

# Arizona

Bureau of Land Management

BLM



## **Southern Arizona Project To Mitigate Environmental Damages Resulting from Illegal Border Activities**

**Fiscal Year 2014 Report**



## **Introduction**

The Bureau of Land Management (BLM) is pleased to provide the Fiscal Year 2014 (FY 2014) accomplishments of the Southern Arizona Project (SAP). Since 2003, the SAP has provided for the cleanup and mitigation of damages done to the natural and cultural environment as a result of illegal border activities. The BLM partners with many other agencies and organizations in these efforts.

In FY 2014, the BLM continued the emphasis on restoration of areas that are in the operational focus of Restore Our Arizona Monuments (ROAM). The BLM initiated ROAM in June of 2010 to deter and address smuggling and other illegal activities on BLM managed national monument lands in southern Arizona, particularly the Sonoran Desert National Monument and the Ironwood Forest National Monument. Detailed law enforcement rangers are brought in to assist in on-the-ground operations which enhance law enforcement capability as well as allow for additional resource protection and restoration of remote areas.

The BLM continues to support the goals of our Arizona Border Strategy: 1) Provide a safe and secure environment for the public and BLM employees; 2) Enhance the protection of natural and cultural resources on public lands; and 3) improve coordination and cooperation with border law enforcement and land management partners.

The SAP is coordinated through the Arizona State Office, and project funding is applied to public lands in the Tucson, Safford, Lower Sonoran and Yuma Field Offices. SAP partners in FY 2014 included: Arizona Game and Fish Department, Arizona Department of Environmental Quality, Tohono O'odham Nation, Pascua Yaqui Tribe, Northern Arizona University, Southwest Conservation Corps, Arizona Department of Transportation, Arizona Department of Corrections, Arizona Conservation Corps, and the US Geological Survey.

As in previous years, the SAP continues to emphasize the involvement of America's youth in conducting these restoration activities. Through agreements with youth employment and training organizations, the BLM was able to provide opportunities for youth to experience working on public lands and providing valuable service in the management of natural and cultural resources.

Following are summaries of the SAP work accomplished in FY 2014.

## **Phoenix District**

### **Lower Sonoran Field Office**

#### **Landscape Restoration**

During FY 2014, the Lower Sonoran Field Office contracted with youth crews to conduct clean up and restoration work at several sites with extensive trash and debris. Whirlybird Wash is an area adjacent to the Sonoran Desert National Monument (NM) used extensively by drug smugglers and as an end point of smuggling activities. The site was heavily contaminated with

debris and trash left by illegal activities and required an eight-person crew over two weeks to clean up. The Freeman Road/Interstate-8 (I-8) is an area used as an observation post and contained trash and equipment, including binoculars, radios, cell phones, and other materials. A third “layup” site with heavy concentrations of trash was located along a wash and base of a hill north of I-8. Approximately 18,175 pounds of trash was removed from these locations.

### **Project Daylight**

The Interstate- 8 (I-8) Vegetation Reduction Project (Project Daylight) was initiated to improve visibility within the right-of-way of I-8 between mileposts 119-161. The goals of the project included the reduction of threats to public and employee safety by improving visibility within the I-8 right of way and nearby areas of public land; limiting the availability of areas of concealment adjacent to I-8; enhancing the ability of law enforcement agencies to suppress criminal activity along I-8; and improving and maintaining resource conditions where illegal activities have caused damage. The Environmental Analysis and public input was conducted in FY 2013, and the project implementation began in FY 2014. The project pruned and thinned dense shrubbery at three critical locations along I-8 in partnership with the Arizona Department of Transportation, Arizona Department of Corrections, and Arizona Conservation Corps. Approximately 68.8 acres along 6 miles of I-8 right-of-way were treated.

### **Range Rider Program**

The Range Rider Program is a project to inspect and repair breaks in the boundary fence between the Sonoran Desert NM and the Ironwood Forest NM with the Tohono O’odham Nation. The fences are often cut by illegal immigrants and drug smugglers traveling cross country by foot, bicycle, and vehicle. These breaks allow livestock and feral burros from the Nation to cross onto public lands on the two monuments. The BLM used in-house staff, seasonal firefighters, and youth crews to inventory breaks in the fence line and repair the breaks. Approximately 200 breaks along 35 miles of fence line along the Sonoran Desert NM were repaired.

### **Public Outreach**

The BLM maintained fifteen public information kiosks on the Sonoran Desert NM adjacent to and south of I-8. The kiosks contain general information and border safety advice for visitors to the monument. Additionally, 26 signs were installed advising of route closures on illegal vehicle routes that have been reclaimed.

### **Resource Impact Monitoring System**

The BLM continued its remote sensing partnership with Northern Arizona University. The Resource Impact Monitoring System project develops remote sensing techniques for the identification, measurement, and inventory of human impacts resulting from illegal immigration, drug smuggling, and recreation uses in the Sonoran Desert NM and the Ironwood Forest NM, as well as adjacent public lands. A major goal of the project has been to determine the specifications of remotely sensed image data that are best suited to detect human impacts in the Sonoran Desert, especially within the national monuments in the southwestern deserts of the

United States. The project has found that relatively inexpensive, black-and-white satellite images acquired at 0.5-meter pixel resolution are adequate for the detection and analysis of linear impacts down to 14 inches in width on the ground.

During FY 2014, the project made accomplishments toward four goals:

1. The project team completed classifying and digitizing the travel networks in three areas of the Sonoran Desert NM where satellite coverage has been obtained. These are the Table Top, Antelope Peak, and eastern Vekol Valley areas of interest (AOIs). All three areas have been known as especially active for drug and human traffickers, and had the potential for numerous impacts resulting from these illegal activities. The project has determined that using satellite data to map and digitize travel networks has the potential to be more efficient and cost effective than ground-based route inventory methods used in the past, provided ground verification is incorporated as an integral part of the mapping effort. The travel networks, including foot trails, were mapped for each AOI and statistics compiled on the total length of routes, route visibility, and route density. Extensive documentation was developed and provided to the BLM on the technical specifications of the imagery selected, inventory and classification process, and prospects for operational use in the future.
2. A sample area of the Sonoran Desert NM was chosen to illustrate and begin developing a Sonoran Desert NM-wide mosaic data image using 2-meter satellite imagery enhanced with 0.5-meter and 0.1 meter image data. This product is conceived as a resource baseline data set that would provide staff specialists the opportunity to analyze changes in vegetation, travel system, and fuels, and would also be a visual representation of the monument when completed. Sample images were acquired in natural and infra-red color. These images are being evaluated for the characteristics of seasonality, time of day, spectral qualities, and other specifications ideally suited for the best representation of the monument.
3. Continued to work with the U.S. Geological Survey (USGS). The USGS has extensive skills in mapping and remote sensing technology and a partnership with the USGS has the potential to reduce the BLM cost of data acquisition and analysis.
4. During FY 2014, staff made presentations at public conferences (Ajo Science Symposium), agency work groups (Sonoran Desert Climate and GIS groups, US Geological Survey – Flagstaff Office), various classroom presentations in the NAU School of Earth Sciences and Environmental Sustainability, and a presentation to the BLM Arizona State Director.

Project Goals for FY 2015 and beyond include:

Develop operational protocols in which remote sensing can be used to respond to law enforcement and resource management data analysis needs in short, medium, and long-term time frames. Examples include development of methods for measuring the activity level of use on primitive, dirt-surfaced vehicle routes (radiometric analysis); continued inventory and digitization of vehicle route networks; and landscape scale surveys for areas of litter and debris using high resolution aerial photography transects.

Continue to develop a monument-wide, 3-D, baseline mosaic data image with enhanced 2-meter satellite imagery.

Utilize existing Landsat Thematic Mapper and the newer Landsat 8 system to explore current problems in such areas as the effects of atmospheric pollution across the southwest; the origination of severe dust storm events, particularly in the Picacho Peak-Casa Grande areas; vegetation dynamics and fine fuels mapping on the Sonoran Desert NM and Ironwood Forest NM; and developing protocols for more effective placement of ground-based sampling systems (transects, sensors, etc) in atmospheric, rangeland, climate, and other monitoring programs.

### **Smuggling Route Decommissioning and Reclamation**

In FY 2014, the BLM closed and remediated a total of 16.78 miles (88,575 feet) of illegally created routes on the Sonoran Desert NM. In the adjacent public lands, 9.7 miles of these routes were also closed and remediated.

Illegal border activities have created numerous routes and even “constructed” roads on sensitive public lands and in national monuments. BLM and youth crews worked to clean up trash and close and reclaim these routes. Vehicle barriers were installed where appropriate, and public signing was installed to inform the public and other border partners of the restored areas. Work crews de-compacted the routes through raking or scoring with a disk or harrow, pulled by an ATV. Crews then rake and apply “vertical mulching” techniques, which include placing boulders, dead and down vegetation, and even the planting of some live vegetation such as cholla cactus within the disturbed soils of the affected routes. Only vegetation, rock and woody materials native to the immediate closed route vicinities are used. The technique is designed to imitate the adjacent vegetation and terrain, while encouraging plant succession and route naturalization. Planting of live hedgehog, cholla and prickly pear cactus species has proven successful, although natural seeding remains the best process for restoration of woody plants and shrubs. Vertical mulching offers the greatest opportunity for long-term reclamation success.

### **Trash Removal**

Scattered trash was collected from the vehicle route network and desert washes adjacent to and within the Table Top Wilderness, the Vekol Valley, and areas in the Sand Tank Mountains and along Sand Tank Wash. Over 10,360 pounds of trash was collected from these areas. Additionally, another 51,000 pounds of trash was collected from public lands in the Ajo Block area.

### **Vehicle Barrier Installation**

During FY 2014, two vehicle barriers were constructed in the Sonoran Desert NM in the South Maricopa Mountains Wilderness, using mechanized equipment. In keeping with the “minimum tool” concept of wilderness management, these barriers had previously been constructed by hand crews using natural materials (large native boulders) at three sites in a “pinch point” on a route used by smugglers to transport contraband by vehicle through the South Maricopa Wilderness. The illegal route effectively connected Interstate 8 to the Maricopa County Route 238. The

original barrier was subsequently breached and in FY 2014 was rebuilt and substantially re-enforced with the use of heavy equipment. Approximately 500 feet of barrier was re-installed, in two locations.

In addition, a barbed-wire vehicle barrier (2.5 miles in length) was re-constructed along the northern boundary of the Sonoran Desert NM near Espanto Mountain. The existing barrier has been severely damaged by frequent cutting. Approximately 13,200 feet of fence was repaired.

### **Abandoned Vehicle Removal**

One abandoned vehicle, an all-terrain vehicle (ATV) was removed in FY 2014. The decline in the number of abandoned vehicles related to drug smuggling has declined in the area, and is attributed to the effectiveness of the vehicle barriers that have been installed in past years.

## **Gila District**

### **Tucson Field Office**

#### **Broken Windows**

This project involved the removal of migrant and smuggling trash as well as sign installation on the Ironwood Forest NM, as well as within the Tucson urban lands interface with public lands. Work was accomplished using youth crews and BLM employees. Approximately 4,695 pounds of trash was removed and 6,000 feet of fencing was repaired.

#### **San Pedro Riparian National Conservation Area (SPRNCA)**

The work in the SPRNCA involved the removal of border related trash, as well as the repair of fences within the area. Work was accomplished with the assistance of youth interns working on the SPRNCA. Crews removed 4,000 pounds of trash and repaired over 1,600 feet of fence line.

#### **Aguirre Fence Project**

A youth crew from the Southwest Conservation Corp, along with several BLM employees finished construction of approximately 6,336 feet of new rangeland fence around the National Register site of Mission Santa Ana de Chiquiburitac on the Ironwood Forest NM. This finishes the fencing work started in FY 2013, and protects the site from border related impacts that were causing damage to the historic property.

#### **Range Rider Program**

The Range Rider Program is an on-going effort to repair and replace missing sections of the boundary fence between the Ironwood Forest NM as well as the Sonoran Desert NM with the Tohono O'odham Nation. These fences have been vandalized and cut by illegal border smuggling activities. Cattle and other livestock have also crossed onto monument lands. The

work was conducted by youth crews and BLM employees. Range Rider crews repaired approximately 6,000 feet of fence line along the Ironwood NM boundary in FY 2014.

### **Safford Field Office**

The Safford Field Office coordinated border related restoration projects in the Guadalupe Canyon, San Simon and the San Bernardino Valleys. The work consisted of the cleanup of trash, as well as the repair of fence lines damaged by illegal border activities. Youth crews were employed in the execution of the restoration work. Approximately 24,000 pounds of trash were removed, and 4,000 feet of fence was repaired.

### **Colorado River District**

#### **Yuma Field Office**

In FY 2014, the Yuma Field Office and students from the Southwest Conservation Corps (SCC) conducted the removal of border related trash and tires in the Mittry Lake, Sears Point and Trigo Mountains areas. The Yuma Field Office also worked with a local scout troop who assisted in installation of information Kiosks which include border related safety information.

### **BLM Partners**

#### **Tohono O'odham Nation**

The Tohono O'odham Nation (Nation) is located in Southern Arizona, with approximately 75 miles of international border with Mexico. As a result, the Nation experiences a significant amount of illegal border related activities. The BLM has worked with the Nation for approximately 10 years as a SAP partner, and assists with funding to help in the clean ups and restoration of Nation lands as part of the greater borderlands efforts to mitigate the impacts on natural resources. The Nation and the BLM have also worked cooperatively to repair and replace fencing between the Nation and public lands for the protection of natural and cultural resources, and the proper containment of cattle and other livestock. The Nation is committed to continuing this important work, and in FY 2014, hired four permanent full-time laborer positions.

#### **Trash Clean Up**

Over 8,000 pounds of trash at 49 sites were cleaned up in FY 2014 on the Nation. The focus was predominately in Chukut Kuk, Sells, and Gu Achi Districts as this is the area with the most abundant trash. Illegal migrants and smugglers have moved routes and encampments to more remote areas of the Nation and into the mountain ranges, and away from more populated areas.

## **Abandoned Vehicles**

Ninety-seven (97) abandoned vehicles were photographed and GPS locations recorded prior to FY 2013. During FY 2014, six (6) vehicles were removed and recycled. Vehicle removal will be a priority for border restoration efforts in FY 2015. It was also reported that scavengers have been stripping vehicles and removing some of them and taking them to Tucson and Phoenix areas to recycle for scrap metal. As funding is available, abandoned vehicles will continue to be removed from Nation lands.

## **Coordination and Planning**

In FY 2014, the Nation coordinated with the BLM and with the US Environmental Protection Agency (EPA) in the efforts to mitigate the impacts of the illegal border activities. Fence repair and posting of signs, and the fencing of the Mission Santa Ana site were cooperative projects between the Nation and the BLM. The EPA continued to assist with funding for clean up projects within the borderlands on the Nation.

## **Pascua Yaqui Tribe**

In FY 2014, the Pascua Yaqui Tribe conducted cleanup operations as well as fence construction and repair. The majority of the work was conducted in the Tortuga Ranch area, and in areas on the boundaries of tribal lands. Over 1,200 pounds of trash were collected and approximately 4,655 feet of new fence was constructed. An additional 16,673 feet of fence line was repaired.

## **Arizona Game and Fish Department**

Utilizing helicopter flights, the Arizona Game and Fish Department (AGFD) identified key areas of trash concentrations. Personnel flew for approximately 3.5 hours to map these locations in order to facilitate on-the-ground cleanup efforts. AGFD partnered with the Department of Corrections, Wilmot Prison “Nogales Crew” to assist in the trash removal efforts. Approximately 5-12 prisoners participated on crews that collected, loaded and transported over 40 tons of trash from locations under trees and shrubs, in washes, and areas in shade or near water sources. Crews worked on average of 3 days per week throughout the year, and collected over 79,000 pounds of trash.

Much of the trash collected by the AGFD and their partners over the past 10 years has been in the Diablo-Saucito-Diablito Mountain complex. Numerous miles of streambeds have been polluted with a wide-range of food and liquid containers, plastic wrappers, clothing, backpacks and used hygiene products.

Aerial helicopter flights proved to be a highly effective means to locate concentrated trash sites. GPS data points collected, gave crews exact on the ground locations, and appropriate scale maps were provided to the crew leaders to assist in identifying the roads closest to the trash.

## **Arizona Department of Environmental Quality**

The Arizona Department of Environmental Quality continued to provide improvements to the Border Trash Web site ([www.azbordertrash.gov](http://www.azbordertrash.gov)). In addition, several training sessions were provided to border land managers on the use of the website for entry of trash clean up areas, and the resources available on the website to assist in planning for clean up projects.

The chart below provides the cumulative detail of the SAP efforts accomplished through dedication, partnership and cooperation in FY 2014.

<b>PROJECT</b>	<b>OUTCOME</b>	<b>COMMENTS</b>
<b>TRASH REMOVAL</b>	200,599 pounds = 100.3 tons of trash removed	Total of BLM and partner cleanup projects
<b>ABANDONED VEHICLE REMOVAL</b>	6 vehicles removed	BLM/Border Patrol cooperative effort, south of Interstate 8
<b>TIRE REMOVAL</b>	47 removed	Removed and transferred to county collection centers.
<b>BICYCLE REMOVAL</b>	32 bicycles removed	Bikes are in highly remote locations and are difficult to reach and remove.
<b>LAND RESTORATION</b>	219 acres	Acres reclaimed on roads, lay up sites, illegal smuggling routes.
<b>UNAUTHORIZED ROAD AND TRAIL RECLAMATION</b>	26.5 miles	Unauthorized roads and trails restored to natural condition.
<b>TRAILS AND ROADS MAINTAINED</b>	22 miles	Vekol Road and Smith Road fully maintained.
<b>VEHICLE INCURSION BARRIERS ERECTED</b>	500 feet	Project ROAM; stops smuggling vehicles from entering protected areas, including wilderness areas.
<b>SIGNS AND POST INSTALLATION</b>	41 signs installed or replaced	Completed by youth crews and BLM staff
<b>FENCE CONSTRUCTION</b>	10,991 feet	New fencing protects natural resources.
<b>FENCE REPAIR</b>	34,273 feet	Repair and replacement of damaged fences

Photos



Concentrations of trash at "Whirlybird Wash"



Kiosk with public lands and border information



Crews brushing section of I-8



Mile marker 142 with high brush density



Mile marker 142 after excess brush removal



Section of I-8 with high density



Section of I-8 after clean-up



Heavy equipment moving boulders to create barriers



Completed barrier with illegal road in the background



Tires removed for recycling.



Before fence repair.



Fence being repaired.



SCC crew working on restoring a road.



Laying down erosion control methods on a road.