

Conservation Target Table Update

As stated in the Carrizo Plain RMP in reference to the Conservation Target Table (CTT), the "BLM will review the Conservation Target Table, annually to determine if changes are appropriate." "BLM in cooperation with the managing partners may change the Conservation Target Table based on the review." BLM and the managing partners have reviewed the CTT annually since 2010 to discuss priorities, accomplishments that are feasible for the coming year and whether there's a need for any changes to the Table itself such as incorporating new findings. The focus of the 2013/2014 meeting was to work with the partners to fill in "empty boxes" where information was now available. Since the RMP was signed the following areas in the CTT (summarized below), have received attention either through active research, monitoring or published information. All changes, edits and additions were completed in the section entitled **Management Objectives and Variables:**

- Rare plants, vernal pool plants, bunch grasses, native annuals, shrubs and soil crusts
- Listed animal species including giant kangaroo rat, San Joaquin kit fox, San Joaquin antelope squirrel, fairy shrimp, Kern primrose sphinx moth
- Featured animal species including burrowing owl, Le Conte's thrasher, mountain plover, pronghorn and Tule elk
- Landscape scale ecosystem functioning

Monitoring is an important component of RMP implementation and is used to gauge the effectiveness of actions at achieving objectives within the CTT. Monitoring occurs in different ways including visual assessments of species and habitat, presence/absence monitoring, surveys that use strict protocol methods or data collection as part of short or long-term studies. Monitoring is conducted by BLM staff, California Department of Fish and Wildlife (CDFW) staff, volunteers and researchers. Some monitoring occurs annually when weather and staffing permits such as kit fox spotlighting surveys (which also documents sightings of other species), wintering raptor and sensitive species surveys, mountain plover and long-billed curlew surveys, California jewelflower/rare plant surveys, permanent vegetation plot and restoration monitoring and vernal pool surveys. Other species are monitored by experts through research agreement commitments and yet others are "monitored" by individuals interested in conducting research for various reasons. These include Le Conte's thrasher, Kern primrose sphinx moth, giant kangaroo rat, San Joaquin antelope squirrel, Northern Pacific rattlesnake, parasitic wasps and others.

2014 Research/Science projects, and plant & animal monitoring on the CPNM

Le Conte's Thrasher Surveys

Surveys for Le Conte's thrasher have occurred since 2009, Point Blue, (formerly PRBO Conservation Science). 2014 funds were used to analyze existing data that has been gathered in previous years to produce a population model. Surveys will resume in 2015.

The Carrizo Plain Ecosystem Project

The ecosystem project is a long-term study designed to aid in our understanding of the relationships between the giant kangaroo rat, (a keystone species), plant dynamics and livestock grazing and inform our management of listed and other plant and animal species. In addition, it looks at how both giant kangaroo rats and cattle may be affecting other species in the system such as rodents, birds, insects and predators. In 2014 the study entered a new phase that includes modifications to detect impacts from climate change.

Ecology and distribution of the federally threatened *Euproserpinus euterpe* (Sphingidae)

Drought conditions resulted in no detection of moth activity in the 2014 season. However, work continues on refining the habitat suitability model and other ongoing studies using captive-reared moths. Dr. Dan Rubinoff from the University of Hawaii has completed genetic analysis and has written and submitted a paper for publication which will summarize his findings.

California Jewelflower Study

Researchers from the Santa Barbara Botanic Garden have been investigating the seeds of the California jewelflower. In general the goals of the study are to determine methods of treating seeds for maximum germination, the most effective way to propagate plants and to estimate the quality of the seeds. This study will continue for several years.

Earthquake and Faulting Research Along the San Andreas Fault

Phase II of a 2013 trenching project has been delayed and did not commence in 2014. The purpose of the trenching is to determine the amount of offset that occurred at this location during the 1857 earthquake or the "Fort Tejon" in the hopes of resolving the current debate that exists over the actual distance of offset. Recent interpretations predict a significantly lower amount.

Trenching in 2014 did occur however within a sag pond located at the south end of the Monument. The objectives of this trenching were to find evidence of faulting, age the faults and compare the results to the ages of faults on the Elkhorn Plain. By doing so would help reveal the size and magnitude of the quakes.

Blunt-nosed Leopard Lizard

The results of this project include three models pertaining to BNLL: (1) an extinction model to assess the risk of extinction for BNLL on the Carrizo; (2) a habitat niche suitability model that will help to inform us about BNLL density under future climate scenarios and (3) a population viability analysis model that will help project impacts from changes in vegetation on populations of BNLL. This project receives funding support from The Nature.

Additional Studies

Various studies where specimens were collected on the Monument include Northern Pacific rattlesnake venom study, diversity study of ground and darkling beetles, legless and night lizard genetics studies, prairie falcon genetic studies and parasitic wasp collection as part of the creation of a California checklist.

Ongoing Plant and Wildlife Monitoring and Surveying conducted by the Managing Partners and volunteers.

Christmas Bird Count (CBC)

For 30 years, volunteers have participated in the annual Christmas Bird Count for the Carrizo Plain under the direction of the dedicated Mr. Roger Zachary. Once again we thank Roger for his dedication in conducting the count for yet another year and we thank all of the volunteers that make it possible. The Carrizo Plain CBC first began in 1971.

Breeding Bird Survey (BBS)

2014 marked another 30 year milestone for an incredibly dedicated volunteer. Sam Fitton conducted his 30th. Breeding Bird Survey and for many years has been travelling from Ohio to do so! Similar to the CBC, the route covers area within the Monument as well as California Valley. It first began in 1970 but was not conducted every year in those earlier years.

Vernal Pool Species Surveys

During the wet season, BLM-conducts surveys of vernal pools and species such as fairy shrimp, spadefoot toads and other amphibian and invertebrate species. A new location for *Branchinecta lynchi*, a federally threatened species of fairy shrimp was discovered on the Monument in spring of 2011.

Mountain plover/Long-billed curlew Survey

Perhaps due to drought conditions, numbers of these wintering birds are down considerably from 2013. A survey was conducted in 2014 with BLM staff. Though this was a late season survey,

general sightings for both birds during the winter were extremely low. No mountain plover or long-billed curlew were seen during the survey. Both species will continue to be surveyed annually.

Raptor and Sensitive Species Surveys

Surveys for wintering raptors and other sensitive species are held each year during the months of October through March. Surveys have been repeated most winters for over 13 years which include photographs at chosen locations for year to year comparison. Surveys cover portions of Soda Lake Road and Elkhorn Road.

Bird Monitoring

Monitoring continues for wintering, breeding and migratory birds at various locations throughout the Monument including springs and rock outcroppings. Volunteers assist with this monitoring. In addition, volunteers also help monitor birds' use of Painted Rock as a shelter or for nesting and how they respond to human visitors to the Rock.

California Department of Fish and Wildlife Monitoring

The California Department of Fish and Wildlife (formerly CDFG), continues its overhead flight surveys to track and count both pronghorn antelope and Tule elk. Pronghorn numbers throughout the region have been on a decline while Tule elk numbers continue to increase.

CDFW also continues quarterly spotlight transects for San Joaquin kit fox and other sensitive species. Transects take place along Soda Lake Road and Elkhorn Road. The Elkhorn route has been run since 1970 and the Soda Lake route has been run since 1988.

**The Carrizo Plain National Monument (CPNM)
Travel Management Plan and Cultural Resources
MAC Meeting 12/13/14**

Cultural resources are defined as objects and places of cultural and historical significance. These can be archaeological sites, historic buildings or places culturally or spiritually important to Native Americans or other groups. A requirement of the National Historic Preservation Act (NHPA, as amended, 1966), the National Environmental Policy Act (NEPA) and the Federal Land Policy and Management Act of 1976 (FLPMA) requires that federal agencies take into account potential impacts to cultural resources as result of their decisions. The process for assessing potential impacts is described in detail in federal regulations (Section 106 of the NHPA and 36 CFR 800) and BLM policy. Decisions regarding route usage have the potential to impact cultural resources. As a result, an approach has been developed to address the identification of resources that may be affected by route usage and acceptable methods to resolve these effects. An important component is the inclusion of interested members of the public and culturally affiliated Indian Tribes in the decision making process. Over the past 2 years, the BLM has engaged the public and Tribal members in the development of the CPNM Travel Management Plan through meetings and the distribution of informational material through the mail and on the web. Comments gathered during this coordination have been incorporated and additional input provided during the review of the proposed plan will also be considered.

The CPNM contains some of the most significant cultural resources in the United States. This has been formalized by the designation of 100 Native American heritage archaeological sites as the *Carrizo Plain Archaeological District National Historic Landmark* (NHL). This is the highest level of recognition for historic resources. The CPNM also contains a large number of historic period archaeological sites and structures which preserve the story of early settlement and agricultural development in the region. In addition, the CPNM is imbued with Native American spiritual values and many culturally affiliated Tribal members view the CPNM as a sacred landscape. During the management of the CPNM, the BLM takes efforts to insure that these important archaeological sites and Native American values are protected and preserved.

Cultural Resource Travel Management Plan Process

Archaeological sites are particularly vulnerable to direct and indirect impacts as a result of route use. Direct impacts consist of site destruction through disturbance and erosion in the event that a road passes through or very near the site. Indirect impacts are usually associated with the facilitation of access to the site which can result in an increase in disturbance or looting by the public. This must be balanced with Tribal needs for Elder access to sacred sites.

The cultural resource assessment process consists of 5 steps-

1) Identification of the area that could be potentially affected by route use

This area is called the Area of Potential Effect (APE). As a result of known patterns of current route use and Tribal input, an APE extending 100 feet from each side of the route was established.

2) Identification of cultural resources within the APE

This was determined through the use of a Geographic Information System (GIS) based analysis which allowed the overlay of known cultural resource locations onto mapped routes in the CPNM. This analysis resulted in the identification of 68 sites within the APE.

3) Field assessment of potential affects to sites

Each site was visited and assessed to determine if impacts as a result of route use were occurring or have the potential to occur. This revealed that 37 sites in the APE are not being affected and have a low potential for impacts due to route use. However, 31 sites are currently being affected by route use.

4) Resolution of effects

The impacts to 16 sites were resolved through route closure and rerouting. It has been proposed that the remaining 15 sites will be capped to prevent further degradation from motorized route use. Capping an archaeological site can protect the sensitive underlying cultural deposits from damage while allowing for continued motorized use of the road. This is done by laying down a protective load bearing fabric and covering it with road base.

5) Identification of unknown cultural sites

The CPNM has not been entirely surveyed for archaeological remains. Approximately 10% of the CPNM, including all of the NHL has been surveyed. In consultation with the Office of Historic Preservation (OHP), the Advisory Council on Historic Preservation (ACHP) and Native American Tribes, the BLM has developed a process to take into account the potential for unknown archaeological sites located within a Travel Management Plan APE. This consists of the development of a GIS based predictive model for determining which areas are potentially sensitive for archaeological sites. The model will be statistically tested through field survey. The results of the best fit model will then be used to guide future survey of potentially sensitive route APEs. As new sites are identified, protective measures will be implemented or the CPNM Travel Management Plan will be amended to protect them from direct or indirect impacts as a result of route use. An important part of maintaining the Travel Plan will be monitoring. A cultural resource adaptive management monitoring plan will be developed to monitor long term effects and changes which may impact cultural sites.

The BLM Bakersfield Field Office is currently coordinating with BLM California State Office Cultural Program leadership and the OHP on the finalization of the proposed approach for addressing impacts to cultural resources as a result of route usage in the CPNM. Public input is also an important component of this process and comments are greatly appreciated. If you have any further questions about this process, please contact Tamara Whitley, BLM Bakersfield Field Office Archaeologist, at (661) 391-6147 or twhitley@blm.gov.