



Wildlife Research Associates

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Paula Cook – Executive Director
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pcook@ch-sc.org

RE: Additional Biological Evaluation – West Hearn Avenue, Santa Rosa

Dear Paula,

This letter report presents the results of the additional biological evaluation of the 2149 West Hearn Avenue parcel, as requested by the California Department of Fish and Wildlife (CDFW) and described in the email you sent to me on April 15, 2021. This supplemental information is in support of the *Biological Resource Assessment, Hearn Veterans Village, 2149 West Hearn Avenue, Santa Rosa* (Wildlife Research Associates and Jane Valerius Environmental Consulting 2020).

CDFW specifically requested additional information on the following species:

- Monarch butterfly (*Danaus plexippus*) – of conservation priority S2S3 (imperiled, vulnerable)
- burrowing owl (*Athene cunicularia hypugaea*) - Species of Special Concern
- American badger (*Taxidea taxus*) – Species of Special Concern

Background Biological Information

Monarch butterfly: Beginning in the fall, monarchs aggregate for overwintering sites, typically within 1.5 miles of the Pacific Ocean or San Francisco Bay, at low elevations and on slope aspects that are south, southwest, or west facing which provide the best solar radiation (Pelton et al. 2016). Monarchs typically cluster in the central portion of a large grove, generally in trees of mixed height and trunk diameter, protected by a windrow of trees that provide thermal regulation and cover from predators (Pelton et al. 2016). Favored roosting trees are blue gum eucalyptus (*Eucalyptus globulus*) and native Monterey pine (*Pinus radiata*) and Monterey cypress (*Cupressus macrocarpa*) (Pelton et al. 2016).

Two types of clustering occur during the fall: a) temporary aggregations that are transient clusters of short duration and b), permanent roosts that are long term hibernal clusters. The latter provide environmental conditions that allow the butterflies to mate in January and February before their spring dispersal. In the fall months, typically in September and October, numerous, generally small temporary aggregations are formed, especially in areas where nectar plants are plentiful near the coast.

Nectar plants used by adults include coyote bush (*Baccharis* sp.), wild mustard (*Brassica* sp.) and bottlebrush (*Callistemon* sp.) along with other native species (Pelton et al. 2016), as identified in Monarch

nectar plants of California (www.xerces.org/19-046_01_MonarchNectarPlants_California_web-3pg.pdf ([xerces.org](http://www.xerces.org))).

Eggs are laid on milkweed plants (*Asclepias* sp.) and larvae use plant chemicals to defend against predators. Monarch metamorphosis from egg to adult occurs in as little as 25 days during warm summer temperatures, to as many as 7 weeks during cool spring conditions (Pelton et al. 2016).

Burrowing owl: Foraging and breeding habitat for burrowing owl include native and non-native grasslands, deserts, and agricultural areas (Zarn 1974). Three habitat characteristics that comprise burrowing owl habitat include openness (lack of canopy cover), short vegetation, and burrow availability. Suitable habitat may also include areas with trees and shrubs, if the canopy covers less than 30 percent of the ground surface (CDFG 2012, CBOC 1997). Vegetation height has been identified as a limiting factor in occupancy (Coulombe 1971, Wesseman 1985). One study reported occupied burrows in grass with an average height between 2.87 inches (7.3 centimeters) and 4.4 inches (11.2 centimeters) (Plumpton and Lutz 1993). Burrowing owls will utilize edge habitats around agricultural fields, golf courses, and airports where there is little or sparse vegetation and raised elevations, which facilitate hunting of small rodents, birds, lizards and insects, with the main prey being Jerusalem cricket (*Stenopelmatus fuscus*). Owls have been reported foraging up to one mile from breeding areas (Haug and Oliphant 1990).

Burrows are the essential component of burrowing owl habitat (CDFG 2012, CBOC 1997) and are often the limiting factor in occupied habitat (Zarn 1974). Burrows used by burrowing owls are usually dug by small mammals, such as California ground squirrel (*Otospermophilus beecheyi*), in loose soil, and are enlarged by the owls for nesting. Other structures used for nesting include soil under slabs of concrete, railroad ties, wood debris piles, and other anthropogenic features (CBOC 1997). Burrows are used repeatedly for nesting, often, but not necessarily, by the same pair of owls (Zarn 1974). During the breeding season (which typically occurs between February 1 and August 31), several burrows may be renovated, but only one will be used per pair, with non-nest (satellite) burrows created nearby for escaping, perching and observation points (Dechant, et al. 1999). Burrowing owls exhibit high site fidelity, reusing burrows year after year (CBOC 1997).

American Badger: In general, badgers den in friable soils, on sloped areas, with unrestricted vision (low grass cover and canopy) and low predator numbers (Huck 2010). In Central California, Quinn (2008) found a preference of intermediate slopes (5% to 50%) with dens associated with loamy soils and native grasslands (Huck 2010). Four types of badger burrows are used: foraging, day-use, reproductive, and over-wintering dens (Huck 2010).

Day-use burrows are short linear tunnels in the ground. Badgers typically occupy a different day use burrow each time they move to new foraging areas (Lay 2008). Characteristic badger burrows are 16-30 cm wide, mostly elliptical in shape (wider than tall), and greater than 50 cm deep (Lay 2008) with an obvious mound of newly dug soil at the entrance. In addition, each deep hole is usually accompanied by numerous shallow digs within an approximately 32-foot radius.

Reproductive burrows are more complex than day-use dens, with the apron of soil excavated more than twice the size of a day-use den mound (Hoodicoff 2003) and with the burrow as deep as 2.3 m and as long as 10 m in certain areas. Reproductive females use the same reproductive areas from year to year (Quinn 2008).

Methods

Trish Tatarian conducted the site survey of the project area on April 16, 2021. The weather was cloudy and moist, with temperatures ranging between 48° and 50° Fahrenheit. The proposed project area and a 600-meter buffer in the North Point Mitigation Bank lands located northwest of the site were surveyed for signs and evidence of American badger, burrowing owl and monarch butterfly.

I evaluated the trees on the site for the monarch butterfly following the survey protocol Western Monarch Overwintering Habitat Assessment of the Xerces Society(www.xerces.org), which includes evaluating the

site for protection from winds and storms, absence of freezing temperatures, exposure to dappled sunlight and presence of high humidity.

All grasslands in the project area were walked in transects placed approximately 10-15 feet apart to look for ground nesting birds and small mammal burrows, as well as dens (Figures 1 and 2). Suitable nesting habitat (i.e., burrows) for burrowing owl was also searched for within 500 feet (which included the North Point Mitigation Bank), as described by CDFW survey protocol as detailed in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), as owls can be impacted by visual or auditory disturbances (Figure 3). This distance was based on the existing development to the north of the project site and the rural residence, and associated trees, located on the west of the site. In addition, Appendix C of the Staff Report recommends a survey of adjoining areas within 150 meters (500 feet) when conducting a Habitat Assessment (CDFG 2012).

I surveyed for ground squirrel burrows, host burrows (i.e., badgers (*Taxidea taxus*), foxes (*Urocyon cinereoargenteus*), coyotes (*Canis latrans*)) or surrogate burrows (i.e., culverts, piles of concrete rubble, piles of soil, burrows created along soft banks of ditches and canals, pipes, and similar structures) that may be potentially occupied by owls.

If burrows were found, I noted the condition of the burrows, as well as any past or present evidence of owl occupancy, such as molted feathers, mutes, cast pellets, livestock manure, or prey remains at a burrow entrance or perch site.

Results

Sign of small mammals include Botta’s pocket gopher (*Thomomys bottae*) and meadow vole (*Peromyscus maniculatus*) on both the project site and adjacent site to the west. None of these burrows showed any signs of being enlarged by other animals. No California ground squirrels (*Spermophilus beecheyi*) were detected on the site or in the North Point Mitigation Bank site.

Monarch butterfly: No blue gum eucalyptus, native Monterey pine or Monterey cypress occur on the parcel. The coast live oak and fruit trees do not provide suitable aggregating habitat. None of the 17 species of forbs identified in the Monarch nectar plants California (xerces.org) were observed, nor were six of the seven shrubs and trees. One coyote bush was observed along the access road on the west.

Burrowing owl: Pocket gopher burrows were observed in the grassland and along the elevated areas of the North Point Mitigation Bank. These are not considered suitable habitat for burrowing owl due to their small size.

American badger: No badger day use dens, foraging burrows or maternity burrows were observed on site or in the North Point Mitigation bank site.

Species Observed: A total of eight bird species were observed or heard in or adjacent to the project area (Table 1).

Table 1: Observed Avian Species

Common Name	Scientific Name	Nesting Habitat	Age class/ Behavior
Cooper’s hawk	<i>Accipiter cooperi</i>	Stick nest in tree	Adult being mobbed by crows
Western scrub jay	<i>Aphelocoma californica</i>	Stick nest in tree	Adults foraging
Anna’s hummingbird	<i>Calypte anna</i>	Stick nest in tree, shrub	Adult calling
American crow	<i>Corvus brachyrhynchos</i>	Stick nest in tree	Adults flying overhead

Common Name	Scientific Name	Nesting Habitat	Age class/ Behavior
White-tailed kite	<i>Elanus leucurus</i>	Stick nest in tree	Adult foraging in mitigation bank area
California towhee	<i>Melospiza crissalis</i>	Stick nest in shrub	Male and female being territorial in coast live oak tree on West Hearn Avenue
Black phoebe	<i>Sayornis nigricans</i>	Mud nest on a ledge	Adults flying and foraging
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	Stick nest in shrub	Males and females observed together in blackberry bushes on mitigation bank area

Raptors: No nesting raptors were observed on the site. No evidence of active raptor nesting was observed below the coast live oak trees or on the ground (i.e., regurgitated pellets or feces concentrated in one area). As a result, no further action is required.

Passerines: No ground nesting passerines were observed in the grasslands during this survey. Although clumps of grasses were present, signs of foxes, skunks and domestic cats were present that reduces the suitability for ground nesting birds.

Recommendations

Based on this habitat assessment and burrow survey, no American badger, burrowing owl or monarch butterfly occupy the project area. No burrowing owl have been reported on the North Point Mitigation Bank lands (CNDDDB 2021) and no suitable burrows occur within 500 feet of the project site.

If you have any questions regarding this report, please call me.

Sincerely,



Trish Tatarian

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Figure 1: Looking east on project site with non-native grasses 2.5 feet tall.



Figure 2: Looking west on project site.



Figure 3: Looking west on Mitigation Bank site at 475 feet.