EXECUTIVE SUMMARY

This biological assessment is designed to identify biological constraints and highlight potential ecological restoration opportunities for the Cupertino Stevens Creek Trail alignment early on in the planning process. The project area extends from Rancho San Antonio County Park to Stevens Creek County Park in the City of Cupertino.

This bioassessment included evaluation of existing environmental reports and biological information already collected in the project area, as well as field surveys conducted specifically for this feasibility report. The field surveys were conducted between January 28, 2000 and March 17, 2001 to determine the location of sensitive habitats and the presence of species of concern. This bioassessment found nine distinct habitat types in the four Study Areas: riparian vegetation, freshwater wetlands, in-stream habitat, oak woodland/ grassland, oak woodland/chaparral, open grassland, orchard, golf course and parks, and suburban development. Of these habitat types, riparian vegetation, freshwater wetlands, in-stream habitat, and oak woodland systems are considered sensitive habitats by the resource agencies, either because they support rare species or because the habitats themselves are protected by law. Rare species documented or expected to occur in the project area include the western pond turtle, red-legged frog, steelhead trout, birds of prey (raptors), valley oak, and blue oak. The most important biological constraints to the trail alignment revolve around these rare species and habitats.

The recommendations provided in this report are based on the identified biological constraints and are designed to *avoid* impacts and minimize the need for environmental permits. The most central recommendations are:

- Avoid impacts to riparian vegetation. Place trail alignment outside the edge of the riparian vegetation to avoid human disturbance effects in the riparian corridor and to avoid the need to replace native species.
- Avoid impacts to oaks. Place trail alignment outside the drip-line of the oak trees to avoid the need to mitigate for impacts to oak trees.
- Avoid impacts to wetlands. Place trail alignment outside wetlands to avoid the need for a permit from the Army Corps of Engineers under Section 404 of the Clean Water Act.
- Avoid impacts to protected species, especially red-legged frog and steelhead trout. Place trail alignment outside red-legged frog and steelhead habitat and protect these habitats from direct and indirect trail

impacts to avoid the need for project redesign or mitigation consultation with the U.S. Fish and Wildlife Service.

Numerous opportunities to improve habitats and restore ecological communities exist in the project area. Significant restoration work could include:

- Provide earthen "stock" ponds for red-legged frogs. Create and maintain earthen ponds, modeled after livestock ponds, in terrestrial uplands near known frog habitat to increase breeding habitat for this rare species.
- Remove fish barriers in Stevens Creek. Fish barriers are a key factor limiting the movement of adult steelhead up stream.
- Remove non-native invasive species. Pampas grass (*Cortaderia selloana*), periwinkle *(Vinca major*), giant reed (*Arundo donax*) and other non-native, invasive species are growing throughout the project and should be removed to prevent their spread and allow revegetation by native plants.
- Replant the riparian corridor with native species. Many stretches of the stream corridor are missing some or all of their riparian cover. Restoring the native riparian community will have significant benefits for steelhead and other wildlife that depends on riparian vegetation for cover, nesting, and foraging.

Overall, this study found that a trail alignment through the project area is feasible from an ecological perspective. However, the sensitive species and habitats in the area and the laws applicable to them will limit the location of the trail alignment in some areas. A range of ecological restoration opportunities exist and these will be described in more detail in a subsequent report.

PURPOSE

This biological assessment is designed to identify biological constraints and potential ecological restoration opportunities for the Cupertino Stevens Creek trail alignment early on in the planning process. This report contains an overall assessment of the existing biological conditions in the project area for the Stevens Creek Trail, describes the locations and ecology of any rare or listed species that are found or may potentially be found in the project area, identifies protected habitats, and lists the laws and regulations that apply to these rare species and habitats. Constraints to the trail alignment and restoration opportunities are described for each of the four Study Areas that comprise the project area.

METHODOLOGY

Guidelines Applied for this Biotic Assessment

The field survey, identification of the habitat types, evaluation of the potential trail impacts on the biological resources, and recommendations to reduce or avoid impacts to the riparian corridor were performed in accordance with accepted practice for California Environmental Quality Act (CEQA) review and recommended policies and practices established by the California Department of Fish and Game (DFG) and the U.S. Fish and Wildlife Service (USFWS) to mitigate impacts to sensitive and listed species.

Focus of this Biotic Assessment

This assessment focused on the biological resources of the Stevens Creek and Permanente Creek riparian corridors and the adjacent uplands. The *Riparian Corridor Policy Study* conducted for the City of San Jose (1994) describes riparian corridors as "defined stream channels including the area up to the bank full-flow line, as well as all streamside vegetation in contiguous adjacent uplands." This biotic assessment considered both the year-round and seasonal use of habitats in the study by wildlife. The *Riparian Corridor Policy Study* notes that riparian zones are often considered "sensitive resource areas" or "sensitive wildlife habitat" by wildlife agencies and under the California Environmental Quality Act (CEQA). These corridors support hundreds of bird, mammal, reptile, amphibian, fish and invertebrate species. This field survey evaluated the biological conditions in nine habitat types found in the project area:

- Riparian Vegetation
- Freshwater Wetlands
- In-stream Habitat
- Oak Woodland/Grassland
- Oak Woodland/Chaparral Scrub
- Open Grassland
- Orchard
- Golf Course/Parks
- Suburban Development
-

The bioassessment focused on the presence of sensitive habitats and rare or listed species in the project area as follows *(See Study Area Habitat Map)*:

1) Sensitive habitats, which are either protected, rare, or decreasing, in the project area include:

All wetlands and In-stream Habitat: Wetlands and in-stream habitats are protected from dredging or filling by Section 404 of the federal Clean Water Act. Impacts to wetlands will require a Section 404 permit from the Army Corps of Engineers and will require mitigation as determined by the Corps. In addition, wetlands and in-stream habitat are known to protect a number of rare or listed species. In Santa Clara County, the red-legged frog, listed as threatened under the federal Endangered Species Act, is found in ponded or slow moving freshwater wetlands. Steelhead trout, another threatened species (federal), breeds in streams in Santa Clara County, including Stevens Creek. Any impacts to these species or their habitat requires consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service, depending on the agency with jurisdiction.

Riparian vegetation: Streamside vegetation zones are recognized as sensitive habitats by the California Department of Fish and Game and the County of Santa Clara. Both agencies recommend setbacks from the vegetated riparian corridor. Large riparian trees may serve as nest sites for birds of prey such as red-tailed hawks or kestrels; these birds and their nests are protected by the federal Migratory Bird Treaty Act and California Department of Fish and Game Code. In addition, the City of Cupertino has a heritage tree ordinance that protects trees 31 inches in circumference or greater (as measured 3 feet above grade) or other trees of special significance. Removing trees and native riparian vegetation may require permits from these agencies and generally requires mitigation.

Oak woodlands/grasslands: Oaks, in particular valley oaks and blue oaks, are declining in number and protecting them from human impact is common practice. Impacts to oak roots or trees themselves typically requires mitigation under the California Environmental Quality Act (CEQA) and most heritage tree ordinances.

Oak woodland/chaparral: Deer, quail, bobcat and other native species live in this habitat. Some, such as deer, are migratory and fragmentation of their habitat can disrupt migratory routes. Impacts to migratory corridors generally requires mitigation under CEQA.

Open grasslands: This habitat type is rapidly decreasing in Santa Clara County. Declining species such as the Burrowing Owl and Loggerhead Shrike require this habitat. Impacts to these rare grassland species requires

mitigation under the California Environmental Quality Act (CEQA) and California Department of Fish and Game Code.

2) Sensitive and listed species of wetlands, riparian vegetation, oak woodlands, chaparral, and grassland habitats, with specific emphasis on those known to occur in the project area and listed in the Natural Diversity Database for Santa Clara County are listed in Table 1.

   Species on this list are protected by the federal Endangered Species Act, the California Endangered Species Act, or California Department of Fish and Game Code. In addition to these species, all birds of prey and their nests are protected by California Department of Fish and Game Code and by the federal Migratory Bird Treaty Act. Impacts to these organisms, their breeding or nesting habitat, or foraging habitat will require consultation with the appropriate agencies and may require mitigation.

Table 1 - Special Status Species occurring or likely to occur in the Project Area.

Animal Species	*Legal Status**
California Tiger Salamander *(Ambystoma californiense)*	CSC, FC
California Red-legged Frog *(Rana aurora draytoni)*	FT
Western Pond Turtle *(Clemmys marmorata)*	CSC
Steelhead (*Oncorhynchus mykiss*)	FT
Cooper's Hawk *(Accipiter cooperii)*	CSC
Merlin *(Falco columbarius)*	CSC
Western Burrowing Owl *(Athene cunicularia*)	CSC
Loggerhead Shrike *(Lanius ludoricianus*)	CSC
Monterey Dusky-footed Wood Rat *(Neotoma fuscipes luciana*)	CSC
Pallid Bat (*Antrozous pallidus*)	CSC
Plant Species	
Valley Oak *(Quercus lobata*)	none
Blue Oak (*Quercus douglasii*)	none

FT = Listed as Threatened by the Federal Government
FC = Candidate for Federal listing
CSC = Listed as a Species of Concern by the State of California

Field Survey Methods

Field surveys were conducted between and January 28, 2000 and March 17, 2001 to capture different seasons and evaluate the length of the study area. A total of 16 hours of field work was conducted by Lynne Trulio on January 28, July 31, 2000, and March 16 and 17, 2001. On each trip, surveys focused on specific Study Areas of the creek corridors. Additional visits were made to previously surveyed portions of the creek to verify findings and evaluate the corridor over time. All observations were made on foot using 10 x 42 binoculars. Adjacent fields, trees, perching sites, and the undersides of bridges were examined for nests or other bird or mammal activity.

Other Information Sources

In addition to field surveys, these sources were consulted for biological information on the area and particular species:

b) Lands of the Diocese of San Jose, Draft and Final Environmental Impact Reports
c) Stevens Creek County Park Master Plan Environmental Impact Report

d) California State Fish and Game Natural Diversity Database
e) Santa Clara Valley Audubon Society (SCVAS)
f) Midpeninsula Regional Open Space District (MROSD)

PROJECT SETTING

Regional Setting

The project area is located in the foothills of the Santa Cruz Mountains and follows the Stevens Creek corridor from Rancho San Antonio County Park to Stevens Creek County Park. The project area also borders a segment of Permanente Creek as it flows through Rancho San Antonio County Park. The project area is bounded by the Santa Cruz Mountain foothills to the west, Highway 280 to the north, suburban development to the east, and Stevens Creek County Park/Fremont Older Open Space Preserve to the south. The general topography of rolling hills and flood plain provides a range of natural habitats from oak woodland to grassland to riparian vegetation. The potential trail alignment passes through theses habitats as well as two golf courses and suburban development. Parts of this area have been quarried in the past and a closed quarry exists in the project area. Active quarries, run by Hansen-Permanente and by Stevens Creek Quarry, operate just west of the project area. Stevens Creek flows from the Stevens Creek reservoir in Stevens Creek County Park through the cities of Cupertino, Sunnyvale, Los Altos, and then into the City of Mountain View, where it joins the San Francisco Bay in Shoreline Park in Mountain View.

Project Area

The project area is divided into four Study Areas, as described below. Nine habitat types were found in the four Study Areas. They include the natural communities of riparian vegetation, in-stream habitat, freshwater wetland, oak woodland/grassland oak woodland/chaparral, and open grassland and the human-developed habitat provided by golf courses/parks, orchard, and suburban development.

BIOLOGICAL CONDITIONS, CONSTRAINTS AND RESTORATION OPPORTUNITES BY STUDY AREA

Study Area A: Cristo Rey Drive to Stevens Creek Boulevard

Existing Conditions. Study Area A is located at the most northwestern end of the project area. It is bounded by Rancho San Antonio County Park and Cristo Rey Drive on the north and Stevens Creek Boulevard to the south. This

Study Area includes the "Lands of the Diocese" development, Gates of Heaven Cemetery, and a large PG&E substation. Several parcels in this area will soon be transferred to Santa Clara County Parks and Recreation as part of the "Lands of the Diocese" development agreement. The Hammond-Synder House, a historic site owned by the Cupertino Historical Society, is also found here.

Habitats in Study Area A include open grassland, blue oak woodland interspersed with grassland, freshwater wetland (with seeps), willow-dominated riparian vegetation, and suburban development *(See Study Area Habitat Map)*. Rare, sensitive, or listed species known to occur in the area include red-legged frog, Loggerhead Shrike, Merlin, blue oak, and valley oak. Rare or protected species potentially existing in the area include the western pond turtle, Burrowing Owl, and other birds of prey. Several extensive searches for the California tiger salamander, a candidate for listing as a federally-threatened species, have not found the salamander in the study area.

Much of this area is covered by non-native annual grassland that had been heavily grazed for decades. Typical non-native grasses include *Avena spp*., *brome (Bromus spp*.), and ryegrass (*Lolium spp*.). Several native grassland species can be observed easily amist the annual grasses, plants such as fiddleneck, soap plant, California poppy (*Escholtizia californica*), lupine species (*Lupinus spp*.), and blue-eyed grass. Grassland rodents, such as voles, mice, and gophers are prevalent, providing a large prey base for a wide variety of birds of prey. Red-tailed Hawks, Kestrels, White-tailed Kites, and Sharp-shinned Hawks are easily seen hunting over the grasslands. Great-horned Owls, Screech Owls, and Merlin have also been observed in the area. This open grassland habitat with existing ponds appears to present likely habitat for the California tiger salamander, a rare species. This species requires vernal pools for breeding and can be found with red-legged frogs in the same habitat and breeding pools. However, the only known the tiger salamander population on the peninsula is found at Lake Lagunita, on the Stanford University campus (Seymour and Westphal, 2000). In addition, Seymour and Westphal (2000) found no tiger salamanders in the amphibian the 217 amphibian survey routes they visited in Mid-peninsula Regional Open Space District (MROSD) preserves in the Santa Cruz Mountains and the foothills. Since the MROSD preserves are similar to the habitat in Study Area A, and the entire project area, it is very unlikely that California tiger salamanders are present in the project area.

Oak woodland is also a significant habitat in this area. Blue oaks (*Quercus douglassii*) dominate the grasslands on the hillsides and down the drainages. Coast live oaks (*Quercus agrifolia*) and some valley oaks (*Quercus lobata*) are also found in the area. These trees are keystone species in the habitat, that is, they are essential for supporting many other organisms. Deer and acorn woodpeckers are two species found in the area that depend on oaks. Oaks are sensitive to disturbances in their root zone, which extends the distance of the tree's canopy. Disturbances that impact the oaks include overcovering, overwatering, earth removal or tilling, and root damage from vehicles.

Three ponded freshwater wetlands and their drainages exist on-site: one on the north side of the Study Area below Cristo Rey Drive, one on the east side between Rancho San Antonio County Park and the Gate of Heaven Cemetery, and one on the south side near the Whispering Creek stable and horse paddock. Each wetland has emergent freshwater vegetation including cattails (*Typha spp*.) and rushes (*Juncus spp*.). Wetlands are protected from dredging or filling by Section 404 of the Clean Water Act. Impacts to wetlands require a Section 404 permit from the Army Corps of Engineers, the agency with immediate jurisdiction over wetlands. The wetland zone just south of Cristo Rey Drive is fed by two drainages (with wetlands down each drainage) and this is an important complex. This wetland complex was surveyed for the "Lands of the Diocese" EIR by Mark Jennings, an amphibian specialist with H. T. Harvey and Associates. On April 8, 1994, he identified a red-legged frog in this freshwater wetland zone. This wetland zone is fed by seeps and provides continuous ponding to support the red-legged frog. This species is listed as threatened under the federal Endangered Species Act. The U.S. Fish and Wildlife Service, which has jurisdiction over federally-listed species, considers impacts to this species or its habitat to include loss of habitat, changes to local hydrology, harming or harassing individual frogs, and introducing predators (including dogs and cats) into the wetland. This list is not inclusive of all potential impacts to this species, but highlights those relevant to the Cupertino Stevens Creek Trail.

Riparian vegetation, dominated by willow species (*Salix spp*.), lines Permanente Creek between the Hammond-Snyder House and Rancho San Antonio County Park. Other tree species in this corridor include coast live oak, sycamore, elderberry, and buckeye. Cattails and horsetails grow along some of the exposed stream edges. Coyote bush, hoarhound, fiddleneck, and miner's lettuce grow under and just outside the willow drip-line. In the past, this riparian corridor was damaged by grazing, agriculture, and other activities of the Diocese. Today, runoff from the Hansen-Permanente quarry still introduces sediments into the Creek and alters the hydrology. Despite

these impacts, Mike Westphal, biologist for Coyote Creek Riparian Station, found juvenile and adult red-legged frogs in Permanente Creek in 1994 and he found red-legged frogs in 1997 in ponds just south of Hansen-Permanente and within 1 mile of the project area (M. Westphal and L. Trulio, pers. observ.). Most recently, Westphal and Seymour conducted an amphibian survey of all Midpeninsula Regional Open Space District lands. Their report, dated June 1, 2000, noted that red-legged frogs were found on the Diocese property just adjacent to Rancho San Antonio County Park.

In-stream habitat is maintained by flows from the Hansen-Permanente quarry operation. A holding pond at the edge of the study area is designed to remove sediments before water moves downstream. This habitat supports red-legged frogs and may be adequate for western pond turtles, a state species of concern.

Constraints for the trail alignment in Study Area A include:

- Place trail alignment outside the drip-line of the willow riparian vegetation along Permanente Creek to avoid human disturbance impacts to riparian species and the need to replace native vegetation.
- Place trail alignment outside the drip-line of the oak trees to avoid the need for mitigation.
- Place trail alignment outside wetlands to avoid the need for a permit from the Army Corps of Engineers under Section 404 of the Clean Water Act.
- Place trail alignment outside red-legged frog habitat and protect frog habitat from direct and indirect trail impacts to avoid the need for project redesign or mitigation. A Section 7 consultation with the U.S. Fish and Wildlife Service under the federal Endangered Species Act may still be required as since the project will be directly adjacent to red-legged frog habitat.

Restoration opportunities in Study Area A include:

- Repair road cut from Cristo Rey Drive down the hill toward red-legged frog wetland: Regrade the road cut to match topography and stop erosion. Plant with native grasses, if possible, and native grassland species. This is a reasonably simple and inexpensive project.
- Plant valley, blue, and coast live oak trees grown from locally collected acorns: Collect acorns in the fall and grow them in a nursery until they have developed a taproot. Newly planted oaks require some maintenance and irrigation for the first few years. This is an project of intermediate cost and complexity.

- Provide earthen "stock" ponds for red-legged frogs: Create and maintain earthen ponds, modeled after livestock ponds, with adequate vegetation and ponding in terrestrial uplands near known frog habitat to increase breeding habitat for this rare species. Potential sites include the parcels being deeded from the Diocese to Santa Clara County Parks and Recreation. This is a reasonably complex project that may require habitat management to keep the ponds attractive to frogs.

Study Area B: Stevens Creek County Park to Linda Vista Park

Existing Conditions. Study Area B is dominated by a closed quarry and Linda Vista Park. Six habitat types occur in the area: open grassland, oak woodland/chaparral, freshwater wetland (with seeps), willow-dominated riparian vegetation, golf course/park lands, and suburban development *(See Study Area Habitat Map)*. Rare, sensitive, or listed species potentially existing in the area include red-legged frog, western pond turtle, and birds of prey. Stevens Creek flows through the golf course and then skirts the northwest corner of the Study Area.

Open grassland is found at the bottom of the quarry. This non-native grassland is growing on the highly disturbed, unconsolidated, and eroding surfaces left after quarrying ended. As is often the case on mined lands, only the hardiest species can survive such disturbance. The quarry area is eroding severely and large gullies are evident on the slopes and on the quarry floor. This unstable topography prevents many native species from establishing and encourages the spread of invasive, non-native species, such as pampas grass and French broom, both of which are growing on the quarry slopes.

Several small flowing rivulets, probably formed by seeps, feed freshwater wetlands in the center and along the southern side of the quarry at the base of a steep hill. These drainages converge to form a small stream that flows to Stevens Creek at the mouth of the quarry. Typical wetland species, especially cattails (*Typha spp.*) and rushes (*Juncus spp.*), are prevalent in both wetlands. The large wetland along the quarry's south edge also supports willow riparian vegetation, including cottonwoods and alders. These wetlands represent potential red-legged frog habitat.

Coast live oak woodland interwoven with chaparral occurs on the east and west wall of the quarry, over much of the knoll just above Linda Vista Park, and through the gulch that runs east-west from the quarry to Linda Vista Drive (along the south edge of Linda Vista Park). Coast live oak, the dominant tree, is found with a diversity of shrubs especially *Ceanothus spp.*,

chemise (*Adenostoma fasciculatum*), manzanita (*Arctostaphylos spp*.), coyote bush (*Baccharis pilularis*) and toyon (*Heteromeles arbutifolia*). Under or around these large shrubs, California blackberry *(Rubus ursinus*), poison oak *(Toxicodendron diversilobum),* California sage *(Artemesia californica)*, chaparral current (*Ribes sanginium*), pearly-everlasting, ferns, monkey flower, and Indian paintbrush are easily found. Deer, California Quail, and the gray fox are typical mammal residents of this habitat.

Suburban development abuts Study Area B on the east side and some of the west side. The Deep Cliff Golf Course borders the west and north edges of Linda Vista Park. The golf course and the park land habitat of Linda Vista Park provided habitat primarily for human-habituated species, such a jays, robins, and California towhees. Herons and egrets may also frequent the golf course ponds and in-stream habitat of Stevens Creek, which flows through the golf course.

Constraints for the trail alignment in Study Area B include:

- Place trail alignment outside the edge of the willow-cottonwood riparian vegetation to avoid human impacts and the need for replacing native species.
- Place trail alignment outside the drip-line of the oak trees to avoid the need to mitigate for impacts to oak trees.
- In conformance with the City of Cupertino Heritage Tree Ordinance, do not remove any trees larger than 31 inches in circumference (measured at 3 feet above grade) to avoid the need to mitigate.
- Place trail alignment outside wetlands to avoid the need for a permit from the Army Corps of Engineers under Section 404 of the Clean Water Act.
- Place trail alignment outside red-legged frog habitat and protect frog habitat from direct and indirect trail impacts to avoid the need for project redesign or mitigation. A Section 7 consultation with the U.S. Fish and Wildlife Service under the federal Endangered Species Act may still be required as since the project will be directly adjacent to red-legged frog habitat.

Restoration opportunities in Study Area B include:

a) Control quarry erosion: Recontour the unconsolidated fill on the eastern floor of the quarry to reduce erosion and the resulting sediment load to Stevens Creek. Use ecologically sensitive engineering methods and stabilize the recontoured slopes by planting native vegetation to control eroding areas on the slopes and around the edges of the quarry. This work will prepare the area for more complete revegetation with native plants.

b) Remove non-native species, especially from quarry slopes: Non-native pampas grass and French broom are two invasive species that crowd out native species. They are both growing on the eroding slopes of the quarry and are found in some of the other habitats. Remove these few plants before they become well-established in the quarry habitat. Remove non-native, invasive species to prepare the area for recolonization by native plants or for planting native species.
c) Plant native species along all feasible quarry slopes: Using less disturbed sites as models for the local native vegetation community, plant the appropriate diversity and abundance of native plant species to restore the native, indigenous vegetation community.

Study Area C: Linda Vista Park to Blackberry Farm

Existing Conditions. Study Area C includes Deep Cliff Golf Course, McClellan Ranch Park, and an open grassland parcel just north of McClellan. Suburban development abuts this Study Area on east and west sides. Linda Vista Park is found at the south end and Blackberry Farm (golf course) borders the north. Five habitat types occur in the area: in-stream habitat, Sycamore-oak riparian vegetation, open grassland, golf course/park lands, and suburban development *(See Study Area Habitat Map)*. Rare, sensitive, or listed species potentially existing in the area include red-legged frog, western pond turtle, steelhead, and other birds of prey. Stevens Creek flows through this Study Area.

The in-stream habitat of Stevens Creek is potential red-legged frog and western pond turtle habitat. It is also known to support adult and juvenile steelhead trout along its entire length from the reservoir in Stevens Creek County Park to Shoreline Park in Mountain View, where it meets the Bay. Steelhead are listed as threatened under the federal Endangered Species Act and are under the jurisdiction of the National Marine Fisheries Service. This anadromous form of rainbow trout lives in streams for some of their life cycle and in the ocean for the rest. They spawn in freshwater streams and are sensitive to high temperatures, sediment, loss of in-stream structures, and loss of appropriate spawning gravel. Since 1937, water has been impounded in a reservoir at the head of Stevens Creek, resulting in only winter and spring flows. Stevens Creek was allowed to go dry each summer. As a result, the entire Creek was used only for migration and rearing habitat was eliminated from the lower reaches. Recently, the Santa Clara Valley Water District, which manages flows in the Creek, has allowed year round flows

(Padley pers. comm. 1999). This new policy was initiated in 1998, and in September of that year, first and second year age class steelhead were observed in Stevens Creek in Mountain View (G. Seeds, pers. comm. 1998). The Fisheries and Aquatic Habitat Collaborative Effort (FACHE) was initiated to research the habitat needs of steelhead, collect information on the effects of different water release policies in Santa Clara County streams, and provide recommendations for managing in-stream habitats for steelhead populations given the constraints of this urban setting. Research shows that Stevens Creek is a viable spawning habitat for adults and summer rearing habitat for juveniles if managed properly. Adult steelhead are limited in their distribution by in-stream fish barriers that impede their movement up stream. The survival of juvenile steelhead seems to be most limited by high in-stream water temperatures, which are not tolerated by young fish. Protecting this valuable steelhead habitat is a high priority.

The potential trail alignment in Study Area C could include replacing the McClellan Road bridge, replacing a tunnel parallel to the stream channel under McClellan Road, and installing new or replacement pedestrian bicycle bridges. Any trail development activity in the channel or in jurisdiction wetland would require:

a) a Stream Alteration Agreement with the California Department of Fish and Game,
b) a Clean Water Act Section 404 permit from the Army Corps of Engineers for wetland impacts, and/or
c) an Endangered Species Act Section 7 consultation with the National Marine Fisheries Service for impacts to steelhead trout and their habitat.

Sycamore and coast live oaks dominate the riparian vegetation along most of this stretch of the Creek. The Santa Clara Valley Audubon Society's McClellan Ranch Park Checklist of Birds notes over 106 species of birds found in the riparian corridor and grasslands of the Park. Riparian cover is especially good through McClellan Ranch to Blackberry Farm where the understory includes coyote bush, box elder, and native blackberry. Non-native invasive species here include periwinkle, german ivy, and tree of heaven. The stream is well shaded through this section and the in-stream habitat, which includes riffles, pools, and exposed gravel, appears to provide high quality fish habitat. The riparian corridor and in-stream habitats through Deep Cliff Golf Course were not evaluated because this area is not part of a potential trail alignment.

The open grassland at McClellan Ranch Park and between the Park and Blackberry Farm provides foraging habitat for a wide variety of bird species,

including birds of prey. Deer, coyote, and bobcat have all been observed here (C. Breon, pers. comm.; pers. observ.). Grassland adjacent to the Creek corridor may also provide the breeding habitat required by western pond turtles. These turtles move into grassy uplands adjacent to creeks to lay their eggs.

Constraints for the trail alignment in Study Area C include:

- Place trail alignment outside the edge of the riparian vegetation to avoid the need for mitigating human disturbance effects in the riparian corridor and to avoid the need to replace native species.
- Place trail alignment outside the drip-line of the oak trees to avoid the need to mitigate for impacts to oak trees.
- To comply with the City of Cupertino Heritage Tree Ordinance, do not remove any trees larger than 31 inches in circumference (measured at 3 feet above grade) to avoid heritage tree impacts.
- Place trail alignment outside wetlands to avoid the need for a permit from the Army Corps of Engineers under Section 404 of the Clean Water Act.
- Place trail alignment outside steelhead habitat and protect in-stream habitat from direct and indirect trail impacts to avoid the need for project redesign or mitigation. A Section 7 consultation with the National Marine Fisheries Service under the federal Endangered Species Act will be required as the project will be directly adjacent to steelhead habitat.

Restoration opportunities in Study Area C include:

- Remove non-native, invasive species from the riparian corridor: At least three non-native, invasive species, Vinca, german ivy and tree of heaven, could be removed to provide room for native plants.
- Stabilize bank and revegetate: Several opportunities exist to stabilize creek bank slopes using ecologically sensitive engineering methods and native species.

Study Area D: Blackberry Farm to Stevens Creek Boulevard/Varian Park

Existing Conditions. Study Area D begins at the south end of Blackberry Farm Golf Course and follows Stevens Creek to Varian Park, just north of Stevens Creek Boulevard. Suburban development surrounds this Study Area on all but the south side. Rare, sensitive, or listed species potentially existing in the area include red-legged frog, western pond turtle, steelhead, and nesting birds of prey. Sycamore-oak riparian vegetation, in-stream habitat, orchard, golf course/park, and suburban development are the five habitat types in this zone *(See Study Area Habitat Map)*.

A narrow band of riparian vegetation lines Stevens Creek as it flows through Blackberry Farm and Golf Course. Sycamore and coast live oaks are the dominant trees. Other tree species include California buckeye, black walnut, redwood, and pines. The corridor through the golf course has almost no understory or mid-story vegetation layers, which severely reduces the habitat quality of the riparian zone to wildlife. Riparian vegetation becomes very sparse to non-existent at the north end of the golf course. The riparian vegetation corridor becomes wider and much more diverse on the north side of Stevens Creek Boulevard where large sycamores, coast live oaks, and buckeyes shade several understory layers.

While this area is considered steelhead habitat, the poor quality riparian vegetation or the complete lack of vegetative cover in this study area reduces the quality of the in-stream habitat for steelhead and the food chain they depend upon. Lack of adequate vegetation cover produces little shade, resulting in water temperatures that are too high for the survival of juvenile steelhead. Sparse vegetation also means the nutrient base in the stream is decreased for insects that feed steelhead young and adults. In addition, riparian vegetation adds large woody debris to streams that forms pools and cover for fish. The in-stream habitat in this area has a fish barrier at the south end of the Blackberry Farm Golf Course and boulders or rip-rap along the stream bank—structures that reduce habitat quality for adult steelhead.

Orchards are found just south of Stevens Creek Boulevard and in Varian Park. The orchard south of Stevens Creek provides habitat for a wide range of species, from resident deer to migratory song birds. This site may also provide nesting habitat for western pond turtles. The smaller orchard at Varian Park is on the bluff high above the Creek and so does not provide turtle habitat.

The potential trail alignment in Study Area D may have between one and five pedestrian/bicycle bridges crossing Stevens Creek and possibly an undercrossing at Stevens Creek Boulevard. The trail alignment may require access ramps to the Stevens Creek Boulevard underpass or tunnel. These structures would result in the loss of riparian corridor trees and vegetation just north of the Boulevard. Any trail development activity in the channel or in jurisdiction wetland would require:

a) a Stream Alteration Agreement with the California Department of Fish and Game,

b) a Clean Water Act Section 404 permit from the Army Corps of Engineers for wetland impacts, and/or

c) an Endangered Species Act Section 7 consultation with the National Marine Fisheries Service for impacts to steelhead and their habitat.

The restoration opportunities listed below provide potential mitigation measures for impacts to wetland habitat and riparian vegetation.

Constraints in Study Area D include:

- Place trail alignment outside the edge of the riparian vegetation to avoid human disturbance effects in the riparian corridor and to avoid the need to replace native species.
- Place trail alignment outside the drip-line of the oak trees to avoid the need to mitigate for impacts to oak trees.
- In conformance with the City of Cupertino Heritage Tree Ordinance, do not remove any trees larger than 31 inches in circumference (measured at 3 feet above grade) to avoid heritage tree impacts.
- Place trail alignment outside wetlands to avoid the need for a permit from the Army Corps of Engineers under Section 404 of the Clean Water Act.
- Place trail alignment outside steelhead habitat and protect in-stream habitat from direct and indirect trail impacts to avoid the need for project redesign or mitigation. A Section 7 consultation with the National Marine Fisheries Service under the federal Endangered Species Act may still be required as since the project will be directly adjacent to steelhead habitat.

Restoration opportunities in Study Area D include:

- Remove rip-rap and boulders lining the Creek banks: At the south end of Blackberry Farm, creek bank armoring with boulders and rip-rap could be replaced with an ecologically-sensitive bank stabilization method that allows riparian vegetation to grow and shade the Creek.
- Remove the fish barrier at the south end of Blackberry Farm Golf Course: Remove the barrier and replace with pool and riffle habitat, which is attractive to steelhead. This project is relatively expensive as it will require environmental permits and engineering work. However, the long-term benefits to steelhead are great.
- Remove low flow vehicle crossings: There are several places along the Creek in Blackberry Farm and golf course where vehicles cross the Creek in the channel. These could be removed and the in-stream habitat restored for aquatic species, especially steelhead.
- Remove non-native invasive species: Periwinkle (*Vinca major*) and giant reed (*Arundo donax*), two highly invasive species, are growing along the corridor and should be removed to prevent their spread.

- Replant the riparian corridor with native species grown from locally collected stock: Much of the corridor in this Study Area is missing some or all of its riparian cover. Restoring the native riparian community, including trees, shrubs, and vegetative understory, will have significant benefits for steelhead and other wildlife species that depend on riparian vegetation for cover, nesting, and foraging.

APPLICABLE SPECIES LAWS AND REGULATIONS

Federal Laws

The federal Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq., as amended) prohibits federal agencies from authorizing, permitting or funding any action that would result in biological jeopardy to a species listed as Threatened or Endangered under the Act. Listed species are taxa for which proposed and final rules have been published in the Federal Register (U.S. Fish and Wildlife Service [USFWS] 1998a, 1998b). If a proposed project may jeopardize listed species, Section 7 of the ESA requires consideration of those species through formal consultations with the USFWS. Federal Candidate species are "taxa for which [USFWS] has on file sufficient information on biological vulnerability and threats to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded" (USFWS 1997). Federal Candidate species are not afforded formal protection, although USFWS encourages other federal agencies to give consideration to Candidate species in environmental planning.

The federal Migratory Bird Treaty Act (1918, 1972, 1976) protects species listed in the Act under the Code of Federal Regulations, 50 CFR 10.12. In essence, all migratory birds and their nests are protected by this Act.

Wetlands are "waters of the U.S." and are therefore regulated under Section 404 of the federal Clean Water Act (1972). The Army Corps of Engineers must issue a permit for projects that result in the dredging or filling of jurisdictional wetlands. Consultation with the Army Corps of Engineers is recommended if a project may cause direct or indirect impacts to wetlands or other waters of the U.S.

State of California Laws and Codes

Project permitting and approval requires compliance with the 1970 California Environmental Quality Act (CEQA) and the 1984 California Endangered Species Act (CESA). CESA authorized the California Fish and Game Commission to designate Endangered, Threatened and Rare species and to regulate the taking of these species (ß 2050-2098, Fish & Game Code). The

California Code of Regulations (Title 14, Section 670.5) lists animal species considered Endangered or Threatened by the state. The CDFG maintains lists of designated Endangered, Threatened and Rare plant and animal species (CDFG 1996, 1997).

The CDFG also maintains a list of animal "species of special concern (SSC)," most of which are species whose breeding populations in California may face extirpation. Although these species have no legal status, the CDFG recommends considering these species during analysis of proposed project impacts to protect declining populations and avoid the need to list them as endangered in the future.

Under provisions of Section 15380(d) of CEQA, the project lead agency and CDFG must mitigate significant impacts to rare species, such as federal candidate species or SSC species, as well as significant impacts to listed species.

In accordance with Fish and Game Code 1601-1603, the CDFG has the authority to oversee work that occurs in streams and riparian zones. A Streambed Alteration Agreement with the CDFG is required if a project will substantially divert the natural flow of a stream, substantially alter its bed or bank, or use any material from the streambed.

SPECIES DESCRIPTIONS

Summary of Special-Status Wildlife Species

Special-status amphibians, reptiles, and fish known to occur in the riverine habitat of Santa Clara County in the vicinity of the project site include the western pond turtle *(Clemmys marmorata*), a California Species of Special Concern, the California red-legged frog *(Rana aurora draytonii*), a federally-listed threatened species, and the steelhead trout (*Oncorhynchus mykiss*), a federally-listed threatened species.

Rare species that may occur in or near the study area include nesting raptors (hawks, falcons and owls) and Monterey dusky footed wood rats *(Neotoma fuscipes luciana*). Raptors and raptor nests are protected under the federal Migratory Bird Treaty Act and California Fish and Game code; the wood rat is a California Species of Special Concern.

State or Federally-Listed Species

California Red-Legged Frog (*Rana aurora draytonii*)
California red-legged frogs are listed as threatened by the U.S. Fish and Wildlife Service under the Federal Endangered Species Act, and they are a state Species of Special Concern. California red-legged frogs are known to occupy and breed in marshy habitats, springs, ponds (both natural and artificial), and slack water pools of rivers and streams (Stebbins 1985).

Frogs may lay their eggs as early as November, but typically egg-laying occurs in central California from January 1 to April 1. Rivers subject to high flows and flushing with no calm pools to escape, such as characterizes Stevens Creek, will flush out egg masses and are not suitable nesting habitat. After breeding, adults may move from pool to pool along stream bank or in riparian vegetation. Juvenile red-legged frogs appear to have different habitat needs from adults. Most sites where juvenile red-legged frogs occur have shallow water and limited shoreline or emergent vegetation (Jennings and Hayes 1988). It is important for juvenile red-legged frogs that there be small one-meter breaks in the vegetation or clearings in the dense riparian cover to allow juveniles to sun themselves and forage, but also to have close escape from predators (Jennings and Hayes 1988). Tadpoles also have different habitat needs. Optimal habitat for this life stage is characterized by emergent willow stems, grasses, filamentous algae, cattails, and submerged weeds and stems (Wiens 1970). In addition to vegetation cover, Jennings and Hayes (1988) note that tadpoles use mud. It is speculated that red-legged frog larvae are algae grazers; however, larval foraging ecology remains unknown (Jennings, Hayes, and Holland 1993).

It is estimated that California red-legged frogs have disappeared from over 99 percent of the inland and southern California localities within the historic range of the species and from at least 75 percent of the entire historic range of the species (Jennings, Hayes, and Holland 1993). Populations of California red-legged frogs have declined due to exotic aquatic predators, habitat degradation from agricultural and grazing practices, a decrease in water quality from human manipulation of habitats, and water diversion.

Steelhead Trout (*Oncorhynchus mykiss*)
The steelhead trout of the central California coast are considered an "evolutionarily significant unit" by the National Marine Fisheries Service and are federally listed as Threatened in the Study Area. As an anadromous form of rainbow trout, steelhead hatch in freshwater streams, migrate out to the ocean and later return to their natal streams to spawn. Steelhead live in their natal streams for up to four years before migrating to the ocean. They spend between two to five years in the ocean where the trout are bluish-gray above

with black spots on their back and fins, silver below. When steelhead are in fresh water they are often greenish and less silvery in color. Other identifying marks include a pink to red stripe on their side. When they are ready to spawn, the fish return to their natal streams where they lay eggs in gravelly substrates. Along the central California coast, migration upstream and spawning occurs from October 15 to June 15. Unlike most other salmon species, the adults survive after spawning. Juveniles remain in their natal streams and are especially sensitive to high water temperatures between May and October. This species eats a varied diet of crustaceans, small fish, tadpoles and insects.

Steelhead are sensitive to water levels, water temperature and poor water quality. Removing trees that overhang spawning streams can increase water temperatures, which decreases the amount of oxygen in the water and reduces the survival of eggs, fry and adults. Sedimentation--a primary form of water quality degradation--will smoother and kill eggs and fry and destroy spawning areas by covering gravels with fine particles.

Rare, Non-Listed Species

Western Pond Turtle (*Clemmys marmorata*)
The western pond turtle is a California Species of Special Concern. Western pond turtles are found in ponds, marshes, rivers, streams, and irrigation ditches containing aquatic vegetation. They are usually seen sunning on logs, banks, or rocks near banks. Individuals move up to three or four miles within a creek system, especially during "walk-abouts" before a female lays eggs. Eggs are laid in nest burrows that can be up to several hundred feet away from river or pond banks in woodlands, grasslands, and open forest. Eggs are laid from April-August; time varies with locality. Suitable riverine habitat for western pond turtles occurs within the project area as Stevens Creek contains escape cover such as deep pools, undercut banks, overhanging vegetation and in-stream tree roots. There appears to be suitable grassy, upland nesting habitat adjacent to Stevens Creek at the Simms Property orchard, McClellan Ranch, and the open grassland parcel just north of McClellan Ranch.

Monterey Dusky-footed Wood Rat (*Neotoma fuscipes luciana*)
This subspecies of the dusky-footed wood rat is a California Species of Special Concern. It occurs in the coastal foothills and mountains from Monterey Bay to Morro Bay. It is common to abundant in deciduous and evergreen woodland habitat that provides dense overstory and understory cover. It is also commonly found in chaparral, coastal scrub, and riparian habitats (Zeiner et al. 1990b). Wood rats build houses of sticks, bark, leaves, and other forest debris at the base of, or within the canopy of, a shrub, tree, or other

structure. Suitable habitat for wood rats occurs in the dense chaparral habitat in Study Area B. Searches for wood rat nests were not conducted during this bioassessment.

Birds of Special Concern in California

The Loggerhead Shrike (*Lanius ludovicianus*) and Burrowing Owl (*Athene cunicularia*) are two grassland species of special concern in California. The shrike forages for insects, reptiles and amphibians and other small creatures in open grasslands and nests in scrubs, viney thickets, or trees adjacent to open grassland. They often occur in grasslands adjacent to creek corridors. The burrowing owl is a prairie bird which nests underground in burrows. In the South Bay, burrowing owls live on open, flat sites such as vacant fields, golf courses and airports where ground squirrels provide the owls' nest burrows.

Raptors (birds of prey) which occur in the area include American Kestrel (*Falco sparverius*), Red-shouldered Hawk (*Buteo lineatus*), Red-tailed Hawk (*Buteo jamaicensis*) Cooper's Hawk (*Accipiter cooperii*), Sharp-shinned Hawk (*Accipiter striatus*), White-tailed Kite (*Elanus leucurus*), Burrowing Owl (*Athene cunicularia*), Great Horned Owl (*Bubo virginianus*), and Barn Owl (*Tyto alba*). Potential nest trees for raptors exist along the riparian corridor of Stevens Creek. Large oaks and sycamore snags with cavities along the upper boundaries of the riparian corridor provide potential nesting habitat for several owl species. However, foraging areas to support resident raptors and their young is limited due to the constrained area of the riparian corridor.

Raptors and their nests are protected by California Department of Fish and Game Code. Nesting raptors are likely to be disturbed if there is a change in human activities levels during their nesting season, but may habituate to human activity if those activity levels are constant (Lee 1981). A pre-construction survey for nesting raptors should occur prior to the nesting season, which begins in March and at least 30 days prior to construction activities. If a nest tree will be removed or construction activity is within 150 feet of an active nest, appropriate mitigation measures must be developed with the California Department of Fish and Game.

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