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Shannon George
David J. Powers & Associates
1871 The Alameda, Suite 200
San José, CA 95126

Subject: South Almaden Offices Project – Revised Biological Resources Report (HTH #4230-01)

Dear Ms. George:

Per your request, this report provides H. T. Harvey & Associates' assessment of existing conditions and potential impacts related to Guadalupe River riparian corridor setbacks and bird collisions with the proposed new buildings for the approximately 3.6-acre South Almaden Offices project located in San José, California. The riparian corridor of the Guadalupe River is located immediately west of the project site, and the site itself primarily consists of impervious surfaces (i.e., a paved parking lot) with associated ornamental trees. It is our understanding that the project entails the demolition of the existing parking lot and redevelopment of the site with a new commercial office building.

This report evaluates potential project impacts related to bird collisions with the proposed new buildings and potential for encroachment on the Guadalupe River riparian corridor under the California Environmental Quality Act (CEQA), as well as any specific conditions necessary for compliance with the Santa Clara Valley Habitat Plan (VHP). In addition, we provide conceptual mitigation measures to mitigate potentially significant impacts under CEQA. For the purpose of this report, we assume that development of the site would be considered a covered activity under the VHP. The VHP, which is implemented by the Santa Clara Valley Habitat Agency (SCVHA), is “intended to provide an effective framework to protect, enhance, and restore natural resources in specific areas of Santa Clara County, while improving and streamlining the environmental permitting process for impacts on threatened and endangered species” (ICF International 2012).

Project Description and Location

The approximately 3.6-acre project site is located north of Woz Way, west of South Almaden Boulevard, south of 303 South Almaden Boulevard, and east of the Guadalupe River in San José, California (Figure 1). Surrounding areas consist of a mix of commercial and residential development, and the riparian corridor of the Guadalupe River is located immediately west of the project site. The site itself primarily consists of impervious surfaces (i.e., a paved parking lot) with associated ornamental trees. The project would entail construction of a

283-foot tall, 16-story (including the mechanical penthouse floor) commercial office building that includes approximately 1,727,777 square feet of office space, amenity/food and beverage space, and parking in two towers. Above grade, the footprint of the proposed new towers will occupy all areas of the site up to a distance of 14 feet from its western boundary, which is located immediately adjacent to the Guadalupe River. Below grade, the project will encroach to the property line. No riparian trees along the Guadalupe River will be impacted (i.e., removed or trimmed) as part of the project.

Methods

Prior to conducting field work, H. T. Harvey & Associates ecologists reviewed aerial photos (Google Earth 2019), project plans and the project description provided by David J. Powers & Associates, and environmental documents for nearby projects. In addition, we reviewed the VHP (ICF International 2012), as the project falls within the boundaries of the VHP Permit Area (SCVHA 2019). Following our background review, H. T. Harvey & Associates plant ecologist David Gallagher, M.S., and I conducted a reconnaissance-level survey of the project site on August 22, 2018.

Riparian Setback Assessment

To determine appropriate riparian setbacks to comply with City of San José policy and VHP conditions, D. Gallagher conducted a focused evaluation of the boundary and quality of the riparian habitat adjacent to the project site. D. Gallagher mapped the limits of the riparian canopy and the top of bank on the east side of the Guadalupe River based on field observations over a high-resolution aerial image using a sub-meter GPS unit in the field.

Bird Collision Hazard Assessment

For the bird collision hazard assessment, H. T. Harvey & Associates ornithologists assessed how birds might use resources around the project site, including using vegetation or artificial structures as roost or nest sites or for cover from predators and the elements; obtaining food (such as invertebrate prey, fruit, or seeds) from vegetation; and obtaining anthropogenic food resources such as food waste. We assessed the potential for avian collisions with the façades of the proposed towers, taking into account the applicant-proposed bird-safe design measures, the location of the proposed buildings relative to food or structural resources (such as vegetation along the Guadalupe River) and presumed flight paths, the distance from the proposed towers to those resources, the potential for vegetation to be reflected in the glass façades, and the existing conditions of the façades of other buildings in the vicinity. H. T. Harvey & Associates senior wildlife ecologist and ornithologist Steve Rottenborn, Ph.D., conducted an additional site visit on September 7, 2018, to assess bird use along the Guadalupe River adjacent to the site and to evaluate appropriate setbacks for proposed buildings.

Because some new vegetation will be planted on the project site, future habitat conditions in the project vicinity will differ somewhat from existing conditions. Thus, we also considered the potential future use of the site by birds based on the project's landscape plan, the surrounding land use, and existing/expected bird use of the

site. We are familiar with the birds of the Guadalupe River in the vicinity of the site, and we drew on this knowledge in assessing bird use of the segment of river immediately adjacent to the site. To ensure that we were taking into account all available information, we also searched for bird observations on the internet to determine what birds others have seen in the vicinity of the site and nearby areas. We searched the archives of the “South Bay Birds” list (<https://groups.io/g/southbaybirds>) for observations along the Guadalupe River in the site vicinity. This internet list is used by the community of birders in Santa Clara County to report interesting bird observations. In addition, we searched the eBird database (<http://ebird.org/content/ebird/>), which has been established by the Cornell University Laboratory of Ornithology to archive records of birds seen worldwide, for records in the vicinity of the site.

Existing Conditions

Biotic Habitats

The 3.6-acre project site currently consists primarily of one general land cover type, urban-suburban, which consists of a paved parking lot with a number of ornamental ash (*Fraxinus* sp.) street trees at its southern end (Figure 2). No other structures or landscape vegetation are present on the site. A narrow sliver of the project parcel (in the northwest part of the site) includes the Guadalupe River and its associated riparian corridor, but elsewhere these resources are located adjacent to the project site to the west, and no project activities will occur in this habitat.

The Guadalupe River corridor is characterized by dense mature riparian trees including many native coast live oaks (*Quercus agrifolia*), red willows (*Salix laevigata*), and Fremont cottonwoods (*Populus fremontii*), with lesser numbers of native valley oaks (*Quercus lobata*), box elders (*Acer negundo*), California bays (*Umbellularia californica*), western sycamores (*Platanus racemosa*), and California buckeyes (*Aesculus californica*), as well as numerous nonnative black walnuts (*Juglans hindsii*) and tree of heaven (*Ailanthus altissima*) and lesser numbers of nonnative London plane trees (*Platanus x acerifolia*), Peruvian peppers (*Schinus molle*), and a number of other nonnative trees and shrubs (Photo 1). The riparian tree canopy extends over the paved Guadalupe River Trail immediately adjacent to the site, and in some places extends outward into the project site (Figure 3).



Photo 1. Riparian habitat along the Guadalupe River abuts the western boundary of the project site.

The riparian understory along this reach of the Guadalupe River varies in quality, with dense native understory in a few locations but a relatively thin assemblage of nonnative grasses, herbs, and shrubs in most areas. Nonnative English ivy (*Hedera helix*) is particularly abundant, forming a monoculture on the riparian forest floor

in some areas and climbing a number of trees and shrubs. Plant species observed include Himalayan blackberry (*Rubus armeniacus*), Pacific bent grass (*Agrostis avenacea*), sweet fennel (*Foeniculum vulgare*), prickly lettuce (*Lactuca serriola*), cheeseweed (*Malva parviflora*), Jersey cudweed (*Pseudognaphalium luteoalbum*), mock orange (*Pittosporum* sp.), trumpet creeper (*Campsis radicans*), cotoneaster (*Cotoneaster* sp.), Mexican fan palm (*Washingtonia robusta*), coyote brush (*Baccharis pilularis*), American century plant (*Agave americana*), and New Zealand nightshade (*Solanum aviculare*). Plant species present along the water line include water primrose (*Ludwigia* sp.), curly dock (*Rumex crispus*), Harding grass (*Phalaris aquatica*), and mulefat (*Baccharis salicifolia*).

Adjacent to the site, the location of this reach of the Guadalupe River in the heart of San José makes it an attractive location for the homeless population. Five or six encampments are located within the riparian habitat adjacent to the site, including a number of tents erected in areas cleared of vegetation. Over time, this has led to an abundance of informal trails devoid of vegetation.

Wildlife Use

Due to the scarcity of vegetation, the majority of the project site provides relatively low-quality habitat for wildlife species. The wildlife most often associated with these areas are those that are tolerant of periodic human disturbances, including introduced species such as the nonnative European starling (*Sturnus vulgaris*), rock pigeon (*Columba livia*), house mouse (*Mus musculus*), and Norway rat (*Rattus norvegicus*). Several common, urban-adapted native species are also able to use this habitat, including the American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), and raccoon (*Procyon lotor*). Few birds are likely to nest on the site due to the sparseness of vegetation, but common species such as the mourning dove (*Zenaidura macroura*) and Anna's hummingbird (*Calypte anna*) may nest in the ornamental trees present. No burrows of small mammals, such as the California ground squirrel (*Otospermophilus beecheyi*) or Botta's pocket gopher (*Thomomys bottae*), were observed on the site during the reconnaissance survey.

Terrestrial land uses and habitat conditions on the project site and in surrounding areas consist primarily of developed areas such as buildings, parking lots, and roads. Away from the Guadalupe River to the west, vegetation in most of the surrounding areas is very limited in extent, and consists primarily of nonnative landscaped trees and shrubs. Nonnative vegetation supports fewer of the resources required by native birds than native vegetation, and the structural simplicity of the vegetation (without well-developed ground cover, understory, and canopy layers) further limits resources available to birds (Anderson et al. 1977, Mills et al. 1989). Thus, although a number of bird species will regularly use the vegetation on the project site and surrounding developed areas, they typically do so in low numbers, and particularly rare species or species of conservation concern are not expected to occur on the project site. As a result, the number of individual landbirds that inhabit and regularly use vegetation on the project site at any given time is relatively low under existing conditions.

Riparian habitats in California generally support exceptionally rich bird communities and contribute disproportionately to landscape-level species diversity. The presence of year-round water and abundant invertebrate fauna provides foraging opportunities, and the diverse habitat structure provides cover and nesting

opportunities. Many bird species that are attracted to wetland and aquatic habitats along the Guadalupe River are expected to move through the site when flying along the Guadalupe River. The numbers of these birds moving through the site will vary by time of year and by species. Many birds, such as waterfowl, often tend to move in large groups, while other species, such as migrating landbirds, will move through individually. Local bird numbers also vary by time of year, as many birds form small to large flocks during winter and migration, and occur in more widely spaced pairs during the breeding season.

We consider the riparian habitat along this reach of the Guadalupe River to be of moderate quality for birds. The large numbers of mature trees and native trees, presence of dense understory vegetation in some areas, relatively large width of the riparian corridor (approximately 120–130 feet adjacent to the project site), and presence of the Guadalupe River Park to the east contribute positively to the value of this habitat for birds. However, the large numbers of nonnative trees (especially tree of heaven, which is rated as moderately invasive by the California Invasive Plant Council (2019) and provides extremely low-quality resources for native birds), predominantly nonnative understory (especially the extensive presence of English ivy, which also provides low-quality resources for most birds), and trampling/disturbance of this habitat from homeless camps negatively affect the quality of this habitat for birds. This riparian habitat is also highly fragmented due to the surrounding high-density urban development and the presence of bridges, road crossings, and channelization along nearby portions of the river, and therefore lacks connectivity to higher-quality riparian habitats in the region. As a result, it is our opinion this reach of the Guadalupe River provides moderate-quality habitat for birds overall.

Although some songbirds that migrate along the Pacific Flyway and travel through the site vicinity are expected to be attracted to this reach of the Guadalupe River, this habitat is not likely to be heavily used by migrating birds. The project site is located approximately 8.5 miles upstream from the Bay and is isolated from Bay habitats by dense urban development. Further, the riparian habitat adjacent to the site is highly fragmented due to the surrounding high-density urban development and the presence of bridges, road crossings, and channelization along nearby portions of the river, and therefore lacks connectivity to higher-quality riparian habitats in the region. During an approximately one-hour site visit on the morning of September 7, 2018, 45 individuals of 13 bird species were observed using the riparian habitat adjacent to the site. All of these species were relatively common native birds that are widespread in the region; only one was a species that is dependent on riparian or riverine systems (mallard [*Anas platyrhynchos*]); and none were migrants (despite the timing of the site visit just prior to the peak migration of Neotropical migrants in the area, when numerous migrants were being reported by birders at other locations throughout the South Bay). Thus, based on the moderate quality of the habitat, the isolation of this habitat from the edge of the Bay and from higher-quality habitats in the region, and the results of the site visit, only moderate numbers of birds migrating along the Pacific Flyway are expected to be attracted to this reach of the Guadalupe River during migration. Nevertheless, some songbirds that migrate along the Pacific Flyway and travel through the site vicinity will be attracted to this reach of the Guadalupe River and disperse and forage adjacent to the site. Further, this reach of the Guadalupe River is used regularly by resident birds that are present in the vicinity year-round and are attracted to the riparian habitat for foraging and nesting opportunities.

Biotic Impacts and Mitigation

Following is an assessment of potential project impacts related to riparian setback encroachment and bird collisions with new buildings. For each potential impact, we describe potential CEQA and regulatory considerations as well as measures that would be required to mitigate significant impacts to a less-than-significant level under CEQA.

Encroachment into the Stream/Riparian Buffer (Project-Specific: Less than Significant; Cumulative: Significant and Unavoidable)

To protect the ecological functions and values of a stream, buffers are often prescribed between new development and the stream (or its banks or associated riparian habitat). These buffers provide habitat for plants and animals associated with the stream, provide habitat connectivity (i.e., areas used for wildlife movement, including flight paths for birds), reduce indirect effects of adjacent development (e.g., noise, lighting, human activity, or invasive species) on the natural stream and riparian habitats, allow for the possible future expansion of natural habitat, help to maintain site hydrology, and in some areas allow for runoff to be treated (e.g., by flowing through vegetated areas) before it enters the stream. In addition, along streams such as the Guadalupe River, vegetative communities within stream buffers may provide important refugia for animals associated with wetland and riparian habitats along the river during flood events, when little to no such refugia may be present within the banks of the river itself. In general, larger buffers protect more of the ecological functions and values of the stream than smaller buffers.

The City of San José's riparian buffer policy is administered through use of a Riparian Corridor Policy Study (Policy Study) document that describes suggested buffer widths (City of San José 1999). The Policy Study, which was incorporated into the City's Envision San José 2040 General Plan (City of San José 2011) and further clarified by the Riparian Corridor Protection and Bird Safe Design Council Policy (City of San José 2016), states that riparian setbacks should be measured 100 feet from the outside edges of riparian habitat or the top of bank, whichever is greater. However, the Policy Study also states that setback distances for individual sites may vary if consultation with the City and a qualified biologist, or other appropriate means, indicates that a smaller or larger setback is more appropriate for consistency with riparian preservation objectives (City of San José 1999). Goal E.2.2 of the City's General Plan also requires a 100-foot setback in all but a limited number of instances, and only where no significant environmental impacts would occur (City of San José 2011).

Similarly, the City Council-adopted VHP, specifically Condition 11, includes an analysis of relevant literature and studies informing the applicant of appropriate setbacks based on stream hydrology and function that are adequate to provide protection of habitat functions and values (ICF International 2012). The VHP-defined standard setback for the Guadalupe River, which is a Category 1 stream, adjacent to the project site is 100 feet. The VHP provides for exceptions to standard stream setbacks, including an exception to prevent denying an owner economically viable use of their land or adversely affecting recognized real property interests (ICF International 2012), which the SCVHA may grant in the case of the project. However, regardless of project

location, the VHP does not allow a stream setback to be reduced to a distance less than 50 feet for new development or 35 feet for existing development.

In our opinion, based on the moderate quality of the riparian habitat present and the native bird community present at this location, coupled with the ecological value of the Guadalupe River on the scale of the Santa Clara Valley, a 100-foot standard setback is appropriate between new building construction and the Guadalupe River on the project site to maintain suitable riparian functions and values. For the purposes of this project, the standard 100-foot setback extends landward from the outer edge of the riparian habitat along the Guadalupe River (Figure 3). At no point does top of bank extend landward farther than the riparian canopy; therefore, the setback is defined by measuring 100 feet from the edge of the riparian canopy along the entire length of the site.

The proposed commercial office building will be set back a distance 0–26 feet from the riparian corridor along the length of the site above grade, and will encroach within 1.8 acres of the standard 100-foot setback area (Figure 3). No riparian trees along the Guadalupe River will be impacted (i.e., removed or trimmed) as part of the project. Nevertheless, encroachment into the riparian buffer along the Guadalupe River, including development or planting of nonnative vegetation/landscaping within the buffer, would be considered an adverse impact because of the high ecological value of the Guadalupe River as a whole (even taking into account the moderate quality of this particular reach of riparian habitat for birds) and the degradation to that value that would occur due to encroachment. Encroachment of the project within the 100-foot standard riparian setback would result in the following impacts on the adjacent riparian communities along the Guadalupe River:

- Wildlife using the Guadalupe River may get the sense that they are “hemmed in” by development and unsuitable habitat if tall buildings are constructed very close to the Guadalupe River (i.e., within the 100-foot standard setback), potentially reducing wildlife use of the adjacent portion of the river (Chamberlain et al. 2007, Fontana et al. 2011). Research on riparian birds along South Bay streams (including the Guadalupe River) has found that distance between riparian habitat and buildings, and the percent cover by buildings in the vicinity of riparian habitat, influences the abundance of certain bird species and affects the overall riparian bird community (Rottenborn 1997, 1999). Birds may be less likely to use areas that are in close proximity to tall buildings that they cannot see over when using a habitat area, or that they will have to fly around/between when moving to and from the habitat area. As a result, bird use of adjacent high-quality habitat is expected to decline following the construction of tall buildings within the riparian setback due to the proximity of the new towers to the riparian habitat.
- The new towers will be located on the east side of the Guadalupe River and these tall buildings will cast shade on the adjacent riparian habitat throughout all or most of the morning year-round. Shading of the riparian habitat by the buildings will reduce the amount of light received by riparian trees and plants, potentially affecting the health and growth of these plants, and we expect some degradation of the riparian habitat over time as a result.

- Some birds using the habitat along the Guadalupe River are expected to collide with the new towers, thus reducing bird diversity and abundance in this area (this impact is discussed in greater detail under *Impacts from Avian Collisions with New Buildings* below).

Collectively, these impacts would reduce the quality of the riparian habitat, reduce bird use of this habitat, and result in some bird collisions with buildings over the long term. Because the existing riparian habitat adjacent to the project site is of only moderate quality (as opposed to high quality) and is not expected to attract large numbers of birds, these impacts are not expected to affect regional populations of bird species that use the site, nor would these impacts result in substantial degradation of riparian bird communities in the segment of the Guadalupe River adjacent to the project site. Hence, in our opinion, this encroachment impact on riparian birds would not rise to a level of significance under CEQA on a project-specific basis.

Cumulative impacts arise due to the linking of impacts from past, current, and reasonably foreseeable future projects in the region. Along the entire Guadalupe River, the encroachment of development toward the riparian corridor has resulted in a cumulative impact on riparian bird communities over time due to the degradation of the riparian habitat, increase in human activity in and along the riparian corridor, and loss/degradation of open areas adjacent to the riparian corridor that birds can use for foraging or as flight paths in and out of the riparian corridor. Given the importance of riparian habitat and riparian bird communities along the Guadalupe River to regional bird diversity and abundance (e.g., on the scale of the South Bay), we consider this cumulative impact on riparian bird communities to be significant under CEQA. Maintenance of appropriate setbacks between new development and riparian habitat along the Guadalupe River would avoid projects' contributions to this significant cumulative impact. Thus, we also assessed the potential for encroachment of the South Almaden Office project within the standard riparian setback to contribute to this cumulative impact on riparian functions and values along the Guadalupe River as a whole. Future development activities along the Guadalupe River in the City of San José may result in impacts on the same habitat types and species that will be affected by the proposed project. Whether or not individual projects, including the South Almaden Offices project and other future projects, make a considerable contribution to the significant cumulative impact on riparian bird communities along the Guadalupe River depends on the nature and extent of direct and indirect impacts of those projects. Impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project, including whether projects maintain appropriate setbacks (to be determined on a project-specific basis) from riparian corridors, as well as compensatory mitigation measures are all taken into account when determining whether a project makes a considerable contribution to significant cumulative impacts.

The purpose of the standard setbacks provided by City of San José Council Policy 6-34 and the VHP is to preserve riparian functions and values on a site-by-site basis in order to avoid a significant cumulative impact on these important resources. While exceptions to these setbacks may be granted on some occasions, it is our opinion that encroachment of the project within the standard 100-foot riparian setback would result in a considerable contribution to significant cumulative impacts on the functions and values of remaining areas of riparian habitat in San José, in the absence of mitigation measures. If encroachment is generally permitted along

streams within the City of San José and/or VHP Habitat Plan Permit Area because the adjacent riparian habitat is determined to be moderate or low in quality, the encroaching developments will contribute to a significant cumulative impact by further reducing habitat quality throughout a large area.

Under CEQA, it is appropriate to analyze the effects of future development on the project site relative to existing conditions, and currently, all areas of the project site located within 100 feet from the edge of the riparian canopy along the Guadalupe River are developed as a parking lot. The project proposes to construct a new, 283-foot tall, 16-story commercial office building within all areas of site located within 100 feet of the edge of the riparian canopy. Thus, the contribution to cumulative impacts due to encroachment into the riparian buffer would be considerable for construction of the new building within this area, as it represents a new type of development that will have a greater impact on the adjacent riparian corridor (due to hemming in the riparian habitat and potentially reducing wildlife use of the adjacent portion of the river, shading riparian habitat and potentially affecting the health and growth of adjacent riparian plants, and bird collisions with new buildings, as discussed above) compared to existing conditions.

Thus, in our opinion, encroachment from the construction of new buildings within the 100-foot setback would represent a cumulatively considerable contribution to significant cumulative impacts on riparian communities in the Santa Clara Valley. Mitigation for encroachment into the setback would be needed to reduce encroachment impacts. Because this site is already developed with a paved parking lot and is surrounded by development, encroachment into the 100-foot setback can occur to some extent and still be mitigable (with implementation of Mitigation Measure 1 below). In our opinion, encroachment to within 35 feet would be acceptable with the implementation of Mitigation Measure 1 below to reduce impacts to less-than-significant levels (note that an exception for encroachment within 100 feet of the riparian corridor would need to be granted by SCVHA and City of San José, and these agencies may not be willing to grant an exception for a setback lower than 50 feet). We consider 35 feet to be an appropriate minimum setback distance for mitigating impacts to less-than-significant levels because this distance is consistent with the minimum setback allowed by the VHP.

However, the project proposes to encroach well within 35 of the riparian corridor, providing very little setback. Implementation of Mitigation Measure 1 would reduce the severity of this impact, but even with this mitigation, encroachment of new buildings within 35 feet of the riparian corridor (less than the minimum setback allowed by the VHP) would result in a significant and unavoidable impact due to the contribution of such encroachment to significant cumulative impacts.

Mitigation Measure 1. Provide Compensatory Mitigation for Riparian Buffer Encroachment.

Compensatory mitigation shall be provided to offset project impacts on the ecological functions and values of the riparian corridor. Such compensatory mitigation will be provided as follows:

- Riparian habitat will be enhanced or restored to native habitat along the immediately adjacent riparian corridor¹, and/or off-site on the Santa Clara Valley floor and within the City of San José², at a minimum ratio of 2:1 (compensation : impact), on an acreage basis, for a total of 3.6 acres of enhanced or restored habitat to compensate for 1.8 acres of project encroachment within the 100-foot setback.

Restoration/enhancement that is provided along the immediately adjacent riparian corridor would consist of the complete removal of nonnative trees, shrubs, and vines and the planting of native riparian vegetation. Acreage will be credited based on the areal extent of nonnative vegetation removed. All restoration/enhancement along the adjacent Guadalupe River would be conducted within the existing riparian canopy and not on the project site itself (i.e., not within areas that are currently paved) due to the presence of the Guadalupe River Trail between the Guadalupe River and the project site. This trail separates the existing riparian vegetation from the project site and precludes the creation of high-quality riparian habitat on the site that would effectively enhance habitat for birds.

Restoration/enhancement that is provided off-site must restore or augment high-quality riparian habitat for birds in the opinion of a qualified biologist. Therefore, such restoration would need to occur in an area with sufficient setbacks and appropriate soils and hydrology to support high-quality riparian vegetation.

Either on-site or off-site restoration/enhancement would need to be performed according to a *Riparian Habitat Mitigation and Monitoring Plan* that describes the mitigation and will contain the following components (or as otherwise modified by regulatory agency permitting conditions):

- Summary of habitat impacts and proposed mitigation ratios
- Goal of the restoration to achieve no net loss of habitat functions and values
- Location of mitigation site(s) and description of existing site conditions
- Mitigation design:
 - Existing and proposed site hydrology
 - Grading plan if appropriate, including bank stabilization or other site stabilization features
 - Soil amendments and other site preparation elements as appropriate
 - Planting plan
 - Irrigation and maintenance plan
 - Remedial measures and adaptive management

¹ Permission will need to be obtained from the City of San José and/or Santa Clara Valley Water District to perform restoration/enhancement along the riparian corridor immediately adjacent to the project site. The District may not grant permission for this work, as they often look for such opportunities as mitigation for their own projects.

² The proposed off-site mitigation may not be feasible if a suitable location cannot be found within the City of San José. Properties owned by the City where the restoration/enhancement may be possible include Kelley Park and Lake Cunningham Park.

- Monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule). Success criteria will include quantifiable measurements of riparian vegetation type (e.g., dominance by natives) and extent appropriate for the riparian restoration location, and provision of ecological functions and values equal to or exceeding those in the riparian habitat affected. At a minimum, success criteria will include the following:
 - At Year 10 post-planting, canopy closure at the mitigation site will be at least 60 percent of the canopy closure at a nearby reference site (i.e., a site supporting the same habitat type as that being established at the mitigation site).

Monitoring methods and frequency will be outlined in the Monitoring Plan. The Monitoring Plan is expected to include monitoring between Years 1 and 10 to document progress toward meeting this or other success criteria so that any necessary remedial actions can be taken to ensure that the success criteria are met. Monitoring beyond Year 10 would be necessary if success criteria have not been met by Year 10, as monitoring would be necessary until all success criteria defined in the Riparian Habitat Mitigation and Monitoring Plan have been met.

The Riparian Habitat Mitigation and Monitoring Plan must be approved by the City of San José prior to project impacts on riparian woodland, and it must be implemented within one year following impacts.

We understand that restoration/enhancement along the adjacent reach of the river would be affected by the encroachment/shading of new buildings constructed within the 100-foot setback, which would reduce the quality of riparian mitigation that can be performed within this reach. This is why mitigation at a 2:1 ratio (rather than a lower ratio) is required even if restoration is provided immediately adjacent to the project area.

Impacts from Avian Collisions with New Buildings (Less than Significant with Mitigation)

Due to the presence of moderate-quality riparian habitat along the Guadalupe River adjacent to the site, which provides much higher quality habitat than surrounding urban areas, songbirds that migrate along the Pacific Flyway will disperse and forage along the Guadalupe River in higher numbers compared to surrounding areas (although, as discussed above, migrants are expected to make limited use of this habitat relative to higher-quality riparian habitats in the region). Resident birds that are present in the vicinity year-round use this riparian habitat in moderate numbers for foraging and nesting opportunities (Cornell Lab of Ornithology 2019, South-Bay-Birds List Serve 2019). Birds using riparian habitat along the Guadalupe River may then disperse outward from the river looking for other foraging, nesting, or roosting sites. During such dispersal, some birds could move toward and onto the project site (i.e., towards the towers) to look for feeding and resting opportunities in landscape vegetation.

It has been well documented that glass windows and building façades can result in injury or mortality of birds due to birds' collisions with these surfaces (Klem 2009, Sheppard and Phillips 2015). Because birds do not

perceive glass as an obstruction the way humans do, they may collide with glass when the sky or vegetation is reflected in glass (e.g., they see the glass as sky or vegetated areas); when transparent windows allow birds to perceive an unobstructed flight route through the glass (such as at corners); and when the combination of transparent glass and interior vegetation (such as in planted atria) results in attempts by birds to fly through glass to reach that vegetation. The greatest risk of avian collisions with buildings occurs in the area within 40–60 feet of the ground because this is the area in which most bird activity occurs (San Francisco Planning Department 2011, Sheppard and Phillips 2015). Very tall buildings (e.g., buildings 500 feet or more high) may pose a threat to birds that are migrating through the area, particularly to nocturnal migrants that may not see the buildings or that may be attracted to lights on the buildings (San Francisco Planning Department 2011), but as stated above migrants are expected to make limited use of the project site and adjacent riparian habitat.

If the newly constructed towers on the project site have extensive glass façades, there is potential for birds to collide with these façades for the following reasons:

- Under the project, trees and other landscaping will be present immediately adjacent to the building's glass façades (e.g., along the Guadalupe River and on the building's green roofs). Such vegetation is expected to attract birds. Once birds are using that vegetation, they may not perceive the glass as a solid structure. The vegetation would reflect in the glass of the building's façades, potentially causing birds to attempt to fly in to the reflected "vegetation" and strike the glass. As a result, some birds that are attracted to the trees and other landscaping that is adjacent to the glass façades are expected to collide with the glass.
- Reflections of the sky in glass façades may be perceived by birds as an open flight path (i.e., the sky) rather than solid glass, and birds may then collide with the facades.
- Night lighting associated with new buildings has some potential to disorient birds, especially during inclement weather when night migrating birds descend to lower altitudes. As a result, some birds moving through the project site at night may be disoriented by night lighting and potentially collide with buildings.

Thus, some of the birds using adjacent riparian habitats are expected to occasionally collide with the new towers, resulting in injury or death. Buildings are estimated to result in the mortality of 365 to 988 million birds per year, or 2–9% of all North American birds, with high-rise buildings such as the proposed project accounting for the highest bird mortality rate per building each year (Loss et al. 2014). Most birds that are vulnerable to collisions with high-rise buildings are migrants that move through during the spring and fall (Loss et al. 2014). However, certain groups of birds are also more vulnerable to collisions, including hummingbirds, swifts, waxwings, warblers, nuthatches, tits, and creepers (Loss et al. 2014), all of which occur in the riparian habitat along the Guadalupe River either as migrants or year-round residents. Considering the close proximity of the Guadalupe River, relatively large numbers of birds compared to other areas of San José and surrounding areas can potentially be attracted to the site over the long term. As a result, construction of the project can potentially result in the mortality of large numbers of birds relative to the size of regional populations, and enough individuals of common bird species can potentially strike the buildings over the long term to result in a significant impact according to CEQA.

Because the proposed commercial office building will be located within the standard 100-foot riparian setback and thus close to moderate-quality riparian habitat, standard bird-safe design measures such as those used by the City of San Francisco (San Francisco Planning Department 2011) would not be sufficient to reduce the bird collision impact to a less-than-significant level under CEQA. Rather, Mitigation Measure 2 below, which has more stringent requirements based on the LEED certification program, would incorporate bird-safe design elements into the building design and reduce this impact to a less-than-significant level³.

Mitigation Measure 2. Implement Bird-Safe Building Design. Due to the potential for the proposed towers on the project site to result in high numbers of bird collisions, the building's north, west, and south-facing façades that encroach entirely or partially within the standard 100-foot riparian setback will implement bird-safe building design considerations to comply with LEED Pilot Credit 55: Bird Collision Deterrence (U.S. Green Building Council 2018) on the entire façade. Qualification for this credit will be calculated for all encroaching façades combined, including the following requirements:

- From 0–36 feet above grade and 0–12 feet above any green roof, no more than 15% of the glazed area will have a Threat Factor⁴ higher than 75.
- All glazed corners or fly-through conditions (created when windows meet perpendicularly on a corner or when windows are installed parallel in close proximity such that a clear line of sight is created through the building) must have a Threat Factor less than or equal to 25.
- All structures other than the main building(s) on the site, including but not limited to handrails, guardrails, windscreens, noise barriers, gazebos, pool safety fencing, bush shelters, band shells, etc., must be constructed entirely of materials with a Threat Factor of 15 or lower.
- The combined façades will achieve a maximum total Bird Collision Threat Rating⁵ of 15 or lower.
- For interior lighting, the project will develop a lighting design strategy to effectively eliminate or reduce light trespass from the building, including either a requirement that all interior lighting must be turned off

³ Note that bird collision impact assessments are highly site/project-specific. For example, even Mitigation Measure 2 may not be adequate to reduce impacts to less-than-significant levels for tall buildings adjacent to higher-quality habitats or in landscape positions where bird movements past or through a site would be greater than is the case with the current project site.

⁴ A material's Threat Factor is assigned by the American Bird Conservancy, and refers to the level of danger posed to birds based on birds' ability to perceive the material as an obstruction, as tested using a "tunnel" protocol (a standardized test that uses wild birds to determine the relative effectiveness of various products at deterring bird collisions). The higher the Threat Factor, the greater the risk that collisions will occur. An opaque material will have a Threat Factor of 0, and a completely transparent material will have a Threat Factor of 100. Threat Factors for many commercially available façade materials can be found at <https://www.usgbc.org/resources/bird-collision-deterrence-summary-threatfactors> and <https://abcbirds.org/wp-content/uploads/2015/05/Docs10397.pdf>.

⁵ First, for each Façade Zone, perform the following calculation: $[(\text{Material Type 1 Threat Factor}) \times (\text{Material Type Area}) + ((\text{Material Type 2 Threat Factor}) \times (\text{Material Type Area})) \dots] / [\text{Total Façade Zone Area}] = \text{Façade Zone Bird Collision Threat Rating (BCTR)}$ Then determine the total building Bird Collision Threat Rating by performing the following calculation with the Zone 1 and Zone 2 BCTRs: $[(\text{Zone 1 BCTR}) \times 2] + (\text{Zone 2 BCTR}) / 3 = \text{Total Building BCTR}$

by nighttime personnel after hours when the space is unoccupied, or controlled automatic shutoffs such that all lighting will be automatically shut off after the space is unoccupied for 30 minutes (with exceptions).

- For exterior lighting, develop a lighting design strategy to effectively reduce or eliminate light trespass from exterior fixtures, either by shielding fixtures and programming them to automatically shut off from midnight until 6:00 a.m. or demonstrating that the project complies with the exterior lighting requirements of the latest published LEED for New Construction SS Credit, Light Pollution Reduction.
- The project will develop a three-year post-construction monitoring plan to routinely monitor the effectiveness of the building and site design in preventing bird collisions.

Summary

In conclusion, the findings of our assessment are as follows:

- A 100-foot standard setback is appropriate between new building construction and the Guadalupe River on the project site to maintain suitable riparian functions and values. The proposed commercial office building will encroach within this setback as close as 0–26 feet from the riparian corridor. In our opinion, this encroachment impact would not rise to a level of significance under CEQA on a project-specific basis. However, this encroachment would result in a considerable contribution to significant cumulative impacts on the functions and values of remaining areas of riparian habitat in San José. With the implementation of compensatory mitigation, impact of encroachment even to within 35 feet of the riparian canopy would be reduced to less-than-significant levels. However, encroachment of new buildings within 35 feet of the riparian corridor (less than the minimum setback allowed by the VHP) would result in a significant and unavoidable impact due to the contribution of such encroachment to significant cumulative impacts.
- Considering the close proximity of the Guadalupe River, relatively large numbers of birds compared to other areas of San José and surrounding areas can potentially be attracted to the project site over the long term. As a result, construction of the project can potentially result in the mortality of large numbers of birds relative to the size of regional populations, and enough individuals of common bird species can potentially strike the buildings over the long term to result in a significant impact according to CEQA. The implementation of bird-safe building design measures in accordance with LEED Pilot Credit 55 would reduce this impact to a less-than-significant level.

Please feel free to contact me by email at rcarle@harveyecology.com or by phone at (408) 458-3241 if you have any questions regarding this report. Thank you for contacting H. T. Harvey & Associates regarding this project.

Sincerely,

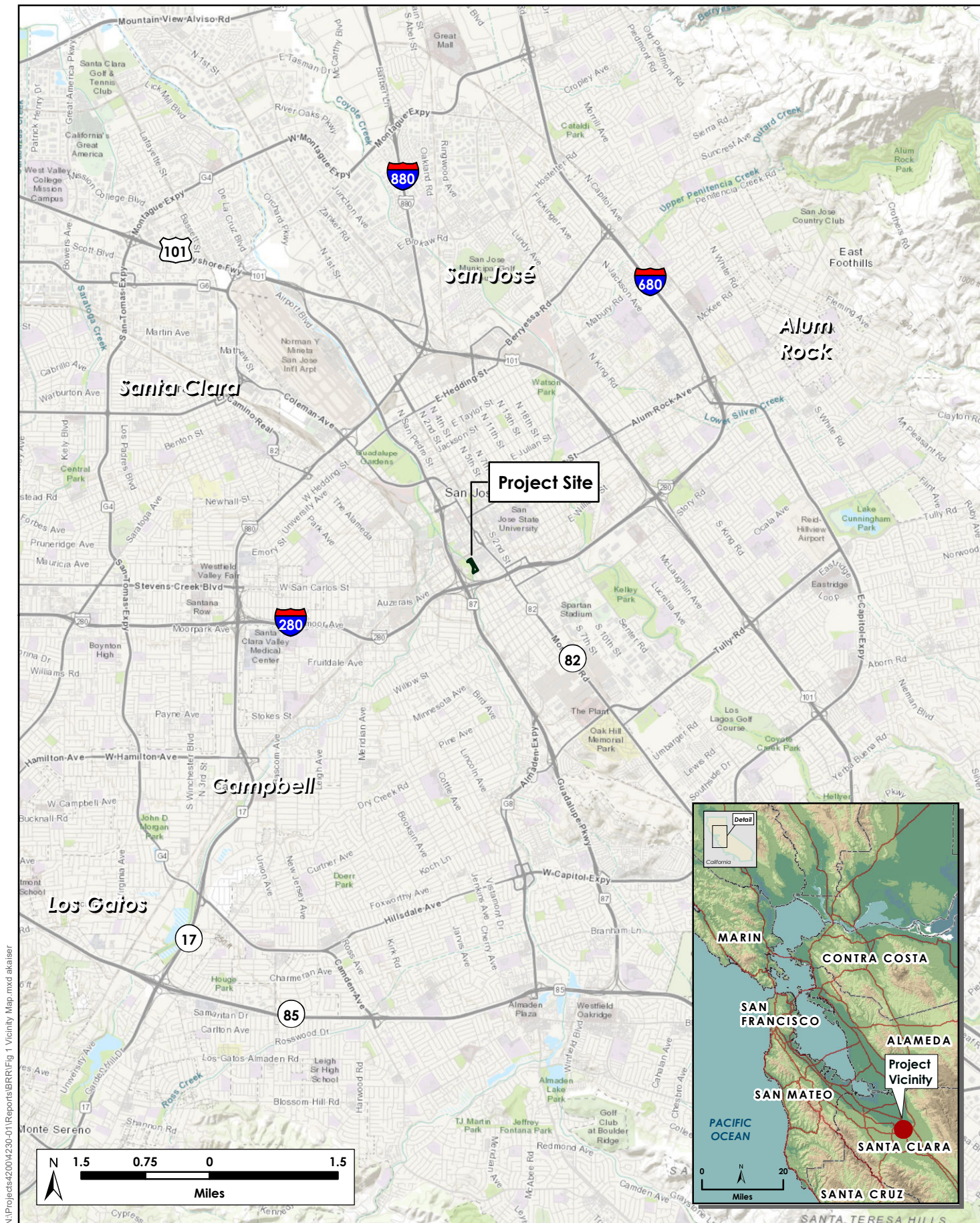


Robin Carle, M.S.
Senior Wildlife Ecologist/Project Manager

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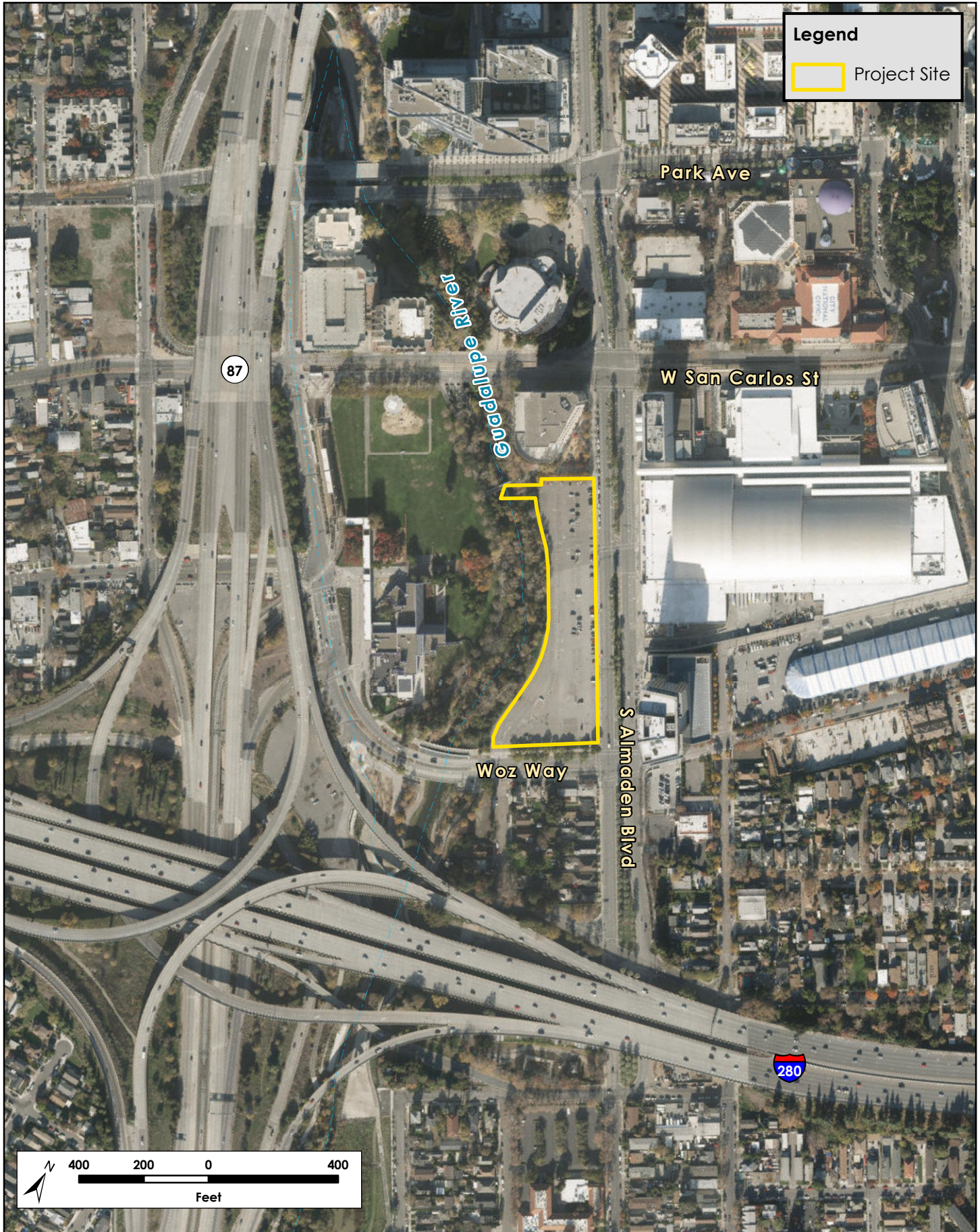
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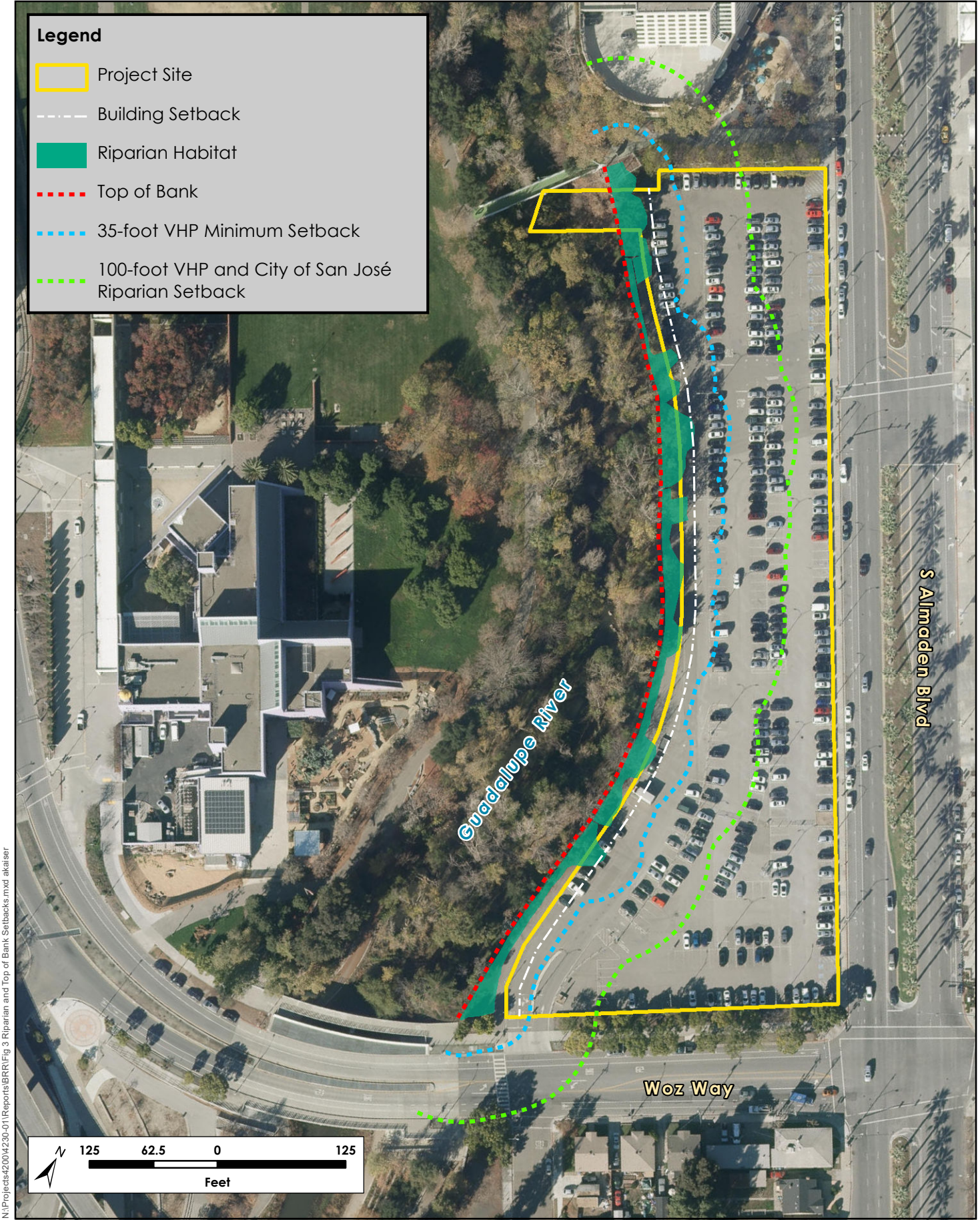
Figure 1. Vicinity Map

South Almaden Offices Biological Resources Report (4230-01)
April 2020



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Ecological Consultants

Figure 3. Riparian and Top of Bank Setbacks
South Almaden Offices Biological Resources Report (4230-01)
April 2020



Stephen C. Rottenborn, PhD Principal, Wildlife Ecology

srottenborn@harveyecology.com
408.722.0931



H. T. HARVEY & ASSOCIATES

Ecological Consultants

HIGHLIGHTS

- Avian ecology
- Wetlands and riparian systems ecology
- Endangered Species Act consultation
- Environmental impact assessment
- Management of complex projects

EDUCATION

PhD, Biological Sciences, Stanford University

BS, Biology, College of William and Mary

PROFESSIONAL EXPERIENCE

Principal, H. T. Harvey & Associates, 1997–2000,
2004–present

Ecology section chief/environmental scientist,
Wetland Studies and Solutions, Inc., 2000–04

Independent consultant, 1989–97

MEMBERSHIPS AND AFFILIATIONS

Chair, California Bird Records Committee,
2016–2019

Member, Board of Directors, Western Field
Ornithologists, 2014–present

Scientific associate/advisory board, San Francisco Bay
Bird Observatory, 1999–2004, 2009–present

Technical Advisory Committee, South Bay Salt Ponds
Restoration Project, 2017–present

PUBLICATIONS

- Erickson, R. A., Garrett, K. L., Palacios, E.,
Rottenborn, S. C., and Unitt, P. 2018. Joseph
Grinnell meets eBird: Climate change and 100
years of latitudinal movement in the avifauna of
the Californias, in *Trends and traditions:
Avifaunal change in western North America* (W.
D. Shuford, R. E. Gill Jr., and C. M. Handel,
eds.), pp. 12–49. *Studies of Western Birds* 3.
Western Field Ornithologists, Camarillo, CA.
- Rottenborn, S. C. 2000. Nest-site selection and
reproductive success of red-shouldered hawks in
central California. *Journal of Raptor Research*
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urbanization on riparian bird communities.
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Ornithology, Virginia Avifauna No. 7.

PROFESSIONAL PROFILE

Dr. Steve Rottenborn is a principal in the Wildlife Ecology group at H. T. Harvey & Associates. He specializes in resolving issues related to special-status wildlife species and in meeting the wildlife-related requirements of federal and state environmental laws and regulations. Combining his research and training as a wildlife biologist and avian ecologist, Steve has built an impressive professional career that is highlighted by a particular interest in wetland and riparian communities, as well as the effects of human activities on bird populations and communities. Steve's experience extends to numerous additional special-status animal species. The breadth of his ecological training and project experience enables him to expertly manage multidisciplinary projects involving a broad array of biological issues.

He has contributed to more than 800 projects involving wildlife impact assessment, NEPA/CEQA documentation, biological constraints analysis, endangered species issues (including California and Federal Endangered Species Act consultations), permitting, and restoration. Steve has conducted surveys for a variety of wildlife taxa, including a number of threatened and endangered species, and contributes to the design of habitat restoration and monitoring plans. In his role as project manager and principal-in-charge for numerous projects, he has supervised data collection and analysis, report preparation, and agency and client coordination.

PROJECT EXAMPLES

Served as senior wildlife ecology expert on the South Bay Salt Pond restoration project — the largest (~15,000-acre) restoration project of its kind in the western United States. Work included preparation of a Biological Assessment for federally listed species, including the California Ridgway's rail.

Served as principal-in-charge for H. T. Harvey's preparation of a Biological Assessment for Federal Endangered Species Consultation and preparation of agency permit applications for the Corps' San Francisco Bay Shoreline Study Phase 1 project. Conducted protocol-level surveys for the California Ridgway's rail for initial soil stockpiling activities.

Serves as principal-in-charge for H. T. Harvey's work performing biological resources-related planning for the Santa Clara Valley Water District's seismic retrofit projects involving Anderson, Calero, Guadalupe, and Almaden dams.

Spearheaded biological planning, permitting, and Federal Endangered Species Act consultation for several large redevelopment projects involving both development and habitat restoration, including the Candlestick Point – Hunters Point Shipyard project, Alameda Point project, and Concord Reuse project.

Served as project manager or principal-in-charge for more than 65 task orders for Santa Clara Valley Water District on-call projects.



Kelly Hardwicke, PhD Principal, Plant Ecology

khardwicke@harveyecology.com
408.458.3236



H. T. HARVEY & ASSOCIATES
Ecological Consultants
50 years of field notes,
exploration, and excellence

HIGHLIGHTS

- Rare and endangered plant surveys
- Wetland delineation and assessment
- Vernal pool ecology
- NEPA/CEQA documentation
- NES for Caltrans
- Permit preparation and assistance
 - U.S. Army Corps of Engineers Section 404, 10, and 404(b)(1)
 - Regional Water Quality Control Board Section 401
 - California Department of Fish and Wildlife Lake and streambed alteration agreements
 - Bay Conservation and Development Commission permits
 - Santa Clara Valley Habitat Plan

EDUCATION

PhD, Ecology, Colorado State University

BA, Biology, Reed College

PROFESSIONAL EXPERIENCE

Principal plant ecologist, H. T. Harvey & Associates, 2006–present

Instructor, Plant Identification, Colorado State University, 2006

Researcher, Shortgrass Steppe Long-Term Ecological Research Site, 2002–06

Teaching assistant, Colorado State University, 2001–06

Field researcher, U.S. Geological Survey, Grand Staircase Escalante National Monument, 2002

Research technician, Center for Cytometry & Molecular Imaging, Salk Institute, 1998–2001

Field biologist, El Paso County Parks Department, 1998

PROFESSIONAL PROFILE

Kelly Hardwicke is a principal and head of the botany group at H. T. Harvey & Associates. She has nearly two decades of experience characterizing plants in salt marsh, riparian, Mojavean scrub, chaparral, annual grassland, and vernal pool plant communities. Kelly also has an entomology and community ecology background, which enables her to distinguish significant plant-invertebrate community associations. Her knowledge of pollination biology complements her familiarity with the rare and endemic plant species of California.

Kelly's primary role at H. T. Harvey & Associates is addressing plant and wetlands-related regulatory issues, preparing CEQA documents, and coordinating regulatory agency permitting for complex projects. She performs wetland delineations and designs, manages, and performs large-scale protocol-level and rare plant surveys in a range of habitats. One of Kelly's strengths is her ability to communicate clearly with project engineers and to relay pertinent permitting-related information to regulatory agencies. Her strong research and botanical background gives her the skills necessary to determine the potential for a site to support special-status species, and analyze habitat requirements of rare plant species.

PROJECT EXAMPLES

Led regulatory permitting for the City of Alameda's Alameda Ferry Terminal project and stormwater outfalls for Alameda Point redevelopment, then joined the Alameda Point Partners, LLC, team to lead regulatory permitting for Site A development of the Alameda Point area, transferred to the City from the former Naval Weapons Station Alameda.

Lead regulatory permitting and rare plant studies for a **utility-scale photovoltaic project** in California. Kelly's efforts included serving as **the primary author of the project's 404(b)(1) alternatives analysis and providing substantial assistance in designing and selecting an appropriate range of on- and off-site project alternatives**. She delineated approximately 5,000 acres of waters of the U.S. as part of this effort, and also **led the team to conduct protocol-level floristic plant surveys on more than 3,700 acres**.

Principal in charge for City of Palo Alto's Baylands Boardwalk and Midpeninsula Regional Open Space Districts Ravenswood Bay Trail projects, both in highly sensitive San Francisco Bay marshlands, **directing regulatory permitting, restoration design, and construction compliance support**.

Served as project manager for biological support of the Pilarcitos Creek pedestrian bridge and trail in Half Moon Bay directing **permit preparation, wetland delineation, agency coordination, and construction monitoring support**.



Robin J. Carle, MS

Wildlife Ecology

rcarle@harveyecology.com
408.458.3241



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exploration, and excellence

HIGHLIGHTS

- Avian ecology
- Environmental impact assessment
- Endangered Species Act consultation and compliance
- Nesting bird and burrowing owl surveys and monitoring
- Other special-status wildlife surveys and habitat assessments

EDUCATION

MS, Fish and Wildlife Management, Montana State University

BS, Ecology, Behavior, and Evolution, University of California, San Diego

PERMITS AND LICENSES

Listed under CDFW letter permits to assist with research on bats, California tiger salamanders, California Ridgway's rails, and California black rails
USFWS 10(a)(1)(A) for California tiger salamander

PROFESSIONAL EXPERIENCE

Associate ecologist, H. T. Harvey & Associates, 2007–present

Volunteer bird bander, San Francisco Bay Bird Observatory, 2010–2020

Avian field technician, West Virginia University, 2006

Graduate teaching assistant, Montana State University, 2003–06

Avian field technician, Point Blue Conservation Science (formerly PRBO Conservation Science), 2004

PROFESSIONAL PROFILE

Robin Carle is an associate wildlife ecologist and ornithologist at H. T. Harvey & Associates, with more than 10 years of experience working in the greater San Francisco Bay Area. Her expertise is in the nesting ecology of passerine birds, and her graduate research focused on how local habitat features and larger landscape-level human effects combine to influence the nesting productivity of passerine birds in the Greater Yellowstone region. She also banded, sexed, and aged resident and migrant passerine birds with the San Francisco Bay Bird Observatory for 10 years. Her expertise extends to numerous additional wildlife species, and she has conducted surveys and assessments for burrowing owls; diurnal, nocturnal, and larval surveys for amphibians; acoustic and visual surveys for roosting bats; surveys and nest resource relocations for San Francisco dusky-footed woodrats; San Joaquin kit fox den surveys; trail camera surveys to document wildlife movement; and burrow-scoping surveys using fiber-optic orthoscopic cameras.

With an in-depth knowledge of regulatory requirements for special-status species, Robin has contributed to all aspects of client projects including NEPA/CEQA documentation, bird-safe design assessments, biological constraints analyses, special-status species surveys, nesting bird and raptor surveys and monitoring, construction implementation/permit compliance, Santa Clara Valley Habitat Plan/Natural Community Conservation Plan applications and compliance support, and natural resource management plans. Her strong understanding of CEQA, FESA, and CESA allows her to prepare environmental documents that fully satisfy the regulatory requirements of the agencies that issue discretionary permits. She manages field surveys, site assessments, report preparation, agency and client coordination, and large projects.

PROJECT EXAMPLES

Served as project manager for issues related to nesting birds for various **Stanford University** and **Stanford University Medical Center** construction projects from 2016–present.

Served as project manager for the preparation of a biological resources report to facilitate CEQA consultation for the City of Santa Clara's **Tasman East Specific Plan**.

Served as project manager for the preparation of a NES and BA to facilitate CESA and FESA consultation for the **Highway 101 Pedestrian/Bicycle Overcrossing** project in Palo Alto, California from 2015–2017.

As project manager, provided **bird-safe design assistance** including design recommendations, bird collision hazard assessments, compliance recommendations/documentation, avian collision monitoring plans, and/or bird-strike monitoring plans for numerous projects in Mountain View, Oakland, San Francisco, San Jose, Sunnyvale, and Palo Alto, California from 2015–present.



David Gallagher, MS

Plant Ecology

dgallagher@harveyecology.com
408.458.3288



H. T. HARVEY & ASSOCIATES

Ecological Consultants

HIGHLIGHTS

- Botany
- Wetland delineation
- Regulatory knowledge
- Biological monitoring
- Ecological statistics and modelling

EDUCATION

MS, Biology, California Polytechnic State University, San Luis Obispo

BA, Biology, University of North Carolina, Greensboro

PERMITS AND LICENSES

CDFW plant voucher collecting permit for state-listed plant species

CDFW scientific collecting permit for small mammals, amphibians, and reptiles

PROFESSIONAL EXPERIENCE

Ecologist 2, H. T. Harvey & Associates, 2018–present; *field biologist*, 2012 and 2014

Senior biologist, MIG, 2015–18

Biologist, Althouse and Meade Biological and Environmental Services, 2015

Biological technician, Western Ecosystems Technology, Inc., 2015

PUBLICATIONS AND PRESENTATIONS

Statistical Methodology for Wildlife Habitat Monitoring presentation, California State Parks, 2016 Off-Highway Motor Vehicle Recreation Division Annual Conference

2018 California Native Plant Society Conference presentation, “Photosynthetic recovery from Thermal Stress across Desert and Montane Plants.”

PROFESSIONAL PROFILE

David Gallagher is a plant ecologist with H. T. Harvey & Associates. He has more than 5 years of experience in the field and an in-depth knowledge of valley grassland, chaparral, riparian, wetland, oak woodland, and Sonoran/Mojave desert communities. David also has advanced training in wetland delineation and has performed wetland delineations in a range of habitats and plant communities including coastal salt marsh, Central Valley vernal pools, riparian systems, and in areas with challenging vegetation, soils, and hydrology. He has conducted floristic inventories, rare plant surveys, and post-fire vegetation monitoring in the San Francisco Bay Area, Central Valley, and Central Coast of California. His graduate research focused on how the composition and distribution of plant assemblages in the Sonoran Desert might shift in response to climate change.

As a plant ecologist with H. T. Harvey & Associates, David performs a range of services to support his client’s projects. He conducts special-status plant surveys, habitat and land cover mapping, vegetation monitoring, and wetland delineations. He prepares technical reports such as CEQA/NEPA documents and regulatory permit applications, including Clean Water Act (CWA) Section 401 and 404 permits.

PROJECT EXAMPLES

Prepared a Natural Environment Study, wetland delineation, CWA 401/404 permits, and a CDFW Lake and Streambed Alteration Agreement for the **Bermuda Drive Bridge replacement project** in the City of San Mateo.

Assisted in the preparation of a biological resources report for a City of Half Moon Bay development project at **880 Stone Pine Road**. The report addressed regulatory requirements under CEQA, the CWA and the Local Coastal Program.

Prepared a biological resources report and wetland delineation for the **Red Barn Public Access Area project**, which is part of Midpeninsula Regional Open Space District’s La Honda Creek Master Plan for improving public access to the La Honda Creek Open Space Preserve.

Conducted biological monitoring for the **Bear Gulch Fish Passage project** for Cal Water in Woodside. Assisted in the relocation of steelhead and California giant salamander.

Provided a variety of services for California State Parks. Performed **floristic inventories and rare plant surveys** in a range of habitat types. Completed a **wetland delineation** for a 1,300-acre area. Updated wildlife and habitat monitoring protocols, developed and implemented protocols for long-term ecological studies, including a multi-year mark-recapture study of small mammals and a multi-year occupancy study of mountain lions, and modeled avian abundance using point count data.