

# TRESTLES WETLANDS NATURAL PRESERVE HABITAT RESTORATION PLAN

*San Onofre State Park, California*

**DRAFT: April, 2009**



**SAN MATEO CREEK CONSERVANCY**

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**Trestles Wetlands Natural Preserve  
top: old Coast Highway; far left: Trestles Path; lower right: point at Lower Trestles surf break**



**The Lagoon and Marsh**



**Willow Woodland plant community fronting Lower Trestles**

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## EXECUTIVE SUMMARY:

### *Trestle Wetlands Natural Preserve: Habitat Restoration Plan*

Almost all coastal streambeds in Southern California have been channelized with portions of their embankments encased in concrete. In these cases, little coastal riparian habitat remains. A notable exception is San Mateo Creek, the most pristine coastal stream in Southern California. Its headwaters originate in the San Mateo Canyon Wilderness Area, and its streambed and alluvial banks are relatively untouched. Almost the entire coastal reach of San Mateo Creek is inaccessible to the public as it is contained within Rancho Mission Viejo and the Camp Pendleton Marine Corps Base.

The wetlands and mouth of the creek between the 5 Freeway and ocean lay within the boundaries of San Onofre State Park. The 160 acres of the Trestles Wetlands Natural Preserve include a freshwater lagoon, marshlands and several distinct plant communities including Coastal Sage Scrub, Willow Woodland, a Sycamore/Cottonwood stand and Marsh Wetlands. These plant communities are populated with over 219 plant species and provide one of the most diverse habitats in coastal Southern California. The walk from the Trestles parking lot to the beach and lagoon provides a unique and esthetic transition from a highly developed urban area to a relatively natural wetlands and beach.

#### **Mission:**

The mission of the Plan is to restore and maintain the Trestles Wetlands Natural Preserve in as natural a state as possible, and to present to the public its important and unique position in our coastal habitat. Courses of action are as follows:

***Invasive Species:*** A primary mission of the Plan is to eradicate as much of the invasive species as possible. Most of the large exotics are not currently damaging, such as the Palm and Eucalyptus trees, but disturb the natural setting. Other more threatening species, notably Poison Hemlock, Fennel, Cape Ivy and *Arundo*, must be removed.

***Habitat Restoration of the Old Field:*** A unique challenge is the 6 acre site adjacent to the upper portion of the Trestles path. It was once cultivated and its soils highly disturbed and at this time has a dominant population of Poison Hemlock (*Conium maculatum*). Its restoration to a Sage Scrub transitioning to a Willow Woodlands community is even more important as it lies along the gateway to Trestles.

***Public Presentation:*** Since 350,000 beachcombers and surfers use the Trestles path annually, there is an opportunity to expose to a large audience this habitat and ongoing restoration. One of the most esthetic vistas is the view of the lagoon and surrounding marshlands and stands of willows. A viewing platform would afford an opportunity to properly view the heart of the wetlands. Interpretive signs would allow explanation and identification of the plant and wildlife communities within the Preserve. Showcasing the lower Creek and Lagoon to visitors would increase public sensitivity to the habitat, promoting support for the protection and rehabilitation for this and other coastal watersheds.

## Goals:

- To restore the Trestles Wetlands Natural Preserve to as natural and healthy a habitat as possible.
- To monitor and protect the Preserve so that it remains a vigorous environment for native plants and wildlife.
- To insure that the streambed remains accessible to salmonid migration..
- To build support among government agencies, conservation organizations, and the public.
- To instill an understanding and appreciation of this native, coastal, riparian ecosystem and inspire conservation of the entire watershed.
- To showcase the San Mateo Creek and Lagoon to the over 2mm annual visitors to San Onofre State Park, raising the public's awareness and support for one of the last remaining coastal riparian habitats in Southern California.

## Action:

- Coordinate the ongoing removal of invasive, non-native plant species and the restoration of an unimpeded natural streambed.
- To remove Poison Hemlock infestation & restore the 6 acre Old Field adjacent to the Trestles path.
- To eliminate rogue campsites and man-made materials.
- To install natural-material fencing as-needed to protect the habitat from pedestrian traffic.
- To develop and install a viewing station and interpretive signage. To rehabilitate and "naturalize" the existing trails.
- To form a coalition of government organizations lead by the California State Parks, and including the CDFG, the California Coastal Conservancy, the Natural Resource Conservation and environmental organizations, such as the Sierra Club, Trout Unlimited, CalTrout, the Surfrider Foundation, Orange County Coastkeeper to support and fund the restoration and improvements.



Uppers

## SECTION 1. WATERSHED OVERVIEW

### 1.1 San Mateo Creek

The coastal rivers in Southern California generally have their most significant sections channelized and their embankments encased in concrete or rock fill. Almost all have dams, weirs and diversions on their main course and major tributaries. Vast Riparian habitat, spawning steelhead, and esthetic vistas have been sacrificed to these massive flood control projects, which have influenced much of the current land use in coastal Southern California. The most notable exceptions are the three creeks, San Mateo, San Onofre, and Las Pulgas, and the one river, the Santa Margarita, whose watersheds lie primarily in the Camp Pendleton Marine Corps Base and the



**Channelized: San Diego Creek above Upper Newport Bay**

Cleveland National Forest. These streambeds and floodplains, which can span a quarter of a mile or more in their lower portions, have significant amounts of untouched riparian habitat and floodplain (although Santa Margarita River suffers severe *Arundo* infestation). The three creeks are dry much of the year, but the Santa Margarita River often enjoys year round flows.

Of the coastal reach of these four streams, only San Mateo Creek is accessible to the public, as the creek mouth and lagoon lie within the leasehold of San Onofre State Park. From the definitive "Southern California Mountains and Foothills Assessment," *San Mateo Creek is perhaps the most pristine coastal stream south of the Santa Monica Mountains. It flows unimpeded to the ocean. The upper watershed is mostly roadless and*



**SMC 4 miles from mouth, SMC Wilderness Area in background**

*primarily within the San Mateo Canyon Wilderness Area.*" (Stephenson & Calcarone, 1999) The Wilderness Area lies at the headwaters and consists mostly of the steep, chaparral-covered Santa Ana Mountains to the north, rising to a peak elevation of 3,756 feet, and the Santa Margarita to Mountains the south, both of which are transversed by

numerous intermittent streams (CCC, 2001a). The San Mateo Creek watershed in total consists of 133 square miles, with 22% of the drainage of SMC contributed by its main tributary, Christianitos Creek. The confluence of the two is located 3 miles northeast of the San Mateo Creek mouth, where the largest Marine Corps development within the San Mateo Valley is located.

The coastal reach of San Mateo Creek, the three miles from the mouth to the confluence of San Mateo Creek and Christianitos Creek to the 5 Freeway, has several notable features.

- It contains a relatively large alluvial valley which was grazed by livestock extensively during and after the Mission Period. This caused the loss of most of the native grasses, which loss has been speculated to have had the largest single impact on the adjacent habitat.
- For much of the twentieth century to the present day, approximately 500 acres adjacent to the streambed north of the 5 highway has been intensively cultivated, having been planted with both grains and vegetables depending on market demand. These cultivated fields are the most dominate feature in the valley between the 5 Freeway and the Christianitos and San Mateo Creek confluence.
- At this confluence, Panhe, a significant village of the Juaneno culture with an estimated population of 300 existed. It is believed to be over 8,000 years old. Panhe is near the site of the first baptism in California in 1769, on a spring creek on the banks of Christianitos Creek just upstream from the confluence with San Mateo Creek.
- A Marine Corps Barracks and other improvements covering approximately 200 acres are located at the confluence of Christianitos and San Mateo Creek.



**Tributary leading to SMC from Mr. Sitton ridgeline in the Wilderness Area**

## 1.2 Trestles Wetlands Natural Preserve



One-half of a mile from the mean tideline, San Mateo Creek is crossed by the San Diego Freeway and the old Coast Highway (closed to mechanized vehicles). Between the two there is a freshwater lagoon, marsh, and wetter soils which hosts a highly biodiverse community of plants, birdlife, mammals and reptiles. This area totals 160 acres, and is defined by the pedestrian pathway and Park boundary to the north, the old Coast Highway to the east, and San Onofre Creek to the south. It contains the Trestles Wetlands Natural Preserve and its approximately 145 acres. Willow Woodland, Sycamore/Cottonwood, and Coastal Sage Scrub plant communities are common to the streambed, floodplain and alluvial terrace of the middle sections of the creek, and also found in the Preserve. Because of the large sand berm which forms by ocean tidal action at the mouth of the creek, a large (app. 6 acre) lagoon and wetlands forms. The berm is breached only for short periods of time 2 to 4 times a decade, and therefore the pond is formally a fresh-water lagoon, not a brackish estuary. This lagoon, the surrounding



wetlands, and the generally moister soils, allows for many other plant communities besides Willow Woodlands and Coastal Sage Scrub, including Freshwater Marsh, Sycamore/Cottonwood Woodland, Jamuea Meadow, and Alluvial Terrace. Within the Preserve, 219 plant species and over ten plant communities have been identified between the Confluence and the beach, which makes this an extraordinarily diverse habitat in a compact area. This habitat has had over 100 bird species and 17 terrestrial mammals, including a beaver, observed in several samplings over a period of a few months (Feldmeth, 1987).

The creek mouth also fronts on the world-renowned Upper and Lower Trestles surf break. Surfrider Foundation and others call this Southern California's "Yosemite of Surfing". This sobriquet was earned by the special "sense of place" which is provided by an excellent surf break which enjoys a beach and landscape framed by the picturesque railway trestle fronting San Mateo Creek and Lagoon habitat. As stated in a California Park Service Assessment "*The long approach walk from a highly urbanized area to the beach through a relatively unspoiled wetlands area provides a sense of transition not experienced at other surfing beaches.*" (CDPR, 1997).



**Looking over the Willow Woodland plant community to Lower Trestles surf break.**

## SECTION 2

### HABITAT RESTORATION & PRESERVATION

The Trestles Wetlands Natural Preserve offers a unique opportunity to instill and share with the public an understanding and appreciation of this free flowing natural streambed, riparian habitat and Lagoon. The 350,000 annual visitors and surfers who use the Upper Trestles pathway provide an opportunity to expose to a wide audience this habitat and its active restoration. Showcasing the lower Creek and Lagoon by means of a proper viewing platform and interpretive signage would increase public sensitivity to the habitat, promoting support for the protection and rehabilitation for this and other south coast watersheds.

#### 2.1 Removal of Invasive, Non-native Plant Species

It is estimated that as many as 20% of the plant species in the LSMC habitat are non-native. Most of these are “naturalized” weeds, well-established but not threatening to become monocultures.

Because of their pervasiveness, removal is considered “out of the question.” (Feldmeth, 1987) However there are several exotic species present which are highly invasive and displace native plant species and animal habitat: Poison Hemlock (*Conium maculatum*), Giant Reed (*Arundo Donax*) Cape Ivy (*Delawarea odorata*), and Fennel (*Foeniculum vulgare*). The *Arundo* was not extensively planted in the SMC and has been treated by the Marine Corps (1996-2003). Cape Ivy was removed by the California Park Service from a six acre area that had been invaded (2003). Although Fennel is perhaps the most extensive invasive in “Camp Fennelton”, it is sporadic in the Preserve proper. This leaves Poison Hemlock as the most established noxious weed. Other less threatening invasives include Pampas Grass (*Cortaderia atacamensis*), Canary Palm (*Phoenix canariensis*), Washington Palm (*Washington robusta*), and *Mypoporum laetum*, and *Euclyptus*.



The irony: noxious weed

Removal of these species within the Wetlands is proposed by means of grubbing the plants and cutting the trees and chemical treatment of the remaining stumps and roots.

#### *Arundo donax*

It is difficult to read any literature on riparian habitat in Southern California without mention of *Arundo Donax*, considered by far the most threatening biomass to the region’s stream banks. This Giant Reed (Mediterranean) was extensively planted in the early 20<sup>th</sup> century primarily for embankment stabilization. The reed is fast growing up to 20 meters, and can displace much of the native flora, and in particular the essential Willow Woodland communities. It is estimated that the water uptake for one acre of *Arundo*

would be equivalent to water usage of 300 modern households. Extensive eradication programs have been established for all of the major Southern California rivers.

The Lower San Mateo Creek at this time appears largely free of *Arundo Donax*. There is little evidence that SMC was subject to the historic planting experienced by other watersheds. More significantly, between 1996 and 2002 the Marine Corps treated 687 acres of *Arundo* at a cost of \$8.5mm, primarily on Santa Margarita River but also on San Onofre Creek and San Mateo Creek, where 1.5 acres were removed near the creek outlet (Neil & Giessow, undated). It appears that the San Mateo and San Onofre Creeks were not subject to the wholesale planting that the Santa Margarita River experienced. While the two creeks are relatively *Arundo*-free, the Santa Margarita River is still highly inundated.



How bad it can get: San Luis Rey River

In October, 2003, Trout Unlimited led a group of volunteers to San Mateo Creek and removed and chemically treated the stumps of two *Arundo* stands that resurfaced. They reported that they “inspected sites that had been cleared by earlier work parties and found only a few straggler stalks, which we removed. Native vegetation is taking over! We were pleased to note that the *Arundo* eradication process is successful.” (Trout Unlimited, 2003)

Currently, several small stands of *Arundo* have been observed in the Wetlands Area.

S



Arundo on Path



SMC Arundo in Willows



SMC Arundo on Embankment



The Threat: \$8.5mm spent on Santa Margarita River *Arundo* removal in Camp Pendleton and still massively infested. Note *Arundo* clumps in both the foreground and the background

### **Cape Ivy (*Delairea odorata*)**

*D. odorata* has been listed as “most invasive and damaging wild land pest plants” (California Exotic Pest Plant Council, 1999). The California State Park’s website states that “the plant grows tenaciously in wetlands and streams, smothering native plants and often dominating the riparian understory...the plant is still very difficult to control because of its ability to resprout from small fragments. Any fragments left behind after removal can result in a reinfestation. Successfully removing cape ivy generally requires several control treatments.”

“A population of approximately 8 acres of German [aka Cape] Ivy has become established within the Trestles Wetlands Natural Preserve at San Onofre State Beach. This infestation threatens to overtake known least Bell's vireo breeding habitat. The spraying of herbicide occurred in March 1997 and is being repeated...to ensure eradication” (CCC, 2001b).

“We [CDPR] have most recently worked 5 of the last 6 years on control of cape ivy in the interior of the wetlands. It has the potential, and has spread to a canopy covering all other vegetation within certain areas. It can smother all other stems within the system, and at one point filled approximately 9 acres on the upcoast side of San Mateo Creek” (Pryor, 2008).

California State Parks has communicated that they are continuing to inspect and treat as required.

### **Canary Island & Washington Palms**

The planting of palm trees along parkways, in public parks, and in private gardens continues to be extremely popular in Southern California. Postcards from as early as the turn of the century feature palm trees along with orange trees prominently in photographs of LA and Hollywood. Of course, neither is native.

According to an email from David Pryor, Environmental Scientist with California State Parks: “A number of years ago, we removed over 300 palm trees in the [Trestles Wetlands] Natural Preserve- mostly Canary Island palms with large canopies. By removing this one species, we gained over 6 acres of wetland habitat.”

Currently there are several palms (6-8) within the Wetlands which require removal.



### **Fennel (*Foeniculum vulgare*)**

“Fennel will invade areas where the soil has been disturbed and can exclude or prevent reestablishment of native plant species. It can drastically alter the composition and structure of many plant communities, including grasslands, coastal scrub, riparian, and wetland communities. ... Once established, fennel is tenacious and difficult to control.” (Cal-IPC, 2009).

Fennel has been recognized as significant a threat as *Arundo* in Camp Pendleton. The Corps has mapped Fennel distribution by using aerial thermography, and has treated over 1,200 acres [leaving 18,000 more acres to treat!] (Easley & Bieber, 2005). The treatment relied partly on research done on Santa Cruz Island, where the removal of feral sheep and boars inadvertently caused a rapid Fennel invasion. The most effective treatment cited was to physically remove the biomass and repeatedly treat the stalks and roots with a chemical “cocktail” of amine and ester formulations of triclopyr (Bell, Easley and Goodman, 2008).



*Foeniculum vulgare* is currently not a prominent problem within the Preserve, primarily because much of the Preserve has well established, higher density plant communities. However, Fennel is found throughout the surrounding environs and in particular along the Penhe Trail from the San Mateo Campground, past the parking lot, to the old Coast Highway. Removal and vigilance are called for.

### **Eucalyptus, Brazilian Pepper, and *Myoporum laetum***

There are a few large, non-native trees within the Preserve. Two extremely large Eucalyptus (Australia) trees and a Brazilian Pepper tree are adjacent to the Trestles Path and old Coast Highway and need to be removed. Several (4-6) *Myoporum laetum* (New Zealand) are scattered throughout the Preserve.



Eucylptus on Trestles path



*Myoporum* in Willow Woodland

## 2.2 Steelhead Recovery

Much has been written but little has been done for the restoration of spawning steelhead and salmon in San Mateo Creek. Spearheaded by Trout Unlimited and the CDFG, a comprehensive Steelhead Recovery Plan has been prepared for the San Juan Creek watershed immediately to the north of the SMC watershed. According to Hubb (1946), consistent steelhead and salmon runs occurred on the San Juan, San Mateo and San Onofre Creeks up to the late 1940's. The San Juan Creek Plan includes restoration of riparian habitat in the mouth of the creek, installation of two fish ladders, and removal of numerous rogue dams, weirs and obstructions (CDM, 2007). No comprehensive plan for San Mateo Creek has been prepared as the creek is essentially free flowing and the streambed free of man-made obstructions.

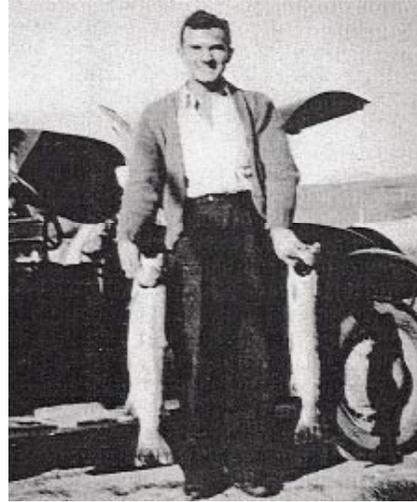
The most significant hindrance to recovery of steelhead runs has been the relatively long-term drought experienced in Southern California. The last wet winter was experienced in 1997-1998, the above average rainfall attributed to El Nino. For the last years, the western Pacific has been experiencing La Nina, unusual currents bringing colder water to Southern California that has resulted in cooler, but drier weather.

Precipitation is traditionally measured from July 1 to June 30<sup>th</sup>. During The 2007-2008 period, 3.2" of rain fell, about a quarter of the historic average. As of April, 2009, it appears that the 2008-2009 period will approach the historical average of 12" of rain.

The largest threat in SMC is the aggressive, introduced species that inhabit the pools in the Wilderness Area. These fish, primarily green sunfish, bluegill, and black bullhead have been flushed into the system during heavy rains from stocked ponds on private ranchettes located within in-holdings and contiguous to the San Mateo Canyon Wilderness Area. Trout Unlimited is in year four of a five-year \$800k grant to fund removal and mitigation of upstream non-native fish.

It is not in the scope of this proposal to fully address Salmonid recovery. Reference is made to the bibliography.

The Trestles Wetlands Plan contains several elements that should benefit salmonid recovery if and when a sustained water flow returns to the lower portions of the creek. Helpful mitigation includes chemically-treating remaining *Arundo*, the removal of trash within the streambed, and the restoration of the Old Field which will arrest invasives from entering and degrading the creek banks.



Dan Ryan, San Mateo Creek, 1939

## 2.3 Removal of Rogue Campsites and Refuse

The Wetlands and Environs suffers 8 to 10 rogue campsites, several of which appear to have enough improvement to allow long-term living, whereas others appear to be transient surfer encampments. The removal and restoration of these sites is wholly appropriate.

In addition, there are many areas with refuse and trash, the removal of which could easily be accomplished in a day with a group of volunteers.

Photographs of sites within the Preserve in January, 2009.



## SECTION 3

### REHABILITATION OF OLD FIELD

#### 3.1 Description

Six acres adjacent to the Trestles path is labeled the Old Field in the Feldmeth survey because it “*apparently was part of an old alluvial terrace. Channelization of the stream cut through this terrace and the levee has protected it from stream erosion and flooding. Because of the high number of introduced species, this area was evidently disturbed at one time. Perhaps the area was cultivated or grazed or was used as a construction camp during the construction of the bridges across the creek. ...The community may represent a stage of succession between disturbed or alluvial terraces and coastal sage scrub.*” (Feldmeth, 1987).

The Old Field is adjacent to the main Trestles pathway for half of the walk from the 5 Freeway to Upper Trestles. For surfers and beachcombers visiting Trestles this represents most of their immediate contact with the Wetlands, as few walk and inspect the perimeters. **This disturbed field represents only 4% of the 160 acres of the Wetland and Environs, yet it is adjacent to fully half of the Trestles path, which is typically the most proximate to the Wetlands that the 300,000 annual path users experience.**

The Old Field is outlined in the aerial below. This aerial illustrates well the inconsistent plant groupings and canopies in comparison to other plant communities. This is typical of disturbed fields resulting in a large amount of open spaces which become susceptible to invasive pioneers, such as Poison Hemlock in this case.



### 3.2 Poison Hemlock (*Conium maculatum*) & Removal

The most serious issue regarding the rehabilitation of the Old Field is the dominance of Poison Hemlock (*Conium maculatum*), which covers more than 50% of the area. Although there are a good number of mature Western Sage, Coyote Bush, Mulefat, Arroyo Willow and Mexican Elderberry species within the field, *Conium* forms pure stands in a number of areas largely void of other species.



**The unsightly dead biomass of Hemlock at the end of its cycle**

It is a tenacious weed native to Europe, West Asia and Africa and first brought to the West Coast as a garden plant. Arguably an attractive plant when in bloom, it is a biennial that at the end of its cycle forms large stands of unsightly dead biomass. Poison Hemlock contains a deadly alkaloid and apparently does not provide food for any native wildlife, nor nesting areas for birds, nor a strong root system for erosion control. It is best remembered as the source for the potion that Socrates drank to carry out his own execution for “corrupting the youth and disbelieving in the ancestral gods.”

Little mentioned in the Feldmeth survey, nonetheless Poison Hemlock is the most pervasive exotic in the Old Field and Ruderal communities in the Preserve. It is clearly one of the “weeds” to which Feldmeth refers whose removal is “out of the question”.

In many areas, glyphosate (aka: glycolphosphate and roundup) has proven to be an effective control prior to seeding. In environmentally sensitive habitat, physical removal is appropriate. Hemlock is much easier than with Fennel to grub as it does not have deep tap roots. “Hand pulling works easiest with wet soils and with small infestations. When grubbing, it is not necessary to remove the entire root system since the plant is not

perennial. It is best to pull or grub out the plant prior to flowering ... 'Follow-up cultivation is necessary to deal with any seedlings and if possible a vigorous pasture should be established to compete with any further seedling growth' ... (The Nature Conservancy, *Element Stewardship Abstract, Conium maculatum*). The soil in the Old Field is alluvial sand and the removal of the dead Hemlock is accomplished by raking or grubbing, followed with a thorough hoeing or chemical spraying to kill the new growth. A half acre demonstration area, sited near the middle of the Path, has been cleared of Hemlock in this manner and replanted in CSS species placed between the remaining mature Western Sage and Mulefat, which represent about a 25% coverage of the area. These mature plants should enhance and accelerate the recovery to a CSS community, according to the Bowler study referenced above.

The longer commitment will be the need to hoe or spray the re-sprouting of dormant seeds on at least a quarterly basis until the establishment of the CSS community. According to literature, this is without question the key to long-term success. Dormant seeds of *Conium maculatum* are generally short-lived, germinating only about three years after dispersal (Cal-IPC, 2009).



**Center of Old Field showing pure field of Hemlock: mass of Dead Stalks surrounded by New Seedlings**

### 3.3 Replanting

The re-establishment of a Coastal Sage Scrub and Willow Woodland community to this area is essential. Coastal Sage Scrub (CSS) along the Trestles path will evoke the beauty of the large extensive scrubland that was along the entire coast, opening views to the Willow Woodlands and the Sycamore -Cottonwoods beyond.

Peter A. Bowler at UC Irvine has written extensively on restoration of CSS communities. The probability of success in establishing CSS has proven to increase by interspersing the seedling and nursery starts with mature plants from established habitat, for example from areas planned for development or roadway expansion.

*“transplantation and salvage can play a vital role in establishing canopy plants and many understory plant species. For a number of reasons, transplanting wild grown plants appears to hasten the development of fledgling communities, and this approach shows particular promise as inocular sources when planted as patches within a larger matrix of imprinted or direct seeded approaches”* (Bowler, 2000) . Fortunately the Old Field has a significant number of mature native plants distributed throughout the field.



The CSS community will attempt to replicate the density of the most common bushes in the surrounding CSS: Coastal Sagebrush (*Artemisia californica*), Coyote Bush (*Baccharis pilularis*), Mule Fat (*Baccharis salicifolia*), Buckwheat (*Eriogonum fasciculatum*) Black Sage (*Salvia mellifera*), Toyon (*Heteromeles arbutifolia*), Mexican Elderberry (*Sambucus mexicana*), and Lemonadeberry (*Rhus integrifolia*) . The Willow Woodlands will include Arroyo Willow (*Salix lasiolepis*), California Sycamore (*Platanus racemosa*), and Black Cottonwood (*Populus balsamifera*).



**Old Field adjacent to Trestles path, Willow Woodlands background**

## SECTION 4 PATH ENHANCEMENT AND VIEWING PLATFORM

### 4.1 The Fence:

At the terminus of the Trestles path pedestrians are presented without a sense of place or a viewing opportunity of the lagoon. This fence will be replaced with a four foot high wood fence evoking the design of the adjacent trestle. Existing Fence:



## 4.2 Viewing Platform & Interpretive Signage

The Viewing Platform provides two important services. It allows clear viewing of the heart of the Wetlands, the freshwater lagoon, and the surrounding marshes and woodlands. In so doing, it educates and inspires the public to support the restoration and preservation of San Mateo Creek specifically, and wetlands and riparian habitats in general.

Currently, the only view of the lagoon is from the retaining berm on the beach, as the surrounding plant communities and tules wholly obscure the lagoon from any other vantage. The plant communities, the center and upper reaches of the lagoon are obscured by the trestle, which has three sets of pylons in this section, and a very low aspect of the sight-line.



Lagoon from beach , only current viewing perspective

The placement, near the terminus of the pathway, of a viewing platform would allow for an unobstructed view of the center and upper reaches of the lagoon: the adjacent marshland, the Willow woodlands to the north, and the Sycamore Cottonwood to the south. The many waterfowl that frequent the lagoon would also be showcased. Interpretive signs would be mounted on the railing, illustrating the plant communities and listing the most significant resident and transient bird and animal life.

Complimenting the inland vista would be the unique view of the lagoon looking towards the beach and the surf and ocean beyond. The design of the platform would be architecturally consistent with the form and material of the adjacent Trestle, and the proposed terminus fence.



Existing Path leading to proposed site



Examples of Viewing Platforms

The Interpretive Signs will be placed sparingly, two along the Coast Highway, one adjacent to the Trestles Path, one at the head of the Lower Trestles Trail, and two on the Viewing Platform. They will incorporate the Plant Community map and descriptions of plant communities within the sightlines of the individual signs. See Appendix A.

The following photographs clearly represent the sightlines and examples of viewing platforms.



**View Upstream from Viewing Platform at 18' Height**



**Downstream View towards outlet from Viewing Platform**

## REFERENCE CITED OR NOTED

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