

Focused Burrowing Owl Survey
77-Acre Imperial Center Project
Imperial County, California

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October 8, 2003

Introduction

As requested by Development Design Engineering, UltraSystems Environmental, Inc. conducted three diurnal and three nocturnal field surveys for the Burrowing Owl (*Athene cunicularia*) at the 77 acre Imperial Center site just east Heber and north of Calexico, Imperial County, California. The project is bordered on the north by Abatti Road, the east by the Alder Canal, the south by Heber Road and the west by Yourman Road and Highway 111. This site can also be described as being located within Section 26 of Township 16 South, Range 14 East.

The Burrowing Owl is a small, pale, buffy-brown owl that is unique in its habit of nesting in subterranean burrows. It occurs in grassland and other open habitats throughout much of the western United States, with a disjunct population in Florida. In California, the species is often found in areas containing California Ground Squirrels (*Spermophilus beecheyi*), whose burrows are used by the owls. It is opportunistic in its use of burrow sites, and can use pipes or other suitable cavities at or below ground level. Burrows can be up to 10 feet long, and enlarged nesting chambers are constructed at the terminus. The entrances to burrows are often decorated with bits of animal dung, feathers, litter, and other objects. Clutches of up to 12 eggs are laid, primarily from February to May.

The Imperial Valley is a stronghold for the Burrowing Owl in southern California, with recent estimates of up to 5,600 pairs. Irrigation canals and drains are commonly used as nesting sites in this area. Prey items identified in the Imperial Valley include insects, spiders, earwigs, windscorpions, isopodes, and small rodents.

The Burrowing Owl is a California Department of Fish and Game (CDFG) Species of Special Concern, and a Federal Species of Concern. The CDF&G is currently evaluating a petition to have the species listed as either Threatened or Endangered. This species is declining in many portions of its range, but has increased in some areas. The CDFG has issued a staff report addressing survey and mitigation guidelines for the owl (CDFG 1995).

Methods

Diurnal and nocturnal surveys were conducted by Jeff W. Kidd, biologist, from September 26th to September 28th on clear, calm days with maximum temperatures of 98 degrees. During each survey the project site was searched for Burrowing Owls and their sign (burrows, pellets, feathers, scat, litter, and animal dung). Night vision optics were utilized during the nocturnal surveys to help increase owl detection rates.

Results

Project Site Description and Habitats

As is characteristic of the topography of this region, the Imperial Center site is flat and has a recent and long history of agriculture. Canals and ditches are used to transport water to fields and are the most frequent nest locations of the burrowing owl in Imperial Valley. Roadside berms are also used regularly. The site is bordered by agricultural fields to the north and east. Properties located to the west and south consist of industrial yards, housing and sewage treatment plants. The entire site was recently harvested for corn. Vegetation was therefore sparse and ranged in height from 0-12 inches.

Birds observed on-site included ring-necked pheasant (*Phasianus colchicus*), rock dove (*Columba livia*), mourning dove (*Zenaidura macroura*), burrowing owl (*Athene cunicularia*), red-winged blackbird (*Aegialius phoeniceus*), great-tailed grackle (*Cassidix mexicanus*), house finch (*Carpodacus mexicanus*), cattle egret (*Bubulcus ibis*), great egret (*Ardea alba*), killdeer (*Charadrius vociferus*), mallard (*Anas platyrhynchos*), greater roadrunner (*Geococcyx californianus*), meadowlark (*Sturnella neglecta*), American kestrel (*Falco sparverius*), northern mockingbird (*Mimus polyglottos*), northern harrier (*Circus cyaneus*), Cooper's hawk (*Accipiter cooperii*) and American avocet (*Recurvirostra americana*).

Mammals observed on-site included Audubon's cottontail (*Sylvilagus auduboni*), round-tailed ground squirrel (*Spermophilus tereticaudus*) and antelope ground squirrel (*Ammospermophilus leucurus*). No amphibians or reptiles were detected.

Burrowing owls are colonial species and can nest in extremely high densities when conditions are good. The conditions at the Heber Subdivision site are good for burrowing owls. Alfalfa fields provide suitable nesting and foraging habitats where

rodents and arthropods are abundant. The canals and roadside berms provide the topography and substrate, and squirrels and irrigation pipes provide nesting habitat.

Survey Results

The immediate 77-acre site and perimeter supports 12 pairs of burrowing owls and an additional 40 pairs were found directly adjacent to the project boundary (Figure 1). Since burrowing owls in the Central Valley are known to regularly travel more than 1,000 meters (Gervais et. al 2003) away from their nest burrows during the breeding season, the above estimate of 52 pairs would likely be impacted by the project (Exhibit 3).

Impacts

As planned, the proposed project would result in the direct loss of all on-site nest burrows, on-site foraging habitat and the 12 burrowing owl pairs currently nesting on-site. The proposed project would also negatively impact about 40 breeding pairs on adjacent properties by removal of foraging habitat, increased intraspecific competition and road mortality. Some adjacent pairs would probably also be eliminated during project construction, or directly after project completion.

Mitigation

- Prior to any earth moving, all on-site burrows need to be evaluated by an experienced BUOW biologist and confirmed as not having any owls in them before being closed. This can be accomplished by a combination of behavioral observations, ecological clues at the burrow entrances, fiber optics scoping of the nest chambers, trapping, banding, and on-site release of the owls. Closure of the nest burrows can only be accomplished by an experienced BUOW biologist and only during the non-breeding season from approximately August 15 to approximately February 15.
- Adult owls can be captured and translocated to an off-site permanently protected reserve where the adults would be temporarily held in breeding enclosures for 1-5 months and then released, usually when they have produced eggs or young. Ideally project development would be initiated while the birds were maintained in captivity at the release site.
- Coupled with the above options is the possibility, and probable requirement of purchasing mitigation lands or conservation easements, swapping land, providing artificial nest burrows, and caring for or breeding owls in captivity. BUOW and certain agricultural reserves complement each other.

- A pre-construction survey, possibly several, must be undertaken within a month before earth disturbance (construction). The surveys should be conducted as close to the actual construction initiation date as possible. Depending upon the success of previous owl removal efforts, a monitor may need to be present until the entire site has been graded.
- Meetings need to be set up with the California Department of Fish and Game (CDFG) and U. S. Fish & Wildlife (USFWS) Service to approve translocation methods. The CDFG and/or USFWS may also request additional surveys to determine the number of young produced from this location and/or other research/conservation projects.