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175 0 175 Feet

Source: Google Earth, 2006; PCR Services Corporation, 2007.

Figure 6
Site D
Tree Locations Map

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All amphibian species expected to occur within the study area are included in Appendix B, *Floral and Faunal Compendium*.

3.4.2 Reptiles

Reptilian diversity and abundance typically varies with habitat type and character. Some species prefer only one or two natural communities; however, most will forage in a variety of communities. A number of reptile species prefer open habitats that allow free movement and high visibility. Most species occurring in open habitats rely on the presence of small mammal burrows for cover and escape from predators and extreme weather.

The study area has many essential reptilian habitat characteristics and possesses the potential to support several species. One reptile species was observed within the study area, the western fence lizard (*Sceloporus occidentalis*). A number of additional species have the potential to be resident within the study area including Skilton's skink (*Eumeces skiltonianus skiltonianus*), side-blotched lizard (*Uta stansburiana*), San Diego alligator lizard (*Elgaria multicarinatus webbii*), western blind snake (*Leptotyphlops humilis*), ring-necked snake (*Diadophis punctatus*), California king snake (*Lampropeltis getula californiae*), chaparral whipsnake (*Masticophis lateralis lateralis*), coastal whiptail (*Cnemidophorus tigris stejnegeri*), southern pacific rattlesnake (*Crotalus viridis helleri*), and San Diego gopher snake (*Pituophis catenifer annecten*). None of these species are considered sensitive. All reptile species expected to occur within the study area are included in Appendix B, *Floral and Faunal Compendium*.

3.4.3 Avian

Avian species observed within the study area include wrentit (*Chamaea fasciata*), bushtit (*Psaltriparus minimus*), northern mockingbird (*Mimus polyglottos*), spotted towhee (*Pipilo maculatus*), house finch (*Carpodacus mexicanus*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), California towhee (*Pipilo crissalis*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), western scrub jay (*Aphelocoma californica*), black-headed grosbeak (*Pheucticus melanocephalus*), Bewick's wren (*Thryomanes bewickii*), song sparrow (*Melospiza melodia*), killdeer (*Charadrius vociferus*), and yellow-rumped warbler (*Dendroica coronata*). A number of additional common bird species have potential to be resident within the study area. All avian species observed, as well as those expected to occur within the study area, are included in Appendix B, *Floral and Faunal Compendium*. Sensitive avian species potentially occurring within the study area are discussed further in Section 3.7.4, Sensitive Wildlife Species.

Trees found along the drainages as well as the woodlands within the study area provide foraging and potential nesting opportunities for raptors, including American kestrel (*Falco*

sparverius), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and turkey vulture (*Cathartes aura*), which were observed within the study area. Additional raptor species that have potential to be resident within the study area include white-tailed kite (*Elanus leucurus*). All raptor species observed or expected to occur, are included in Appendix B, *Floral and Faunal Compendium*. Sensitive raptor species occurring or potentially occurring within the study area are discussed in Section 3.7.4, Sensitive Wildlife Species.

3.4.4 Mammals

Mammals observed within the study area include Virginia opossum (*Didelphis virginiana*), California ground squirrel (*Spermophilus beecheyi*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), and Bottoa's pocket gopher (*Thomomys bottae*). A number of other species are expected to be resident within the region and may occasionally utilize the study area to forage or for cover including ornate shrew (*Sorex ornatus*), broad-footed mole (*Scapanus latimanus*), Yuma myotis (*Myotis yumanensis*), western pipistrelle (*Pipistrellus hesperus*), brush rabbit (*Sylvilagus bachmani*), deer mouse (*Peromyscus maniculatus*), black rat (*Rattus rattus*), dusky-footed woodrat (*Neotoma fuscipes*), striped skunk (*Mephitis mephitis*), San Diego pocket mouse (*Chaetodipus fallax*), house mouse (*Mus musculus*), and bobcat (*Lynx rufus*). All mammals observed or expected to occur within the study area are listed in Appendix B, *Floral and Faunal Compendium*. Sensitive mammal species occurring or potentially occurring within the study area are discussed further in Section 3.7.4, Sensitive Wildlife Species.

3.5 WILDLIFE MOVEMENT

3.5.1 Overview

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because such conditions preclude the infusion of new individuals and genetic information into isolated populations (MacArthur and Wilson 1967, Soule 1987, Harris and Gallager 1989, Bennett 1990).

Corridors effectively act as links between different populations of a species. A group of smaller populations (termed "demes") linked together via a system of corridors is termed a "metapopulation." The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration vs. emigration). The smaller the deme, the more important immigration becomes, because prolonged inbreeding with

the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with new genes and gene combinations that increases overall genetic diversity. An increase in a population's genetic variability is generally associated with an increase in a population's health and long-term viability.

Corridors mitigate the effects of habitat fragmentation by: (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss 1983, Fahrig and Merriam 1985, Simberloff and Cox 1987, Harris and Gallagher 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as "travel route," "wildlife corridor," and "wildlife crossing" to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

Travel route: A landscape feature (such as a ridge line, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover while moving between habitat areas; and provides a relative direct link between target habitat areas.

Wildlife corridor: A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.

Wildlife crossing: A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are man-made and include

culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often "choke points" along a movement corridor.

3.5.2 Wildlife Movement Within the Study Area

As previously described, wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). Although the nature of each of these types of movement are species specific, large open spaces will generally support a diverse wildlife community representing all types of movement. Each type of movement may also be represented at a variety of scales from non-migratory movement of amphibians, reptiles, and some birds, on a "local" level to many square mile home ranges of large mammals moving at a "regional" level.

Movement on a smaller or "local" scale occurs throughout the surrounding vicinity as well as within the study area itself. Data gathered from biological surveys indicate that the study area contains habitat that supports a variety of species of amphibians, reptiles, birds, and mammals. The home range and average dispersal distance of many of these species may be entirely contained within the study area and immediate vicinity. Populations of animals such as amphibians, reptiles, small mammals, and a few bird species may find all their resource requirements without moving far or outside of the study area at all. Occasionally, individuals expanding their home range or dispersing from their parental range will attempt to move outside of the study area.

From a "regional" perspective, the study area is situated within Brea Canyon in the Chino Hills. Tonner and Carbon Canyons are located southeast of the study area and the Puente Hills are northwest of the study area. The study area is situated northeast of the open space areas designated as the Puente-Chino Hills Wildlife Corridor but the study area is surrounded by development and the habitat fragmented from open space areas. Several studies regarding wildlife movement in this corridor have been completed. These, plus additional wildlife movement studies for proposed developments in the vicinity were consulted and provide an excellent baseline for this analysis. Combined, these studies are particularly important in the analysis of wildlife movement on a regional level due to the study area's location within the Chino Hills themselves.

The Puente-Chino Hills Wildlife Corridor extends west from State Route 91 in Orange and Riverside Counties to State Route 605 in Los Angeles County, California. This corridor plus others have been proven to provide passage and habitat linkages for many wildlife species to

larger open space areas (e.g., Cleveland National Forest) (Beier and Noss 1998, Haas 2000). A wildlife movement study was conducted between SR 57 and Harbor Boulevard by Chris Haas in 2000. The study concluded that a majority of wildlife movement through the vicinity was occurring largely in part through the large open space area owned by Shell Oil Company located south of the study area, north of Brea Boulevard, south of Pathfinder Road, and extending from SR 57 west to Harbor Boulevard. Although the Haas study was not conducted on the Shell property itself, results indicated that carnivore abundance and distribution resulted in a number of wildlife or wildlife sign observations along significant travel routes leading to the property (e.g., Tonner Canyon Underpass, Brea Canyon Road underpass, and Harbor Boulevard Equestrian Tunnel) (Haas and Crooks 1999, Haas 2000). Studies conducted on the Shell property by PCR in 1999 confirmed that the property is utilized by a variety of wildlife species similar to those documented by Haas and Crooks in 1999 and 1998.

The study area is surrounded by development and does not provide connection to any adjacent open space areas or areas documented as supporting movement from the study conducted by Haas in 2000 (Figure 3, *Aerial Photograph*). Therefore, because of urbanization surrounding the study area, larger mammals requiring larger home range areas and dispersal distances, dense vegetative cover, or that shy away from urban development (e.g., mountain lion and mule deer), are not likely to traverse the study area. Furthermore, although the drainage systems within the study area are a significant topographic feature supporting dense vegetation may have once supported concentrated wildlife movement in the past, development surrounding the study area now impedes movement for larger mammals to other drainages or large open spaces beyond the study area. Species that are less restricted in movement pathway requirements or are more ubiquitous in nature (e.g., raccoon, skunk, coyote, birds) may move through the study area.

In conclusion, the study area itself is unlikely to function as an integral part of regional wildlife movement due to its fragmentation from other open space areas. However, it may potentially be utilized as stepping-stone habitat for regional movement of birds and more ubiquitous species of mammals.

3.6 JURISDICTIONAL WETLANDS AND "WATERS OF THE U.S."

The study area contains three jurisdictional drainages that total approximately 2,125 linear feet and support approximately 0.20 acre of ACOE/RWQCB jurisdictional "waters of the U.S./waters of the State", of which 0.01 acre is wetlands, and approximately 4.10 acres of CDFG jurisdictional streambed and associated riparian habitat. The various jurisdictional acreages overlap (i.e., ACOE/RWQCB acreage is typically included in CDFG acreages, they are not additive). A map of the locations of these features is presented in Figure 7, *Jurisdictional Features*, on page 27 and a summary of the drainage feature is presented in Table 3, *Jurisdictional Features* on page 28. A detailed description of each drainage within the study

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