

# **1 Introduction & Overview**

## ***1.1 Project Purpose***

The purpose of the Rose Creek Watershed Opportunities Assessment (Assessment) is to comprehensively assess existing conditions, opportunities and constraints for habitat protection, habitat restoration, enhancement and protection of cultural resources and public access improvements in the Rose Creek Watershed (RCW). The Assessment is primarily funded by the Coastal Conservancy with additional support by County Supervisor Pam Slater.

## ***1.2 Study Area***

The Rose Creek Watershed is part of the Penasquitos Hydrologic Unit, which is roughly 162 square miles and includes portions of the City of San Diego, Del Mar and Poway. This hydrologic unit is highly developed with a population of approximately 400,000 people, or about 3.8 people per acre on average. The hydrologic unit is centrally located within San Diego County and represents about 4% of the County's land area, making it one of the County's smallest hydrologic units.

Hydrologic features within the unit include Los Penasquitos Creek, Los Penasquitos Lagoon, Rose Creek, Tecolote Creek, Mission Bay and Miramar Reservoir. The San Diego Regional Water Quality Control Board (SDRWQCB) has sub-divided the Penasquitos Hydrologic Unit into two Watershed Management Areas: 1) The Penasquitos Watershed Management Area which is comprised of the Miramar Reservoir (906.1) and the Poway (906.2) Hydrologic Areas; 2) and the Mission Bay Watershed Management Area which is comprised of the Scripps (906.3), Miramar (906.4), and Tecolote (906.5) Hydrologic Areas. The Miramar (aka Rose Creek) Hydrologic Area is roughly 27,667 acres (37 square miles), which makes it the second largest hydrologic area in the Penasquitos hydrologic unit (Figure 1-1).

To further analyze the Rose Creek watershed and its boundaries, a topographic delineation was performed to correctly assess runoff and stream flow that discharges from the mouth of Rose Creek into Mission Bay. The Rose Creek watershed delineation refined the boundary of the sub-basin to

23,427 acres or 36 square miles. The area within the hydrologic area that is not considered part of the study area occurs toward the mouth of Rose Creek where it flows into Mission Bay, and includes those land areas that drain directly into Mission Bay (Figure 1-2). For this study, Rose Canyon and San Clemente Canyon were separated to allow more detailed analysis in future phases of the project. Figure 1-2 shows the breakdown of the three planning basins created by this delineation. San Clemente Canyon is the largest planning basin occupying 49% of the watershed while Lower Rose Canyon only occupies 11%.

Figure 1-1: Regional Overview

Back of Figure 1-1

Figure 1-2: Planning Basins

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## **1.3 Watershed Overview**

### **1.3.1 Physical Characteristics**

The Rose Creek Watershed (RCW) consists of three primary drainages; Rose Canyon, San Clemente Canyon, and Stevenson Canyon. The watershed is characterized by relatively steep foothills in the headwaters, which transition to broad mesa's throughout the mid-section that drain into steeply incised canyons as runoff concentrates and flows through the primary drainages towards Mission Bay. The northern edge of the watershed is partially defined by the Rose Canyon drainage. The majority of Rose Canyon itself, excluding the adjacent mesa tops, has been dedicated as public open space and is called the Rose Canyon Open Space Park. The central portion of the watershed is defined by upper and lower San Clemente Canyon. Upper San Clemente Canyon originates in the foothills east of Interstate 15 on MCAS Miramar before flowing across the mesa and into lower San Clemente Canyon. This portion consists of the dedicated parkland of Marian Bear Memorial Park. San Clemente Creek flows through this canyon before converging with Rose Creek on its way to Mission Bay. The southern edge of the watershed is partially defined by Stevenson Canyon, which is tucked away between two developed mesa tops. The bulk of Stevenson Canyon is privately owned with the Bay Ridge Open Space being the only designated public open space.

### **1.3.2 Land Uses & Planning**

Currently in the RCW, the dominant land use is undeveloped land occupying roughly 21% of the study area. Parks and preserves occupy 21% and family housing is the third highest land use occupying 16%. Commercial and industrial complexes each occupy 2% of the study area. The Federal Government owns 40% of the RCW and lies primarily within the boundaries of MCAS Miramar. The second largest ownership is the private sector occupying 25%. City of San Diego owns or manages roughly 17% of the RCW with 7% being leased from the Federal Government. There are two larger private natural open space areas within the RCW in Stevenson Canyon and off of Lakehurst Avenue in Clairemont Mesa. Stevenson Canyon is 76 acres while the Lakehurst site is approximately 16 acres.

Watershed assessment calls for developing an understanding of the many processes and interactions occurring within a watershed. Information gathered during a watershed assessment is typically organized into separate distinct topics such as soils, hydrology and land use. This information needs

to be integrated in order to discover the processes and interactions occurring between the different topics. There are three distinct land use datasets used in this assessment; ownership, existing land use and proposed land use. Synthesis between these datasets allows the existing and future planning of the watershed to be analyzed to help the overall protection of the watershed. Land use data analysis will be more comprehensive with the incorporation of community plan documents, policies and guidelines for future development and habitat protection. The incorporation of City of San Diego Management Plans and Master Plans are also vital sources for future planning.

### **1.3.3 Biological Resources**

Vegetation communities depicted within the project boundary provide an insight to the potential species present, as well as habitat richness and diversity. Understanding the diverse habitats provides insight on site-specific biological assessments necessary for review during the watershed management planning process.

The vegetation communities found within the RCW are sharply defined based on jurisdictional boundaries, particularly between MCAS Miramar and its adjacent communities. MCAS Miramar contains the majority of Diegan Coastal Sage Scrub and Chaparral found in the study area. The Coastal Sage Scrub and Chaparral that can be found west of MCAS Miramar tends to follow finger canyons that protrude up into the developed mesa tops. The majority of the Riparian Scrub is predominantly found outside MCAS Miramar within Rose Canyon and San Clemente Canyon. San Clemente Canyon can be distinguished by the Sycamore Riparian Woodland that runs along its bottom in a near continuous manner from Interstate 805 to below the confluence with Rose Canyon to Interstate 5. Other notable habitats types with the RCW are the Mima Mounds and vernal pool complexes that can be found almost exclusively within MCAS Miramar and the inter-tidal communities at the mouth of Rose Creek.

Special status species are species that are listed as sensitive by one or more of the following resource agencies or societies: United States Fish & Wildlife Service (USFWS), California Department of Fish & Game (CDFG), or the California Native Plant Society (CNPS). Species may be sensitive for a variety of reasons, including limited geographic distribution, documented or suspected population declines, extensive habitat loss, and/or natural occurrence in low numbers. One, or a combination of these factors, may cause a given species to be more vulnerable to extinction. There are a number of



categories, depending on the significance of the threat of the species' survival, under which a given species can be listed as sensitive at the local, state, or federal level.

A diversity of sensitive plant and animal species occur within the Rose Creek Watershed, however the driving force behind the major conservation efforts in the region are federally listed species, and to a lesser extent, species listed by the state of California as endangered.

The listing of the California Gnatcatcher as a federally listed species was the primary catalyst for the passage of the State of California Natural Community Conservation Planning Act of 1991 (NCCP). The Gnatcatcher is the most widely distributed species on the threatened and endangered list occurring within the Rose Creek Watershed.

In addition, the California Least Tern is another species of concern and is a rare visitor to the Fish Pond on MCAS Miramar. The U.S. Marine Corps and the U.S. Fish and Wildlife Service have teamed up to manage a large number of California least tern populations breeding on military lands. Because they tend to be located on remote beaches that are off-limits to the public, naval bases and training centers have become refuges for these endangered birds. Cooperation among these government agencies to minimize human impact within these sites have resulted in a dramatic recovery of tern populations, which climbed from a low of 600 breeding pairs in 1970 to 2,300 pairs in 1993. Today, over one-third of California least tern populations breed on Navy and Marine Corps bases. However, within the Rose Creek Watershed the least tern is currently only infrequently found on MCAS Miramar or within Mission Bay.

The San Diego Fairy Shrimp is one invertebrate that is federally protected. It occurs almost entirely within MCAS Miramar and is limited to vernal pool areas. The San Diego Fairy Shrimp are considered federally endangered due to continued conversion of grassland-vernal pool ecosystems to urban or agricultural uses.

There are many notable Threatened and Endangered plants that occur within the watershed. The two most widely distributed species are San Diego Button Celery and Willow Monardella. Other

Threatened and Endangered species include: California Orcutt Grass, San Diego Mesa Mint, Short Leaved Dudleya and Spreading Navarretia. Other sensitive or special status species sighted within the Rose Creek Watershed include mammals such as the Mule Deer and Mountain Lion. Sensitive bird species include the Northern Harrier, Coopers Hawk, and the California Brown Pelican. The Rufous-crowned sparrow is an occasional winter resident and the Burrowing Owl was last recorded in 1997. Sensitive reptiles and amphibians include the Orange Throated Whiptail, San Diego Horned Lizard, and the Western Spadefoot Toad.

The sole sensitive insect occurring within the watershed is the Monarch Butterfly and is geographically located in the northwest corner of the study area. Other sensitive flora worth noting include Campbell's Liverwort, Coulter's Goldfields, Nuttall's Lotus, Nuttall's Scrub Oak, Orcutt's Brodiaea, San Diego Barrel Cactus, San Diego Goldenstar, Bottle Liverwort, Estuary Seablite, Rayless Ragwort, Prostrate Navarretia, Purple Stemodia, Long-spined Spineflower, Summer Holly, Wart-stemmed Ceanothus, Woven-spored Lichen, Clevelands Goldenstar, and Little Mousetail.

Unfortunately, the vegetation communities within the RCW are not in pristine condition, having been impacted by a variety of human activities that have contributed to invasive exotic species proliferation. Some of the most problematic species are pampas grass, tamarisk, arundo, castor bean, Brazilian pepper, and ice plant. Of these species; pampas grass is the most pervasive in the finger canyons and other disturbed upland areas, while ice plant is predominantly spreading downhill from private mesa top landscapes. The other species are primarily associated with the riparian and railroad corridors. The distribution of these invasive exotic species are most prevalent downstream of storm drain outfalls where disturbed conditions and regular water inputs favor their growth habitats over other native species. Comprehensive mapping of invasive exotic plant species is being conducted as part of the field efforts related to this assessment and will be incorporated and considered during the future phases of the project.

#### **1.3.4 Water Resources**

The major surface water resources within the RCW are Rose Creek and San Clemente Creek. Both creeks flow southwesterly until their confluence near the interchange between Interstate 5 and State Route 52 and then flows south to Mission Bay. Both creeks would naturally only have precipitation driven seasonal flows with riparian and aquatic communities adapted to periods of dry conditions.

With the contribution of dry weather flows from the nearby urbanized landscaping, the lower sections of both Rose Creek and Sycamore Creek are now nearly perennial in nature. There are no significant groundwater aquifers present in the RCW. The aquifers that do exist are narrow shallow alluvium deposits that support the existing riparian communities along the canyon bottoms. There are also a variety of small surface impoundments on MCAS Miramar, including the Fish Pond used as a recreational asset for Station personnel.

### **1.3.5 Cultural Resources**

Cultural Resources on MCAS Miramar are managed by the Environmental Management Department (EMD). EMD completed the final version of the Integrated Cultural Resources Management Plan (ICRMP) in January of 2004. The ICRMP is being used as a five year plan to manage cultural resources by maximizing the benefits on resources, minimizing adverse affects and impacts on resources, while supporting the continued mission of MCAS Miramar. The document provides guidance on actions to be taken if a proposed project will have an effect on a cultural resource. Typically, survey or excavation work would be performed by qualified contractors to meet National Historic Preservation Act (NHPA) requirements. Regulations outlined by the National Advisory Council on Historic Preservation (ACHP) and the National Park Service (NPS) provide additional guidance and instruction on managing cultural resources. The ICRMP has not been made public due to sensitivity of resources on station.

In addition to reviewing the historic and cultural resource information provided by MCAS Miramar, the project team conducted research in the Rose Canyon and San Clemente Canyon west of Interstate 805. The research resulted in a finding of 47 recorded archaeological sites. Historic sites located in Rose Canyon include the Union Brick Company and features associated with the railroad line. The terraces and banks of Rose Canyon have not been surveyed for cultural resources. San Clemente Canyon was last comprehensively surveyed in 1968. It would benefit from a new survey since many conditions have changed over the past 37 years.

### **1.3.6 Recreational Resources**

There are 16 parks and 11 open space preserves within the RCW, all of which are owned by the city of San Diego. They provide many recreational opportunities such as nature viewing, hiking and cycling. A network of 37 miles of designated bikeway facilities allows users from the area access into these parks and open spaces. Over 14 miles of hiking and mountain biking trails span both the Rose

Canyon Open Space Park and the Marian Bear Memorial Park. These parks allow locals to enjoy nature without having to venture too far. There is potential for more educational opportunities within the RCW with the presence of significant biological and cultural resources, as well as suitable habitat for several endangered species within the RCW boundaries. Interpretive signage and kiosks, which are currently installed on park lands, are a simple way to inform the public about the sensitivity of the RCW and a way to encourage them to help preserve it.

### **1.3.7 Political Districts**

Politicians, land owners and land managers play a big part in the funding and management of projects within a watershed. It's important to know the political structure of the RCW in order to contact officials for appropriate funding, project proposals and the implementation of future projects.

The watershed includes ten community planning areas, each with an elected board; five San Diego City Councilmembers (Districts 1,2,5,6 and 7); three San Diego County Supervisors (Districts 1,3 and 4); three State Assemblymembers (Districts 75, 76 and 77); two State Senators (Districts 36 and 39) and three representatives in Congress (Districts 50, 52 and 53).