

6 Water Resources

Water resources, whether generated and maintained by precipitation and groundwater or by urban runoff, are the circulation system of every watershed. A natural stream system acts as the distribution system not only for runoff from precipitation, but also for habitat building sediments and associated nutrients, seeds and rhizomes of many native plant species, and provide shelter for many animals moving through and between watersheds. In semi-arid climates like San Diego, stream systems and impoundments often provide the only source of year-round water for many animal species. Streams become critical components of a watershed's ecosystem during times of drought or catastrophic events like a fire. However, stream systems that occur in more developed watersheds also act as distribution systems for unnaturally erosive storm flows that can cause significant stream bank and bed erosion. They can also transport seeds and rhizomes of invasive exotic plant species, and provide shelter and concealment for non-native predators, such as domestic or feral cats.

6.1 Stream System

The Rose Creek Watershed consists of two primary creeks, Rose Creek and San Clemente Creek (Figure 6-1). These two creek systems converge approximately 3.3 miles north of Mission Bay below the Interstate 5 and State Route 52 interchange. From the confluence upstream, the main stem of Rose Creek is approximately 17.1 miles with another 10 miles of currently mapped tributaries. The main stem of San Clemente Creek is the shorter of the two at approximately 16 miles but has more than 15 miles of mapped tributaries. All the mapped San Clemente tributaries can be found on MCAS Miramar except for a one-mile long section along Lakehurst Ave and Regents Road with the outlet in the Marian Bear Memorial Park. Both Rose Creek and San Clemente Creek flow from the northeast to their outlet in Mission Bay to the southwest.

Both creek systems are very cobbled in nature with numerous sections of standing water in their lower reaches. Along the lower half of Rose Creek, the riparian scrub habitat is dense with a healthy understory and narrow channels varying from 2 feet to 4 feet wide. The portion of Rose Creek east of Interstate 805 is an intermittent stream primarily dependent on precipitation and associated runoff to fill its channel. This section of Rose Creek remained dry during fall field work, with a cobblestone streambed and various trees growing intermittently in the streambed. There were signs of dead foliage and numerous other fallen trees with many signs of stream bank erosion occurring during higher flows. As Rose Creek progresses southwest beyond Interstate 805, its character changes as dry-weather

flow is added from adjacent urban development in the form of runoff and irrigation return flows. These hydrologic additions have allowed for the formation of dense riparian scrub habitat with numerous small in-stream impoundments as wide as 6 feet. San Clemente Creek shares many of the same characteristics as Rose Creek with its cobbled streambed, stream bank scour, and progressively wetter conditions as you move down-stream. Various types of riparian trees have taken root within the drier channel segments, or within the over-bank floodplain, including sycamores, bay laurel, coast live oak, and various willows. The San Clemente Creek channel is typically a bit wider than Rose Creek, which may in part be due to the less dense riparian understory that exposes the stream banks to more direct storm flows and erosion potential. Sycamores can be found scattered along San Clemente Creek from east of Interstate 5 within MCAS Miramar all the way to the confluence with Rose Creek, and form a near continuous canopy within Marion Bear Memorial Park from Interstate 805 to Interstate 5. Along the reaches west of Interstate 805 small in-stream impoundments can also be found, which again appear to be primarily associated with the additional hydrologic inputs from urban runoff and irrigation return flows.

6.2 Surface Water Impoundments

There are no major surface water impoundments within the Rose Creek Watershed. The closest major surface water impoundment is the Miramar Reservoir just north of the northeastern watershed boundary in Scripps Miramar Ranch. The largest surface water impoundment within the RCW is the Fish Pond within MCAS Miramar on Rose Creek (Figure 6-1). The Fish Pond is used for recreational purposes by MCAS Miramar personnel and has been stocked with game fish species. Other small in-stream impoundments can be found along both Rose Creek and San Clemente Creek. The larger of these are found along Sycamore Creek at the site of past aggregate extraction activities near the current Sim J Harris operation in the middle of MCAS Miramar. Two other impoundments can be found along San Clemente Creek just east of Interstate 805 in MCAS Miramar and on the main tributary flowing into San Clemente Creek from Kearny Mesa.

Figure 6-1: Hydrologic Features

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