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Subject: Preliminary Osprey and Bat Survey Results Report, Redwood Multipurpose Marine Terminal, Samoa, California

Dear Shane Phillips:

Introduction

This preliminary osprey (*Pandion haliaetus*) and bat (order *Chiroptera*) survey results report provides the results of initial surveys and observations at the proposed Redwood Multipurpose Marine Terminal (RMMT) site in Samoa, California. The surveys were completed to inform conceptual planning for the proposed terminal and is intended as the first of multiple phases of osprey and bat surveys and mitigation coordination with California Department of Fish & Wildlife.

This preliminary survey effort included visual observation survey of the entire study area for existing osprey nests, identifying potential bat roost availability, and conducting nighttime acoustic monitoring for bat species presence.

Site Description

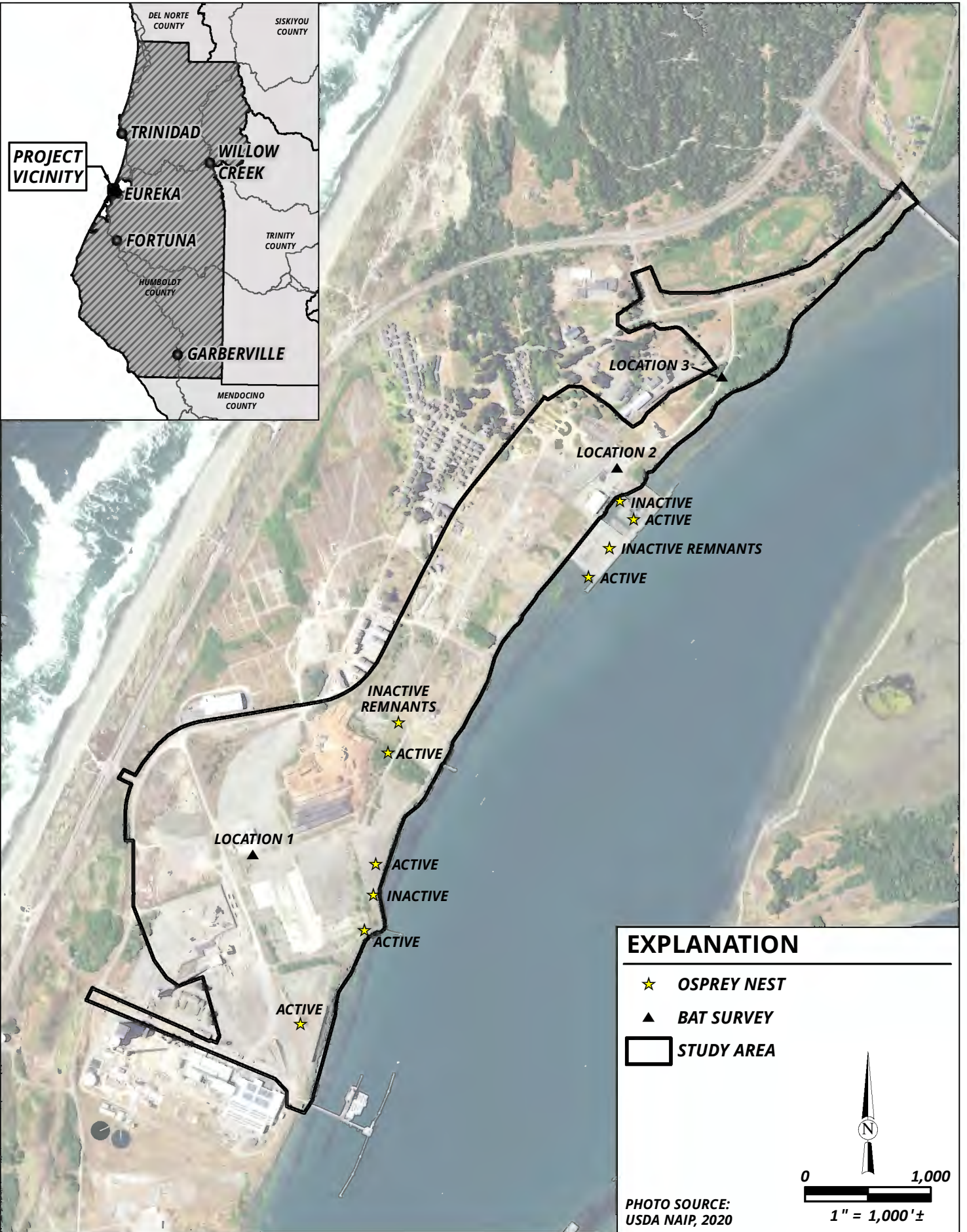
The RMMT site is located on the Samoa Peninsula, a narrow peninsula that separates Humboldt Bay from the Pacific Ocean (Figure 1). The subject site has a long industrial history of timber production that has resulted in significant grading, infilling, and expansion over previous intertidal lands along the Humboldt Bay shoreline. Several human-made structures provide nesting platforms for osprey including power poles and abandoned industrial equipment. Habitat exists for bats that tend to roost in buildings and cave-like structures within the abandoned buildings onsite. There is some habitat available for tree crevice and foliage-roosting bats, although limited and subject to exposure to a marine environment.

Survey Methods

Osprey

Surveys for locating osprey nests and determining active or inactive status were conducted during the breeding season in April 2022 within the entire study area. The area was searched on foot by one Senior Wildlife Biologist with 24 years of wildlife survey experience. All potential nesting platforms were





Humboldt Bay Harbor, Rec., & Cons. District
Redwood Marine Multipurpose Terminal
Samoa, California

Osprey and Bat Survey Results **Figure**

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inspected visually from the ground for the presence of nests. When a nest structure was located, it was monitored in April, June, and July 2022 to determine if it was currently being used, or if it showed signs of wear and not currently upkept. If osprey were currently using the nest, it was determined if the nest was “active” defined by behavior indicating a pair was either incubating, feeding nestlings, or supporting fledglings. All nest locations regardless of active or inactive status were noted and mapped (see Figure 1).

Bats

During an initial wildlife habitat assessment in April 2022, potential bat roost locations were identified as being available within the abandoned buildings onsite as well as possibly within the dense vegetation in the northern section of the study area. Surveys were conducted during the maternity roosting season (generally spring through early fall). Three acoustic monitoring locations were established near these potential roost sites (see Figure 1) and surveyed on July 11 and July 18, 2022. On July 11, two observers watched for emergence from buildings at location 1 beginning ½ hour before sunset and continued to survey the area with a Wildlife Acoustics Echometer Touch 2 ultrasonic bat call detector until 1 hour after sunset. On July 18, 2022, two observers watched for emergence from buildings at location 2 and one observer surveyed the dense vegetation area at location 3 beginning ½ hour before sunset and continued to survey the area until 1 hour after sunset, each team using a Wildlife Acoustics Echometer Touch 2 ultrasonic bat call detector.

Results

Osprey

Ten (10) osprey nest structures were observed within the study area, all on human-made structures. Six (6) of these nests were active with pairs apparently incubating eggs or young, the male bringing food to the female on the nest (see Figure 1). During a site visit in June, all osprey young appeared to be fledged from nests although nests were still being used for resting. By early July, osprey nests were not being frequented by osprey, and a few of the nests on the southern end of the study area were occupied by resting double-crested cormorants.

Bats

On July 11, four (4) species of bats were detected foraging in the immediate vicinity of survey location 1; bat presence was visually observed, though no emergence from buildings was observed. On July 18, 2022, six (6) bat species were detected foraging in the vicinity of survey location 2 and three (3) species were detected from survey location 3, although most were faint recordings at station 3, likely distant (see Figure 1). Overall, a total of six (6) bat species were detected in the study area, four (4) of these species are on the California Special Animals List (CDFW, 2022): Hoary bat (*Lasiurus cinereus*); Yuma myotis (*Myotis yumanensis*); Silver-haired bat (*Lasionycteris noctivagans*); and Little brown bat (*Myotis lucifugus*) (see Appendix 1 for survey results).



Discussion and Data Gaps

Osprey

Osprey tend to remain with the same mate and return to the same nesting location year after year, and nesting is often semi-colonial, which may enhance foraging and reduce risk of predation (Hagan III and Walters, 1990). Development of the site may require removal of some or all of the osprey nest structures onsite. In coordination with CDFW, a nest relocation plan may be developed that could allow for semi-colonial nesting of the osprey population currently breeding within the study area at a nearby location offsite.

Bats

Bats detected during July 2022 surveys were confirmed foraging in the area, and although emergence from roost locations were not observed, this does not confirm the lack of their use of abandoned buildings or other potential roosts onsite. Bats typically use maternity roosts during the day, though they may use different roosts at night between times of foraging, and often change roosts seasonally (H.T. Harvey & Associates, 2004). Confirming roosting locations and year-round use patterns of bats require a more intensive survey effort within multiple seasons. Buildings near bat survey location 1 have the greatest potential for building-roosting bat use; however, the dilapidated condition of the buildings make closer inspection unsafe. Acoustic bat monitoring surveys are planned for fall/winter 2022.

Respectfully,

SHN



Gretchen O'Brien
Senior Wildlife Biologist

GAO:ame

Appendix 1. Survey Results

References

California Department of Fish & Wildlife (CDFW). (2022). "Special Animals List." Accessed July 2022 at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline>.

Hagan, John M. III and J. R. Walters. (1990). Foraging Behavior, Reproductive Success, and Colonial Nesting in Ospreys. Department of Zoology, North Carolina State University.

H. T. Harvey & Associates. (2004). California Bat Mitigation Techniques, Solutions, and Effectiveness. December 29, 2004.



Survey Results

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Appendix 1
Bat Species Detected July 2022
RMMT, Samoa, CA

Scientific Name	Common Name	California Special Animals Listing?
July 11, Station 1		
<i>Eptesicus fuscus</i>	Big brown bat	No
<i>Myotis yumanensis</i>	Yuma myotis	No
<i>Lasionycteris noctivagans</i>	Silver-haired bat	Yes
<i>Tadarida brasiliensis</i>	Mexican free-tailed bat	No
July 18, Station 2		
<i>Eptesicus fuscus</i>	Big brown bat	No
<i>Myotis yumanensis</i>	Yuma myotis	Yes
<i>Lasionycteris noctivagans</i>	Silver-haired bat	Yes
<i>Tadarida brasiliensis</i>	Mexican free-tailed bat	No
<i>Lasiurus cinereus</i>	Hoary bat	Yes
<i>Myotis lucifugus</i>	Little brown bat	Yes
July 18, Station 3		
<i>Eptesicus fuscus</i>	Big brown bat	No
<i>Lasionycteris noctivagans</i>	Silver-haired bat	No
<i>Tadarida brasiliensis</i>	Mexican free-tailed bat	No

