CRITICAL COASTAL AREAS PROGRAM

JAMES V. FITZGERALD MARINE RESERVE

Fitzgerald Marine Reserve is noted as one of the richest, most biodiverse intertidal environments on the California coast. Extending three miles along the San Mateo coast, from Point Montara to Pillar Point, the Reserve is a semi-protected outer coastal area with rocky intertidal habitat. Here low tides expose rocky pinnacles, reefs, and pools that are home to hundreds of kinds of animals and algae.[1] In addition, there are a bluff top cypress forests, offshore reefs, freshwater and salt marshes, and a renowned surf break - known as 'Mavericks' within the Reserve.

Intent of this document – This CCA Fact Sheet provides a review of work completed to date on the creation of a CCA Watershed Assessment and Action Plan for the James V. Fitzgerald Marine Reserve. This document provides context to the reader on the outcomes of actions by local partners within the watershed after various committee and subcommittee meetings with the Commission.

WATERSHED DESCRIPTION

The James V. Fitzgerald Marine Reserve (Reserve) is a 402 acre natural resource area located in San Mateo County, approximately 7 miles north of Half Moon Bay and 15 miles south of San Francisco (Figure 1). The reserve is part of the larger Monterey Bay National Marine Sanctuary (MBNMS), and includes 370 acres of intertidal and sub-tidal marine habitat, and 32 acres of upland coastal bluffs with elevations up to 100 feet[2].

In 1969 the Reserve was officially designated, and it is currently managed by the San Mateo County Parks and Recreation Department. It includes a little over 3 miles of shoreline (extending south from Point Montara to Pillar Point), intertidal and marine habitat, coastal bluffs, and the Pillar Point Marsh. The reefs within the Reserve form ten distinct areas, although they are generally referred to as Moss Beach Reef to the north, and Frenchman's Reef to the south.[2]

The Reserve boasts rich biodiversity and is host to thousands of visitors who enjoy its unique tide pools and scenic bluffs each year.

Fitzgerald Marine Reserve is located adjacent to the towns of Montara and Moss Beach to

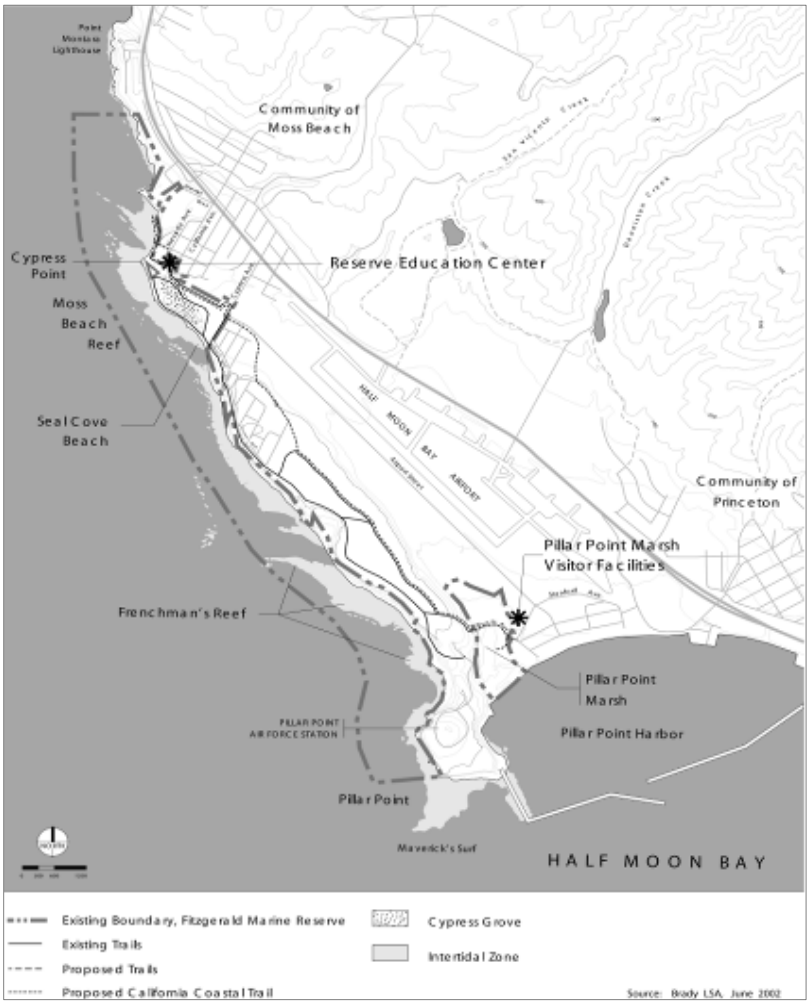

Figure 1. The James V. Fitzgerald Marine Reserve, the Community of Moss beach, and Pillar Point Harbor (image courtesy of the San Mateo County Parks Department: Fitzgerald Marine Reserve Master Plan.[2]).

the northern end, and Pillar Point Harbor to the south, approximately one half mile west of Highway 1, along the coast of San Mateo County.

Multiple sub-watersheds, (from north to south: Martini, Daffodil, Kanoff Creek, Montara, Dean/Sunshine Valley, San Vicente, Denniston, Deer Creeks, Pillar Point Marsh, Pillar Point Harbor and associated shoreline areas)all drain into or directly adjacent to the reserve and make up are Fitzgerald Marine Reserve CCA. Included in this 14.44-square mile area are the unincorporated communities of Moss Beach, Montara, and parts of El Granada; as well as agricultural fields, equestrian facilities, marinas, industrial areas, and over 4,000 acres of shrub/oak woodland managed in part by the Peninsula Open Space Trust (Figure 2).

Figure 2. Watersheds draining into or adjacent to the Fitzgerald Marine Reserve (image courtesy San Francisco Estuary Institute, 2007).

WATERSHED STATUS

Today the watersheds of the Fitzgerald Marine Reserve are impacted by increased urban development with the lower portions of the associated watersheds, Pillar Point marsh, and Pillar Point Harbor most directly impacted. Drainage, groundwater overdraft and stream flow have been identified as issues in at least three watersheds: Sunshine Valley/Dean Creek, Pillar Point Marsh and Montara Creek. For Pillar Point Marsh, there is concern over groundwater overdraft, airport runoff and drainage and other adjacent land use drainage (e.g., mobile home park). For Sunshine Valley/Dean Creek, drainage has been identified from houses against or on top of creek. For Montara, drainage, debris, flow, water diversions, flooding, wells, etc. have been identified. As well, the Montara Water and Sanitary District have production wells in Montara Creek area and in the coastal plain at the Airport. The Coastside County Water District (CCWD) has several wells along Dennistion Creek east of the Airport and scattered domestic wells commonly draw groundwater from marine terraces and the coastal plain.[3]

WATER QUALITY CONDITIONS IN THE CCA

There are multiple known or potential NPS pollution issues in the watersheds that drain into FMR that can threaten water quality and have impacts on the Reserve's coastal resources.

San Vicente Creek, which flows to the Reserve, and the Pacific Ocean at both at Fitzgerald Marine Reserve and Pillar Point Beach, are included on the State's 2002 303(d) list as impaired for Coliform Bacteria from nonpoint sources of pollution list for High Coliform Count (Table 1). Both of these have a low Total Maximum Daily Load (TMDL) priority.

Table 1. Fitzgerald Marine Reserve, including San Vicente Creek, Pacific Ocean impairment listings on the 303(d) Lists of Water Quality Limited Segments.

303(D) LIST	LISTING ANALYTE
YEAR	COLIFORM BACTERIA
2002; 2006	SAN VICENTE CREEK
2002; 2006	PACIFIC OCEAN AT FITZGERALD MARINE RESERVE
2002; 2006	PACIFIC OCEAN AT PILLAR POINT BEACH
Listings are included on the 2002 and 2006 303(d) list of Water Quality Limited Segments requiring TMDLs.	

During the Pilot Program, Commission staff, working with San Francisco Estuary Institute (SFEI) and the Association of Bay Area Governments (ABAG), conducted a nonpoint source pollution assessment of the watersheds in the FMR area. The following list indicates the pollutants which have been identified by various sources as adversely impacting or potentially impacting water quality at the Reserve[4].

Pollutants of Concern	Information Sources
• Fecal bacteria indicators	– San Francisco Bay RWQCB Surfrider San Mateo County San Mateo County Environmental Health Monterey Bay National Marine Sanctuary Snapshot Day
• Hydromodification and flooding	– San Mateo County drainage council FMR CCA Steering Committee CCA Pilot Project Technical Team reconnaissance
• Sediments	– Coastside County Water District 2004
• Nutrients	– San Mateo County Department of Parks et al. 2002
• Pesticides	– San Mateo County Department of Parks et al. 2002
• Mercury	– San Francisco Bay RWQCB
Airport Wells Water Treatment Facility Site (Half Moon Bay Airport):	
• 1,2,3-trichlorpropane (THP)	– MHA Environmental Consulting Inc. 2005 (San Mateo)[5]
• Manganese	– MHA Environmental Consulting Inc. 2005 (San Mateo)[5]
• MTBE	– MHA Environmental Consulting Inc. 2005 (San Mateo)[5]

Other potential or known NPS issues and sources were investigated and are briefly described here:

BACTERIA:

As noted above, San Vicente Creek and the Pacific Ocean at Fitzgerald Marine Reserve and Pillar Point Beach are listed for High Coliform and are on the 2002 and 2006 303(d) lists. Although not on the 303(d) list, bacteria may also be an issue for other FMR coastal watersheds, including Denniston Creek, Pillar Point Harbor (one area of which adjacent to Capistrano Avenue has a permanent posting), Sunshine Valley/Dean Creek, and possibly Montara Creek. San Mateo County Environmental Health and/or Surfrider sample weekly for bacteria at various ocean locations within these watersheds (except Montara Creek).

All stables and other animal enclosures are also possible sources of fecal contamination – although the environmental and health significance of this contamination is unclear according to San Mateo County Environmental Health, who reviews manure management practices with respect to the County Ordinance (Confined Animals, 04074) and conducts onsite inspection of stables that have been permitted through the Planning Department to ensure the management does not constitute a nuisance.

The San Mateo County Environmental Health Department also continues to make efforts to ensure that sewage and septic system effluent do not contaminate waters of the state, including the Reserve, noting the primary source of bacteria that are an indication of pathogens is sewage (public and private). Environmental Health visited all septic systems in the area during 2004-5, and oversaw the repair of all septic systems that were found to have problems. They then inspected every septic system in this area in December 2006, indicating that any system found to be failing would either be repaired or destroyed (connected to public sewer). It is thought that the Public Sewer may also be a potential significant source of pathogens in urban areas as the Public Sewer can contaminate storm drainages, creeks, ditches, groundwater and the ocean where there are leaks or intermittent failures or clogs. Environmental Health recommended that a management plan be implemented with Sewer Authority Mid-Coastside, Granada Sewer District, and Montara Water and Sanitary District to eliminate all infiltration and exfiltration, by such methods as checking all sewer mains and laterals that come within a designated distance of storm drain catch basin, creeks or ditches, for leaks via smoke and video, and/or other appropriate methods.

EXCESSIVE NUTRIENTS, NITRATES

For Denniston Creek, groundwater testing[5] shows increased nitrate, polycyclic aromatic hydrocarbons (PAH), 1,2,3-trichlorpropane (TCP) that could be the result of past agricultural uses or solvents, septics and industrial land uses at the airport. Nutrients can come from many sources such as agricultural and urban fertilizer, septics, horse waste/equestrian facilities, pet waste, wildlife, etc. According to the San Mateo County 2004 James V. Fitzgerald Marine Reserve: Resource Assessment[6] livestock and equestrian facilities in San Vicente Creek may also be contributing excessive nutrients to the Reserve. Additionally, the 2002 San Mateo County Fitzgerald Marine Reserve Master Plan[2] indicates that nutrient loading in the form of nitrate and ammonia from upstream equestrian facilities is likely to be occurring due to the location of facilities and waste storage in close proximity to the creek, upstream of Etheldore Road. The Master Plan also indicates that quantitative information regarding the transport of fertilizers and nutrients from these uses is lacking, and the potential effects on local freshwater and inter-tidal habitats are not documented. It is not known the extent that excessive nutrients and nitrates may be a problem for the Mid-Coast.

SEDIMENTATION/EROSION

This may a problem in multiple watersheds in the coastal watersheds, including Denniston Creek, San Vicente Creek, Sunshine Valley/Dean Creek, Montara Creek, Farallone and Martini Creeks. Sources include plugged culverts, crumbling or poorly managed hiking and biking trails, stabling operations, new development/construction (e.g., road base and construction debris), agricultural activities, and rural or urban roads.

URBAN RUNOFF-DEVELOPMENT, STORM DRAINS, INADEQUATE BUFFER ZONES

Urban runoff may be an issue for all of the coastal watersheds in FMR. There are 28 direct discharges by which urban runoff flows into the ocean, primarily from the residential area along

the bluffs adjacent to the northern portion of the State Water Quality Protection Area. Residential discharge pipes (not installed by County Parks) carrying runoff from houses currently discharges through pipes directly to the Moss Beach area. The Resource Assessment points to input from storm drains as an additional source of water quality contamination and trash in the Reserve.

INVASIVE/NON-NATIVE SPECIES

The problem of non-native and invasive weed species has been identified as an area needing more research to determine whether it is a problem in some of the FMR watersheds including San Vicente Creek, Sunshine Valley Creek, and Martini Creek. Currently, Himalayan blackberry, English ivy, Jubata Grass (Pampas Grass), French Broom (Scotch Broom), Gorse, Yellow Starthistle, Cape Ivy as well as numerous ivy species are known to be present along the Highway 1 corridor, and in the various parks areas along the San Mateo coast.

DEGRADED WETLANDS OR RIPARIAN AREAS

It is unclear at this time whether wetland and watershed degradation is a problem in the FMR watersheds. Inadequate buffer zones and development around riparian corridors can generally have negative impacts and may be present in this area of the coast. This needs to be further explored. Many areas within FMR include sensitive habitats, riparian corridors, etc. According to the FMR Master Plan, the three primary potential sources of degraded water quality in Pillar Point Marsh are: 1) sediment transported from the airport drainage ditch network, roadside ditches, and grading and development in the Princeton area; 2) urban runoff from the airport and Princeton; and 3) agricultural chemicals used by local growers on the Half Moon Bay Terrace. One way to mitigate some of these impacts would be to protect buffers around the water bodies, incorporate stormwater Best Management Practices, and better filter all outlets in the reserve.

EXISTING OR PLANNED PROGRAMS, PROJECTS, AND PLANS

Significant success in protecting water quality has been achieved within the watersheds of the Fitzgerald Marine Reserve Critical Coastal Area over the last 10 years.

The following significant assessments or actions have been completed in and around the areas of the Fitzgerald Marine reserve: FMR Master Plan, James V. Fitzgerald Marine Reserve: Resource Assessment, Public Works Plan Phase I - Final EIR, and a Summary of Nonpoint Source (NPS) Pollution Issues (see references below). As well, the San Mateo County Parks and Recreation Division has also created and installed a series of 16 interpretive signs throughout the reserve and surrounding area; the Friends of Fitzgerald Marine Reserve continues to run educational outings for schools and volunteer participation events for volunteers; the San Mateo County Surfrider Chapter continues to monitor water quality; and the Recourse Conservation District of San Mateo County works with landowners and agricultural operators on pollution prevention programs in the coastal watersheds of FMR.

NEED FOR CONTINUED SUPPORT

All of these programs should be supported and expanded so that they reach their full potential. While some of these programs are in their initial stages of development and implementation, and others have reached a stage of reevaluation, there is still potential to greatly improve the habitat and water quality of the Fitzgerald Marine Reserve CCA. Currently, however, water quality and wetland habitat are still degraded, urban and agricultural encroachment on current and historic wetland habitat continues, historic urban septic and stormdrain systems have not been updated, and few of the programs have been well funded or evaluated for success.

CCA Pilot Project Progress

In 2006 the California Coastal Commission (Commission) and the State Water Resources Control Board (State Board) initiated a pilot Program in five CCA watersheds. The Fitzgerald Marine Reserve CCA was chosen for this program as a watershed prime for success. The San Francisco Estuary Institute (SFEI) and the Commission collaborated on a 319(h) grant to develop a template process for this work, and then renewed their efforts to provide more assistance under a Prop 50 Consolidated grant in 2007. Project partners worked together to identify gaps and determine needs for additional water quality improvement in the watershed.

In 2007 a CCA Steering Committee was formed for the Fitzgerald Marine Reserve CCA to support a dialog among the numerous watershed stakeholders. The CCA Committee was tasked with identifying priority actions to improve water quality in the FMR and then define steps required to implement those actions. A number of Steering Committee meetings were held with local stakeholders over the 2 year period, and a public workshop was held in February 2007. CCA Documents completed for the Fitzgerald Marine Reserve during this project included a Watershed Assessment[4] that includes an Action Plan of priority projects, and a Resource Study which evaluated public policy barriers to completing watershed restoration. SFEI completed a Historical Ecology[7] brochure of the watershed to help spur the watershed planning effort.

Watershed Assessment and Action Plan Development

During the pilot project period, the Fitzgerald CCA Steering Committee worked to develop a CCA Watershed Assessment and Action Plan document as envisioned within the State NPS Program Plan and compiled achievable actions for inclusion in that plan. The identified actions were derived from input by many partners (public groups, NGOs, and local governments), and all attempt further articulate possible actions to reduce water quality impairment threats from adjacent landuse.

The Committee derived six priority action focus areas:

Water Quality Monitoring

Targeted BMP Implementation (with tracking)

Targeted NPS Outreach & Education within the watershed

Targeted outreach in support of San Mateo County's watershed policies

Technical assistance to landowners and developers for implementation of watershed policies

Permit streamlining for restoration projects

The CCA Actions were to be completed by the Steering Committee through subcommittees, focused on NPS land use categories. Each subcommittee included members of the public and local governments who worked together to prescribe strategic actions that would eliminate current hurdles. Each action was defined as critical to addressing the underlying water quality, habitat or programmatic shortfalls within this watershed.

Current and future restoration activities would benefit from the continued participation of the members of the Fitzgerald CCA workgroup to carry out the goals of the CCA Watershed Assessment and Action Plan, evaluation of current success, identifying ongoing hurdles, revisit several of the identified Management Plans to follow their progress and effectiveness, and evaluation of Management Measure actions for implementation and success.

CURRENT CCA PILOT PROGRAM STATUS & NEXT STEPS

The Pilot program remains incomplete as, along with many other projects funded by the State of California, funding was frozen in late 2008 due to budgetary concerns. The Commission has been strategizing, internally and with local partners, on ways to re-initiate the CCA Steering Committee and complete the planning process for the Pilot CCAs. The intention in the Fitzgerald Marine Reserve CCA Project would be to reconvene the Steering Committee to review the existing list of additional actions identified during the Pilot Project process, and develop an approach for executing the Action Plan items. The Steering Committee would establish the highest priority actions and define the roles and responsibilities of partners for those actions required to complete the final Fitzgerald CCA Watershed Assessment and Action Plan, and then move the watershed forward toward implementation of those actions to reduce water quality impacts in the Fitzgerald CCA watersheds.

The Commission would like to pursue the following priorities for the Fitzgerald CCA in the coming year;

- Support local partners in the region by aiding in identifying funding for the projects identified in the Watershed Assessment and Action Plan.
- Support our local partners such as the San Mateo Chapter of Surfrider, Friends of Fitzgerald Marine Reserve, and the Resource Conservation District of San Mateo County to take the lead in implementing priority projects identified the CCA Action Plan where possible.
- Coordinate with federal, state and local agencies, such as the Pillar Point Air Force station, CalTrans, Pillar Point Harbor, the County of San Mateo, the City of Half Moon Bay, the townships of Montara, Moss Beach, and El Granada, as well as the various water management agencies, in order to identify and overcome policy barriers to water quality improvements, and take the lead on implementing high priority projects where appropriate.

DOCUMENT REFERENCES

[1] Friends of Fitzgerald Marine Reserve website, © 2002 - 2010: http://www.fitzgeraldreserve.org

[2] San Mateo County Parks Department. Fitzgerald Marine Reserve Master Plan, Part One: The Master Plan. May 2002.

[3] Association of Bay Area Governments (ABAG). Technical Memorandum: Fitzgerald Marine Reserve Critical Coastal Area (FMR CCA #29), San Mateo County, Preliminary Watersheds and Shoreline Assessment. 2008

[4] Coastal Commission. Nonpoint Source Watershed Assessment: James V. Fitzgerald Marine Reserve Critical Coastal Area. December 2008. http://www.sanmateorcd.org/CCA%20Watershed%20Assessment

[5] MHA Inc. Montara Water and Sanitary District: Public Works Plan Phase I - Final EIR. March 2006 (pps. 1-1, 2-28)

[6] San Mateo County Parks and Recreation Division. James V. Fitzgerald marine reserve: Resource Assessment. 2004

[7] San Francisco Estuary Institute. Historical Ecology of the Fitzgerald Marine Reserve CCA. 2008 http://www.sfei.org/sites/default/files/cca/Docs/phase2HE/Fitzgerald_MarineReserve_CCA_lowres_v3.pdf