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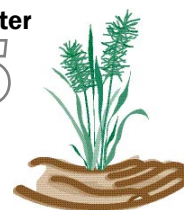
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## Integrating Transportation and Resource Conservation Planning *Conservation Banking*

### INTEGRATING TRANSPORTATION CONSERVATION WITH REGIONAL CONSERVATION PLANNING

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**Abstract:** Conservation planning in San Diego County has been ongoing since the early 1990's and has resulted in the establishment of the Multiple Species Conservation Program (MSCP) in southwest San Diego County and the Multiple Habitat Conservation Program (MHCP) in northwest San Diego County. Currently, the County of San Diego is developing regional plans for the unincorporated lands remaining in north and east San Diego County. These regional plans are (or will be) permitted under the Federal Endangered Species Act (Section 10: Habitat Conservation Plan) and the State of California Natural Community Conservation Planning Act.

This paper focuses on the integration of transportation conservation with the MSCP. "The MSCP is a comprehensive, long-term habitat conservation plan which addresses the needs of multiple species and the preservation of natural vegetation communities in San Diego County" (MSCP 1998). The MSCP covers 85 species, of which 20 species are federally listed and 14 are State listed, including 46 plant species and 39 animal species. The MSCP defines a design preserve within the plan boundaries that include large interconnected areas for the protection of the MSCP-covered species. The MSCP does not cover regional transportation projects, such as projects funded by the Federal Highway Administration.

District 11 of the California Department of Transportation and the Federal Highway Administration collaborated with Federal and State resource agencies to develop transportation projects that are consistent with the MSCP. The planning and development of improvements to Interstate 15, State Route (SR) 125 South, and the SR 905 Extension included the protection of large blocks of habitat in conservation banks. Numerous parcels were purchased as mitigation, including the Walsh property, Bonita Meadows Open Space Preserve, Johnson Canyon Open Space Preserve, San Ysidro Mountain, Lake Jennings, and Denner Canyon. These parcels are key to the buildout of the preserve identified by MSCP. In addition, the design of SR 125 South and the SR 905 Extension included modifying the alignment to avoid and minimize impacts to sensitive natural resources within the MSCP.

Collaboration between the transportation agencies and natural-resource agencies has resulted in the preservation of large blocks of habitat to further the buildout of the MSCP preserve. The voter-approved extension of a \$0.005 sales tax will provide a funding mechanism for the up-front purchases of land to continue this collaboration in recognition that it results in the most cost-effective mitigation and better conservation.

### **Introduction**

Conservation planning in San Diego County (Figure 1) has been ongoing since the early 1990's and has resulted in the establishment of the Multiple Species Conservation Program (MSCP) in southwest San Diego County and the Multiple Habitat Conservation Program (MHCP) in northwest San Diego County. Currently, the County of San Diego is developing regional plans for the unincorporated lands remaining in north and east San Diego County. These regional plans are, or will be, permitted under the Federal Endangered Species Act (Section 10: Habitat Conservation Plan) and the State of California Natural Community Conservation Planning Act.

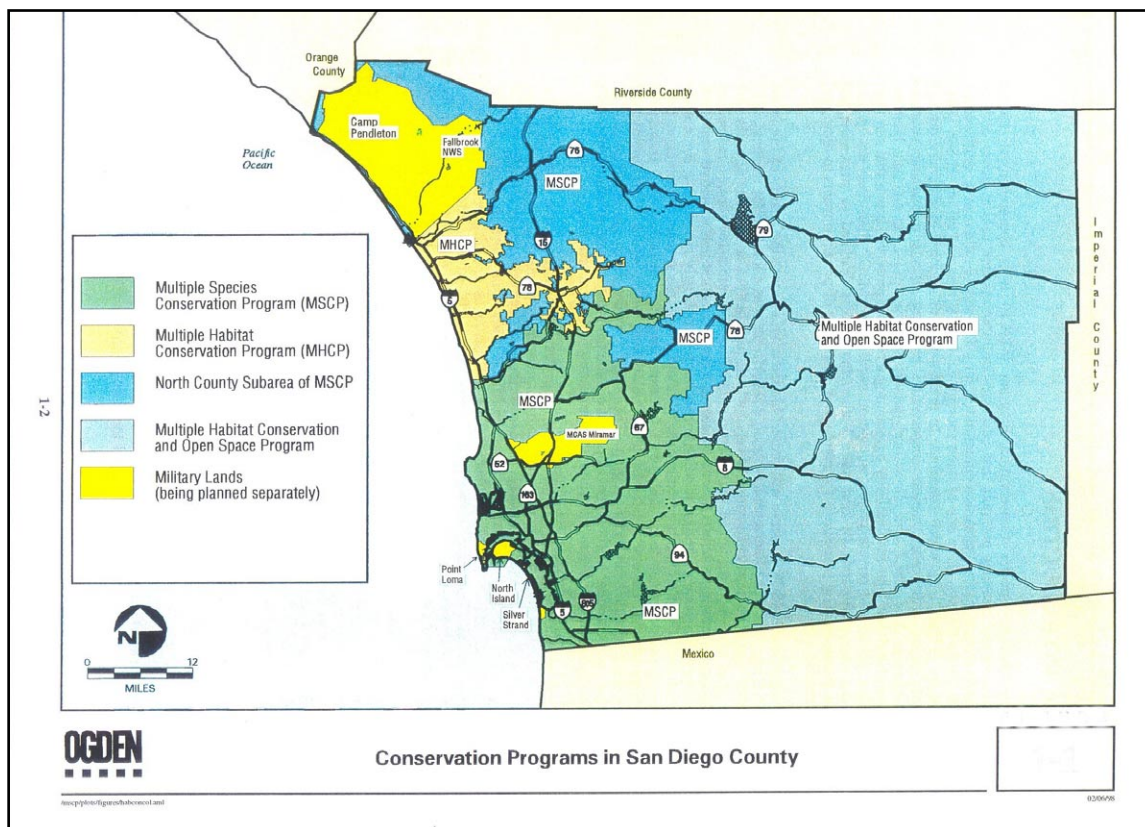


Figure 1. Regional conservation plans in San Diego County (MSCP 1998).

District 11 of the California Department of Transportation (Caltrans) has been working with Federal, State, and local governments to ensure that their conservation efforts compliment regional conservation-planning efforts. The MSCP (Figure 2) has identified a preserve system for 85 rare, threatened, and endangered species. The MSCP was developed to conserve both the diversity and function of southwestern San Diego County ecosystems through the preservation and adaptive management of large blocks of interconnected habitats and smaller areas that support rare vegetation (e.g. vernal pools, Otay tarplant). The MSCP defines a preserve within the 12 participating jurisdictions to protect large interconnected areas for the protection of the MSCP-covered species. When completed, the preserve will include approximately 171,920 acres. Currently 112,244 acres of land have been purchased and preserved through Federal, State, and local funding.



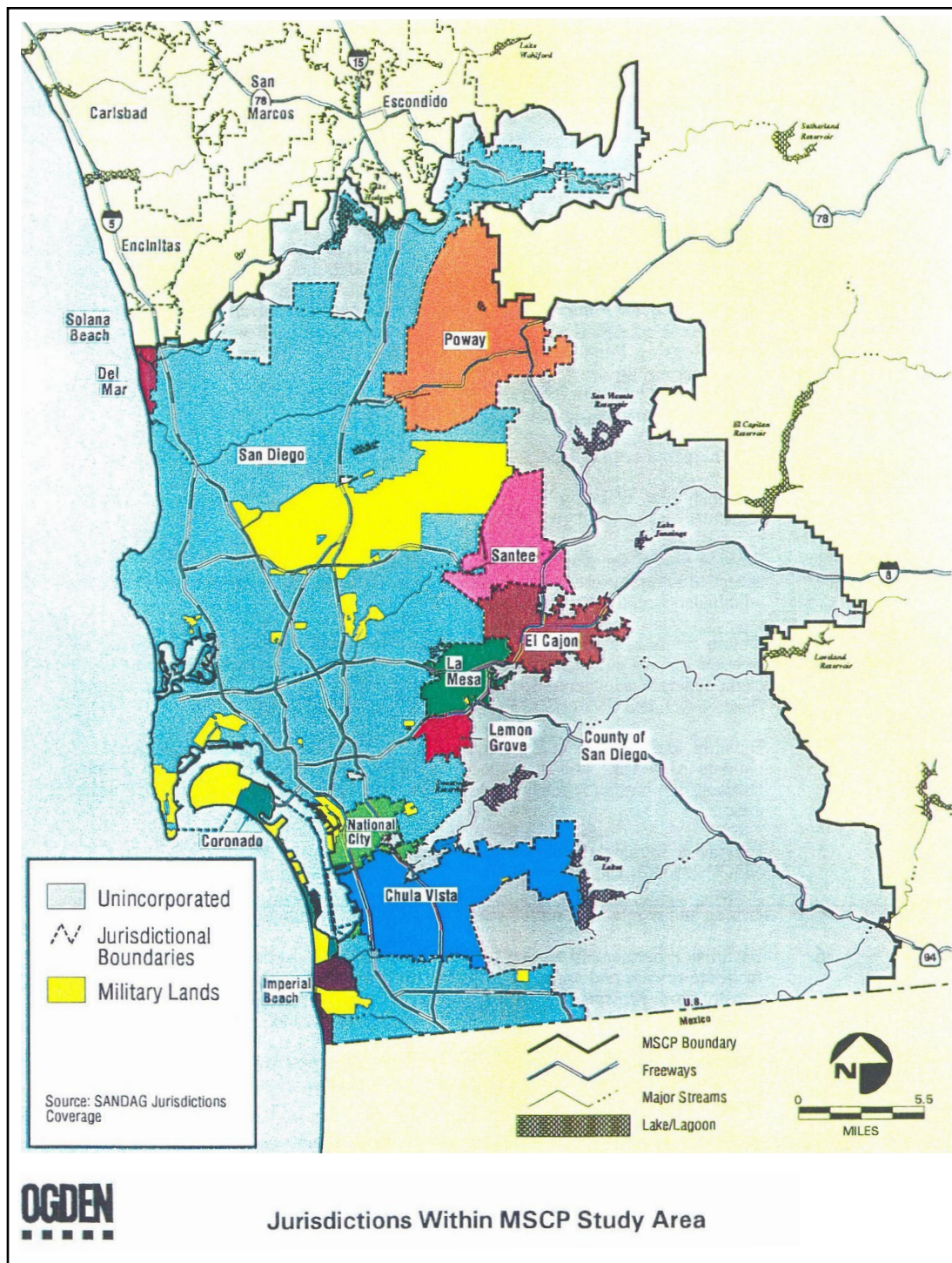


Figure 2. Multiple Species Conservation Program in San Diego County (1998).

The California Department of Transportation (Caltrans) has worked with the wildlife agencies to conserve large blocks of habitat through the establishment of mitigation banks within the identified preserve, instead of lots of small disjunct pieces. Some of these banks were established up front and can be used to mitigate for several projects rather than just one project. The advantages to purchasing pre-project mitigation lands include purchasing lands at lower prices, establishing larger preserves that support multiple species, and streamlining the National Environmental Policy Act/California Environmental Quality Act process. Because highways can cause significant impacts to natural resources, they can also provide significant mitigation and contribute to the preservation of key pieces of the preserve.

As an example, Caltrans purchased the Bonita Meadows Open Space Preserve (Bonita Meadows Preserve), part of the Rancho San Diego Conservation Bank, the Wall-Hudson property at Dennery Canyon (Dennery Canyon Preserve), and the Walsh property at Lake Hodges in the early planning phases of multiple capital-improvement projects. In addition, Caltrans has purchased large blocks of land that support a variety of sensitive species as mitigation during the project-development process.

Caltrans and the Federal Highway Administration (FHWA) are not signatory agencies to the MSCP. Therefore, the regional highway projects were not covered. The wildlife agencies worked closely with Caltrans and FHWA to minimize impacts to the preserve during the development of the Least Environmentally Damaging Practicable Alternative (LEDPA). In instances where the roadway alignment impacted the preserve, mitigation was developed that expanded the preserve in other areas that were to be developed to ensure that an equivalent level of conservation was provided consistent with the original MSCP. "Equivalency" is defined as having the same or higher biological value of the preserve.

Combining upfront mitigation purchases with mitigation from project development has resulted in the continued build-out of the preserve. It has also enhanced the preserve by buying up development rights on these lands and expanding the preserve which helps offset the impacts to the preserve from construction of the projects. Mitigation to offset impacts to approximately 380 acres of habitat from capital improvements to Interstate 15, and the new construction of State Routes 125 South and the 905 Extension, has resulted in the preservation of over 1450 acres of habitat for a variety of MSCP-covered species. In addition, 34 pairs of coastal California gnatcatcher (*Polioptila californica californica*), 12 pairs of least Bell's vireo (*Vireo bellii pusillus*), and 12 pairs of coastal cactus wren (*Campylorhynchus brunneicapillus couesi*) were protected within the preserved habitat. As Caltrans continues building capital-improvement projects in San Diego County, conservation strategies will be developed to protect and enhance existing resources and to restore and preserve habitat contiguous with regional design preserves. In the remaining areas of the County, where regional planning is in the planning phase, we are coordinating closely with Caltrans to plan for the regional-transportation projects and incorporate them into the plans.

The following is a description of the parcels purchased, the natural resources on the parcels, and the regional significance of these purchases for conservation biology.

### **Walsh Property**

The Walsh property was originally purchased as three contiguous parcels totaling 105.4 acres immediately north of Lake Hodges and the northern boundary of the MSCP. The property includes 86 acres of coastal sage scrub supporting nine gnatcatcher pairs and three individuals, 6.2 acres of southern mixed chaparral supporting the MSCP-covered wart-stemmed ceanothus (*Ceanothus verrucosus*), and an area within the coastal sage scrub dominated by cholla (*Opuntia* ssp.) that supports a population of the MSCP-covered coastal cactus wren. In addition, the site is home to the MSCP-covered orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), and California Rufous-crowned sparrow (*Aimophila ruficeps canescens*).

The purchase of the Walsh property contributes to securing a key interface between MSCP and MHCP north of the existing limits of the City of San Diego between San Diego and Escondido (Figure 3). The sloping hills surrounding Lake Hodges in the northeastern area of the City of San Diego support a variety of plant communities that support a variety of sensitive flora and fauna such as the golden eagle (*Aquila chrysaetos*). The area surrounding the preserve has been developed as residential communities with houses, malls, and recreation facilities. In addition, the Lake Hodges open-space area also provides local residents and visitors an opportunity to hike, bicycle, or ride horses through a myriad of trails.



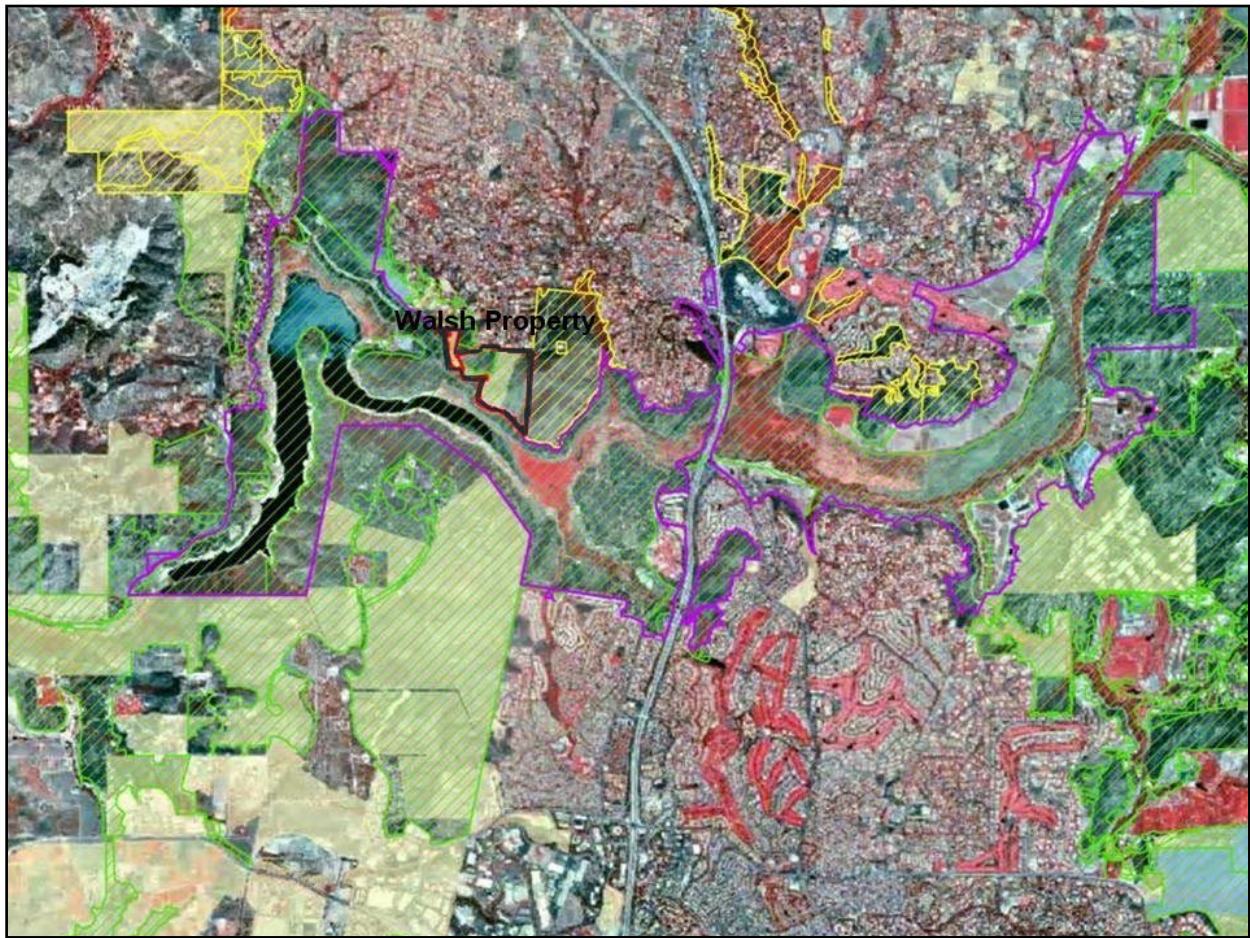


Figure 3. The Walsh Property along the northern border of Lake Hodges within the MSCP preserve system (hash marks).

### **Bonita Meadows**

The 200-acre Bonita Meadows was originally purchased as three parcels that would be contiguous, except for the San Diego County Water Authority easement running north to south through the L-shaped open-space preserve (Figure 4). Bonita Meadows is a relatively flat valley bottom sloping up to mesas to the west and south with numerous tributaries draining the mesas to a main stream channel, which is dominated by native and non-native wetland-plant species. The slopes are primarily dominated by native grasslands on clay lenses and non-native grasslands on loamy soils with coastal sage scrub and maritime succulent scrub communities in patches throughout the site. The preserve includes 31 acres of habitat occupied by the federally threatened Otay tarplant (*Deinandra conjugens*), areas supporting the federally threatened San Diego thornmint (*Acanthomintha ilicifolia*), a small population of coastal cactus wren, six pairs and one individual coastal California gnatcatcher, California Rufous-crowned sparrow, San Diego horned lizard, orange-throated whiptail, variegated dudleya, and a variety of other MSCP-covered species.



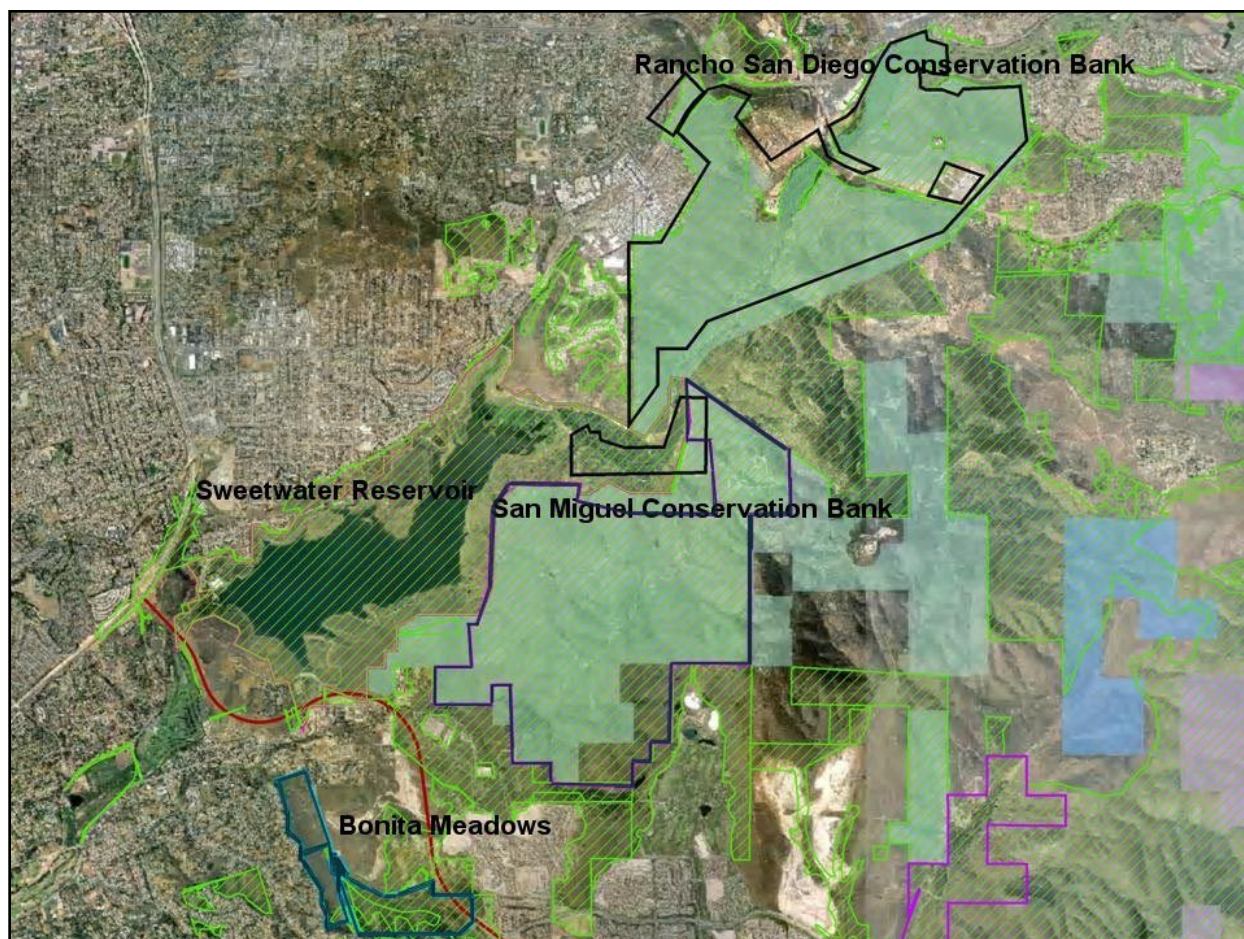


Figure 4. Large contiguous preserves in unincorporated San Diego County.

Bonita Meadows was slated to be developed and now adds to the preserve in southern San Diego County as an open-space preserve with trails for continued access by equestrian and pedestrian visitors. Bonita Meadows is contiguous with other preserved lands including the Tri-Mark property across the future SR 125, the Sweetwater Reservoir (owned and managed by Sweetwater Water Authority), and San Diego National Wildlife Refuge to the north. The main stream channel through Bonita Meadows is actively being restored with riparian and wetland habitats for the future colonization of riparian nesting birds such as the federally endangered least Bell's vireo (*Vireo bellii pusillus*).

### **Rancho San Diego Conservation Bank**

The Rancho San Diego Conservation Bank (Rancho San Diego) was established by the County of San Diego, the San Diego Association of Governments (SANDAG), and Caltrans totaling 1,705.1 acres supporting 34 pairs of coastal California gnatcatcher and 28 pairs of least Bell's vireo. Rancho San Diego consists of 1,289 acres of coastal sage scrub, 67 acres of southern mixed chaparral, 155 acres of riparian woodland, 5.1 acres of marsh riparian floodplain, 11 acres of oak woodland, seven acres of native grassland, and 171 acres of non-native grassland. This large parcel supports a variety of MSCP-covered species, including the San Diego horned lizard, orange-throated whiptail, Otay manzanita (*Arctostaphylos otayensis*), and felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*).

Rancho San Diego is an important purchase due to its size, location, and diversity of communities. This parcel was slated for development, but instead was conserved and became the first piece of the San Diego National Wildlife Refuge. Rancho San Diego is contiguous with the Sweetwater Reservoir, the 1853 acre San Miguel Conservation Bank, and numerous private mitigation banks in the area (Figure 4).

### **Johnson Canyon**

The Johnson Canyon Preserve was recently purchased in four parcels totaling 105.4 acres within the MSCP preserve on northeastern Otay Mesa (Figure 5). Two of the parcels are contiguous, spanning the canyon and part of the mesa to the northeast. A 52-acre parcel lies wholly on Otay Mesa and is currently undergoing restoration for vernal pool, Quino checkerspot butterfly, and coastal cactus wren habitats. The fourth parcel is four acres that are separated from the other three parcels by SR 125 and have a clay lens that supports a healthy population of Otay tarplant. Johnson Canyon currently supports populations of Quino checkerspot butterflies, coastal California gnatcatchers, coastal



cactus wrens, the federally endangered San Diego button-celery (*Eryngium aristulatum* var. *parishii*) and San Diego mesa mint (*Pogogyne nudiuscula*), and a large population of variegated dudleya (*Dudleya variegata*).

The area undergoing active restoration has been recontoured as a vernal pool/mima mound complex and the pools have been inoculated with federally threatened and endangered flora and fauna including San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), spreading navarretia (*Navarretia fossalis*), San Diego button-celery, and Otay mesa mint. In addition and because of its proximity to the SR 125 alignment, many cactus and shrubs were salvaged from the alignment and transplanted to the restoration site, thus jumpstarting the restoration efforts.

Johnson Canyon was not included in the MSCP preserve because it was anticipated that the SR 125 alignment would run through it. During the environmental review process, it was determined that the Least Environmentally Damaging Practicable Alternative was to shift the alignment to the west. Thus the preserve was expanded in this area, partly to offset impacts to the preserve from the alignment. Johnson Canyon is an important part of the preserve because it locks up an area that borders the City of Chula Vista's open-space preserve and the county of San Diego's design-preserve system. The restoration and long term management of these four parcels will allow for the continued survival of numerous listed and covered species while providing for the dispersal and migration of species through the Johnson Canyon and downstream Otay River corridors.

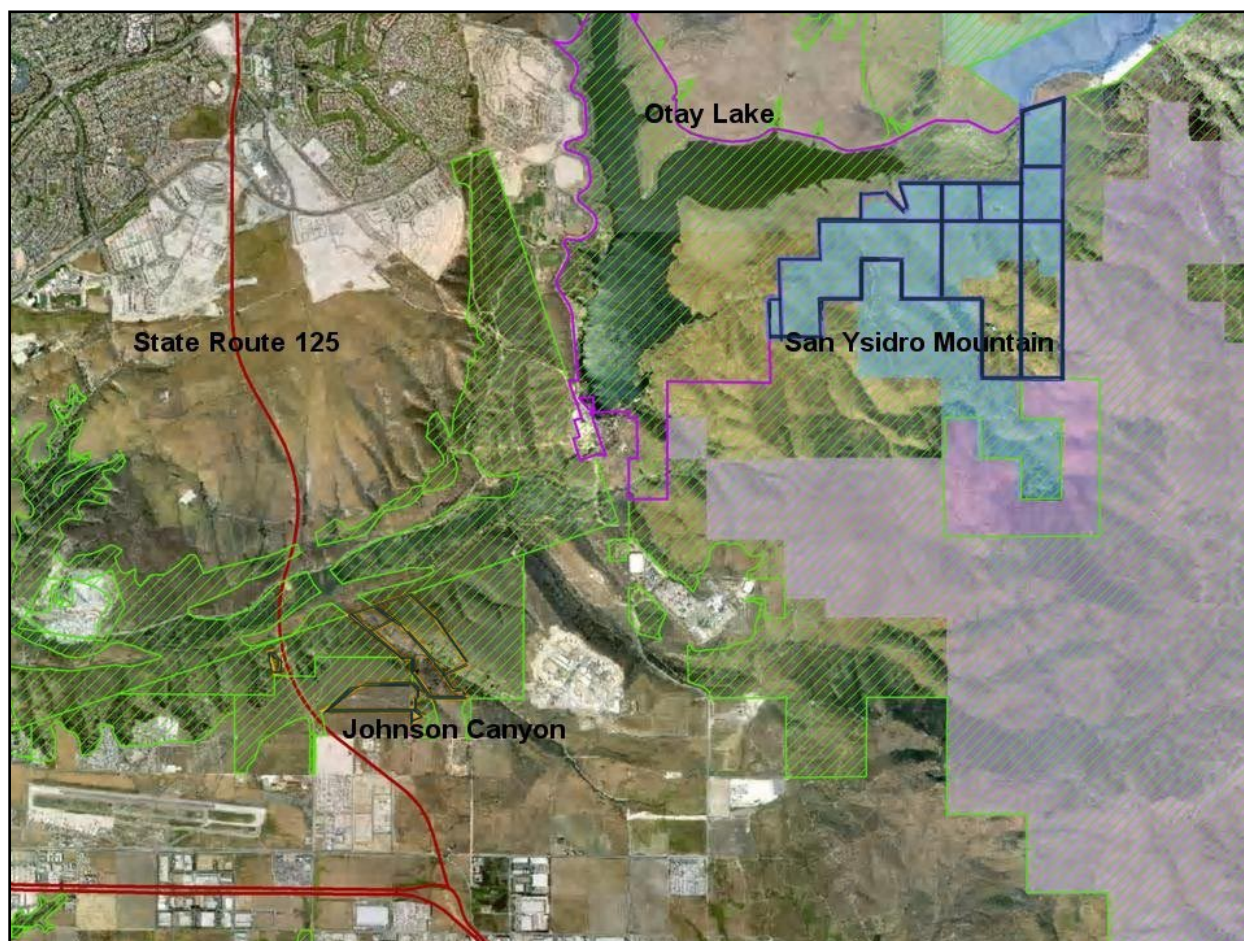


Figure 5. Johnson Canyon and the corridors to the San Ysidro Mountains.

### **San Ysidro Mountain**

A combination of Federal and State grants purchased a few large contiguous blocks of land on the lower slopes of the San Ysidro Mountains above Otay Lake (Figure 5). Caltrans and California Transportation Ventures (the private entity constructing the toll-road portion of SR 125: CTV) provided funding to assist with the purchase of 566 acres of land (part of the larger overall purchase), short term restoration/enhancement actions, and the long-term management of the 566-acre parcel. When purchased, the parcel supported a population of Quino checkerspot butterflies, coastal California gnatcatchers, and variegated dudleya.



The San Ysidro Mountain site is an important purchase because it removed several development bubbles from the MSCP preserve. MSCP had identified this area as important for conservation, but was unable to reach agreement with the land owners. By working cooperatively with the State and Federal agencies, the entire area south of Otay Lake remaining in private ownership was purchased. This parcel borders Bureau of Land Management Wilderness, City of San Diego preserve lands, and U.S. Fish and Wildlife Refuge lands. Together, the open-space preserve in the area supports a variety of federally listed and MSCP-covered species, including Mexican flannelbush (*Fremontadendron mexicanum*), willow monardella (*Monardella linoides* ssp. *viminea*), Dunn's mariposa lily (*Calochortus dunnii*), and Tecate cypress (*Cupressus forbesii*), which is home to Thorne's hairstreak butterfly (*Mitoura thornei*). The purchase of the contiguous blocks by Federal and State grants and Caltrans/CTV funds incorporated the last pieces needed to create a large block of conserved lands between Otay Lake and the Mexican border.

### **Lake Jennings**

Lake Jennings (Figure 6) is another Caltrans/CTV purchase totaling 37.2 acres that supports seven cactus wren territories and the MSCP-covered barrel cactus (*Ferocactus viridescens*). The hilly site includes 27.5 acres of coastal sage scrub and 7.1 acres of non-native grasslands with drainages and a flat area on top of the hill. Lake Jennings was an important purchase within the MSCP because it helps build out the lakeside linkage of the "stepping stones" identified within the County's MSCP, the only linkage north and south for the coastal California gnatcatcher and coastal cactus wren. The site supports coastal cactus wren, is immediately adjacent to areas occupied by coastal cactus wren within the MSCP preserve, and is contiguous with the Helix Water District land surrounding Lake Jennings.

### **Denner Canyon**

Denner Canyon was recently purchased as a single 86.3-acre parcel consisting of 8.95 acres of mesa fingers above slopes and drainages in the upper southern reaches of the canyon. The site supports 40.5 acres of maritime succulent scrub, 17.1 acres of coastal sage scrub, 18 acres of native grassland, and 4.4 acres of non-native grassland. The fingers have remnant-disturbed vernal pools that will be restored/enhanced and inoculated with spreading navarretia, San Diego button celery, and Otay mesa mint. Maritime succulent scrub is a rare coastal-plant community that supports the coastal California gnatcatcher, San Diego horned lizard, and a host of rare plant species. The site also supports the host plant for and is occupied by the Quino checkerspot butterfly.

The purchase at Denner Canyon preserved one of the few remaining pieces of land surrounding the Canyon that was not previously protected for conservation (Figure 6). To the south is a small parcel that is undergoing vernal-pool restoration. Across the canyon to the east is a large area where extensive vernal pool/mima mound restoration has successfully created a mosaic of plant communities that support a variety of sensitive and rare flora and fauna. Denner Canyon is the westernmost canyon remaining on the north rim of Otay Mesa. Preserving the entire canyon will fill out the preserve in the area. Under the City of San Diego's plan, portions of the mesa could have been developed. Instead, the site will be restored and complement the conservation occurring in and adjacent to the canyon.



Figure 6. Lake Jennings within the MSCP preserve.

### **Transnet**

Past collaboration between Caltrans and Federal and State resource agencies has successfully preserved large blocks of land contiguous with and/or within the MSCP preserve. The collaborative process, and in particular the establishment of contiguous banks, has resulted in more cost-effective mitigation and better conservation. In recognition of these benefits, a countywide initiative (Transnet) was developed. The voters of San Diego County approved the extension of the \$0.005 sales tax to fund transportation projects.

Principle four of the Transnet Environmental Mitigation Program states that the “allocation for the estimated economic benefits of incorporating specified regional and local transportation projects into applicable habitat-conservation plans, thereby allowing mitigation requirements for covered species to be fixed and allowing mitigation requirements to be met through purchase of land in advance of need in larger blocks at a lower cost. The benefits of this approach are estimated at approximately \$220 million. This amount will be allocated to a Regional Habitat Conservation Fund “which will be made available for regional habitat acquisition, management and monitoring activities necessary to implement the MSCP and MHCP...” (Transnet 2004). Transnet will not only provide upfront funding for the purchase of lands for pre-mitigation purposes, but will also contribute to the long-term management and monitoring of the preserve.





Figure 7. Denner Canyon on the northwest end of Otay Mesa.

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