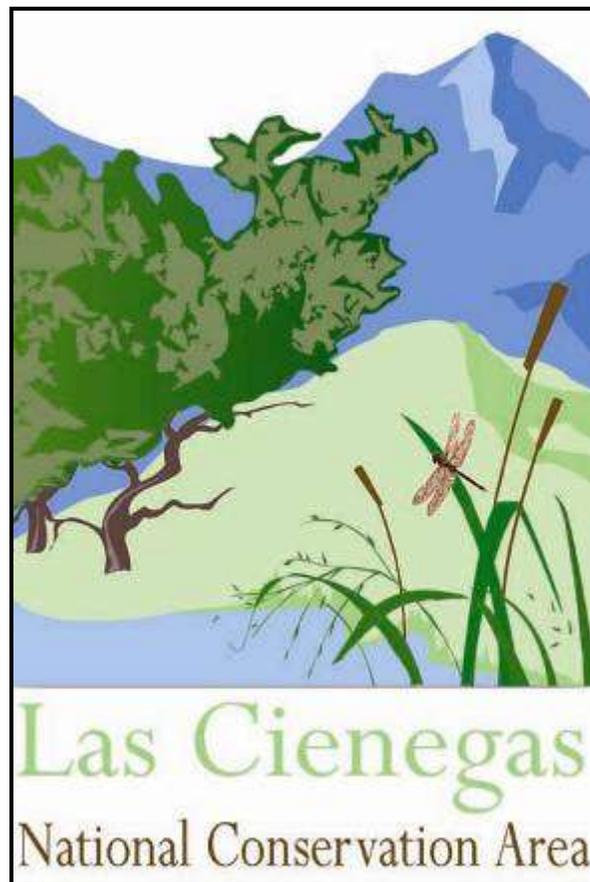


National Landscape Conservation System FY 2009 Annual Manager's Report



- NATIONAL LANDSCAPE CONSERVATION SYSTEM –

FY 2009 MANAGERS ANNUAL REPORT

Introduction

Site Name: Las Cienegas National Conservation Area (LCNCA)

Manager: Markian Rekshynskjy (January 2009 to present).

Report prepared by: Keith Hughes, Las Cienegas, Natural Resource Specialist

Contact Information:

Las Cienegas National Conservation Area

12661 E. Broadway Blvd.

Tucson, AZ 85748

(520) 258-7200

http://www.blm.gov/az/st/en/prog/blm_special_areas/ncarea/lascienegas.html

Field Office: Tucson Field Office

District: Gila District

State: Arizona

Legislation: Public Law 106-538, Dec. 6, 2000

Total Acres: 41,972 acres in Las Cienegas NCA, with in-holdings totaling 5,225 acres of Arizona State Trust Lands and 82 acres of private lands. Congressionally-designated Sonoita Valley Acquisition Planning District surrounds the NCA and includes 7,917 acres of BLM; 73,158 acres of Arizona State Trust Lands and 14,534 acres of private lands.

Estimated Annual Visitation: FY 09: 25,900 visits

Key Resources and Values:

- Cienega Creek Riparian Area
- Native Grasslands
- Empire Ranch Historic Site
- Appleton-Whittell Research ACEC
- Outstanding Biological, Ecological, Cultural, and Paleontological Resources

1) Natural and Heritage Resources Condition

a) Natural Resource Trends:

i) Overall Upland, Riparian, Biological Diversity, Special Status Species

The overall natural resource trend on Las Cienegas National Conservation Area (LCNCA) is stable and improving. Ecosystem health with regard to the grasslands (Figure 1) and the riparian areas continues on an upward trend, despite overall drought conditions for the past 9-10 years. Compared to 2008 when summer rainfall was at above normal levels, summer rainfall for 2009 was well below average and followed below-average winter rains. Despite the lower rainfall, over 90% of key areas sampled in 2009 were meeting the bare ground objective and over 31% were meeting the perennial grass basal cover objective (Table 1). The drought effects continued to be observed as four key areas dropped below the threshold for perennial grass basal cover in 2009 when compared to 2008. Upward trend in upland and riparian areas is supported by maintenance of riparian fencing, annual adjustments in stocking rate, modified livestock rotation and specific projects such as salt cedar removal and mesquite control.



Figure 1: Upland grassland aspect of the Las Cienegas National Conservation Area with Pronghorn Antelope. (BLM photo by Bob Wick).

Table 1: Status of RMP Objectives for Bare Ground and Basal Cover of Perennial Grasses
Upland Monitoring Key Areas

Key Areas that were monitored in 2009

Threshold	Bare ground	% Bare ground	Perennial grass basal	% Perennial grass basal
meeting	20	90.9	7	31.8
not meeting	2	9.1	15	68.2

Notes:

Bare ground < 30% meets objective

Perennial grass basal cover > 1% meets objective

Riparian Areas Trends: Riparian areas have continued in a stable or upward trend on Las Cienegas NCA. Length of perennial surface water on Cienega Creek as measured in annual wet-dry mapping increased slightly in 2008 compared with 2006-2007 measurements. Overall perennial surface water length on Cienega Creek plus tributaries slightly increased in 2008 compared to 2007 but was still shorter than in 2006. This was primarily attributed to reduced length of perennial water in lower Cienega Creek (Table 2).

Table 2: Trends from Wet-dry mapping of Perennial Surface Water in Cienega Creek

	2006	2007	2008
Cienega Creek upper reach	1.8	1.941	1.942
Cienega Creek lower reach	6.4	5.138	5.231
Mattie Canyon	0.8	1.064	1.042
Empire Gulch upper reach	0.2	0.326	0.456
Empire Gulch lower reach	0.4	1.248	not read
Wet lengths in km (total)	9.6	9.717	8.671
Wet lengths in km (except Lower Empire)		9.2	8.469
			8.671

Note: Wet-dry mapping was conducted in 2009. Results are not ready for publication.

Special Status Species Trends: The long-term trend for Gila topminnow from 1990 to present is down likely due to high tree canopy densities. The recent trend for endangered Gila topminnow is stable in the lower portion of Cienega Creek. The topminnow population has declined in the upper portion due primarily to drought conditions, which began in 2000, but has rebounded substantially this year. Several thousand fish were collected with little effort in the summer. The high volume of leaf litter that comes from the increased willow canopy cover has influenced low dissolved oxygen levels to the point that fish habitat is no longer suitable (stagnant and anoxic) for approximately 50% of the available habitat. The trend for this stream segment is now stable and likely to improve with the end of the drought. The status for the Gila topminnow, reintroduced to Empire Gulch in 2001, is tenuous; no topminnows were collected this year and it is likely that this location has poor habitat suitability for this species. The habitat conditions at this small spring appear to favor predacious insects (e.g. belestomatids, anisoptera, and notonectids).

Gila topminnows have been collected for the first time on O'Donnell Creek at the lower reservoir dam on BLM land. The topminnows were mixed with invasive exotic species including crayfish, green sunfish and mosquitofish. This area below the dam acts a stopping point for the upstream migration of fish from tributaries. The topminnows likely came from upstream and were displaced by winter flooding.

The trend for endangered Gila chub for lower Cienega Creek has improved since disease decimated that population in 2000. The population extent has declined for the upper portion of the creek for the same reasons mentioned above for the Gila topminnow. Nonetheless, the chub population in this reach remains substantial.

The trend for the endangered Huachuca water umbel is improving as this species has gone from a rare occurrence in Cienega Creek to widespread in distribution and abundant where it is found.

The population of Quitobaquito pupfish on the Audubon Research Ranch portion of the NCA was lost due to the failure of a solar pump system supporting an artificial pond. This habitat will be stocked with listed native fish and frogs following repair and upgrade of the solar system.

A recently dredged and fenced stock pond system used for conservation was colonized by lowland leopard frogs and is slated to receive Gila topminnow and desert pupfish in the spring of 2010. The habitat improvements at this site were facilitated by the participation of 40 middle school students in cattail removal.

The trend for the threatened Chiricahua leopard frog is stable but the lone population is small and at risk of extirpation from an invasive bullfrog population. The leopard frogs at Empire Gulch continue to maintain a large healthy population. This population tests positive for Chytrid (potentially lethal disease causing fungus), yet thrives in this location. This is the last Chiricahua leopard frog population left on the NCA as the rest were eliminated by chytridiomycosis in the 1990's.

The population of Mexican gartersnake has plunged such that it is rare. Sustained efforts to trap this species by qualified herpetologists have resulted in only a few specimens for a captive breeding program.

ii. Exotic and Invasive Species Trends:

Invasive Vegetation: Sonoran Institute (SI) completed an invasive plant modeling and mapping effort in partnership with BLM on LCNCA in 2008, which was described in last year's report. Building on this modeling and mapping effort in 2009, BLM issued a contract for early detection weed monitoring on LCNCA. Surveys included 11 target species: Sahara mustard, White top, Spotted knapweed, Malta starthistle, Yellow starthistle, Giant salvinia, Johnson grass, Buffelgrass, Fountain grass, Onion weed, and Boers love grass. Areas along Arizona State Highways 83 and 82 and within the NCA boundaries were surveyed, for an approximate survey area measuring 5.5mi x 25mi. Johnson grass was the only target species detected on the NCA during the 2009 effort. Using GPS, isolated Johnson grass occurrences were marked as points, 1-meter-wide occurrences were recorded as polylines and occurrences of 5 meters or more in diameter were recorded as polygons. Johnson grass is ranked medium by the Arizona Wildlands Invasive Plant Working Group because it may have substantial ecological impacts on ecosystems, plant and animal communities, and vegetation structure. Exotic plants detected during the 2008 Sonoran Institute survey (Figure 2) were not detected in 2009.

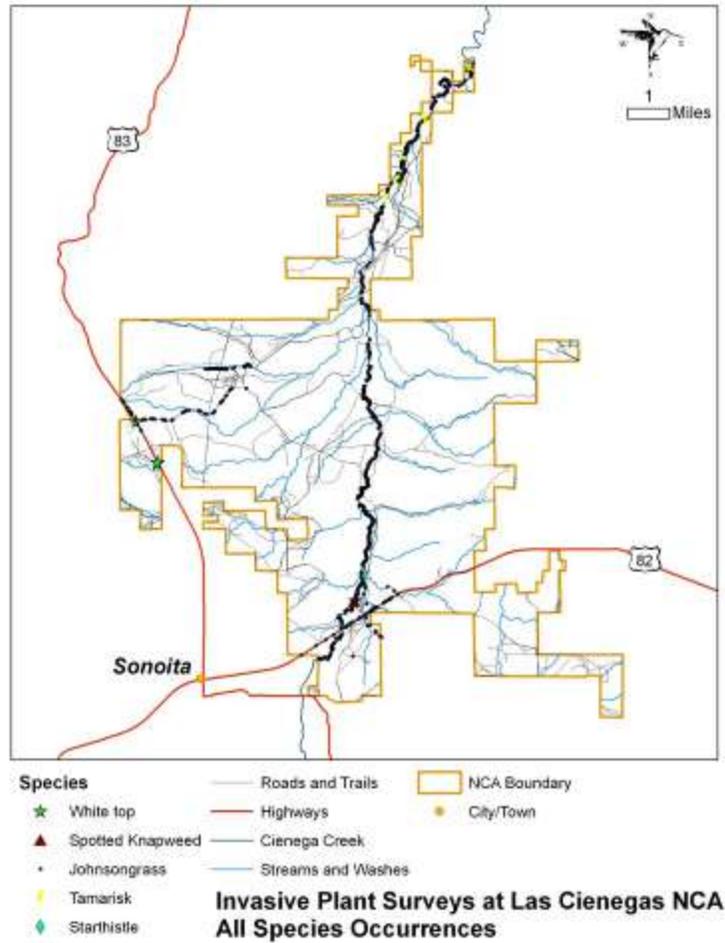


Figure 2. Invasive plant surveys on the Las Cienegas NCA

Invasive Animals: The increased human population and of the valley surrounding the NCA has resulted in a proliferation of new ponds that pose a threat to Cienega Creek’s listed species and aquatic biodiversity. These ponds have the potential to harbor invasive fishes, crayfish, and bullfrogs that can escape during flood events or be transferred by people to nearby waters. This issue is being addressed by a program funded by the National Fish and Wildlife Foundation. The effort is being lead by the Cienega Watershed Partnership with the assistance of the Nature Conservancy, University of Arizona and Arizona Game and Fish Department. The goal of the effort is to convert ponds with invasive aquatic species to native fishes and frogs in order to improve the status of listed species and eliminate sources of invasive species on private lands surrounding the LCNCA.

A private parcel within the NCA acquired in 2005 contains a small pond. The pond harbored non-native northern crayfish (Figure 3). Efforts to eliminate this species through drying of the 1 acre pond proved ineffective in 2007 and 2008. The combined effort of the BLM and Arizona Game and Fish Department to treat the pond with piscicide resulted in a complete kill of crayfish in the pond and nearby spring pools. These invasive predators were located only six miles

upstream of Cienega Creek and posed a serious threat to multitude of aquatic species including the Gila topminnow, longfin dace and Chiricahua leopard frog.



O'Donnell Creek on the Audubon Research Ranch is home to Gila Chub, Sonora sucker, longfin dace and Gila topminnow. In 2002, green sunfish were removed by the Arizona Game and Fish Department and natives returned to the Creek. BLM manages land with two dams created in 1960 for watering livestock. These dams now provide a barrier to migration from downstream populations of mosquitofish, green sunfish and largemouth bass. The dams are at risk of washing out unless repaired

Figure 3. Invasive Crayfish.

to prevent deterioration from erosion. The Bureau of Reclamation has funds to repair the “fish barriers” to meet conservation requirements of a Biological opinion on the Central Arizona Project.

Post Canyon, a tributary to O'Donnell Creek, is contaminated with two invasive species: northern crayfish and green sunfish. These species pose a threat to native fishes. BLM is working with the AZ Game and Fish Department to renovate this creek and reintroduce native fish and leopard frogs.

b. Heritage Resources Trends

- Historic resources in good condition overall; some disturbance from soil erosion
- Cultural properties continue to be monitored by Arizona Site Stewards, BLM archaeologists, and BLM Rangers. Monitored properties are generally reported to be in stable condition.

c. Land Health Assessments

i. Health Assessments to Date:

Rangeland Health Evaluations have been completed for three of four allotments on the NCA covering just over 39,000 acres or about 93% of the NCA. An updated allotment evaluation including Standards and Guidelines evaluation for the Rose Tree Allotment was completed in FY08. All allotments assessed to date are meeting land health standards. All of the riparian habitat on Cienega Creek and its tributaries have been assessed for Riparian Proper Functioning Condition (PFC). Overall, all riparian areas are in PFC, with a few stream segments functional at risk due to drought effects, or historic stream alterations.

ii. Annual Health Assessment:

On the Empire-Cienega allotment, livestock numbers and pasture rotations are adjusted annually in response to monitoring data through a biological planning process. This is part of the adaptive management implemented through the Las Cienegas Resource Management Plan. BLM, agency technical experts, and a team of interested stakeholders, review BLM's evaluations of the monitoring data and provide input to the BLM and permittee on the annual grazing proposal. Participants include BLM, Forest Service, Fish and Wildlife Service, Natural Resource Conservation Service, Arizona Game and Fish Department, Arizona State Land Department, University of Arizona, ranchers, conservation organizations, recreationists, and other interested public.

Livestock management in riparian areas has been implemented and maintained in order to protect and enhance riparian function and health. Riparian enclosure fences and livestock crossing lanes have been monitored and repaired as needed. Removal of exotic salt cedar in riparian areas is also being implemented. However, additional maintenance and replacement of old riparian fence is needed to decrease the incidence of livestock grazing in enclosed riparian habitats during the growing season. Old fences, fences with poor placement, and poorly designed gates allow a limited number of livestock to impact riparian resources.

The NCA supports 7 threatened and endangered species, and BLM is actively managing habitat for these species. Monitoring of livestock use in relationship to the Biological Opinion on the Las Cienegas Resource Management Plan has been accomplished in order to protect high quality fish and wildlife habitat from degradation. The BLM has worked cooperatively with the University of Arizona, School of Natural Resources to construct and operate a head-start facility for threatened Chiricahua leopard frogs. This will allow for the establishment of additional populations of this species. In addition, we have partnered with the Arizona Game and Fish Department, which has been able to acquire \$250,000 in wetland restoration funds from the Army Corps of Engineers for creation of 9 acres of wetland habitat for Chiricahua leopard frogs, endangered Gila topminnow and endangered Huachuca water umbel. Reintroductions of new populations of Gila topminnow have occurred and more are being planned for springs and other waters in the NCA. Cooperative Conservation efforts involving private land-holders in the watershed have begun concerning the control of invasive non-native species such as bullfrogs and crayfish. Bullfrogs, which threaten native fish and frogs, are being controlled through annual removal efforts within Cienega Creek and adjacent wetlands.

d. Inventory

i. Heritage Resources Inventory:

BLM continues to pursue grassland restoration goals on approximately 20, 000 acres of the NCA. In 2009, fiscal assistance through the American Reinvestment and Recovery Act (ARRA) was received. Projects to be funded under ARRA will begin in spring 2010. As with past restoration projects, these ARRA projects will restore native sw grassland ecosystem, reduce tree

and shrub canopy cover, increase herbaceous grass cover, and improve habitat for pronghorn and birds.

In order to move forward with the restorative portion of the projects, cultural clearances must occur, and a portion of the ARRA funding was used to contract the completion of 5,000 acres of Section 106 Class III survey on BLM land parcels around the Empire Ranch Headquarters. Goals of the project were to document and protect cultural resources, and inventory data resulting from these surveys. This will enable a management plan for cultural resources on Las Cienegas to be written.

Additionally, archaeological Site AZ EE:2:314 (ASM) was recorded in 2006 as part of a larger cultural resource survey of the Hummel Ranch property. This past summer an emergency situation resulting from a hazmat spill of toxic gases caused damage to the archaeological site mentioned above. During the soil remediation work human remains were recovered and successfully re-patriated under NAGPRA (Native American Graves Repatriation Act). Archaeological site remains were documented recorded and photographed prior to the hole being refilled.

Also, researcher Robert McCord secured a paleo permit through the Arizona State BLM office for documentation, reconnaissance and limited surface collection. The permit is good through 2011.

ii. Natural Resource Inventory:

Wildlife: Upland wildlife distribution and abundance monitoring continues annually, in effort to establish baseline and trend information. We are using remote, infrared triggered cameras (Figure 4) and wildlife tracking volunteers trained through a local partnership with Sky Island Alliance to accomplish this work. Abundance and distribution trends of detected upland wildlife species is stable with some seasonal variations possibly due to extended, regional drought conditions. To date we have surveyed more than half of the NCAs' critical wildlife corridors.



Figure 4. Infrared triggered, remote camera photo of Coati Mundi (*Nasua narica*), photographed in a regionally important wildlife movement corridor on the Las Cienegas National Conservation Area.

Rangeland: Rangeland monitoring of upland vegetation is conducted annually by BLM staff in partnership with The Nature Conservancy and its volunteers, University of Arizona Cooperative Extension, and Natural Resource Conservation Service (NRCS). Assistance has also come from volunteers with the Public Lands Foundation (PLF), interns from the Chicago Botanic Gardens, and volunteers from the Arizona Native Plant Society.

Riparian: Riparian vegetation is monitored every 3-5 years, and stream cross sections are surveyed every 5-10 years. Wet-dry monitoring to map extent of perennial surface water is conducted annually with assistance of volunteers from the Nature Conservancy, Arizona Master Watershed Stewards, and students from Empire Ranch Foundation's *Wild About Grasslands!* Summer camp.

e. Restoration

The Las Cienegas RMP prescribes vegetation treatments on more than 23,000 acres of the NCA and Acquisition Planning District to control invasive brush and trees and restore grasslands (Figures 5 and 6). In FY09, about 300 acres of mesquite invaded grassland was treated with mechanical removal and herbicide, about 34 acres were treated to create fuels breaks, and 1,800 acres were treated with prescribed fire (Table 2). LCNCA staff and Gila district Staff also conducted preparation work for the upcoming ARRA funded treatment of another 1400 acres of mechanical mesquite removal to be stewardship contracted in fiscal year 2010.

**Table 2: Las Cienegas NCA
2009 Vegetation and Fuels Treatments**

Treatment Name	Type	Acres	Cost/acre	Total Cost
Prescribed Burning	Prescribed Fire	1800	\$33/acre	\$59,400
Dirt Gulch Herbicide Contract	Herbicide	208	\$397/acre	\$82,576
Mesquite Test Grubbing	Mechanical	50	\$210/acre	\$8,395
Mesquite cut and spray (includes miscellaneous support costs)	Mechanical/Herbicide	15	\$482/acre	\$12,050
Herbicide Purchase (for Airstrip, Dirt Gulch, and Stewardship Contract)	Herbicide	–	–	\$36,110
Mesquite Stewardship Contract Funding: (\$50,000 fuels \$20,000 HLI \$29,000 damaged lands , \$1000 TFO base.)	Herbicide/grubbing	233		\$100,000
Ongoing Monitoring of vegetation and faunal changes the result vegetative treatments	Monitoring			\$30,000 (HLI) \$25,000 (CCS)
Bio-mass utilization (fire wood permits, erosion control, wood chips, mill wood) approximately 190 tons. All wood cutting permits are deposited into the 5320 account (minus treasury costs)		875	\$0/acre	\$3,500 (Approximate total revenue)
Empire Headquarters mowing	Fuel Control	34		\$2669



Figures 5 and 6: **Left:** Mesquite harvested from Las Cienegas NCA grassland restoration project headed to Arizona-Sonora Desert Museum to create a tree house structure for youth environmental education exhibit. **Right:** BLM firefighters conducting prescribed burn on LCNCA.

Black-tailed Prairie Dog Reintroduction

Reintroduction efforts for the black-tailed prairie dog continued in 2009 with the first release on BLM lands on LCNCA in September 2009 (Figure 7). Twenty-seven prairie dogs were initially released followed by an additional 41 prairie dogs two weeks later for a total of 68 prairie dogs. In addition, a supplemental release of 39 prairie dogs was made at the State Land Department site adjacent to LCNCA. The goal of the reintroduction program is to repopulate these animals to where they once existed in Arizona. Black-tailed prairie dogs were once native to Arizona and commonly found in southeastern Arizona but were extirpated about 50 years ago following an extensive poisoning campaign. The native grasslands in and adjacent to LCNCA were selected by AGFD as the preferred reintroduction site for the species based on assessments.

The initial reintroduction sites will be used to evaluate and modify the methods employed to reintroduce prairie dogs. Once the reintroduced populations are stable, AGFD plans to reestablish the species on up to five additional sites in southern Arizona to contribute towards the national and international conservation effort and preclude the need for listing as part of the Endangered Species Act.



Figure 7: Arizona Game and Fish Department employees, Game and Fish Commissioner and volunteers assist with reintroducing Black-tailed Prairie Dogs to Arizona State Trust Lands within Las Cienegas NCA in 2008.

Native Fish and Frogs

BLM in partnership with Arizona Game and Fish Department continues to pursue establishment of additional populations of native fish and frogs on Las Cienegas NCA. The Chiricahua leopard frog head start facility will provide a source of native leopard frogs and endangered Gila topminnow for other reintroduction projects on LCNCA.

Heritage Resource Preservation Projects

The ongoing efforts to preserve, protect, stabilize, and interpret historic buildings and structures at the Empire Ranch Headquarters (Figure 8) continue. Historic preservation projects undertaken during FY2009 included:

- Repairs to the post-and-rail corral fences
- Repair of the wood-and-glass partition entry to the Stone Corral
- Repair of the Tack Shed
- Stabilization of adobe walls and plasters
- Cleaning and restoration of historic plumbing fixtures in the master bath (Room #29)
- Restoration of two historic doors on Empire Ranch House
- Completion of Seismic and Structural Evaluation of Masonry Structures
- Completion of BOR structural evaluations of three historic structures
- Preparation and award of contract for repair of the South Lintel on the Zagan
- Replacement of damaged head frame on historic windmill
- Removal of hazard branches/limbs around structures and public areas
- Securing hazardous areas from public access pending mitigation of safety hazards



Figure 8. Ranch Buildings at the historic Empire Ranch headquarters (BLM photo by Bob Wick)

These efforts were undertaken through a collaboration of multiple partners: BLM; the Bureau of Reclamation; the Empire Ranch Foundation; SRI, Inc. (a private, local cultural resources contractor); John Weiss (a local historic wood restoration specialist); and volunteer efforts by individuals and work-day groups sponsored by ERF.

In addition, BLM funded a contract to complete historic research and Determinations of National Register Eligibility for 25 historic structures or complexes on the LCNCA. The contract was administered by the ERF under an ongoing Assistance Agreement with the agency. The contract included submission of modification to the National Register listing for Empire Ranch House; it will now include 16 other significant and contributing historic structures at the Ranch Headquarters in a NR Historic District. The nomination will be submitted to SHPO for consultation, and then to the ACHP for listing, during FY2010.

During FY2009, the Foundation received a Challenge Cost Share grant from the BLM for the planning and implementation of final stabilization and repairs to the historic Adobe Hay Barn. The Foundation agreed to provide matching funds in excess of the CCS amount for this project, in addition to volunteer hours. A work plan and final cost estimate are being prepared at this writing, and work will be completed during Fy2010. The Foundation also updated and printed room description signs and prepared exhibit materials for the 2009 Roundup.

BLM staff and volunteers recorded the historic Pump Wash site, a large hydraulic facility associated with the Total Wreck Mine and the growth of the Empire Ranch.

2. Recreation Facilities, Roads, and Trails Conditions

a. Overview

BLM facilities on Las Cienegas NCA are generally in fair condition. The two main access routes which form a loop drive through the NCA are in good condition and are maintained annually. Most back roads are in poor or at most fair condition; however, the management plan prescribed primitive road conditions for most of the back roads. Most buildings are in poor to fair condition and most are considered historic. Several are boarded up (mothballed).

b. Construction

Work continued in FY09 on the Heritage Discovery Trail. Route was established and pasture fence realignment was discussed with the livestock permittee.

c. Maintenance

On Las Cienegas NCA, we still have a significant backlog of deferred maintenance projects related to roads and historic buildings, our administrative sites, and quarters. Annual road maintenance is not meeting the needs of BLM or our public land users. Road maintenance projects are not ranking high enough in the Deferred Maintenance process to receive funding. Similarly, we have had to mothball several of our structures (both historic and non-historic) due to lack of funding to make needed repairs. BLM's Gila District, AZ has convened an interdisciplinary structures team to look at needs, future uses, priorities, and funding sources for our structures including those on Las Cienegas NCA. We may consider the US Forest Service Cabin Rental program as one innovative way to support preservation of some of our historic structures.

d. Signage

Work on a sign plan for Las Cienegas NCA was initiated in 2004. An inventory of existing signs was completed in 2005. Several signing projects have been completed over the years prior to NCA designation and since NCA designation including installation of recreation zone area markers, road number signs, portal sign installation, wayside exhibit, fire signs, and border-related information signs.



Las Cienegas NCA has two portal signs installed, one on the State Highway 83 access (Figure 10) and one on the State Highway 82 access. The portal signs were manufactured by the BLM sign shop and meet all BLM standards.

Figure 10. LCNCA Portal Sign

3. Outreach, Environmental Education, Interpretation, and Volunteers

a. Outreach Events and Environmental Education

Events - Onsite

- Empire Ranch Roundup, western cultural event – October 2009, held at Empire Ranch Headquarters with approximately 2500 in attendance, BLM had information booth/handouts. <http://www.empireranchfoundation.org/Rndup.htm>
- Fall Biological Planning Meeting – November 2009, held at LCNCA, Stakeholder meeting with about 30 attending to learn about grazing management plans, and upcoming vegetation treatment and natural resource projects.
- 8th Annual **Youth in the Wilderness** Program Hohokam Middle School and Pascua Yaqui, Native American Tribe April 2009. Students participated in Arizona State Standards for education projects (Figure 11).



Figure 11. Youth in Wilderness Program students explore the Old Ag Fields Recreation Group Site.

- Civano Middle School Field Camp – 1 November 2009 held on LCNCA. Students assisted BLM fisheries biologist with field work. Approximately 40 students attended.
- Wild About Grasslands! Middle School Summer Camp – June 2009 held on LCNCA. Students learn about LCNCA natural and heritage resources, presenters include BLM staff. About 20 students attended.

Events – Offsite

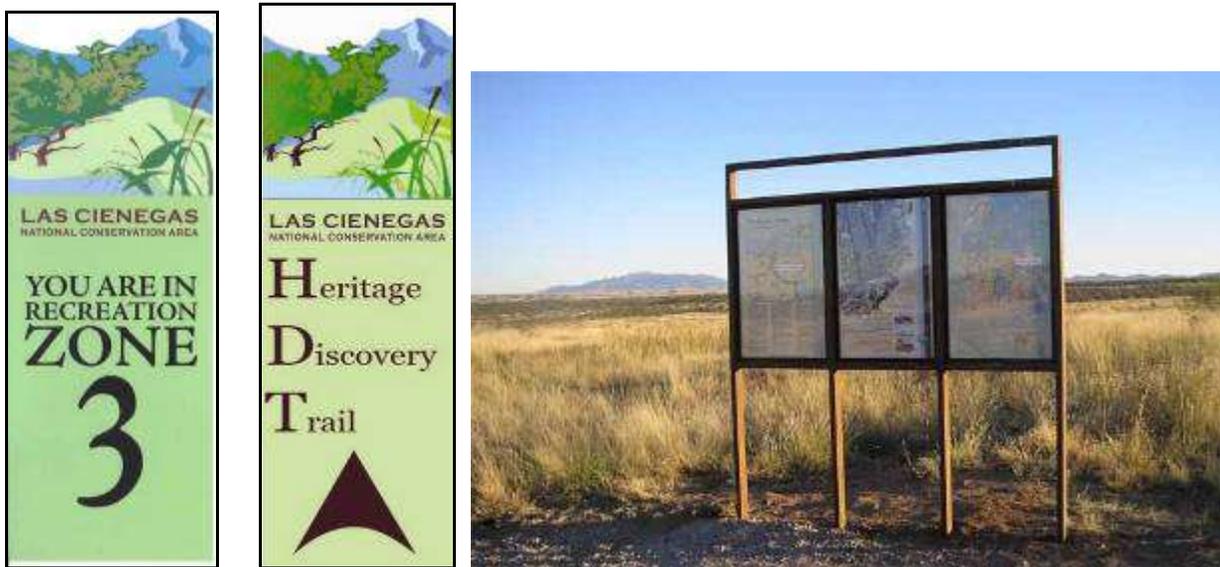
- Prescribed Fire Informational meeting – Sonoita, AZ – April 2009. Approximately 20 residents attended to learn about 2009 prescribed fire plans on LCNCA.

Environmental Education, Special Recreation Permits and Interpretation

The following photos (Figures 12 to 15) depict various special recreation permit, outreach and environmental education efforts undertaken on Las Cienegas National Conservation Area in 2009.



Figure 12 and 13. Left: Hohokam Middle School Students, built the Airstrip Recreation Group Site part of the curriculum for the Youth in Wilderness Program, a Take it Outside project. Right: Bird Dog Club members enjoying Field Trials at the Airstrip Recreation Group Site.



Figures 14 and 15. Left: Stickers created for "Carsonite" post installed through LCNCA identifying recreation zones and a trail route. Right: Visitor information posted on long lasting and fade resistant laminate at the LC 900/901 Road Intersection.

b. **Visitor Centers:**

LCNCA Does not have a visitors center. Plans to develop the historic ranch headquarters include an interpretive element, and discussions of an education or interpretive center focused on ranching history and regional ecosystems are being considered.

c. **Environmental education**

Our partner, the Empire Ranch Foundation again offered the very successful middle-school age summer camp program developed with Hands on the Land funding. Twenty middle school children attended the third *Wild About the Grasslands (WATG)! 2009*, June 8-12, 2009. The Foundation provided \$6,500 in funding for the program, and BLM contributed \$10,000 in challenge cost share funds that will also fund a Spring 2010 camp. The Empire Ranch Foundation received several grants including \$5000 from the Fred W. Stang Foundation, \$3900 from Sulphur Springs Valley Electric Cooperative, and \$2800 from the Patagonia Regional Community Foundation, which also helped support the program. Funding for eight student scholarships was received from the Patagonia museum, Mountain Empire Rotary, Arizona Rangers, Patagonia Elementary Parent-Teacher Club, Anne C. Stradling Foundation, and Ron and Carla Martin. A \$2,500 grant from the Patagonia Regional Community Foundation in 2008 provided funding for equipment for nature expedition packs that were used during *WATG!* Summer camp 2009 and will be available for loan to students and parents throughout 2010 and future years. BLM also received a *Take it Outside* Grant in 2008 for geospatial technology that supported the purchase of GPS units for the nature expedition packs. We estimate that a total of 500 volunteer hours were contributed to this program by instructors, parents, and ERF board members.

Take It Outside Grants

“Geospatial Technology” Project, AZ421 Las Cienegas NCA, Tucson Field Office

Partners:

BLM Tucson Field Office
Empire Ranch Foundation

Project Funding:

BLM Funds: \$ 4500 TIO grant All TIO funds spent by September, 2008
BLM funds: \$1530 staff time/fleet and equipment use
Partners : \$1685 (ERF inkind) \$6000 (ERF \$) \$2233 (Patagonia Regional Community Foundation \$)
Total Project Cost: \$18,838

d. Interpretation

i. Overview

- Promote the area as an entire NCA experience with suitable and sustainable activities and avoid over-promotion of a single use to the public
- National significance of resources,

ii. Overview of participation by the visiting public in the unit's interpretive program

The majority of interpretation is with non-personal contact methods such as maps, brochures, web sites. Interpretive programs are given by BLM and partners on a limited basis during tours and events such as the annual Empire Ranch Roundup. In October 2009, the Round Up, a Western Cultural Festival held at the Historic Empire Ranch Headquarters, was attended by approximately 2500 visitors.

- **Volunteers**

Empire Ranch Foundation – We estimate that during the fiscal year a minimum of 5,800 volunteer hours were contributed by Empire Ranch Foundation members and local organizations such as several Boy Scout and Girl Scout troops. Volunteer hours attributable to specific projects are included in the descriptions below.

Volunteer workdays are held on Saturdays every other month. The Foundation and BLM partner on the volunteer program to provide hands-on support of preservation and interpretation work at the Historic Empire Ranch. With direction and training from Foundation, agency, and contract experts volunteers participated in the regular upkeep of the Ranch House and grounds for visitors and special events and projects approved during ERF/BLM planning sessions. Over 500 volunteer hours were contributed during the 5 volunteer days held during the fiscal year.

The Nature Conservancy – Volunteers from The Nature Conservancy assist BLM resource specialists and TNC science staff with upland and riparian monitoring on LCNCA. In 2009, 458 hours were contributed by TNC volunteers.

Arizona Master Watershed Stewards - Volunteers from the MWS program assist BLM resource specialists with riparian and water monitoring on LCNCA. In 2009 40 hours were contributed by Master Watershed Steward volunteers.

f. Other outreach efforts, if applicable.

See outreach section under # 3a

4. Science

In 2009, Las Cienegas NCA received funding for 5 new science projects from the NLCS office.

1. Las Cienegas Cretaceous Project (\$9,000) this study will result in a baseline survey of paleontological resources on Las Cienegas National Conservation Area. It will include the exploration of all potential exposures in the area and the recovery of all surface vertebrate remains, as well as representative invertebrate and paleobotanical remains with appropriate documentation. It will include stabilization, preservation and analysis of those remains preserving those resources and providing a qualitative assessment of them. The project will also produce a locality map and a resource management map providing a tool for the continuing management, monitoring and exploration of this asset.
2. Las Cienegas Grassland Restoration and Avian Response (\$19,200) - this study will examine the responses of grassland birds and vegetation to three types of experimental restoration treatments designed to reduce density of shrubs that have invaded grasslands: fire, herbicide, and mechanical removal.
3. Las Cienegas Prairie Dog Study (\$14,500) - this study will evaluate prairie dog reintroductions by developing baseline data on plant and animal community composition and the prairie dog population; evaluating the changes in plant and animal community structure and composition induced by black-tailed prairie dogs; and assessing the spread of the reintroduced population.
4. Las Cienegas Avian Groundwater Relationships study (\$18,400) - this study will quantify the importance of riparian woodlands to bird communities in southeastern Arizona by studying avian abundance, species richness, and reproductive health within these riparian woodlands while at the same time quantifying the presence and abundance of surface water, vegetation parameters, and abundance of invertebrates
5. Las Cienegas Breeding Ecology of Arizona Grasshopper sparrows (\$25,000) - this study will document the breeding ecology and habitat use of Arizona Grasshopper Sparrow, including as possible, information about territory size, habitat preferences, percent of singing males that are mated, reproductive success, and breeding behavior.

Numerous additional grassland research projects have been completed and documented by the Audubon Research Ranch, which includes the Appleton-Whittell Research Area of Critical Environmental Concern on the NCA see the Science table in attachment 2 for details.

5. Partnerships and Collaborative Relationships

Las Cienegas NCA Partners

Empire Ranch Foundation (ERF): The Empire Ranch Foundation is a nonprofit (501c3) volunteer organization that was established in 1997. Acting in cooperation with the Bureau of Land Management, the purpose of the Foundation is to protect, restore and sustain the Empire Ranch historical buildings and landscape as an outstanding western heritage and education center. The Empire Ranch Foundation funds its projects through the support of members, individuals and businesses, through public, corporate and foundation contributions and grants, and through proceeds from special fundraising activities.

The National Audubon Society's Appleton-Whittell Research Ranch is an active partner in the southern portion of LCNCA. About 3,000 acres of BLM lands, which are designated as the Appleton-Whittell Research Area of Critical Environmental Concern, are included in the Research Ranch. BLM and Audubon cooperate on management of the area under a Cooperative Agreement signed in 1986. The Appleton-Whittell Research Ranch (ARR) is a cooperative partnership among the National Audubon Society, U.S. Forest Service, Bureau of Land Management, The Nature Conservancy, and The Research Ranch Foundation. For more than 30 years, the Research Ranch Sanctuary has protected grassland ecosystems through conservation, research, and education. The mission of the Research Ranch is to formulate, test, and demonstrate methods to restore and safeguard the bioregion, and provide assistance to citizens and policy-makers in the protection and stewardship of our native ecosystems, natural resources and quality of life. See <http://www.audubon.org/local/sanctuary/appleton/>

Cienega Watershed Partnership (CWP) The CWP is a newly formed nonprofit (501c3) organization whose mission is to coordinate and help resource landscape stewardship initiatives for the landscape that runs from Saguaro National Park and the Rincon Wilderness to the Canelo Hills south of Sonoita and from the crown of the Santa Rita Mountains east to the crown of the Whetstone Mountains. The CWP coordinates the activities of two ad hoc organizations, the Sonoita Valley Planning Partnership and the Cienega Corridor Conservation Council which are described below.

Sonoita Valley Planning Partnership (SVPP): The SVPP is a voluntary ad hoc association of agencies, user groups, conservation groups, and individuals who work together to achieve community-oriented solutions to local and national issues affecting public lands within the Sonoita Valley. The SVPP was created in 1995 in response to BLM's initiation of a collaborative planning process for the Las Cienegas National Conservation Area. The SVPP's mission is to work together to perpetuate naturally functioning ecosystems while preserving the rural, grassland character of the Sonoita Valley for future generations. Among the currently active participants are BLM, USFWS, US Forest Service, Arizona Game and Fish, Pima County, Audubon Research Ranch, Phoenix Zoo, Sky Island Alliance, Empire Ranch Foundation, SCCF, and a number of individuals. The SVPP forum is facilitated by the Cienega Watershed Partnership and supports implementation of the Las Cienegas plan and other complementary land use planning and conservation efforts in the Cienega watershed. Programs include restoration, education, and stewardship projects and a sustainable monitoring program.

Cienega Corridor Conservation Council (CCCC). In 2002, the Sonoran Institute helped facilitate formation of a locally-based, multi-stakeholder organization in the Cienega Corridor modeled after the SVPP. The Cienega Corridor Conservation Council (the Council) comprises local landowners, recreationalists, biologists, public land managers, developers, retirees, businesspeople and other citizens. The Council's mission is "to protect, steward, and enhance the cultural and natural resources of the Cienega Corridor." The Cienega Corridor is defined as the area linking Saguaro National Park and Coronado National Forest Rincon Wilderness to Las Cienegas National Conservation Area. It includes most of the Sonoita Valley Acquisition Planning District. Some of the active participants in CCCC include Rincon Institute, Saguaro National Park, BLM, Forest Service, U.S. and Fish and Wildlife Service, Arizona Game and Fish, Pima County Parks, Rincon Institute, Colossal Cave Park and a number of individuals.

Sonoita Crossroads Community Forum (SCCF) is a non-profit membership organization which was formed in about 1997. The mission of the SCCF is to preserve the rural character of the Sonoita Valley for both the human and wildlife residents; to promote sustainable local economic development. The SCCF has several active committees including development, water, cultural, recreation, and dark skies. The primary focus of the organization in recent years has been working with Santa Cruz County on the NE Santa Cruz County Comprehensive Plan and other development / zoning issues. They have also been very active on investigating water related issues and opportunities. A representative of SCCF is on the board of Cienega Watershed Partnership.

As mentioned previously, **The Nature Conservancy** is a partner in developing and implementing the ecological monitoring program for the NCA. TNC is also actively partnering with BLM on vegetation treatment monitoring and invasive species monitoring and control.

Sky Island Alliance has assisted in general wildlife monitoring, redundant road obliteration, and local tracking workshops that promote increased awareness of regional ecology.

6. Planning and Business Practices

- a. **Planning**: Resource Management Plan for the NCA and the ROD were completed in 2002
- b. **New Units**: No new units to be reported for LCNCA
- c. **American Recovery and Reinvestment Act of 2009**: LCNCA received approximately \$800,000 from ARRA to continue on-the-ground work towards the goal of restoring LCNCA grasslands on 1,400 acres of mesquite invaded grasslands. Archaeological surveys to support grassland restoration efforts were also included in the successfully funded ARRA grant proposal. To date, NEPA analysis is completed, archaeological surveys are completed, resource management plan resource concerns such as percent of mesquite canopy to leave post treatment have been considered and established on the ground, and the project is well on its way through the contracting process. Contracts will likely be awarded in Spring 2009. The project will result in the the removal of invasive mesquite from 1,400 acres, thereby partially accomplishing one of the goals set

forth in the RMP, that being shrub and tree removal to restore a historic grassland setting.

7. Manager's Corner. Perhaps the single most challenging aspect of day-to-day management of Las Cienegas National Conservation Area have been managed by a no less than four revolving, 'acting' managers. On January 5th, 2009, Markian Rekshynskyj became the NLCS manager for both Las Cienegas and San Pedro Riparian National Conservation Area. The most challenging part of being a Manager for both sites is creating enough time to steward the partnerships, meeting with senior officials and coordinating with staff on scheduling projects, meeting deadlines of the myriad of reports that are due for both sites. Since the Las Cienegas staff is located in Tucson and the San Pedro staff is located in Sierra Vista, accessibility, communication and supervision is challenging. These challenges have been met by both the staff and the manager. I especially commend the staff on their professionalism and ability to perform under stress. In my 25 years of government service, I have never had such a positive goal orientated crew.

The next challenges facing Las Cienegas and San Pedro for FY10 is the integration of both staffs into one unit, begin work on developing an RMP for San Pedro, Creating a Co-operative Management Partnership with both the Friends of San Pedro and the Empire Ranch Foundation to assist us in managing the San Pedro House within the San Pedro Riparian area and the Empire Ranch complex at Las Cienegas, dealing with water depletion in the San Pedro Riparian NCA (already at a critical level) and launching the ARRA projects.

Another challenge is the attempt to integrate Adaptive Management with traditional BLM management in this NLCS unit. Both styles have positive qualities but are not completely compatible and have caused many challenges with project implementation and for the few core LCNCA staff asked to practice Adaptive Management. Most BLM State, District and Field office personnel (other than the few core LCNCA staff) that have LCNCA related workload are unaware of Adaptive Management style and philosophy.

The goal for 2010 is to inform more Gila District personnel of the challenge to integrate the two styles.

Appendix 1:

Publications Received Oct 1 2007 through Sept 30, 2009 Associated with the Appleton-Whittell Research Ranch National Audubon Society

2007

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- Kennedy, L.J., Z.F. Jones, C.E. Bock, J.H. Bock. (2008) Impacts of grazing, wildfire and drought on rodent populations in a semi-arid grassland of southwestern North America. Paper and poster presented. XXI International Grassland Congress and VIII International Rangeland Congress. Hohhot, China Pg 89.
- Kennedy, L.J., K. Strom, J Downey, A. Lynn-Holloran, R. Petty (2008) Protecting wildlife habitat on ranchettes. Paper and poster presented. XXI International Grassland Congress and VIII International Rangeland Congress. Hohhot, China Pg 1095.
- Kynard, B. E. (1979). Final Report of Research Accomplished Under National Park Service Purchase Order No. PX-8100-7-0351 Study of Quitobaquito Pupfish--Preservation, Habitat and Population Monitoring. Tucson, AZ, University of Arizona: 14.
- Marti, C. D., J. Ruth, et al., Eds. (2008). Birds of the US-Mexico Borderlands: Distribution, Ecology, and Conservation, Cooper Ornithological Society.
- Ruth, J. M. (2008). Distribution and Abundance of Breeding Arizona Grasshopper Sparrow (*Ammodramus Savannarum Ammolegus*) in the Southwestern United States: Past, Present, and Future. Birds of US-Mexico Borderlands: Distribution, Ecology, and Conservation. C. D. Marti, J. Ruth, T. Brush and D. Krueper, Cooper Ornithological Society. **Studies in Avian Biology No. 37**: 113-124.
- Steiguer, J. E. d. (2008). "Semi-Arid Rangelands and Carbon Offset Markets: A Look at the Economic Prospects. Potentially new economic opportunities for rangeland managers." Society for Range Management **30**(2): 27-32.
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