM Sign Manual (Bureau Manual 9130) Standards Compliance**
 - SDNM installed portal signs comply with the 9130 Manual.
 - Kiosks located south of Interstate 8 are temporary wooden messaging boards for Borderland information.

- Kiosks located north of State Route 238 are temporary, but factory fabricated, messaging boards for the temporary Butterfield OHV closure.

Figure 9 - Caution sign on Smith Road



Figure 10 - Visitor Update Sign for Borderlands



Figure 11 - Portal Sign along West Margie's Cove Road



Figure 12 - Margie's Cove West Trailhead, kiosk and visitor register



Outreach, Environmental Education, Interpretation, & Volunteers

❖ Outreach

- The major outreach effort for the SDNM in FY11 was the 10th anniversary celebration of the SDNM. The anniversary was coincident with the 20th anniversary of passage of the Arizona Desert Wilderness Act and designation of the Juan Bautista de Anza National Historic Trail. The event took place on December 4, 2010 at the U.S. Air Force Gila Bend Auxiliary Airfield. Around 500 citizens attended. Highlights included:
 - short speeches by several dignitaries, including Gerald F. (Fred) Pease, Jr., Department of Defense Liaison to the Secretary of the Interior; James G. Kenna, former BLM Arizona State Director; and Robert V. Abbey, BLM Director;
 - a parade of local history led by costumed youth from local communities from the Jurassic period to 2010;
 - several entertainment acts;
 - a large array of partner, agency and organization informational booths and vendors.
 - The Hia C-ed O'odham Basket Dancers, Native American dancers from local communities;
 - wildlife and raptor presentations;
 - historic boundary and Cadastral "General Land Office" (GLO) surveyors;
 - drum ceremonies;
 - "living" desert puppets from the International Sonoran Desert Alliance; and,
 - an authentic Well Fargo stagecoach offered free rides.

- Conventional outreach in the SDNM is realized by public contacts, by distribution of our new monument brochure/map, at information kiosk displays offering temporary and permanent information, by signage, with self-service visitor register boxes, by staff participation in community events and using the World Wide Web.

- Field-based "passive" delivery of information/outreach was accomplished by:
 - issuing a new SDNM Map and Brochure;
 - distributing a SDNM info sheet, and four trail and three wilderness info sheets;
 - posting information on signs and kiosks addressing the 55,000 acre/88 route mile temporary OHV closure;
 - offering several Anza NHT brochures and two Anza interpretive signs;
 - extending monument and 10th Anniversary posters and take-aways;
 - updated Project ROAM and Borderland alerts, activities and project statistics weekly on the BLM website during the eight cool weather months;

- installing, with our partner Maricopa County, Anza NHT motor way signs along the Maricopa Road and State Route 238;
 - installing and maintaining signage addressing Borderlands safety and caution, off-highway-vehicle use and ethics, and directional and regulatory information.
- Person-to-person delivery of information/outreach was achieved by:
- contacts and meetings with Tribal governments and districts, hiking clubs and environmental organizations, the Friends of the SDNM, and the Anza Foundation Coalition;
 - presentations about the SDNM and the trail during two Anza NHT volunteer days;
 - attending the Ajo Sonoran Shindig and the Town of Gila Bend Shrimp-Fest; BLM staff spoke with almost 500 visitors concerning recreation, natural resources, and travel management. Among the attendees were the National Park Service, U.S. Fish and Wildlife Service, Luke Air Force Base, Pima County, and the International Sonoran Desert Alliance:
 - conducting quarterly meetings with our Barry M. Goldwater Executive Committee and bi-annual Goldwater public meetings focusing BLM and U.S. Air Force management and issues in and adjacent the SDNM.
 - conducting monthly meetings to address SDNM matters and providing input into the interagency Borderlands Management Task Force by agency and public attendees.

❖ Visitor Centers

- The SDNM does not have a visitor center. One gateway community contact point is being discussed by the Friends of the SDNM and the Town of Gila Bend.

❖ Environmental Education

- Ten students and their teacher from the Paloma School donned authentic Anza costumes for participation in a Parade of History as part of the SDNM 10th Anniversary Celebration in December, 2010.
- A BLM volunteer presented several lessons on the history of Anza Expedition and the Anza NHT to the Paloma School.
- User ethics, natural history, leave-no-trace, and cultural heritage information is provided by signs located at wilderness trailheads, along the Juan Bautista de Anza NHT, and at more frequently used monument entry points.

❖ Interpretation

The SDNM does not have a formal interpretive program. Most interpretation is conducted by field-going personnel during the course of other duties, such as working with volunteer groups, youth corps, Boy Scouts, or at public outreach events in local communities.

➤ Main Messages:

- Learning about your heritage and cultural history.
- Experiencing the historic landscapes of the Anza NHT and the Butterfield Overland Stage.
- Exploring on foot and hand cart the path of the Mormon Battalion.
- Seeing the history and remnants of the homesteaders and ranchers in this area.
- Realizing the natural quiet and solitude of wilderness landscapes.
- Discovering untrammeled desert ecosystems, vast vistas, and cultural landscapes.

❖ Volunteers

- Four volunteer agreements were executed in FY11 representing 199 volunteers providing 1,810 hours of contributed labor and services. The contributed labor and services had an estimated value of \$39,969:
 - Two agreements were initiated for the Anza Trail Foundation and the Anza Trail Coalition, representing 54 volunteers and 162 hours of contributed labor.
 - One individual served as a year-around patrol and maintenance Park Ranger working about one day every two weeks, totaling 208 hours in contributed labor.
 - One volunteer agreement was arranged to include participants in the SDNM 10th Anniversary Celebration About 144 citizens provided services at various times, including prior planning and logistics, manning displays and support during the event, and staging exhibitions.

Figure 13 - Hia C-ed O'dham Basket Dancers perform at the SDNM 10th Anniversary Celebration



Science

❖ Background

- Table 1 describes science studies related to major issues confronting the monument, and proceeding with and without BLM funding. It lists science project name, discipline, research contributor/collaborator/partner, project description, status, products, applications, outreach options and BLM/partner contributions.
- The SDNM is currently supporting three projects with intermittent or annual funding: These are:
 - **Northern Arizona University:** “Recreation Impact Inventory and Monitoring.” This project was begun in 2003 to record all areas of the monument that had experienced impacts resulting from recreation activities, such as camping and target shooting.
 - **Northern Arizona University:** “Resource Impact Monitoring System.” This project was initiated in 2010 in response to increased impacts to areas of the SDNM resulting from illegal immigration and drug smuggling. The project will attempt to measure impacts – such as new vehicle routes, footpaths, and concentrations of trash – through the use of satellite and aircraft digital imagery.
 - **Arizona Game and Fish Department:** “Wildlife connectivity planning in the National Landscape Conservation System’s Sonoran Desert National Monument.” This project will monitor the movements of radio-collared mountain lions to test the computer modeling for wildlife movement corridors (see Figure 14).

Figure 14 - Curious mountain lion leans on trap gate and evades capture after derailed gate fails to drop



Partnerships

❖ Overview

The SDNM relies heavily on partners, friends groups, the Anza Trails Coalition, Boy Scouts and education organizations. Total contributions, mostly in-kind, totaled \$34,045 of contributed labor. See Table 2 for a list of Partnerships, with project name, partners, and a brief description of the project or accomplished task.

- **Friends of the Sonoran Desert National Monument (FSDNM):**
 - Conducted several buffelgrass removal projects and trash cleanups on the SDNM.
 - Recruited partners and initiated community networking in the gateway community of Gila Bend, Arizona.
 - Guided hikes to endangered cactus populations.
 - Manned a booth and supported the SDNM 10th Anniversary Celebration.
 - Joined the Gila Bend Chamber Chamber of Commerce.

- **Anza National Historic Trail (NHT) Foundation:**
 - Staged workshops to foster board development and strategic planning.
 - Conducted two restoration projects on damaged portions of the Anza NHT
 - Signed five miles of the NHT.

- **Boy Scouts of America:**
 - Clean up, restoration, and monitoring of the Anza NHT.

- **Project ROAM:**
 - BLM initiated “Project ROAM” (Reclaim Our Arizona Monuments) in FY11 in response to public safety and resource impact concerns stemming from illegal immigration and human and drug smuggling activities occurring in the area of the SDNM south of Interstate 8. This project has three primary goals:
 - Provide a safe and secure environment for the public and employees;
 - Protect the resource objects within national monuments, national conservation and wilderness areas; and,
 - Enhance coordination and cooperation with law enforcement and land management partners.

 - **Law Enforcement Partners:**
 - Department of Homeland Security – Customs and Border Protection (CBP)
 - U.S. Border Patrol
 - Immigration and Customs Enforcement (ICE)
 - Alliance to Combat Transnational Threats (ACTT)
 - Maricopa County Sheriff’s Office
 - Pinal County Sheriff’s Office
 - Arizona Department of Public Safety

- local police departments.
- **Resource Restoration Partners:**
 - Southwest Conservation Corps.
 - Valley of the Sun Youth Corps.
 - International Sonoran Desert Alliance.
 - American Conservation Experience.
 - Friends of the SDNM.

Figure 15 - Rare snowfall on February 27, 2011, whitens upper 2000 feet of 4,400 foot Table Top Mountain



Planning and Business Practices

❖ Planning - Status of Unit's Land Use Plan as of 9/30/11

- The draft Lower Sonoran Field Office/Sonoran Desert National Monument Resource Management Plan was released August 17, 2011. The final land use plan will be issued in September 2012.
- Analysis of over 6,000 comments received during scoping showed that the various concerns expressed by the public, non-governmental organizations, agencies, and tribal and local governments identified five SDNM major planning issues. These issues accounted for more than 95 percent of the comments received. The issues were:
 - Issue 1: Travel Management: How will the BLM manage travel and public access?
 - Issue 2: Wilderness Characteristics: How will the BLM manage wilderness characteristics in the Decision Areas?
 - Issue 3: Wildlife: How will the BLM address wildlife management, including special status species and wildlife water developments in the Decision Areas?
 - Issue 4: Livestock Grazing: How will livestock grazing be addressed in the Decision Areas, particularly in the SDNM?
 - Issue 5: Recreation: How will public recreation activities be managed?
- During the public comment period on the draft plan, the BLM held seven public meetings and received over 4,800 comment/submissions via email, mail, meetings, and fax. Each submission was carefully reviewed to identify and respond to substantive comments.
- Comments focused on a number of issues, including monument objects, wildlife, livestock grazing, special designations, national historic trails, recreation, special status species, vegetation, visual resources, travel management, recreational target shooting, and wilderness characteristics.

❖ Activity-Level Planning

- FY11 activity level planning centered on Borderland and Project ROAM Resource protection projects like signing, anti-smuggling vehicle barriers, landscape restoration and road decommissioning/closure tasks.
- Travel and transportation planning for the SDNM will be completed late in FY12 and released for public review on September 15, 2012.

❖ National Monument Budget

- The FY11 budget concentrated L1711000 national monument NLCS funding on three foremost work issues and priorities facing the SDNM:
 - preparation of a draft land use plan throughout FY11;
 - implementation of proactive efforts on Borderlands smuggling issues; and,
 - celebration of the SDNM's 10th Anniversary.

- Table 3 represents work months and funding for the unit's permanent staff, non-unit field office staff funded by the SDNM L1711 sub-activity. The table illustrates broad use of SDNM – NLCS L1711 funds by the SDNM, Lower Sonoran Field Office, Phoenix District and District Fire staff assigned to priority work:
 - interdisciplinary land use planning staff from the SDNM, the LSFO, the district office and the Arizona State office worked throughout FY11 on the draft resource management plan;
 - curtailing and reclaiming smuggling impacts on monument and wilderness resources required eight-months of intensive construction and land restoration work on Project ROAM and the Southern Arizona Project;
 - Staging a successful SDNM 10th and Arizona Desert Wilderness Act 20th Anniversary Celebration was a staff and funding priority throughout the first quarter of FY11.

❖ Staffing Needs - Table 4

- Table 4 presents staffing needs that have been identified for the SDNM. Positions include two Unfunded Core Skills positions (Wildlife Biologist and Lead Park Ranger) needed to meet present and emerging work. These positions are listed in the BLM Arizona Staffing Strategy.

- The SDNM Manager has advanced three new positions critical to address land use plan implementation, range conservation, partnerships/community planning, and long-term ecological sustainability. These positions are not currently incorporated in the BLM Arizona Staffing Strategy.

❖ Contributed Funding – Table 5

- Table 5 describes contributions including contributed funds and in-kind support.

Manager's Corner

Looking over last year's Manager's Corner in the Annual Report, I decided that I must repeat a portion of it because everything stated remained true and good and worth sharing.

The period October 1, 2010 through September 30, 2011 was a particularly busy one for the SDNM staff. The staff was focused on three large projects:

- 1) preparation of a forthcoming draft land use plan;
- 2) participation in and coordination of Project ROAM; and
- 3) preparation and staging of the SDNM 10th anniversary celebration and the 20th Anniversary of both the passage of the Arizona Desert Wilderness Act of 1990 and the designation of the Juan Bautista de Anza National Historic Trail..

All of this was, of course, much more than four individuals can handle and we thank all of those who helped along the way. First, I wish to thank former Arizona State Director Jim Kenna for the support, time and leadership provided on the successful Project ROAM . Second, I would be negligent not to mention the assistance and guidance put forward by BLM Director Robert Abbey and State Director Kenna on moving the monument's long-awaited draft land use plan to a public release in FY11. And third, clearly, our capacities are magnified by literally dozens of BLM resource and support staff, the agencies' law enforcement officers, our partners, volunteers, supporting organizations, and newly founded friends group, and everyday citizens who, likewise, are interested in actively managing this treasured landscape.

Going forward, challenges to effective long-term management of the SDNM for the public are three-fold. First, the monument lacks a central, accessible, and generally known place where the public can visit and experience the landscape. Such a location – accessible by two-wheel-drive; modestly developed with educational and interpretive displays, picnic and camping sites, and directional signing; and appropriately marketed – would go a long way toward showing the public the value of the SDNM and the National Landscape Conservation System. Hopefully, this realization will be closer with the forthcoming release of the final land use plan in FY12.

Second, a monument will only be supported by people and communities when it is well-managed and safe, and can entered and enjoyed by residents and visitors alike. The four year old Butterfield temporary closure is a case in point. How long will it take BLM and our partners to get the planning and infrastructure in place to lift some or all of the temporary closure? Also, we need to rest from RMP planning and start to build partnerships and links with our Friends group, the Anza groups, the Boy Scouts, political leaders and with the gateway communities of Gila Bend, Maricopa, and Goodyear. And less we forget the large number of citizens who will

probably be willing to help us along and help us monitor, patrol, restore, interpret, inventory and manage.

Third, and most difficult in many ways, is the long-term management challenge and pervasive effect of illegal immigration and human and drug smuggling in the monument. The BLM has expended tremendous financial and staff resources in providing for public safety and managing the problems of resource damage, and route and trash proliferation. In this perspective, Project ROAM has been an unmitigated success. Nevertheless, while the acute problems may have been ameliorated and the public and BLM is “successful”, the symptoms remain chronic, and the resources of the BLM are limited.

Figure 16 and 17: View of Interstate 8 from smuggling observation post and drug load seized in the SDNM



Best Management Practices: Borderlands: Southern Arizona Project and Reclaim our National Monuments (Project ROAM)

The Southern Arizona Project (SAP) is administered by the BLM in Arizona to mitigate the effects of undocumented immigration and drug smuggling on Arizona’s borderlands. Cleanup and mitigation projects, funded through the SAP since 2003, are managed by BLM, cooperating governmental agencies, and nonprofit groups. The SAP cleanup and remediation projects are focused in the area within 100 miles of the United States border with Mexico. It is in these areas where the highest volume of illegal activity and landscape degradation occurs. Major impacts of smuggling and undocumented immigration include the accumulation of trash along smuggling corridors and the creation of illegal roads and trails throughout the border landscape.

Throughout FY 2010 drug smuggling on the SDNM, and BLM’s reactions to the criminal activity, was viral front-page and national news. Officials and citizens stated Federal officials were not doing their job to protect citizens and the public lands while conservationists wanted more action to reclaim damaged wilderness and rehabilitate harmed natural resources. A year later, Arizona’s strategies to manage and protect lands amidst Borderland smuggling is considered the “gold standard” and viewed as applying the best management practices within the

Borderlands region smuggling zone. When public or political complaints now get aired or negative Borderlands information presented, it gets little traction.

What happened between FY 2010 and FY 2011? Simply, BLM and our partners changed direction and created a strategy that pursued a fully coordinated approach to address Borderland issues related to smuggling and other illegal activities on public lands. This ensured harmony between BLM's SAP, Project ROAM, our law enforcement endeavors and our other partners. This change was accomplished by:

- 1) fully implementing Project ROAM on the SDNM and Ironwood Forest National monuments;
- 2) shifting enforcement and project emphasis from reactive to proactive;
- 3) enhancing development, coordination and integration of SAP, ROAM and law enforcement strategy and planning through an Incident Command Team structure; and,
- 4) executing intense law enforcement operations and restoration projects in concert with one another.

FY11 was the first fiscal year with Project ROAM fully operational and integrated into SAP actions. The resource protection and restoration goals of Operation ROAM align with both the SAP and the BLM Border Strategy through:

- 1) providing a safe and secure environment for the public and BLM employees;
- 2) enhancing the protection of natural and culture resources on public lands and safeguarding the resource objects within national monuments and wilderness areas, and,
- 3) improving coordination and cooperation with border law enforcement and land management partners.

SAP and Project ROAM activities in FY11 represented a major shift in BLM strategy from reactive clean up and restoration operations to pro-active tactics. BLM and our partners would now concentrate on "taking" and "holding" ground in the SDNM through a combination of intense law enforcement operations and preemptive blocking or restoration actions. Assuredly, BLM would still pick up the trash, remove abandoned vehicles, repair the fences, capture the horses and decommission illegal smuggling routes. Simultaneously, BLM and our partners would be installing projects or conducting operations to prevent or curtail new resource damage. Preventing landscape damage is easier than restoring impaired desert lands.

Removing trash, cars, roads and trails remains an essential SAP goal. Consequently, detecting and collecting trash (discarded property, surplus food, drug hauling materials, saddles, blankets, horse tack, clothing), collecting and removing abandoned horses, vehicles and bicycles, repairing fences, restoring damaged soils and plants, and reclaiming and closing illegal smuggling roads, staging and load out areas, and observation posts represents the majority of work. Signing, re-

signing, and road or trail maintenance were also done where needed and deemed critical to SAP success.

Project ROAM included 10 weeks of law enforcement high-intensity surge patrols in conjunction with focused SAP efforts using student work crews, fire crews, and BLM and cooperating agency staff. Up to 14 weeks of surge patrols are scheduled in FY12 and 16 weeks anticipated in FY13.

SAP projects funded in FY 11 provided seasonal jobs for America's youth. Over 58 temporary jobs were created by hiring crews for 10 weeks from the Southwest Conservation Corps (SCC) and Valley of the Sun (VOS) youth work crews. Hiring dedicated youth crews to work on cleanup and restoration projects with BLM staff helps to maximize the accomplishments of the SAP funding. Youth worker experiences establish long-term stewardship values they carry forward into their careers.

Best Management Practices: NAU Remote Sensing Project

How can we best detect transformations in the SDNM from climate change or smuggling activity? Do we drive around in a truck and randomly encounter change or document with science through remote sensing? Which is best and most cost effective? Remote sensing. Like they say, a picture is worth a thousand words. See the photos below for some early results.

A partnership between the BLM and Northern Arizona University's (NAU) Department of Geography, Planning, and Recreation is paying off with new digital data. This data portrays the presence, absence, and even the successful reclamation of smuggling trash deposits, foot trails, and roads. More importantly, this digital imagery is revealing measurable changes on the ground from the pro-active SAP projects conducted in FY 2011.

The goal of this project is to determine whether commercially available satellite imagery can be used to detect impacts to the SDNM and IFNM landscapes resulting from illegal human and drug smuggling. Initial results have been encouraging. In 2005, images from Google Earth showed few wildcat routes or roads in the Table Top wilderness within the SDNM. Five years later, well-traveled smuggling routes could be seen from satellite images. The project has been able to detect impacts on the scale of footpaths and some types of trash.

The project is Those involved in the project are analyzing results from extremely high resolution aerial photography taken during the summer of FY 2011 to test the limits of impact detection with satellite imagery. Future areas of interest include establishing methods of consistently measuring image brightness and developing surface mobility index maps – which might provide information for predicting ease of human mobility across a landscape.

Figure 17 - August 2010: Smuggling roads and trails highly evident

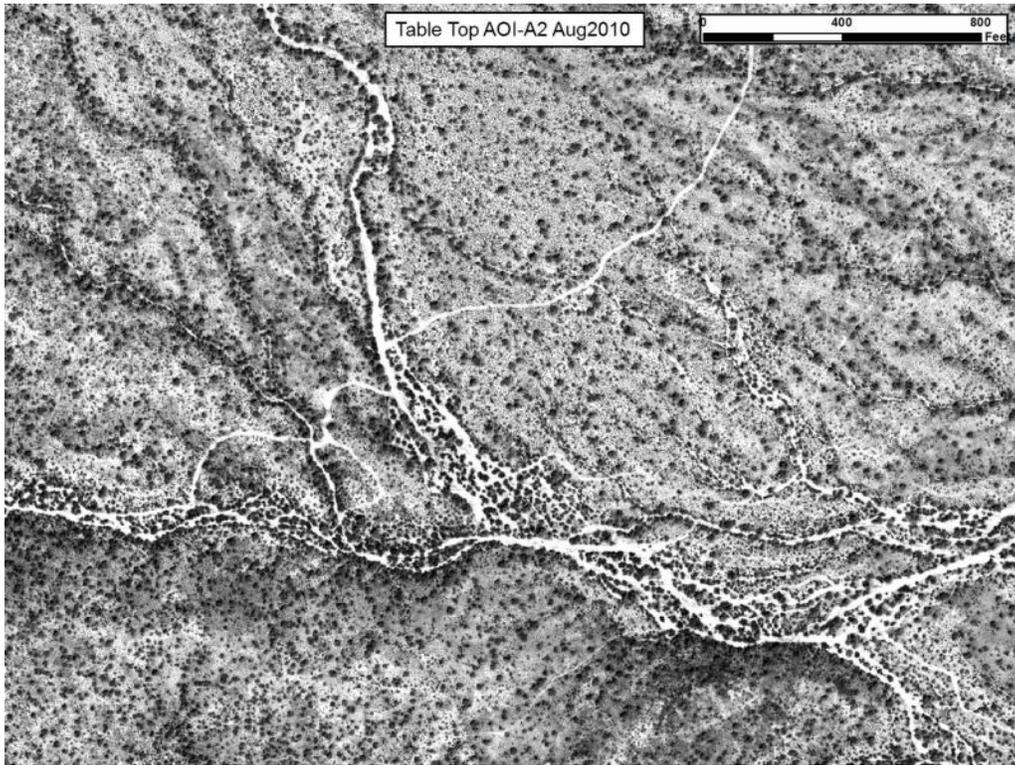


Figure 18 - January 2011: two months after Normandy barrier installation, barricade is accomplishing both direct and indirect road and landscape restoration. Vehicle routes have disappeared or faded due to non-use and active reclamation.

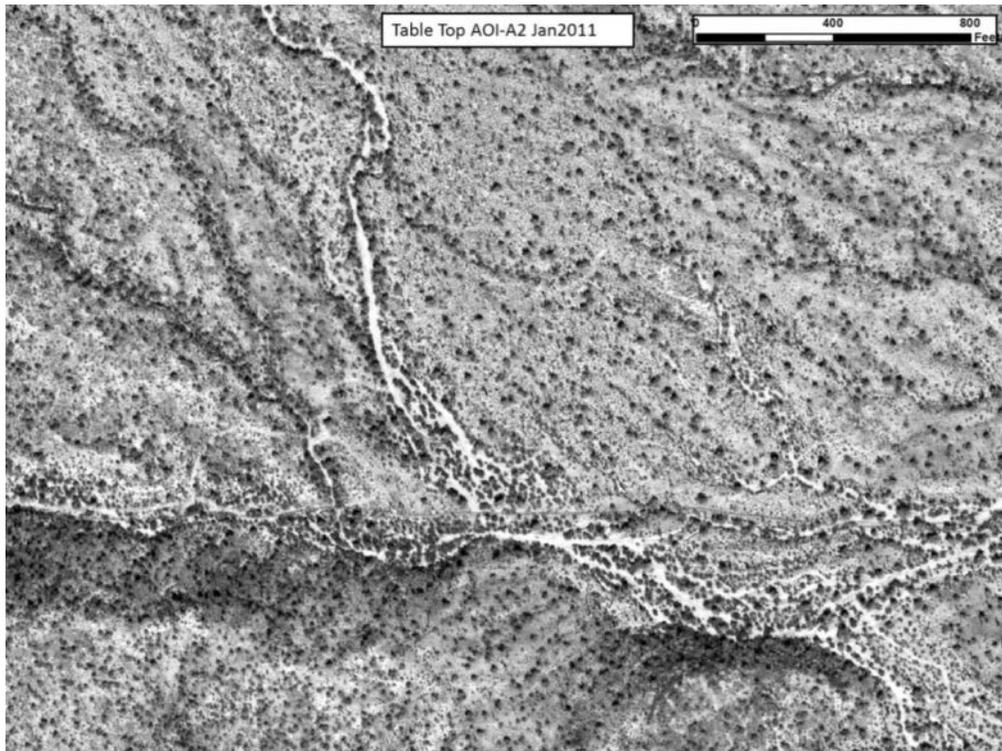


Figure 19 - Montage of SDNM Anniversary Celebration



Best Management Practices: SDNM Wilderness Management

The Arizona State Office and Chris Barns, BLM Representative at the Arthur Carhart National Wilderness Training Center in Montana, praised Dave Scarbrough's work in preparing the North Maricopa Mountains Wilderness Character Monitoring Report. The report is part of a national initiative to create a uniform method to assess wilderness character conditions, changes, and to monitor trends. This process, called, “Keeping It Wild: An interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System”, improves wilderness stewardship by providing land managers with a common tool to measure change.

Best Management Practices Support Community Use

The Arizona State Director honored the SDNM and Phoenix District with an Annual State Director Strategic Awards 2011. The award recognized: 1) a demonstrated clear understanding of the Arizona Strategies, 2) turning the Strategies into reality on the ground, and 3) Demonstrating a clear tie to one or all of the common themes of community interaction, engagement of youth and implementation of shared goals with partners.

Awards of \$15,000 were granted for each of the business lines in the Arizona Strategies. The Phoenix District was honored in the category “Support Community Use”, The Phoenix District for ROAM – Reclaim Our Arizona Monuments. The ROAM project is a collaborative effort across district boundaries, agency jurisdictions, and levels of government. It demonstrates the effectiveness of working together with community partners in a statewide focus to accomplish public safety and resource protection goals. By focusing our efforts and working together we can increase the capacity of Arizona BLM to deliver outcomes important to the American people.

Best Management Practices BLM Law Enforcement Rangers Track Tortoise with AZ Game & Fish and Share Knowledge

Law Enforcement Rangers patrolling the SDNM collect data when a desert tortoise is spotted. The data, such as GIS coordinates, photos, and habitat descriptions are provided to biologists and to the Arizona Game and Fish Department for its Desert Tortoise Study. This study is targeted for the Barry Goldwater Range and the SDNM to monitor the effects of increased human activity in remote areas due to border activity. The LE Rangers also escort Game & Fish biologists to these locations to provide health checks and check on radio-tracking devices that are mounted on the tortoise.

On the day the photos were taken, AGFD biologists checked on two tortoises with radio tracking equipment. Both got a health check and new batteries. Also while tracking the two an additional three new tortoise were found and became part of the study.

Figure 20 - desert tortoise involved in BLM and AGFD study



Table 1: SCIENCE (table continues on next page, please scroll to the right)										
Location	Project Name	Discipline	Research Contributor/ Collaborator/ Partner	Project Description	Status	Products	Applications	Outreach Options	BLM Contributions	Partner Contributions
		<i>Geology, Paleontology, Hydrology,</i>			<i>Ongoing, 1st year, or completed</i>	<i>Provide citations and web addresses where applicable</i>	<i>How the research has or will be used</i>	<i>Identify projects or stories that may be of interest to the public</i>	<i>To date by year</i>	<i>To date by year</i>
North Maricopa Mountains Wilderness	Wildlife Connectivity	Wildlife and Habitat Management	Arizona Game and Fish Department	The intent of this study is to evaluate the validity of using the “least cost linkage design” approach for wildlife connectivity planning when species movement data are unavailable. To accomplish this, the project will collect movement data from radio-collared mountain lions – a wide ranging species whose movement patterns will inform regional connectivity patterns at a landscape scale – and examine the concurrence between model predictions and actual movement data. Such wildlife movement models are used to determine land use planning decisions for preservation of wildlife habitat corridors and locations of wildlife crossing structures, but have not been thoroughly tested in south-central Arizona.	Ongoing	Final project report; map of mountain lion movement patterns; geobase of mountain lion movement data; presentation of study results.	Study will inform and design human infrastructure development and transportation planning across or inside wildlife movement corridors. Study will affirm validity of using the “least cost linkage design” approach for wildlife connectivity planning.	The mountain lions eluded trap capture in FY11, but provided interesting remote photography opportunities.	FY10: \$18,400; FY11: \$3,000	FY10: \$4,000; FY11: \$3,000
SDNM	Collaborative Research: Geodetic Constraints on the Kinematics of the Colorado Plateau and its Western and Southern Margin.	Geology	Nevada Bureau of Mines and Geology, University of Nevada Reno	Earthscope Project to deploy hundreds of geodetic and seismic equipment across the western U.S. to image the structure and evolution of the Pacific-North America tectonic plate.	Ongoing	Scientific journal reports and publications.	Long-term studies of the North American and Pacific Plates, and the Colorado Plateau	TBD	0	0
Central SDNM	An evaluation of potential OHV Impacts on Kit Foxes	Wildlife Biology	Arizona Game and Fish Department	To determine if desert kit fox habitat selection is influenced by off-highway-vehicle use.	Suspended at this time due to smuggling activity in selected project areas.	Final project report.	Travel management designations, seasonal or locational closures, and a determination of thresholds on potential habitat impact from levels of OHV use.	Provides on-the-ground science and research to the public on the cause and effect of OHV use on wildlife habitat.	0	0
SDNM	Desert Tortoise Population Monitoring	Wildlife Biology	Arizona Game and Fish Department and BLM	To monitor population trends of desert tortoise.	Ongoing	AGFD Report.	Siting of projects, protection of monument objects, climate change trends, road and trail management decisions.	Data can be used in the consideration of the proposed listing as a T&E species of the Sonoran Desert Tortoise, in FY15.	0	0

SDNM	Integrated Spatial Models of Non-native Plant Invasion, Fire Risk, and Wildlife Habitat to Support Conservation on Military and Adjacent Lands in the Sonoran Desert	Ecology and Natural Functioning Ecosystems	School of Earth Sciences and Environmental Sustainability; Northern Arizona University	Map and predict spread of non-native, invasive weeds.	Ongoing	Final products will include a report and map.	Inform decisions and land management actions based on long-term fire, noxious weed and wildlife habitat in a Sonoran Desert facing longer-term droughts, changing fire regimes, and climate change.	None determined at this time.	0	0
SDNM	Recreation Impact Inventory and Monitoring	Recreation and Conservation of Monument Objects	Recreation Science Department of Geography, Planning, and Recreation; Northern Arizona University	Inventory and monitor impacts to resources occurring from recreation activities including target shooting, camping, cross-country vehicle travel, hunting and OHV use.	Ongoing, 5th year	M.S. Thesis, "A Spatial Analysis of Recreation Impacts within the Sonoran Desert National Monument"	Through inventory and data collection, inform recreation decisions and land management actions based on inventory and monitoring of recreation impacts on monument objects and resources on the SDNM. Ultimately, the BLM will establish standards for acceptable levels of impact at recreation sites and manage recreation uses to those standards.	Build partnership and citizen support of recreation decisions and benefits for both visitors and the protection of monument objects.	FY11 \$10,000, average of \$5,000 annually in FY 10, 09, 08 and 07.	\$0
Southern SDNM	Resource Impact Monitoring System	Remote Sensing Department of Geography, Planning, and Recreation; Northern Arizona University	Remote Sensing Department of Geography, Planning, and Recreation; Northern Arizona University	Identify areas of impacts to resources occurring from illegal immigration and drug smuggling, and from recreation activities. The initial phases of the project in FY10 and FY11 concentrated on areas of known impacts and use both ground reconnaissance and imagery at various resolutions and frequencies to determine the efficacy of remote sensing technologies in monitoring such impacts. These sensing methods detected landscape changes caused by BLM Borderland law enforcement and restoration efforts.	Ongoing, second year	Final products include annual reports to BLM, tribes, the RAC and other presentations.	Reports and data have been to applied to detect and document changes in resource conditions at a landscape level on a repeated and annual basis. Outputs include documented success (or failure) of reclamation, detection of new roads and trails, restoration of landscapes and routes, and location of smuggling trash.	Measuring success of our Borderland pro-active interdiction efforts and smuggling road/trash reclamation activities is contributing to agency, law enforcement, public and political support for Project ROAM and associated efforts.	FY12: \$75,000; FY11: \$50,000	\$0
Northern SDNM - North Maricopa Mtns.	Research on the Effects of Urban Growth and Air Pollution on Desert Ecosystems	Air pollution and dust	Global Institute of Sustainability, Arizona State University	A 20-year study researching the effects of urban growth and air pollution and desert ecosystems in the Sonoran Desert.	Ongoing, 5th year	Research papers and long-term pollution, dust and desert ecosystem analysis/findings	Climate change, dust, managing the impact of urban air pollution on desert plant communities.	None determined at this time.	Unknown at this time.	0

State Name: Arizona
 Unit: Sonoran Desert NM
 Manager: Rich Hanson

Table 2: PARTNERSHIPS (table continues on next page, pleas scroll to the right)								
Location	Project Name	Partners	Project Description	Status	Results	Outreach Options	BLM Contribution	Partner Contribution
						<i>Identify projects or stories that may be of interest to the public</i>	<i>Funding To date by year</i>	<i>To date by year</i>
Sonoran Desert Nation Monument	Friends Group	Friends of the Sonoran Desert National Monument	The FSDNM, in partnership with the BLM, is helping to develop and implement our land use plan. The FSDNM is doing this through on the ground conservation work, land restoration projects, capacity building, networking with towns and interest groups, volunteer projects, advocacy and fund raising.	Ongoing, 3rd year	At the close of FY11, the Friends of the SDNM had an Executive Director and a Board of Directors. They were scheduling regular field trips and volunteer work projects.	The FSDNM have led tours to rare and endangered cactus locations, have removed noxious weeds, and have monitored cultural sites.	In FY11 BLM contributed \$5K in cash & \$4,803 in-kind (1/4 work month each of GS 12 & GS 07, & supplied tools & garbage bags). In FY 10 BLM contributed \$2,716 in-kind (1/4 work month of GS 12). In FY 09 nothing was contributed by BLM.	In FY 11, partners contributed \$2K in labor and \$5K in funding. In FY 10 partners contributed \$2K in labor. Funding unknown.. In FY 09, partner contributions unknown. In FY 2006, partners contributed \$45K in labor and \$20K in funding.
Sonoran Desert Nation Monument	Partnership and Capacity Building	Anza Trails Foundation	Efforts continued in FY11 in the form of two workshops. BLM's National Training Center and Arizona State University's Lodestar Center of Philanthropy and Innovation provided this new Friends Group with coaching in board development governance, fund raising, and strategic planning.	Ongoing, 2nd year	At the close of FY11, the Anza Trails Foundation was actively planning events on the trail and on-the ground volunteer restoration projects.	Outreach to youth and schools in the Gila Bend, Maricopa and Phoenix areas, and Tohono O'odham Indian Nation.	\$15,000	FY11: \$5,000 in kind volunteer labor.
Sonoran Desert Nation Monument	Site Monitoring	Arizona Site Stewards	Periodic monitoring of 16 cultural sites on the Sonoran Desert National Monument	Ongoing, 11th year	Cultural site monitoring and compliance.	None determined at this time.	None.	IN FY 11, \$341 in contributed labor. Previous years unknown due to database problems with the program.

State Name: Arizona
 Sonoran Desert National Monument
 Manager: Rich Hanson

Table 3. STAFF & WORK MONTHS		
Work Months and Funding (12 wms = 1 work year)	Work Months (#)	Funding (\$)
Sonoran Desert National Monument Staff		
Natural Resource Specialist	2.7	22802
Park Ranger	3.4	20321
Seasonal staff (list positions, add rows as needed)		
Park Ranger (Fire)	1.3	7742
Total for SDNM Staff	7.4	50865
Lower Sonoran Field Office Staff Support Funded by SDNM		
Field Manager	1.1	12267
Planning and Environmental Coordination	0.84	7,543
GIS Specialist	1.6	5268
Law Enforcement Rangers - three staff	7.26	85424
Fire STEP Staff - 8 staff (Project ROAM)	6.42	19495
Fuels Management Specialist	0.2	1661
Equipment Operator	0.4	2347
Archaeologist	3.06	28755
Outdoor Recreation Planner	1.4	15743
Staff Assistant	1.36	8326
Public Affairs Specialists - 3 staff	4.5	36445
District Manager & Associate District Manager	3.25	37464
Travel Management Coordinator	2.05	17474
Range Conservation Specialist Supervisory	0.6	4902
Range Conservation Specialist	2.29	19000
Project Manager	3.12	35264
Force Account	2.39	17688
Totals for Lower Sonoran Field Office	41.84	355066
TOTAL Staff & Work Months	60.84	514168

Table 4. PRIORITY STAFFING NEEDS (in priority order)		
Position	Perm or Term	Position on Approved Table of Org? Y/N
Lead Park Ranger	Permanent	Yes
Wildlife Biologist/NRS	Permanent	Yes
Range Conservationist	Permanent or Term	No
Partnership - Outreach Coordinator or Community Planner (target shooting)	Permanent or Term	No
Ecologist (Sustainability)	Permanent or Term	No

State Name: Arizona

Unit: Sonoran Desert National Monument

Manager: Rich Hanson

Table 5. CONTRIBUTIONS	
Anza Coalition, AZ Wilderness Coalition, Friends of the SDNM - restoration, signing, trash removal	\$1,557
Arizona Site Stewards	\$341
SDNM - Boy Scout of America Project	\$1,183
Anza Foundation - National Historic Trail Restoration & Signing Events	\$3,460
Volunteer Park Ranger	\$4,100
Friends of the SDNM - Buffelgrass Removal	\$946
Contributions in services or work on the SDNM 10th Anniversary Celebration: Wells Fargo Bank, Desert Rivers Audubon Society, Sonoran Audubon Society, Abengoa Solar, Arizona Public Service, Arizona State Parks, Arizona Game and Fish Department, Wild at Heart, Southwest Learning Sources, Au-Thum Crafts & Education, Al Cornell – Prehistoric Fire Making, SALT – Study of Ancient Lifeways and Technologies, Glen Dotson – Pottery Making, Matilda Sarafico – Basket Making, Tohono O’odham Baskets, Desert Skies Kachina Dolls, Southwest Conservation Corps, Arizona Water Resources, Northern Arizona University, U.S. Post Office, International Sonoran Desert Alliance, Town of Gila Bend, National Park Service – Organ Pipe Cactus N.M., U.S. Fish & Wildlife Service – Cabeza Prieta N.W.R., Friends of Cabeza Prieta, Sierra Club, Luke Air Force Base, The Wilderness Society, Arizona Wilderness Coalition, Sonoran Institute, Friends of the Sonoran Desert National Monument, Friends of the Ironwood Forest National Monument, Friends of Saddle Mountain, Anza Trail Foundation, Mormon Battalion Association, U.S. Border Patrol, OHV Ambassadors, and BLM Fire Prevention and the Smokey the Bear Cold Air Balloon. <i>Figure is estimated based on the # of partners and the # of staff or membership staffing the event.</i>	\$28,382
TOTAL Contributions	\$39,969