

Teichert – Shifler Property
Woodland, Yolo County, California
Preconstruction Chiroptera (Bat) Survey

8 April 2016

Teichert Triangle Properties

Attn: Barry Baba
P.O. Box 15002
Sacramento, CA 95851

Introduction

Teichert Aggregates is conducting a Biological Resources Evaluation for a proposed aggregate extraction site in Yolo County in the area west of the City of Woodland, California. The area primarily consists of highly disturbed agricultural land (row and field crops) with a small area of scattered valley oaks along an irrigation ditch running through the property. A total of 43 valley oaks occur in this area with a mean DBH of 24-inches for cumulative trunk diameters. Approximately 1,000 feet to the northwest is the channel for Cache Creek. Cache Creek Conservancy maintains natural habitat along Cache Creek in the area to the northwest of the project site. The area of Cache Creek to the north and northeast of the property is also in natural riparian habitat. The site is approximately 5 miles west of downtown Woodland, California (Fig. 1).

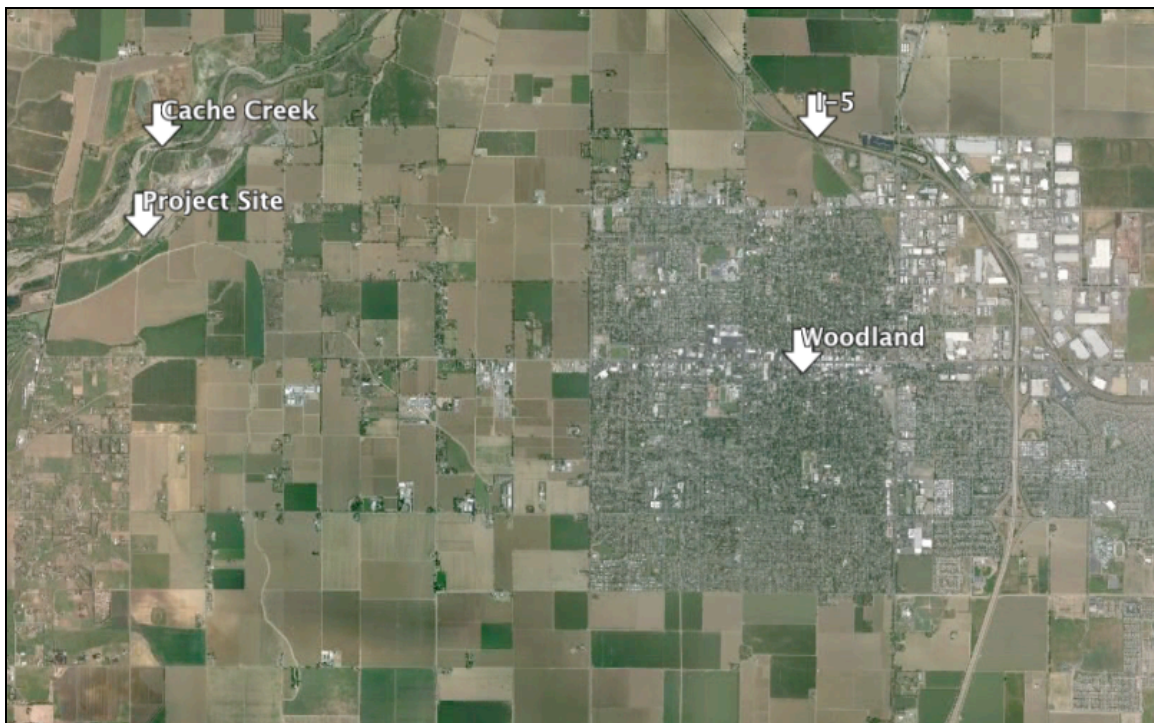


Fig. 1. Location of project site, Yolo Co., California.

The site has the potential for occurrence of several species of bats with roosting opportunities possible in the oak trees on the property. Of particular concern is one bat species with the potential to occur in the area (*Corynorhinus townsendii* – Townsend’s big-eared bat) - a candidate for listing as Threatened under the California Endangered Species Act. The “Candidate Threatened” designation provides protection to that species equivalent to the “Threatened” designation during the period it is a candidate for listing. At this time (April 2016), *C. townsendii* remains a “Candidate Threatened” species and is expected to remain so (or upgraded to full protection status) in the foreseeable future. Although unlikely to occur in this particular project area, a survey of the trees was conducted to ascertain presence/absence of suitable habitat at the project site to ensure environmental compliance is met.

The small amount of natural vegetation (oak trees) at the site could provide a potential to support four sensitive bat species – three California Species of Special Concern (SSC) and one Candidate Threatened (CT) species. All are known to use trees as one of their roost site preferences. The three SSC species are: *Antrozous pallidus* (pallid bat), *Lasiurus blossevillii* (Western red bat), and *Myotis thysanodes* (fringed myotis). Of these three species, the fringed myotis is not likely to occur in this area – exfoliating bark of conifers is their preferred roosting location. The CT species is the previously discussed *C. townsendii* (Townsend’s big-eared bat). This species usually utilizes caves, mines, and buildings, but have also been found utilizing large tree cavities as roost sites.

It is very likely that bats in California will be undergoing greater scrutiny in terms of regulatory actions (e.g. California Environmental Quality Act, California Fish and Game Code, Streambed Alteration Agreements) in the very near future. This is primarily due to the threat posed to hibernating species of bats by the fungal disease White-nose Syndrome (WNS). Until recently, this disease was known to occur only east of the Rocky Mountains. However, on March 31, 2016 the U.S. Geological Survey confirmed that a bat found in the state of Washington died from WNS. This is the first known occurrence of this disease in western North America. WNS causes mortality in hibernating bat species with mortality rates as high as 99% in some species. Approximately two-thirds of the bat species in California can hibernate during winters. The loss of bats that otherwise would be consuming large numbers of insects has significant ecological, economic (pest control), and human health (pest control) implications.

Potential bat species in the general project area for Yolo County including roost preferences and regulatory status:

Species	Common Name	Roost Type	Status*
<i>Antrozous pallidus</i>	pallid bat	Cave/Mine, Tree Cavities, Exfoliating Bark, Buildings, Bridges, Rock Crevices, Debris	CDFW:SSC WBWG:H BLM:S USFS:S
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	Cave/Mine, Tree Cavities, Buildings, Bridges, Rock Crevices	CDFW:CT WBWG:H BLM:S USFS:S
<i>Eptesicus fuscus</i>	big brown bat	Cave/Mine, Buildings, Bridges, Rock Crevices, Tree Crevices/Cavities	-
<i>Lasionycteris noctivagans</i>	silver-haired bat	Tree Cavities/Crevices, Exfoliating Bark, Rock Crevices, Buildings, Mines	WBWG:M
<i>Lasiurus blossevillii</i>	Western red bat	Tree and Shrub Foliage	CDFW:SSC WBWG:H USFS:S
<i>Lasiurus cinereus</i>	hoary bat	Tree Foliage. Rarely Caves, Rock Ledges	WBWG:M
<i>Myotis californicus</i>	California myotis	Caves, Mines, Rock Crevices, Exfoliating Bark, Buildings, Bridges	-
<i>Myotis ciliolabrum</i>	Western small-footed myotis	Caves, Mines, Rock Crevices, Buildings, Bridges	WBWG:M BLM:S UFSF:S
<i>Myotis evotis</i>	long-eared myotis	Caves, Mines, Rock Crevices, Tree Cavities/Bark, Buildings, Bridges	WBWG:M BLM:S
<i>Myotis lucifugus</i>	little brown bat	Caves, Mines, Rock Crevices, Tree Cavities, Buildings	-
<i>Myotis thysanodes</i>	fringed myotis	Caves, Mines, Rock Crevices, Tree Cavities, Exfoliating Bark, Buildings, Bridges	CDFW:SSC WBWG:H BLM:S
<i>Myotis yumanensis</i>	Yuma myotis	Caves, Mines, Rock Crevices, Tree Cavities/Bark, Buildings, Bridges	-
<i>Parastrellus hesperus</i>	canyon bat	Rock Crevices	-
<i>Tadarida brasiliensis</i>	Mexican free-tailed bat	Caves, Mines, Rock Crevices, Buildings, Bridges, Culverts	-

* CDFW:CT (CA Dept of Fish and Wildlife Candidate Threatened); CDFW:SSC (CA Dept of Fish and Wildlife Species of Special Concern); WBWG:M (Western Bat Working Group Medium Priority Species); WBWG: H (Western Bat Working Group High Priority Species); BLM:S (Bureau of Land Management Sensitive Species; and USFS:S (U.S. Forest Service Sensitive Species)

It should be further noted that the above list provides all bat species with the potential to occur in this area of Yolo County, although some are highly unlikely to be present in the area due to their habitat preferences not being met (e.g. *M. thysanodes*).

Methods and Materials

An initial field analysis was conducted to determine if suitable habitat is present for bats at the project site with particular attention to habitat characteristics suitable for sensitive

species of bats. This analysis is an examination of the trees to determine the condition of the trees regarding exfoliating bark and/or crevices of at least 0.5-inches in width (both provide crevice roosting opportunities for bats). In addition, the trees were searched for any large cavities that could provide roosting opportunities for bats. The presence and extent of suitable habitat for crevice roosting bats was determined from this analysis and, if warranted, further site examination is recommended.

If further studies are needed following the initial field analysis, then passive and/or active surveys can be conducted to provide a determination of species/genera identified by the surveys. The most common methods used to determine likely presence or definitive presence of bat species (or groupings of bat species – groupings are due to some western bat species having very similar acoustic signatures) is through passive surveying using detectors to record acoustic calls of bats and through active survey capture and examination/ identification using mist nets/harp traps or direct observation of the bats. Acoustically detecting bats requires specialized equipment and experience with analysis of the acoustic data. It is also a non-invasive procedure that does not require specialized permits or authorizations from resource agencies to conduct the work. However, it does require experience and expertise to provide accurate identifications. Active collection and release of bats using nets also requires specialized equipment and expertise, and has further requirements to prevent the contracting of diseases (for both the bats, e.g. White-nose Syndrome, and humans, e.g. rabies – it should be noted that all mammals have the potential to carry rabies). Special permits and vaccinations are necessary to physically handle bats. Direct observation of bats can also be effective, however this can result in a high degree of disturbance to roosting bats and many of the *Myotis* species are difficult or impossible to identify to species through simple observation.

Results

On March 30, 2016, a survey of the trees at the project site was conducted by wildlife biologist David T. Wyatt and Teichert biologists Barry Baba and Jasmine Greer. Trees in the area of impact were examined for presence of suitable crevices or cavities with most of the trees not possessing such potential roosting spaces. Figure 2 provides an aerial photograph of the trees and identifies four oaks with exfoliating bark, crevices, or cavities. None of these trees possessed large cavities that would be suitable for use by *C. townsendii*. Tree #1 had multiple dead branches and had exfoliating bark along the trunk. Tree #2 had a small cavity that extended up the trunk from near the base of the tree. This cavity did not have any signs of bat use (e.g. guano, urine staining, observable bats) and was occupied by large numbers of ants, thereby likely precluding use of the cavity by bats. Trees #3 and #4 are both large Valley oaks (*Quercus lobata*) with extensive crevices and some exfoliating bark. These two trees have potential to serve as roosting habitat for bats that utilize crevices. Both of these trees are outside of the expected area of impact for the project. No other significant crevices or cavities were observed in the other trees within the project impact area. Foliage roosting species (e.g. *Lasiurus blossevillii* and *L. cinereus*) could utilize any of the trees at the site. These two species will roost in tree and shrub vegetation within the foliage – for both day roosting and for maternity roosting.



Figure 2. Location of four trees possessing crevices or exfoliating bark suitable for use as bat roosts for crevice dwelling bat species.

Summary and Recommendations

The surveyed trees at the project site are generally healthy oak trees with only four of the trees exhibiting crevices and exfoliating bark suitable for use by crevice roosting bat species. Two of these four trees (Trees #3 and #4) are outside of the project impact area and are unlikely to be removed, thus providing potential naturally occurring opportunities for establishment and maintenance of appropriate bat roosting habitat. Tree #1 has adequate exfoliating bark and crevices to serve as suitable bat roosts and tree #2 does have adequate crevice and small cavity spaces for bats but the presence of abundant ants within the cavity and crevice is expected to preclude use of that structural element by bats. All of the trees could serve as roosting habitat for foliage roosting species, including one that is a California Species of Special Concern – the Western red bat (*L. blossevillii*).

To prevent any potential impact to maternity roosting crevice or foliage roosting bats, no tree removal should occur from May through August of each year. Outside of this time frame, any tree removal should occur only on days with temperature above 50° F (to ensure bats are able to quickly become active and fly away during tree removal). In addition, the trees should have canopy branches first cut before the trunk of the tree is cut

to provide adequate disturbance to rouse any bats out of torpor and allow their escape from the tree removal operations. Due to the extensive amount of potential habitat present along Cache Creek, no further mitigation is proposed.

Statement of Qualifications

David T. Wyatt (B.S., M.S. – Biological Conservation) is a professor of biology in the Field Ecology Program at Sacramento City College and has been working professionally with bats since 1996. He holds a California Scientific Collecting Permit (SC-004284) and MOUs with CDFG for work with bats and with ringtails (*Bassariscus astutus*) and also has an MOU to conduct work with the California Endangered Species Act-listed Townsend's big-eared bat (*Corynorhinus townsendii*). David has worked as a biologist in both the public- and private-sector and is a member of the Western Bat Working Group, North American Society for Bat Research, Bat Conservation International, the American Society of Mammalogists, The Wildlife Society, and is a member of the California Bat Conservation Plan writing team.

Primary Investigator

David T. Wyatt
3500 Partridge Avenue
West Sacramento, CA 95691
cell: 916-531-0953
email: davidwyatt@mac.com

Proposal Preparation

David T. Wyatt