GLENN LUKOS ASSOCIATES

Regulatory Services



January 11, 2013

Mr. Michael Mohler Newport Banning Ranch, LLC 1300 Quail Street Newport Beach, California 92660

SUBJECT: Results of 2012 Focused Breeding Season Burrowing Owl Surveys Conducted for the Newport Banning Ranch Project, Located in Unincorporated Orange County and Newport Beach, Orange County, California.

Dear Mr. Mohler:

This letter report documents the results of focused surveys conducted for the burrowing owl (*Athene cunicularia*) for the Newport Banning Ranch Project site, Orange County, California. In the spring and summer of 2012, focused breeding season burrowing owl surveys were conducted in accordance with guidelines in Appendix D of the recently issued California Department of Fish and Game (CDFG) Staff Report on Burrowing Owl Mitigation (March 2012).

SITE LOCATION AND DESCRIPTION

The approximately 400-acre Project Site is located partly in unincorporated Orange County and partly in the City of Newport Beach, Orange County, California [Exhibit 1: Regional Map] and is depicted on the U.S. Geological Survey (USGS) 7.5" topographic quadrangle Newport Beach, California (dated 1965, photorevised 1981) within unsectioned areas of Township 6 South, and Range 10 West [Exhibit 2: Vicinity Map].

The Project Site is located north of Pacific Coast Highway, east of the Santa Ana River, south of 19th Street and Talbert Regional Park, and west of existing residential and commercial areas. It lies at approximately 33.636522° latitude by -117.947903° longitude.

The Project Site has been utilized as an operating oil field for over 50 years and ongoing oil extraction operations along with remnant oil wells and pipelines occur throughout the site. The site includes flat lowlands throughout the western portion of the property, south and west facing slopes located east of the lowlands, a southwest facing bluff overlooking the Newport Shores residential area, a large mesa encompassing the eastern portion of the site, and two arroyos that bisect the mesa.

As addressed in the section below on previous habitat assessments, potentially suitable areas for burrowing owl are generally restricted to the flat mesa areas encompassed by "Survey Areas" 1 and 2 as depicted on Exhibit 3.

Lake Forest

California 92630-8300 Facsimile: (949) 837-5834

RECENT BURROWING OWL HABITAT ASSESSMENT AND SURVEY RESULTS

Summary of Recent Surveys

Prior to the 2012 breeding season survey described in this report, a number of wintering and breeding season surveys had been conducted on the site, since 2008:

- Wintering Season Surveys: January 2008 (GLA)
- Breeding Season Surveys: March/April 2008 (GLA)
- Wintering Season Surveys: January 2009 (BonTerra Consulting)
- Breeding Season Surveys: May 2009 (BonTerra Consulting, 2009)
- Wintering Season Surveys: January 2010 (GLA)
- Breeding Season Surveys: March 2010

All of the above surveys were conducted in accordance with the California Burrowing Owl Consortium (1993) survey protocol. Prior to conducting focused wintering surveys in 2009, BonTerra Consulting also conducted a habitat assessment that included mapping of areas with suitable burrows for burrowing owl. Areas with suitable burrows as mapped by BonTerra are depicted on Exhibit 3.

Summary of Results for Recent Surveys

As depicted on Exhibit 4, two wintering burrowing owls were detected during surveys conducted in January 2008 and a single wintering burrowing owl was detected in both 2009 and 2010, at the same location. Selected site photographs depicting occupied burrows are included as Exhibit 5.

Breeding season surveys in 2008, 2009, and 2010 did not result in detections of breeding burrowing owls.

Burrowing Owl Distribution and Natural History

The burrowing owl (*Athene cunicularia*) is designated as a sa a State species of concern by the CDFG. The western burrowing owl (*A. C. hypugaea*), which breeds in California, has a broad distribution, historically breeding from southern Canada south through the Great Plains and western United States to Central Mexico (USFWS 2003). While the breeding range of the western burrowing owl is largely unchanged, range contractions have occurred in peripheral regions, including southern Canada, the Great Plains, and parts of California and the Pacific Northwest (USFWS 2003). The winter range is much the same as the breeding range, except that most burrowing owls apparently vacate the northern areas of the Great Plains and Great Basin (Haug et al. 1993).

In California, the burrowing owl is both a yearlong resident and a migrant formerly common in appropriate habitats throughout the state, excluding the humid northwest coastal forests and high

mountains (Zeiner et al. 1990). It is present on the larger offshore islands and is found as high as 5,300 feet in Lassen County. Generally, burrowing owls occur throughout the Central Valley, throughout the eastern deserts, including the Great Basin of northeastern California, and in the outer coastal foothills from Monterey north to San Francisco (Grinnell and Miller 1944). The burrowing owl is also a resident in the open areas of the lowlands over much of the southern California region (Garrett and Dunn 1981).

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrubland characterized by low-growing vegetation (Zarn 1974). Suitable habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts; debris piles of cement, asphalt, or wood; or openings beneath cement or asphalt pavement. Burrowing owls may also use a variety of developed areas, including golf courses, cemeteries, airports, vacant lots, abandoned buildings, and irrigation ditches (Haug et al 1993). Owls will modify and enlarge the mammal burrows for their use. Occasionally, owls may dig their own burrow in soft, friable soil (Robertson 1929). One burrow is typically selected for use as a nest; however, satellite burrows are usually found within the immediate vicinity of the nest burrow within the defended territory of the owl. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992).

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (whitewash) at or near a burrow entrance.

The burrowing owl is a mostly crepuscular hunter (active during the dawn and dusk hours) with prey including invertebrates and small vertebrates (Thomsen 1971). They may hunt by using short flights, running along the ground, hovering, or using an elevated perch from where prey is spotted. Burrowing owls are relatively opportunistic foragers (Haug et al. 1993). Their diet is composed of a variety of foods, mainly insects and small mammals, but also reptiles, other birds, and carrion.

METHODOLOGY

Burrowing Owl Habitat Survey Area

A variety of factors were included in determining the appropriate burrowing owl breeding season survey area, including results of past surveys, results of previous habitat assessment and burrow mapping, and the presence of suitable habitat characteristics (i.e., areas with generally flat topography supporting low growing grasses and forbs and exhibiting limited shrub cover). The areas of potentially suitable habitat on the mesa portions of Newport Banning Ranch were

divided into two survey polygons to ensure thorough coverage of all areas of suitable habitat. Exhibit 3 depicts two survey polygons for the 2012 surveys and also depicts the burrow complexes mapped by BonTerra in 2009. The areas encompassed within Survey Polygons 1 and 2 largely consist of non-native grasses and forbs and exhibit relatively flat topography. A large drainage course with dense willow riparian habitat separates the surveys areas, and the some areas of the slopes overlooking the drainage support dense maritime succulent scrub that is not suitable for burrowing owls. In addition, Survey Area 1 includes areas with dense patches of disturbed upland mulefat scrub that were not surveyed. Suitable breeding and/or wintering habitat for the burrowing owl on the Newport Banning Ranch site is limited to the areas within Polygons 1 and 2. Other portions of the site support scrub habitats, riparian and wetland habitats, or areas of ornamental vegetation that are not suitable for burring owl.

Four areas mapped by BonTerra in 2009 as containing burrows were excluded from breeding season surveys for the following reasons. The northernmost area (Polygon A) is partly within and partly adjacent to an active coastal sage scrub restoration area and has been subject to intense human activity during the past year and combined with the limited size of the remaining area (approximately 1.5 acres) was determined to have no potential for breeding burrowing owl.

The small, 1.2 acre Polygon B, immediately south Polygon A has been colonized by mix of shrubs including coast goldenbush (*Isocoma menziesii*), California buckwheat (*Eriogonum fasciculatum*) and deerweed (*Acmispon glaber*) that comprise approximately 50-percent cover and the area is no longer suitable for burrowing owl.

Polygon C occurs in an area of fairly intensive oil field operations and is surrounded by a mix of coastal sage scrub and willow riparian forest and no associated grassland areas. These factors combined with limited area of 0.35 acre resulted in a determination that this area is not suitable for breeding burrowing owl and was not surveyed.

Finally, Polygon D, located along the western edge of the lowland is coincident with a major oil field activity area including shops and equipment storage areas. Given the high level of human disturbance in this area, it was not determined to be suitable for breeding burrowing owl.

Focused Burrowing Owl Surveys

The focused burrowing owl surveys were conducted following the Staff Report (CDFG 2012). Surveys were performed following the updated guidance for survey timing, which recommends four survey visits, with at least one site visit between February 15 and April15 and a minimum of three visits, at least three weeks apart, between April 15 and July 15, at least one of which should occur after June 15. Each of the four site visits was conducted either at dawn or at dusk, with dawn surveys conducted from approximately morning civil twilight until about 10:00 a.m. and dusk surveys conducted from approximately two hours before sunset until evening civil twilight, which generally provides the highest potential for detection. In accordance with the Staff Report, Mr. Bomkamp conducted focused surveys for survey polygon #1 on April 11, May 1 (combined with a general raptor survey), June 1, and June 25 and survey polygon #2 on April 14, May 7,

June 2, and June 26, 2012. The survey on May 1 was extended to 11:00 since it was combined with the general raptor survey.

For each survey polygon, surveys were concentrated within the areas of mapped burrows. Transects within these areas generally ranged from seven to ten meters apart (in some areas spacing was less than seven meters due to high burrow densities). Burrows were checked for the presence of sign (pellets, whitewash, etc.). The transect lines were walked slowly with stops approximately every 50 meters to scan the area with binoculars. Such stops were generally limited to between one and two minutes. Areas exhibiting a higher density of burrows required longer stops as did areas where wintering burrowing owls have been previously detected [see Exhibit 4]. Outside of the mapped burrow locations (i.e., areas lacking burrows), transects were spaced 30 meters apart and stops were made approximately every 100 meters to scan the area with binoculars. All of the surveys within each polygon allowed for adequate visual coverage of all areas of potentially suitable habitat within the polygons. In addition, areas within 150 meters (approximately 500 feet) of the Project Site boundary that had the potential to support the burrowing owl were scanned with binoculars from appropriate vantage points along the project boundary.

Survey Date	Survey Type	Survey Times	Temp (°F)	Cloud Cover	Wind (Mph)
April 11, 2012	Polygon #1	1700 - 2005	64 - 59	Mostly cloudy	2 - 10
	Focused Survey #1				
April 14, 2012	Polygon #2	0530 - 0820	46 - 53	Clear - Clear	5 - 10
	Focused Survey #1				
May 1, 2012	Polygon #1	0530 - 1100	60 - 60	Overcast - Overcast	1 - 3
	Focused Survey #2				
May 7, 2012	Polygon #2	0545 - 0830	60 - 61	Overcast - Overcast	Calm
	Focused Survey #2				
June 1, 2012	Polygon #1	0545 - 0830	62 - 63	Overcast - Overcast	Calm
	Focused Survey #3				
June 2, 2012	Polygon #2	0540 - 830	61 - 63	Overcast - Overcast	0 - 3
	Focused Survey#3				
June 25, 2012	Polygon #1	0530 - 0910	61 - 63	Partly Cloudy -	Calm
	Focused Survey#4			Partly Cloudy	
June 26, 2012	Polygon #2	0540 - 0900	60 - 61	Partly Cloudy -	Calm
	Focused Survey#4			Clear	

Table 1. Weather related data for the focused surveys.

RESULTS

Burrowing Owl Habitat Assessment

As previously stated, a habitat assessment and formal burrow mapping were not performed for 2012 breeding season surveys. Instead, the 2009 burrow mapping conducted by BonTerra as depicted on Exhibit 3 was used in conjunction with the detailed knowledge of the site gained during previous breeding and winter season burrowing owl surveys referenced above.

Survey Conditions/Limitations

Appendix D of the CDFG Staff Report provides guidelines that, when implemented, increase the effectiveness of focused surveys by increasing the potential for detection. With regard to weather conditions, Appendix D states:

Weather conditions. Poor weather may affect the surveyor's ability to detect burrowing owls, therefore, avoid conducting surveys when wind speed is >20 km/hr, and there is precipitation or dense fog. Surveys have greater detection probability if conducted when ambient temperatures are >20° C, <12 km/hr winds, and cloud cover is <75% (Conway et al. 2008).

It is important to note that Appendix D provides guidelines, and as such, it is important to follow these guidelines to the maximum extent possible. Nevertheless, strict adherence to the guidelines is not always possible. As noted above, temperatures of $>20^{\circ}$ C are considered optimal; however, temperatures in coastal southern California during late winter and early spring, especially at the surveys times proposed, often do not reach 20° C during the optimal surveys hours. The surveys conducted in 2012 were all conducted during periods of good weather and visibility, and all of the surveys were conducted during periods of low wind.

As such, weather conditions during the surveys were consistent with highest levels of burrowing owl detectability given typical weather conditions in coastal Southern California during late winter and spring.

Similarly, with regards to the timing, while the surveys were conducted within the timeframes suggested in the CDFG staff report as having the highest potential for detection, GLA's experience on the site suggests that burrowing owls can be detected during all times of the day. Cornell University's "All About Birds" website notes the following regarding the burrowing owl:

The Burrowing Owl appears to be diurnal because it can often be seen foraging during the day. In fact, it hunts all day and night long and is most active in the morning and evening. It catches more insects during the day and more mammals at night.¹

To the extent that survey times did not exactly correspond to the guidelines, the potential for detection remained optimal. It is also important to note that in addition to the focused burrowing owl surveys conducted on the site in 2012 separate raptor surveys were conducted during the 2012 breeding season by biologists from GLA and Dudek that included five survey passes with two of the raptor surveys polygons exhibiting substantial overlap with the burrowing owl survey polygons (Dudek, 2012).

¹ http://www.allaboutbirds.org/guide/Burrowing_Owl/lifehistory

Focused Burrowing Owl Surveys

No breeding burrowing owls were detected within the Newport Banning Ranch Site during the 2012 focused burrowing owl surveys or during the focused raptor surveys. Multiple burrows within multiple ground squirrel complexes depicted on Exhibit 3 were examined for prior and current evidence of burrowing owl occupation; however, no burrowing owl sign was observed within the project site, including the areas of previous winter occupation.

CONCLUSION

No burrowing owls or burrowing owl sign were detected during the 2012 breeding season focused surveys, which is consistent with past breeding season surveys results, since they were initiated in 2008. Wintering burrowing owls have been documented on the Newport Banning Ranch site in the past; however, breeding season surveys have been negative, and there is no evidence that burrowing owls breed within the site.

If you have any questions regarding this letter, please call me at (949) 837-0404, ext. 41.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Tony Bomkamp Biologist

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Miles











Legend

Project Boundary



- Burrowing Owl Survey Area
- Burrow Locations (Source: Bonterra)





NEWPORT BANNING RANCH

2009 Habitat Assessment Map





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Legend

- Project Boundary
- 2008 Burrowing Owl Location
- 2009 Burrowing Owl Location
- 2010 Burrowing Owl Location

NEWPORT BANNING RANCH

Winter Burrowing Owl Map





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Exhibit 4



Photograph 1: View of occupied burrow in Survey Polygon 1. Photograph taken January 27, 2008.



Photograph 3: View looking at an earthen mound and surrounding habitat in Survey Polygon 2 that supported a winter burrowing owl. Photograph taken January 25, 2010.



Photograph 2: Close-up view of a burrowing owl (just below center) in Survey Polygon 2. Photograph taken January 27, 2008.



Photograph 4: View of burrowing owl perched outside burrow in Survey Polygon 2 at mound depicted in Photograph 3. Photograph taken January 14, 2010.



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