

Whittier Pond and Storke Wetlands

Freshwater Marsh



The freshwater marshes that occur here are separated from the saline estuary system and occur on soils that drain slowly and are wet for most of the year from urban run-off. Variations in depth and duration of water support species, such as bull rush (*Schoenoplectus* sp), basket rush (*Junucs textilis*), and willow dock (*Rumex salicifolius*). Freshwater resources for wildlife are rare in urban coastal environments where stormwater is generally shunted in to storm drains and dumped in the ocean. These wetlands provide an opportunity for nutrient cycling and infiltration, which reduce downstream pollution. The protection and enhancement of these habitats is an important aspect of this project.



Basket Rush



Willow Dock



California Bulrush

Plant Communities

Creating Diversity



Phelps Creek and Whittier Channel

Riparian Woodland



Riparian habitat occurs along fresh water tributaries with flowing water and can include flood plains, streambanks, and places with near surface ground water. Arroyo willow (*Salix lasiolepis*) and black cottonwood (*Populus trichocarpa*), for example, occur adjacent to Phelps Creek and in sandy soils at the western edge of the property where there is a perched water table. Riparian species have been planted along Whittier storm channel to increase habitat structure for birds and wildlife.



Arroyo Willow



Arroyo Willow (close-up)



Cottonwood

15 acres on mesa top

Native Perennial Grassland



Considered one of the most invaded habitats in North America, grasslands in California have been heavily impacted by exotic annual grasses and human disturbance. These restored grasslands will be dominated by a number of native bunchgrasses: Purple Needle Grass (*Stipa pulchra*) and Meadow Barley (*Hordeum brachyantherum*), as well as a diverse community of native wildflowers. After winter rains, look for blooming wildflowers such as the California Poppy (*Eschscholzia californica*), Blue-eyed Grass (*Sisyrinchium bellum*), Miniature Lupine (*Lupinus bicolor*), California Buttercup (*Ranunculus californicus*), and Checker Bloom (*Sidalcea malviflora*).



California Poppy



Checkerbloom



Miniature Lupine

Nine Vernal Pools at NCOS

Vernal Pools

Vernal pools are seasonally flooded during the winter season and dry during the summer and fall. Generally found on open mesas with dense clay soils or underlying hardpans, vernal pools are not part of stormwater drainage systems and are generally oligotrophic, or low nutrient. The plants and animals that are uniquely associated with these systems have mechanisms for adapting to the short wet window and for persisting as seeds and cysts during the dry season. Be on the lookout for Coyote thistle (*Eryngium vaseyi*), Dwarf Woollyheads (*psilocarphus brevissimus*), dragonflies and clam shrimp.



Dwarf Woollyheads



Coyote thistle



Pacific Foxtail

Trailside and mesa slopes

Coastal Sage Scrub

A fog-adapted shrub community along the coast of California, Coastal Sage Scrub can be found along trails and in patches on the mesa slopes. It is characterized by aromatic low-growing shrubs that are drought tolerant. There are over 20 different Coastal Sage Scrub species growing here. Keep an eye out for the showy California bush sunflower (*Encelia californica*), Sticky monkey flower (*Diplacus aurantiacus*), and Golden Yarrow (*Eriophyllum confertifolium*), as well as the characteristic Coastal sage (*Artemisia californica*) and giant wild rye grass (*Elymus condensatus*).



Golden Yarrow



California Brittlebrush



Monkey Flower

Surrounds Sub-Tidal Zone

Salt Marsh



One of the project's dominant habitat features is the salt marsh habitat which is found at elevations between 7 and 9 feet within the restored estuary. The plants that live in the salt marsh are adapted to intermittently flooded conditions and high salinity levels. These harsh conditions support a surprising diversity of plants. Look for, alkali heath (*Frankenia salina*), salt grass (*Distichlis spicata*), and pickleweed (*Salicornia pacifica*) at the edge of the salt marsh and transitional species such as the rare shore grass (*Distichlis littoralis*) and Parish's glasswort (*Salicornia subterminale*), and the more common and adaptable: California saltbush (*Extriplex californica*), creeping wild rye (*Elymus triticoides*) and California sea blite (*Suaeda taxifolia*).



Alkali Heath



Pickle Weed



Salt Grass