



WILDLANDS, INC.

**BRUSHY CREEK CONSERVATION BANK
2003 MONITORING REPORT**

Prepared by:

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2003 MONITORING REPORT**

Prepared for:

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INTRODUCTION

The Brushy Creek Conservation Bank (BCCB) was established to provide habitat for Burrowing Owls (*Athene cunicularia*) and was approved by the California Department of Fish and Game on April 12, 2000. The site is a 120-acre parcel located at the base of the interior central Coast Range just south of the town of Byron in Contra Costa County, California (Figure 1). The site occupies relatively flat ground to gently rolling hills. Existing habitats include annual grassland, intermittent drainage (Brushy Creek), alkali wetlands, and vernal pools and seasonal swales. Much of the vegetation on the site is low growing, and includes palatable forage such as soft chess brome (*Bromus hordeaceus*) and filaree (*Erodium cicutarium*) (Figure 2). Other areas include higher growing non-native grasses and weeds such as rip gut brome (*Bromus diandrus*), Mediterranean barley (*Hordeum murinum*), wild oats (*Avena* sp.), and mustard (*Brassica* sp.). Taller vegetation is concentrated predominantly around the hill slopes. The site has a long history of grazing, which continues with current management practices. Long-term management of the site focuses on preservation of Burrowing Owl habitat, and monitoring is conducted annually. This report documents the second year of Burrowing Owl monitoring.

Monitoring Requirements

Annual Burrowing Owl (BUOW) monitoring is conducted to determine the level of BUOW utilization of the site. Monitoring includes surveys conducted during the breeding and non-breeding seasons. At least three surveys are conducted each year during the peak of the breeding season, between April 15 and July 15. One winter survey is also conducted, between December 1 and January 31.

Range monitoring is conducted during the winter and breeding season to assess herbaceous foliage cover, and pest plant populations. The target vegetation height is between three to twelve inches to provide optimal habitat for BUOW (Ford, 2001).

Although not a requirement of the project agreements, a dip-net survey for vernal pool invertebrates was conducted in the vernal pools during the winter, with authorization from the U.S. Fish and Wildlife Service. This survey was undertaken at the same time as the winter BUOW survey, and was conducted as a follow-up on previously reported occurrences of vernal pool invertebrates (Wildlands Inc., 1999).

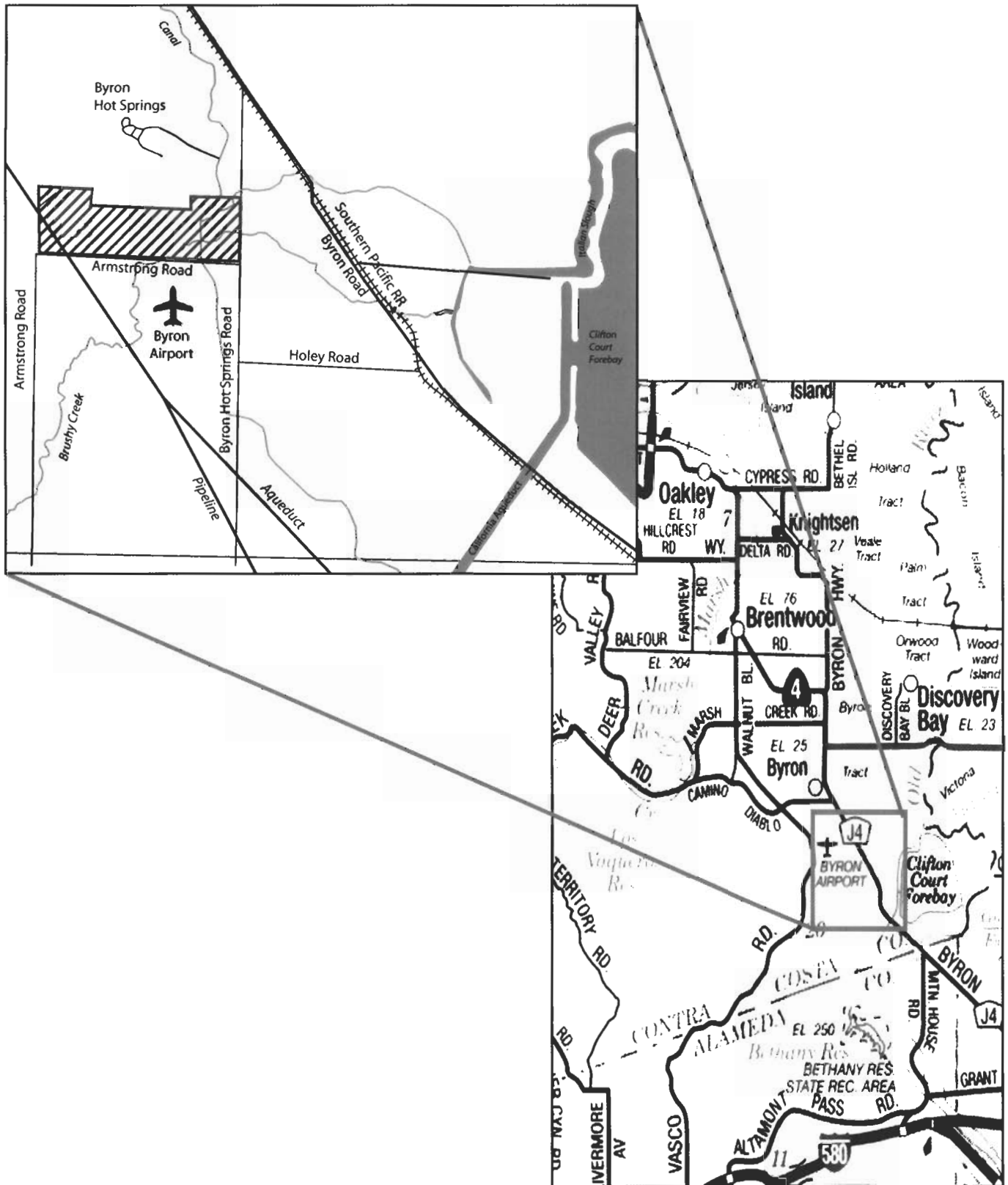


Figure 1

Location



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Brushy Creek Conservation Bank



Annual grassland, photo point 1 looking west



Alkali wetland, photo point 2 looking east



Annual grassland, photo point 3 looking north



Annual grassland, Brushy Creek drainage to the right, photo point 4 looking east



Annual grassland, photopoint 5 looking west



METHODS

Burrowing Owl Surveys

The winter survey was conducted on January 17, 2003. Three biologists walked the entire site, noting the condition of the habitat and the presence of owls. Breeding season surveys were conducted on March 11, April 30, May 21, and June 18 of 2003. Four to eight biologists walked transects spaced at approximately 10 – 20 meter intervals to allow complete visual coverage of the ground with the intention of seeing all potential nest or satellite burrows. Burrow locations, if found, were mapped on aerial photos. Burrows were mapped if owls or owl sign (feathers, pellets, whitewash, prey remains) were observed. White-wash alone was not used as an indicator of BUOW use because other grassland birds, such as meadowlarks, may have left the sign.

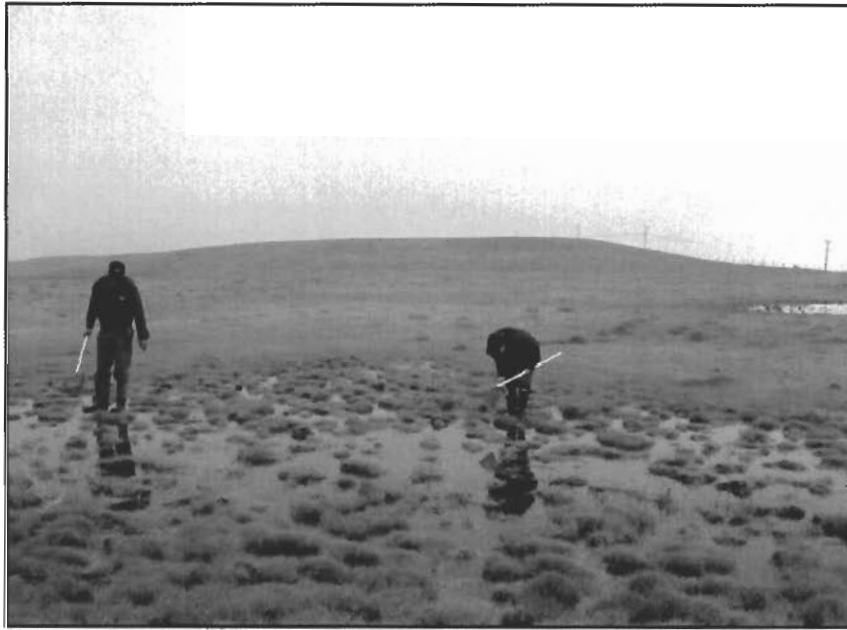
Behavior of BUOWs, if observed, was recorded in an effort to gain insight into burrow use or other information regarding owl activity. Examples of behaviors that indicate potential presence of a breeding burrow are: owls that give an alarm call, demonstrate defensive behavior, and/or flush relatively late; staying close to a burrow or showing a reluctance to flush; or returning quickly to a burrow after flushing.

Upland Range Assessment

A visual assessment was made of the herbaceous cover during regular site visits in 2003. Pest plant species such as yellow star thistle (*Centaurea solstitialis*) and other thistle species were mapped using GPS.

Fairy Shrimp Surveys

A dip-net survey of vernal pools was conducted on January 17, 2003 (Figure 3). Ten-inch aquarium nets were used to sweep through the pools. Samples of fairy shrimp from three pools were collected and identified to species using a dissecting scope.



Fairy shrimp sampling in vernal pool January, 2003



Close up of Vernal pool



RESULTS AND DISCUSSION

Burrowing Owls

No BUOWs were observed during the 2003 surveys. However California ground squirrels (*Spermophilus beecheyi*) and their burrows were observed throughout the site and habitat conditions have remained suitable for Burrowing Owls. Prey remains of an unidentified rodent were also observed near a complex of burrows, but it was not confirmed that this was sign from a BUOW (Figure 4).

Although results were negative during the monitoring surveys, two BUOWs were observed roosting on the BCCB in November of 2003 (G. Ponting pers. comm.).

Wildlife

Versatile fairy shrimp (*Branchinecta lindahli*), and the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) were found in vernal pools and in tire tracks that ponded water during the winter. Other wildlife species observed include, Western Kingbird (*Tyrannus verticalis*), Western Meadowlark (*Sturnella neglecta*), Horned Lark (*Eremophila alpestris*), Savannah Sparrow (*Passerculus sandwichensis*), Cliff Swallow (*Petrochelidon pyrrhonota*), Killdeer (*Charadrius vociferus*), Loggerhead Shrike (*Lanius ludovicianus*), American Kestrel (*Falco sparverius*), Red-tailed Hawk (*Buteo jamaicensis*), Turkey Vulture (*Cathartes aura*), black-tailed jackrabbit (*Lepus californicus*), and coyote (*Canis latrans*).

Upland Range

Habitat conditions at the BCCB in 2003 fell within the target parameters. Vegetation was predominantly annual, non-native grasses. During the growing season, average vegetation height on flatter areas was maintained at the lower end of the 3-12 inch spectrum. The hill slope vegetation was taller, but still within the high end of the 3-12 inch range. During the dry season, vegetation across the site was grazed down to approximately 3-7 inches in the flat areas but remained at 3-12 inches on the hill slopes. The only vegetation that rose above 12 inches were scattered occurrences of weeds (*Brassica* sp., *Centaurea solstitialis*, and *Silybum marianum*.) located predominantly on the hill slopes of the site. These species are indicative of disturbance and their presence may be due to grading that took place before the BCCB was established to reduce the height of the hills. The hills were graded because of their proximity to the Byron Airport. The effect of these weed patches on BUOW use of the site is probably not significant, since the patches were relatively small, and the densities of the patches were estimated at one to three plants per square meter in most areas. Weeds were much less prominent in the lower elevations of the site (Figure 4).

A solar powered livestock watering facility including a pump, tank and a trough was installed near the center of the site in February of 2003 to enhance the prescribed grazing. This will allow for grazing during the dry season and aid in livestock dispersal by supplementing the seasonal flows of Brushy Creek with a remote, year-round water supply (Figure 5).

Future Monitoring and Management

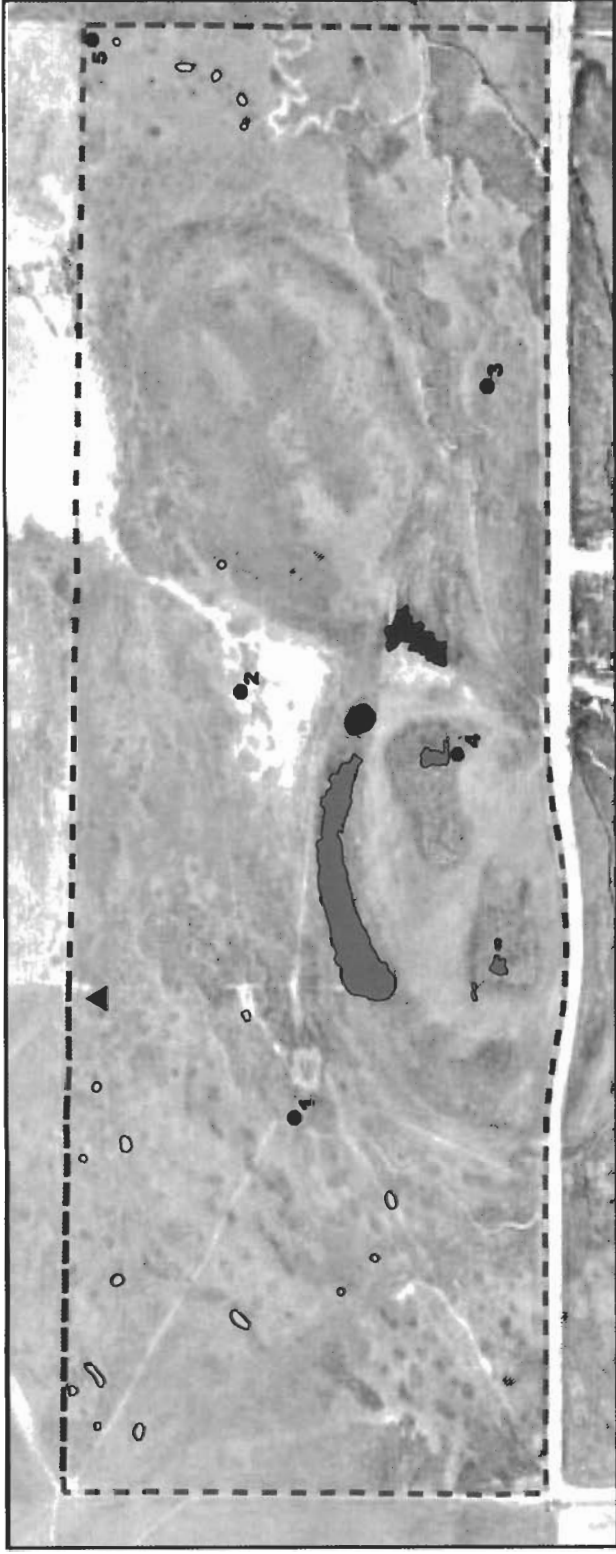
Surveys for Burrowing Owls and of upland range conditions will be conducted in 2004. The same grazing management that was used in 2003 will be implemented as well. Should pest plant populations spread significantly, management efforts will be adapted through the use of mineral supplements or other methods to encourage cattle grazing and animal impact (e.g., trampling weeds) in these areas.









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Personal Communication

- Ponting, Gordon. Telephone conversation, December, 2003.



-  Star thistle (*Centaurea solstitialis*)
 -  Milk thistle (*Silybum marianum*) $\leq 1-3$ plants/m²
 -  Milk thistle (*Silybum marianum*) $\leq 4-7$ plants/m²
 -  Burrow with Prey Remains
 -  2003 Photo Point Locations
 -  Brushy Creek Conservation Bank Boundary
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Wildlands, Inc. Figure 4
 Photo Point Locations & Pest Plant Populations
 Brushy Creek Conservation Bank



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Figure 5
Solar-Powered Livestock Watering Facility

Brushy Creek Conservation Bank