

The Empire-Cienega Resource Conservation Area

Karen M. Simms³, Mac Donaldson⁴, and Joe Sacco⁵

INTRODUCTION

The Empire-Cienega Resource Conservation Area (RCA) is located approximately 50 miles southeast of Tucson and just north of Sonoita, in southern Pima and northern Santa Cruz counties, Arizona. The RCA is situated in a basin between the Santa Rita and the Whetstone mountains at elevations ranging from 3300 to 4900 feet. Annual rainfall is quite variable but averages 15 inches. Temperatures may vary from highs near 100 degrees F in summer to lows below 29 degrees F. The vegetation is predominately Chihuahuan semidesert grassland. These semidesert grasslands are perennial grass-shrub dominated rangelands positioned between the Chihuahuan Desertscrub type below and the Madrean Evergreen Woodlands above.

Just over 36,000 acres of public land within the RCA were acquired by the Bureau of Land Management (BLM) in 1988 through a private land exchange with Anamax Mining Company. BLM traded scattered urban parcels near Phoenix for these high resource value lands. Grazing leases on an additional 37,000 acres of State Land came with the private lands. Additional exchanges have brought the public lands within the RCA to just over 45,000 acres. There were several driving forces behind the land exchange. A major one was the threat of development. In the 1960's, a master plan was developed for the Empire-Cienega by Gulf America Corporation. If implemented, over 40,000 homes would have been built on the properties. Associated with this threat were Pima County's concerns about the potential loss of urban space near a growing metropolitan area, with aquifer recharge, and with the potential of flooding into Tucson if the area was developed. Another major factor was the high resource values of the Empire-Cienega.

RESOURCES

The Bureau of Land Management's purpose in acquiring the ranches was to preserve and enhance the high resource values. These values include a critical watershed which is important to Tucson for flood control and aquifer recharge, a Federal Register historic site, endangered species, extensive riparian areas, broad expanses of native grasslands, outstanding wildlife habitat, scenic open space and high potential for dispersed recreation.

The Empire-Cienega has a long and colorful history. The Cienega Valley has been inhabited by humans for approximately 5000 years. Evidence has been found for the Archaic, Ceramic, Protohistoric, and Historic periods of occupation along portions of Cienega Creek and its tributaries. The more recent history of the Empire Ranch dates to the early 1870's when Walter Vail acquired a small ranch which he added to over several decades until it encompassed over 1000 square miles. Vail added on to the original 4 room adobe house to eventually build a sprawling 23 room ranch house. The house is now on the National Register of Historic Places.

³ Bureau of Land Management, Tucson Field Office

⁴ Empire-Cienega Ranch Allotment

⁵ Arizona Game and Fish Department, Region 5

Cienega Creek dissects the broad alluvial valley between the Santa Rita and Whetstone mountains as it flows north. Cienega Creek and its tributaries support over 20 miles of riparian area including cottonwood-willow and rare cienega (marsh) plant communities (Hendrickson and Minckley 1984). The riparian zones are of great importance to many wildlife species which are obligate or show a strong preference for riparian vegetation and surface water. Three native fish inhabit Cienega Creek including the endangered Gila topminnow. Several other special status wildlife species including the Chiricahua leopard frog also depend on the riparian areas in Cienega Creek. Riparian areas create havens and provide food and water sources for migrating birds and other animals making seasonal or daily movements.

The Chihuahuan semidesert grassland is the most prevalent plant community in the area and generally occurs between 3600 and 4600 feet. Characteristic perennial grass species include black grama, sideoats grama, plains lovegrass, cane beardgrass, three-awns, curly mesquite, and big sacaton. These grasses are intermixed with various succulents such as yuccas, agaves, beargrass and sotols. Shrubs such as burroweed, whitethorn acacia, mormon tea, and wolfberry occur in varying densities. In some areas along Cienega Creek mesquite has invaded into the grassland type. Almost pure stands of big sacaton occur on the level floodplains, low stream terraces, and first and second order tributaries of Cienega Creek. These sacaton stands have also become a rare plant community (Humphrey 1958, Bahre 1991).

These diverse, native grasslands support a variety of wildlife including a reintroduced herd of pronghorn antelope and several other big game species. The endangered lesser long-nosed bat feeds on agave in the grasslands. A variety of bird species including northern harrier, Mearns's quail, Baird's, Botteri's and grasshopper sparrows also depend on the grasslands.

The grasslands provide forage for a successful livestock operation and support a variety of dispersed recreation activities such as camping, hunting, horse-back riding, mountain biking, wildlife viewing, and even hang-gliding. Competitive recreation events have included bird-dog field trials, mountain bike races, and mountain man rendezvous. Several research projects are on-going. Commercial uses include filming of movies and leasing of utility rights-of-ways.

Livestock Management

The Donaldson's management philosophy for livestock grazing on the Empire-Cienega is based on one herd of mother cows, moving through a series of flexible pasture rotations as the seasons progress. The one herd concept is used to maximize rest in all other non-grazed units and to better utilize the different species of grasses. Multiple selection of species is possible and regrazing of specific species is kept to a minimum. The husbandry of the cattle becomes more efficient due to their concentration. The ranch is divided into "Units of Useability", which are variable size units of rangeland that will support the base herd for a certain period of time during a certain time of the year. The units are tied to "primary" water sources. The units are determined and affected by location and quality of water sources, topography, fencing, rainfall patterns and amounts, vegetative composition, salt and mineral use, and wildfire. The key to this management approach is to have a variety of options available for any planned grazing rotations, and to be able to quickly change from the plan when range conditions or livestock needs are different than anticipated (Empire-Cienega Ranch Interim Livestock Management Plan, 1995, BLM, Tucson Field Office files).

A "Biological Planning" process is being used to determine planned livestock management actions. This planning is conducted in February (prior to the spring growing season) and September (following the monsoon rains). The Units of Useability are evaluated for their suitability for livestock use during the upcoming pasture rotations. A proposed rotation strategy is developed based on the animals physiological needs and the condition of the vegetative resource. The proposed rotation is charted on graphs. This strategy is then presented to the biological planning team to identify and resolve any conflicts with other resource uses or objectives. This team is composed of a diverse mix of resource specialists, agency

representatives, wildlife managers, University of Arizona professors, neighboring land users, environmentalists, and other interested publics.

The team discusses the biological plan, visits both grazed and proposed grazing units, assesses the condition of the resource, and makes any necessary changes to the proposed plan. If consensus cannot be reached the BLM Field Manager makes final decisions. Once the biological planning has been completed and the upcoming grazing rotations scheduled, the livestock graze the particular unit of useability selected until monitoring of forage utilization levels and animal performance indicate the need to proceed to the next unit in the rotation. Desired levels of utilization may vary based on the "key" forage species selected, plant phenology, time of the year, current condition of the unit, and intensity of past grazing use of the unit. Generally utilization of key forage species will not be allowed to exceed an average of 40% of the current years production.

Land Use Planning

The Bureau of Land Management (BLM) has initiated long-term land use planning to guide management of the 45,000 acres of public land within the Empire-Cienega RCA. The BLM is striving to increase and improve public involvement in planning and management activities on public lands through community outreach, education, and the formation of partnerships with various organizations to balance the needs of people and resources. These concepts are reflected in the new approach that BLM is taking for planning on the Empire-Cienega. The approach involves greater public participation in all aspects of planning as well as improved communication and coordination with surrounding landowners both private and public. A community partnership has been initiated to chart the future management of these lands. The partnership is completely open and includes all individuals, organizations, groups, and government entities interested in participating in development of the future of this area. Working groups have raised a variety of issues related to public lands in the Sonoita Valley. They are generating goals and specific, measurable resource objectives and will be developing management recommendations to achieve the objectives and solve the issues. They will provide input on monitoring design and on an evaluation process which provides for the plan to be updated and improved on as new data or issues are brought up.

There are many potential conflicts between the variety of uses of these grasslands including livestock, wildlife, and recreation. Increasingly, the area around the Empire-Cienega is becoming popular for ranchettes and Sonoita is growing. This interface between public and private property also creates the potential for conflicts such as fire management of grasslands. Our panel today presents perspectives on some of the strategies we're using for maintaining the grasslands and managing them for a variety of uses.

Karen Simms, Ecosystem Planner and Wildlife Biologist, BLM:

Ongoing planning and management activities on the Empire-Cienega Resource Conservation Area illustrate several successful public land management strategies:

- 1). Land Exchanges: The BLM has completed several land exchanges where parcels with low resource values and relatively high development value have been exchanged for high resource value lands in more rural areas. Through this process, the BLM has been able to block up public lands in manageable units and large areas of open space, such as grasslands on the Empire-Cienega, and associated resources have been protected from development. At the same time, scattered tracts near urban areas which are difficult to manage effectively and have low resource values have been disposed of.
- 2). An endangered species success story: On the Empire-Cienega, we have grassland and riparian habitats which support 3 endangered species (a fish, bat, and plant). We also have a successful grazing operation. Many of the conflicts that we read about in the newspaper have been avoided by working together, sharing diverse views, and recognizing that having a healthy resource base benefits everyone. An example:

Biological planning meetings are held twice a year on the Empire-Cienega as part of the grazing plan. These allow diverse interests to have input into the upcoming pasture rotation and other aspects of the grazing operation and provide an opportunity to look at resource conditions on the ground. This open communication builds trust and reduces conflicts. As an example, it has allowed the grazing operation to be adjusted to provide fawning cover for antelope at the appropriate time and to protect habitat for the endangered fish.

3). The Sonoita Valley Planning Partnership (SVPP). The SVPP is a volunteer gathering of agencies (federal, state, and local), organized groups and interested public who share a common interest in the future of public land resources in the Sonoita Valley. It developed from the need of the BLM to prepare a management plan for the Empire-Cienega. Two working groups (natural resources and people) meet monthly. The groups have raised issues and helped develop goals and objectives for the public lands. They have provided input into several BLM and USFS proposals and will be working on recommendations for management actions.

There are several factors which have contributed to the success of these strategies. The first is increased communication on a variety of levels. Communication has included education on scientific and technical topics, sharing diverse views, and finding common ground. The second is the opportunity to have a greater level of participation in planning for and managing public lands by being directly involved in preparing a plan and implementing projects. The third is the emphasis on partnerships which allows the agency to accomplish a great deal even with limited resources. These partnerships, although implemented at the local level, result in a blending of national and local level issues and priorities.

Mac Donaldson, Rancher, Empire-Cienega Allotment:

Management of grazing and problems with resources, land, and grass:

- Rest is vital to restore/maintain land.
- 30% fluctuation in livestock numbers is used as dictated by resource conditions.
- Success of grazing strategies under management by Donaldsons for past 20 years and combined with BLM management for past 8 years measured by:
 - expanding springs and increased length of perennial water in streams
 - increases in native grasses, e.g. Plains lovegrass
 - erosion control with grass, grass filling in gullies.
 - T& E species--have seen increase of quality of habitat (grass and streams) and species

Coordination

- Twice each year, the BLM, ranchers, biologists from Arizona Game and Fish and U.S. Fish and Wildlife Service, and other interested agency representatives and public get together out on the ground. They review the grazing plan for the next 6 months, identify potential conflicts and resolve them, and visit areas of concern on the ranch. Biological planning team involvement is instrumental for improvement of resources and success of grazing operation. Communication has helped create trust with outside groups and reduced conflicts with natural resource groups.
- Sonoita Valley Planning--vision is to protect values of rural lifestyles and open space associated with grasslands, forest and wildlife. Groups are vocal--maybe not educated in natural resources but we can educate people to use and care for this region.
- From a rancher's point of view to work "with" agencies and interested public is much more productive than being in conflict.
- Bottom line: Healthy resources mean healthy cattle and business.

Joe Sacco, Wildlife Manager, Arizona Game and Fish Department:

Several positive results from both biological planning and Sonoita Valley Planning Partnership approaches:

- Decrease of conflict with natural resource groups. Biological planning working with diverse interests to implement ideas and management, Sonoita planning--generating community support in what is to occur;
- People recognizing how they effect wildlife.
- Good to see different perspectives of diverse groups and users.
- Educating the public to work together to accomplish success.

REFERENCES

Bahre, C.J., 1991. A legacy of change. Univ. of AZ Press.

Hendrickson, D.A. and Minckley, W.L., 1984. Cienegas-Vanishing climax communities of the American Southwest. Desert Plants 6(3).

Humphrey, R.R. 1958. The Desert Grassland. Bot. Review 24:193-253.