

Natural Conservation, Habitat, and Water Quality

Existing Conditions Overview

August 2023



Introduction

This report summarizes analysis of Marina's natural environment including habitat, and biological and water resources. This analysis will serve as the baseline for the General Plan Update and environmental review, providing an important snapshot of where the community is now.

Topics addressed in this report include:

- Natural Resources and Habitat
- Biological Resources
- Water Quality

The report concludes with key findings on the topic.

Natural Resources and Habitat

Planning and Regulatory Setting

The following list includes planning and regulatory documents related to conservation, habitat and water resources.

- **Government Code section 65302(d)** – Conservation Element Requirements
- **Assembly Bill 1358** – Conservation Element Requirements for Water Resources
- **Federal Endangered Species Act** – Protections for Imperiled Native Species
- **Federal Migratory Bird Treaty Act** – Protections for Migratory Birds and Birds in Danger of Extinction
- **California Endangered Species Act** – Protections for “Listed” Species
- **California Environmental Quality Act** – Requires Informing and Reducing of Environmental Impacts of Proposed Projects
- **Clean Water Act** – Regulates discharge of pollutants into United States waters

Existing Local and Regional Plans and Projects

The following are the local and regional planning documents that address the topics in this report.

- **Existing Marina General Plan** – Addresses environmental protection and conservation and open space
- **Marina Resource Management Plan (RMP) and Citywide Incidental Take Permit Program** – Currently being drafted to comply with the Installation-Wide Multispecies Habitat Management Plan (HMP) for former Fort Ord
- **Marina Local Coastal Program Land Use Plan & Implementation Plan** – Addresses coastal planning and conservation for environmentally sensitive habitats in the coastal zone
- **Marina State Beach General Plan** – Directs long-range development and management of the State Beach and establishes policies and programs for management
- **Monterey Bay National Marine Sanctuary Management Plan** – Guides management of the Monterey Bay National Marine Sanctuary and protection of coastal and marine environments within the sanctuary
- **Locke-Paddon Vernal Pond Management Plan** – Guides management of Locke-Paddon Park to protect vernal ponds

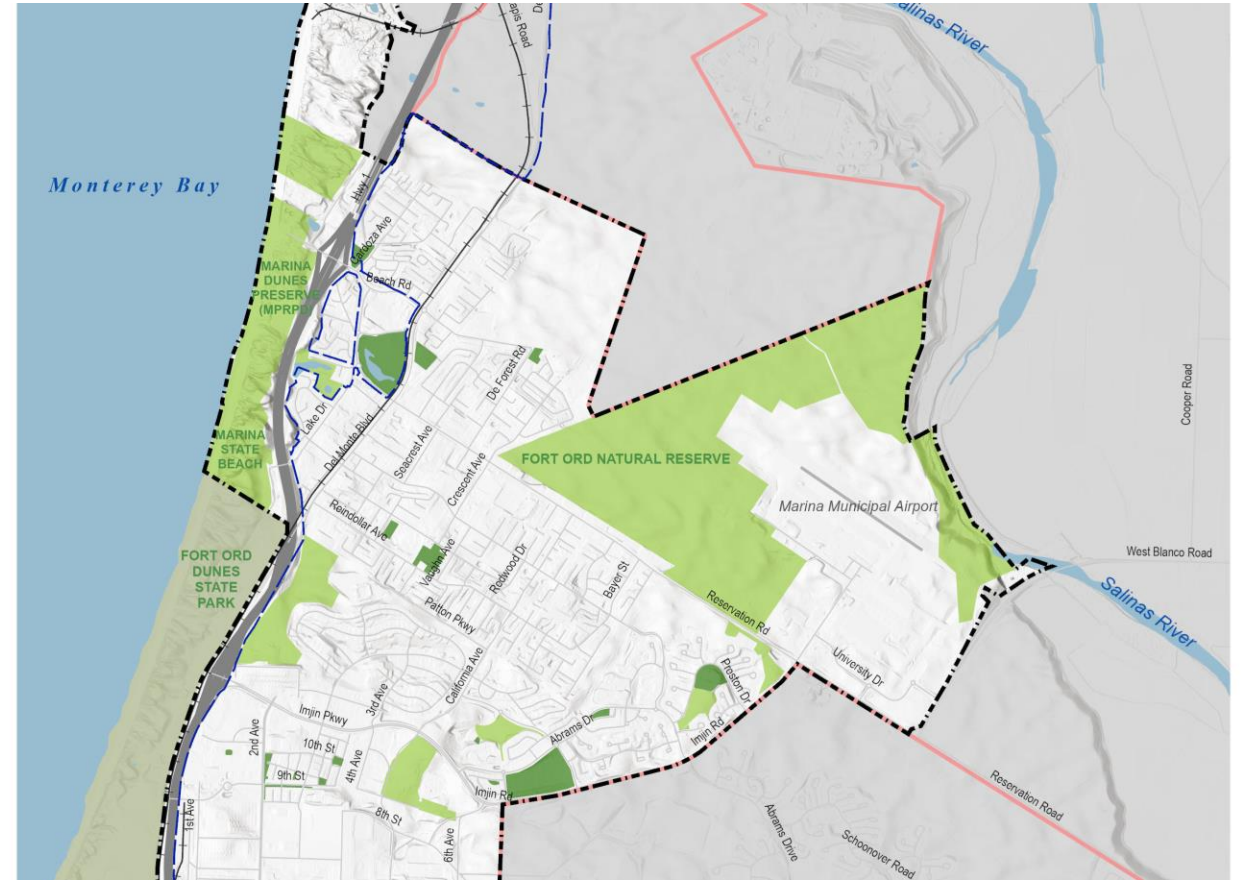
Existing Local and Regional Plans and Projects (continued)

- **Installation-Wide Multispecies HMP for Former Fort Ord** – Addresses impacts on vegetation and wildlife resources and provide mitigation for their loss associated with the remediation, disposal, and reuse of former Fort Ord military base
- **Marina Resource Management Plan** (currently being drafted) – Plans for the protection of federally protected plant and animal species of the four Habitat Management Areas (HMAs) that Marina is responsible for (Salinas River HMA, Airport HMA, Northwest Corner HMA, Landfill HMA)
- **Monterey County Regional Conservation Investment Strategy (RCIS)** – Voluntary, non-binding, non-regulatory conservation assessment that outlines widespread conservation actions to sustain and enhance ecological resources, biodiversity, and promotes resilience of species and habitats for Monterey County

Biological Resources

City of Marina Habitat Management Areas

- Marina has four Habitat Management Areas, as is shown in the map to the right. These areas were identified in the regional Habitat Management Plan (HMP).
- In accordance with the requirements described in the HMP, the City is currently preparing a Resource Management Plan (RMP). The RMP will identify the habitat management activities required for each parcel, describe any proposed development activities that are consistent with the terms of the HMP, and outline the monitoring and reporting requirements.

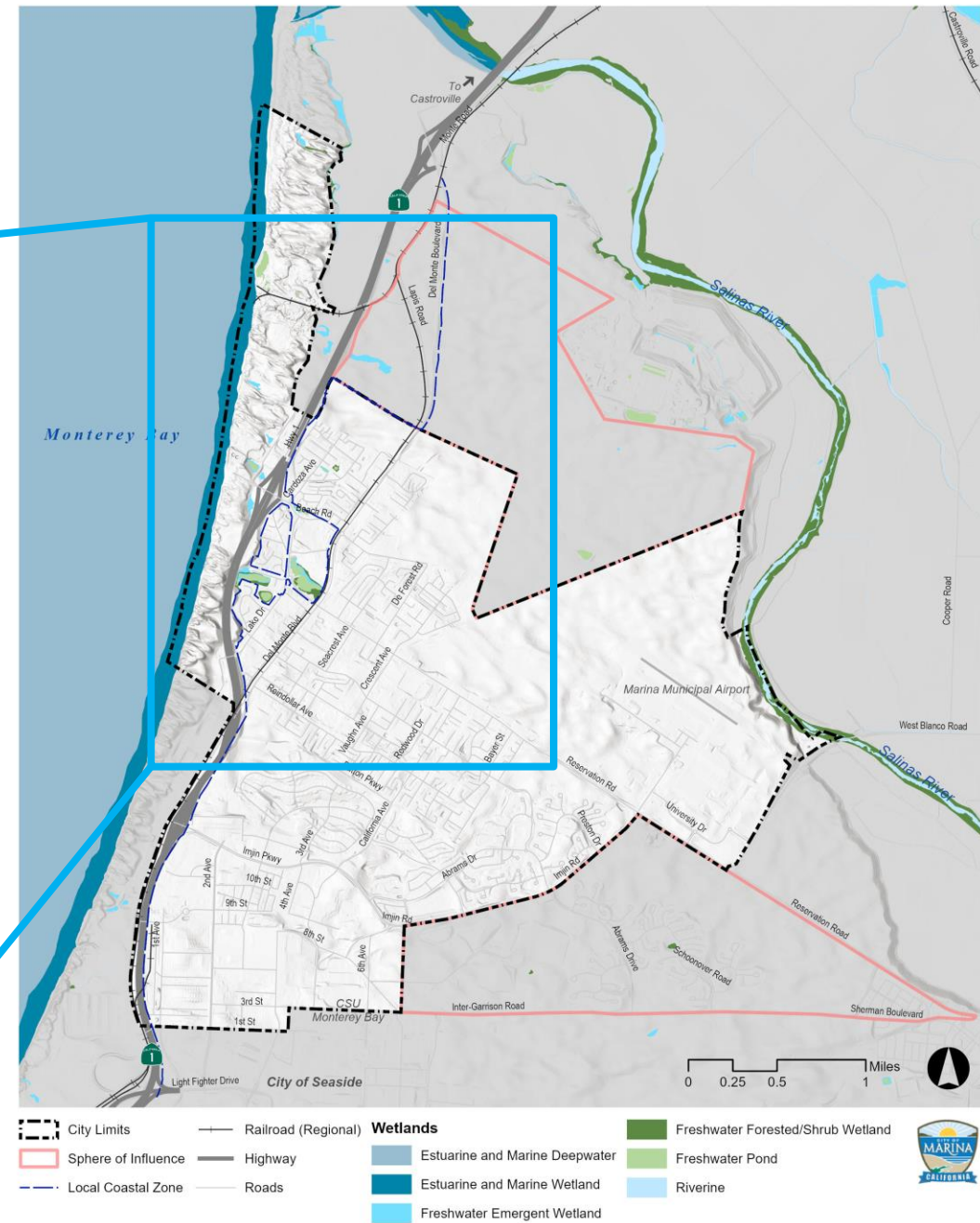
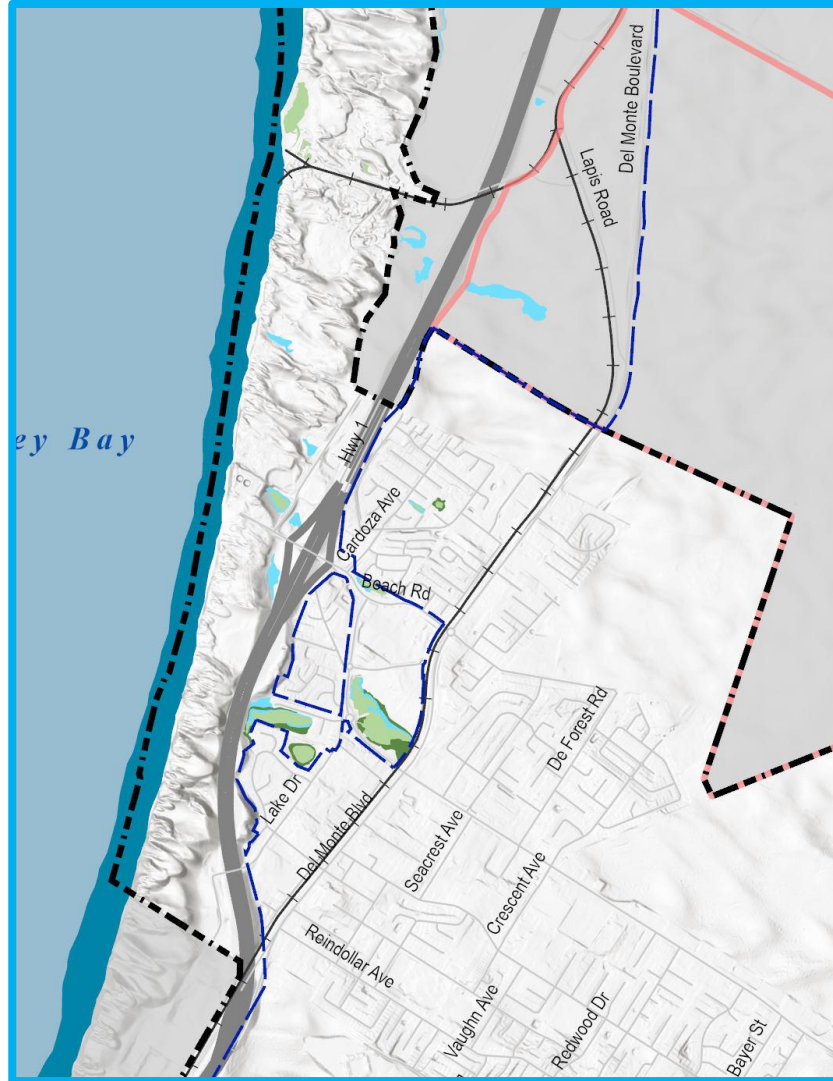


Wetlands

- The City of Marina has multiple small wetlands, as is shown on the maps on the following pages, within the Coastal Zone which is governed by the Local Coastal Plan. The wetlands are generally located in the northern part of the City, just east and west of Highway 1.
- Wetlands in Marina consist of vernal ponds and associated freshwater marsh and saltwater marsh vegetation¹
- Federal and State protected wildlife species known to use or inhabit Marina's wetlands include¹:
 - Smith's blue butterfly (*Euphilotes enoptes smithi*)
 - Southwestern pond turtle (*Clemmys marmorata pallida*)
 - Black legless lizard (*Anniella pulchra nigra*)
 - Merlin falcon (*Falco columbarius*)
 - Peregrine falcon (*Falco peregrinus*)
 - Tricolored blackbird (*Agelaius tricolor*)

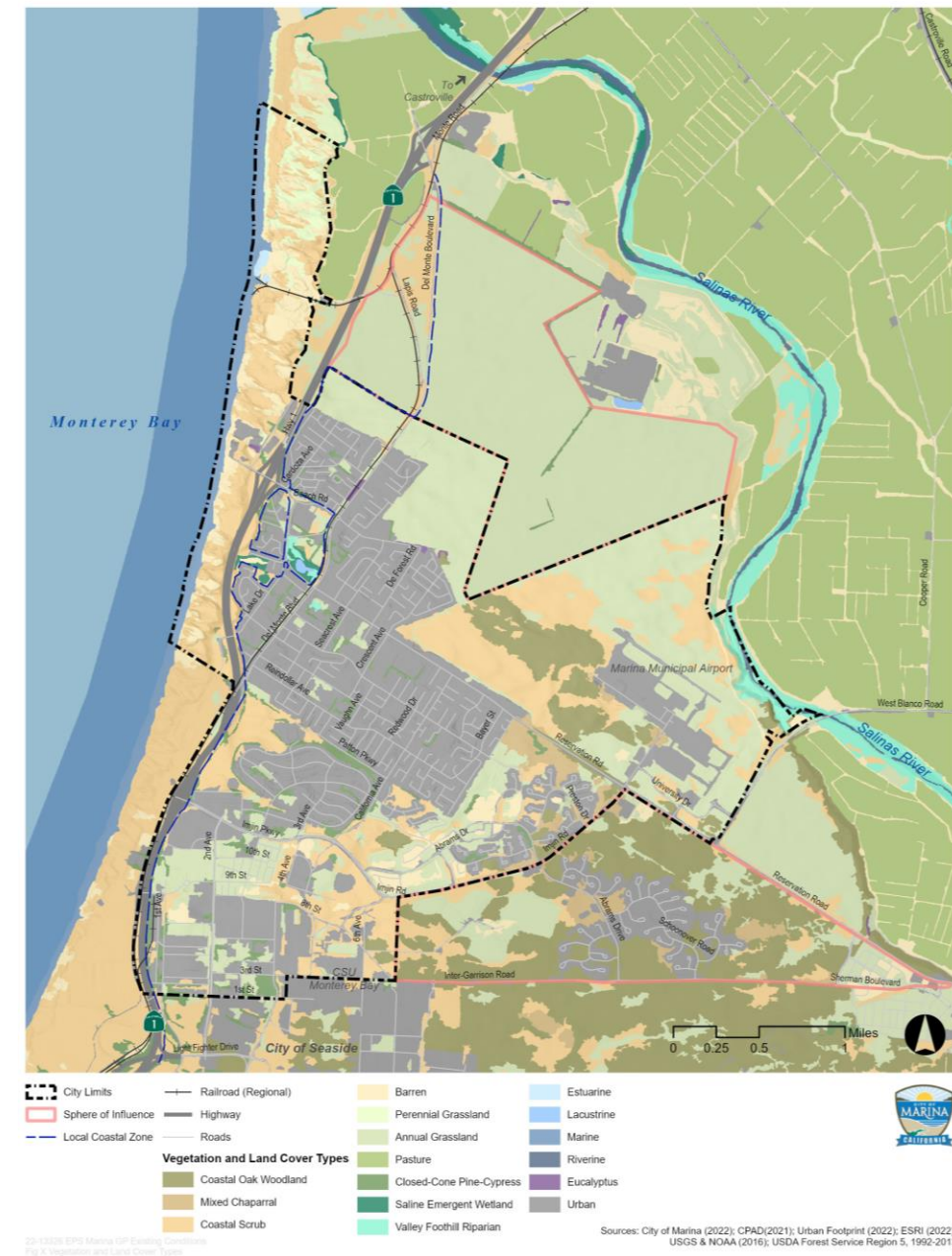
¹ City of Marina. 2000. Final Environmental Impact Report on the Draft Marina General Plan. <https://www.cityofmarina.org/DocumentCenter/View/1158/final-eir-pdf?bidId=>

Wetlands



Habitat and Vegetation

- **Vegetation Communities and Land Cover Types.** Marina contains multiple vegetation types that provide habitat to federal- and state-designated rare and endangered species. As is shown in the map, these areas are mostly located within the former Fort Ord and in the dunes west of Highway 1.
- The following vegetation and land cover types provide habitat to species in Marina²:
 - Coastal Oak Woodland
 - Mixed Chaparral
 - Coastal Scrub
 - Barren
 - Perennial Grassland
 - Annual Grassland
 - Pasture
 - Closed-Cone Pine-Cypress
 - Saline Emergent Wetland
 - Valley Foothill Riparian
 - Estuarine
 - Lacustrine
 - Marine
 - Riverine
 - Eucalyptus
 - Urban



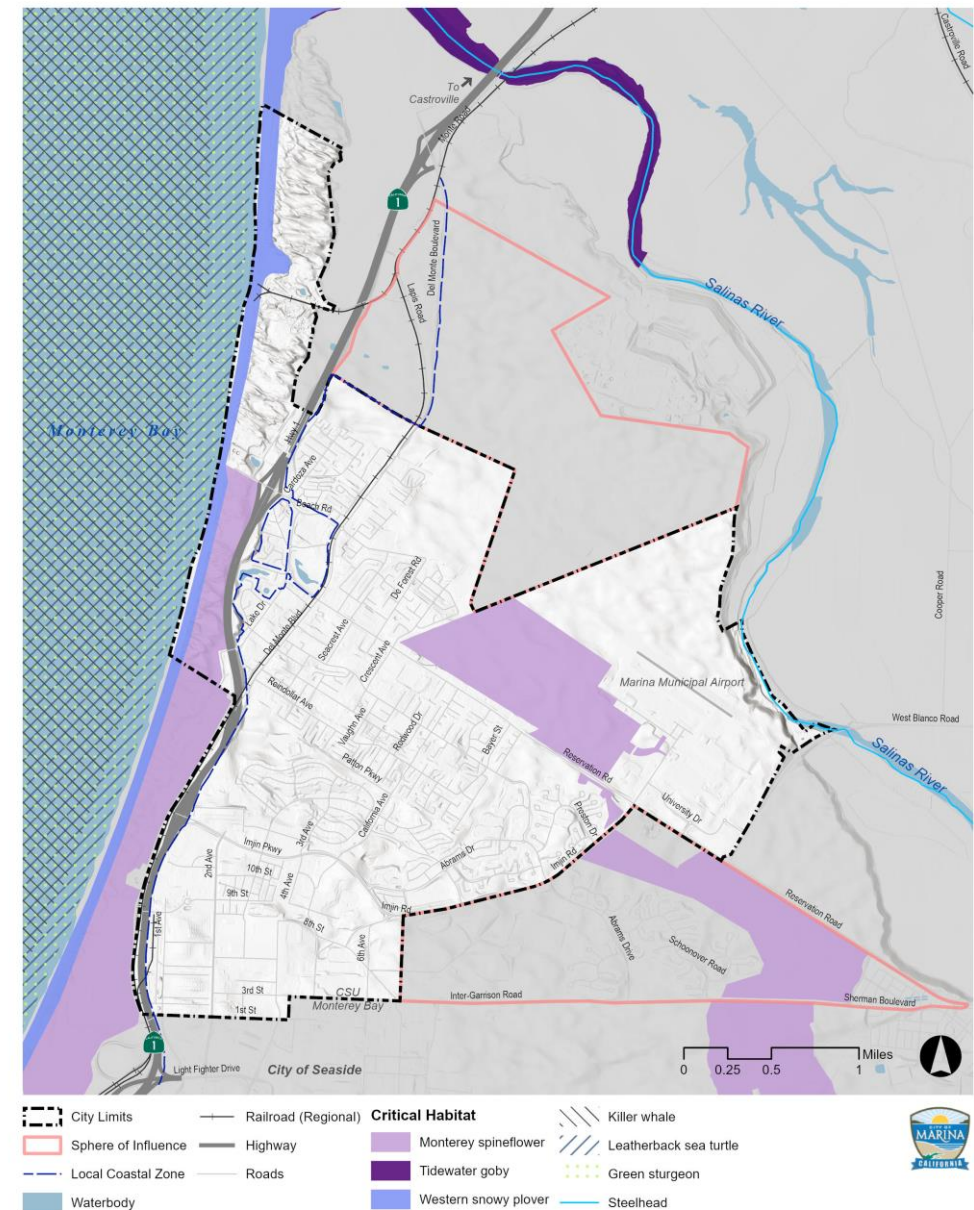
² City of Marina, 2022.; CPAD, 2021; Urban Footprint, 2022.; ESRI, 2022; USGS & NOAA, 2016; USDA Forest Service Region 5, 1992-2013

Coastal Habitat

- Coastal habitat in Marina includes areas west of Highway 1 that are protected to provide habitat for rare or threatened wildlife and plant species:
 - Sand gilia (Monterey gilia)
 - Monterey spineflower
 - Smith's blue butterfly
 - Snowy plover
- Other habitats are in permanent retention as open space to protect plant and wildlife species
 - Potential habitat for
 - Monterey gilia (Sand gilia)
 - Monterey spineflower
 - Toro manzanita
 - Sandmat manzanita
 - Monterey ornate shrew
 - black legless lizard
 - Cooper's hawk
 - Sharp-shinned hawk
 - Monterey ceanothus
 - Eastwood's ericameria
 - Coast wallflower
 - Yadon's piperia

Special Federal Status Species

- Critical Habitat in Marina consists of the following species⁴:
 - Monterey spineflower
 - Western snowy plover
 - Steelhead
- Marina also has one wildlife corridor, the Salinas River. This river provides a migration corridor from Monterey Bay upstream for steelhead into the Arroyo Seco River.⁵



⁴ United States Fish & Wildlife Service. 2023. Environmental Conservation Online System. <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>

⁵ County of Monterey. 2008. General Plan Draft EIR Biological Resources.

<https://www.co.monterey.ca.us/home/showpublisheddocument/44002/636386650108830000>

Special Status Species

- There are approximately 100 special status plant and animal species potentially located in or near Marina. However, many of these are restricted to specific habitats already under protection by Federal, State and local regulations.
- Examples of Special Status Species in Marina:
 - **Monterey spineflower** (*Chorizanthe pungens var. pungens*) (federally threatened).⁶ Habitat is found in maritime chaparral and/or coastal dunes, which primarily occurs in scattered pockets in the Marina Municipal Airport area north of Reservation Road, in the vicinity of several vernal ponds, and on the western portion of the Armstrong Ranch.
 - **Western snowy plover** (*Charadrius nivosus nivosus*) (federally threatened, CA species of special concern).⁶ The sand dunes in the Marina Dunes and Fort Ord State Park provide nesting sites for snowy plover.

⁶ City of Marina. 2000. Final Environmental Impact Report on the Draft Marina General Plan. <https://www.cityofmarina.org/DocumentCenter/View/1158/final-eir-pdf?bidId=>

Special Status Species



- **Steelhead** (*Oncorhynchus mykiss irideus* pop. 9) (federally threatened).⁷ The Steelhead rely on riparian habitat along the Salinas River. The fish migrate upstream from the ocean to tributaries of the Salinas River for spawning.
- **Sand Gilia** (*Gilia tenuiflora* ssp. *arenaria*). This species is federally endangered, and state threatened. There are known occurrences within the Landfill HMA and elsewhere throughout the city.⁸ Generally, this species can be found in bare areas and roadsides, on the cut banks of sandy ephemeral drainages, in recently burned chaparral, and in other disturbed patches.

⁷ County of Monterey. 2008. General Plan Draft EIR Biological Resources.
<https://www.co.monterey.ca.us/home/showpublisheddocument/44002/636386650108830000>

⁸ Rincon Consultants, Inc. 2019. Botanical Survey Report for the Fort Ord Regional Trail and Greenway Project. September. Prepared for the Transportation Agency for Monterey County

Water Quality

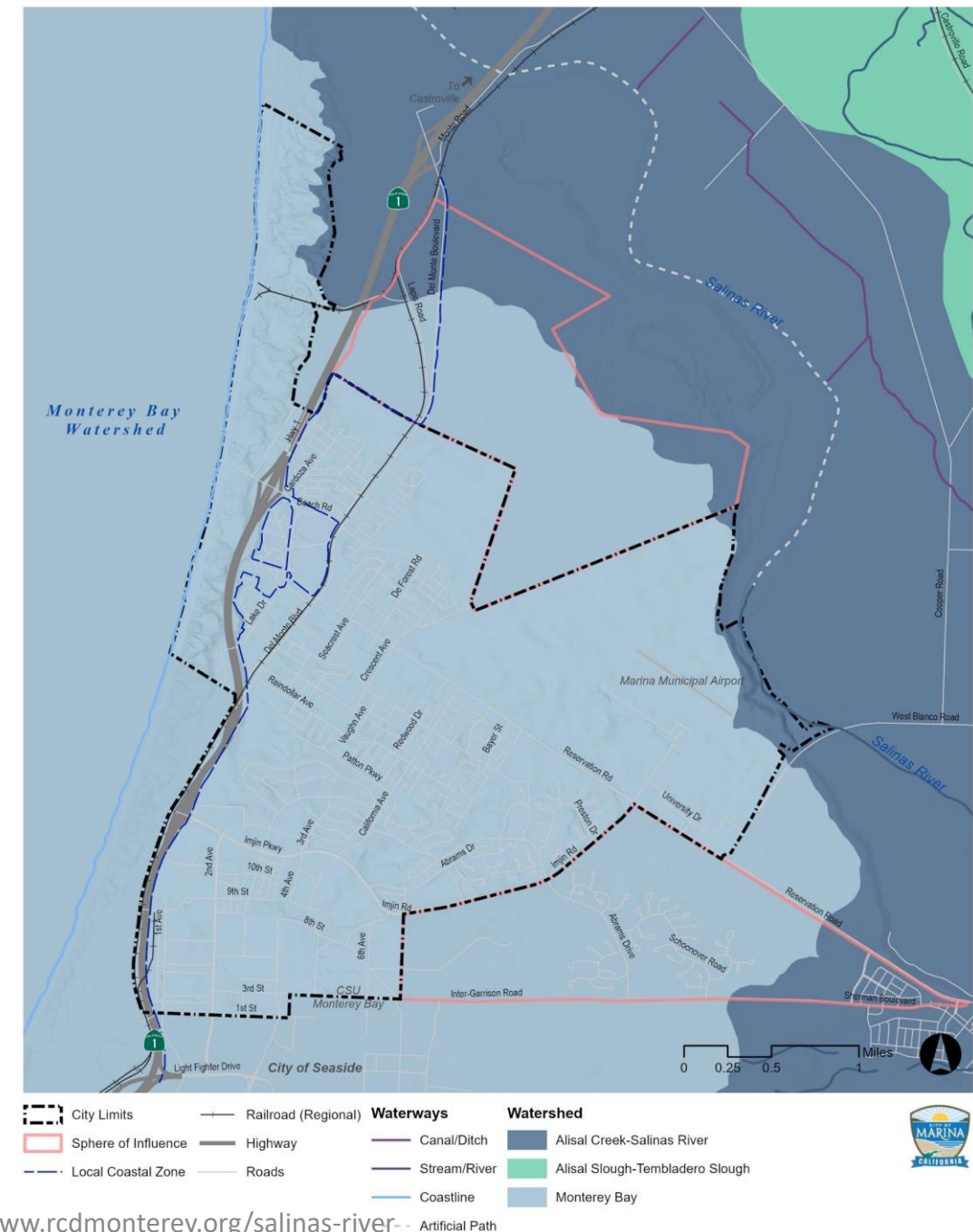
Water Quality Regulatory Context

- The City of Marina is subject to the Water Quality Control Plan for the Central Coastal Basin.⁹ The following is a summary of the Plan.
 - Addresses water quality for surface water and groundwater in the Central Coast Region, which includes all of Monterey County, including Marina
 - Contains water quality objectives for ocean water, inland surface waters, enclosed bays, and estuaries, and groundwater
 - Includes the following goals :
 - Protecting all basin waters for present and future use
 - Maintaining water quality for all surface waters
 - Managing wastewater disposal and treatments systems
 - Maximizing effective use of fresh water through reclamation and recycling
 - Reducing erosion

⁹ Regional Water Quality Control Board, Central Coast Region. 2019. Water Quality Control Plan for the Central Coastal Basin.
https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/docs/2019_basin_plan_r3_complete_webaccess.pdf

Watershed

- Marina is located in the Salinas River Watershed which encompasses approximately 4,600 square miles in Monterey and San Luis Obispo counties¹⁰
- Headwaters begin in the La Panza Range in central San Luis Obispo County and flow northwesterly for 152 miles through the Salinas Valley and empties into the Monterey Bay near Marina¹
- The Salinas River Watershed includes 200,000 acres of irrigated agriculture¹



¹⁰ Resource Conservation District of Monterey County. 2023. Salinas River Watershed. <https://www.rcdmonterey.org/salinas-river/>

Groundwater

- Marina receives its water from the Salinas Valley groundwater basin, Monterey Subbasin.
- The following are the groundwater conditions of the Monterey Subbasin¹¹
 - Lowering of groundwater levels due to increased production from deep aquifers in the Salinas Valley Groundwater Basin
 - Annual loss of storage of about 4,434 AFY due to declining groundwater levels
 - Seawater intrusion within the northern portion of the subbasin
 - Groundwater quality concerns regarding chloride and total dissolved solids concentrations from the former Fort Ord
 - No measurable subsidence has been recorded

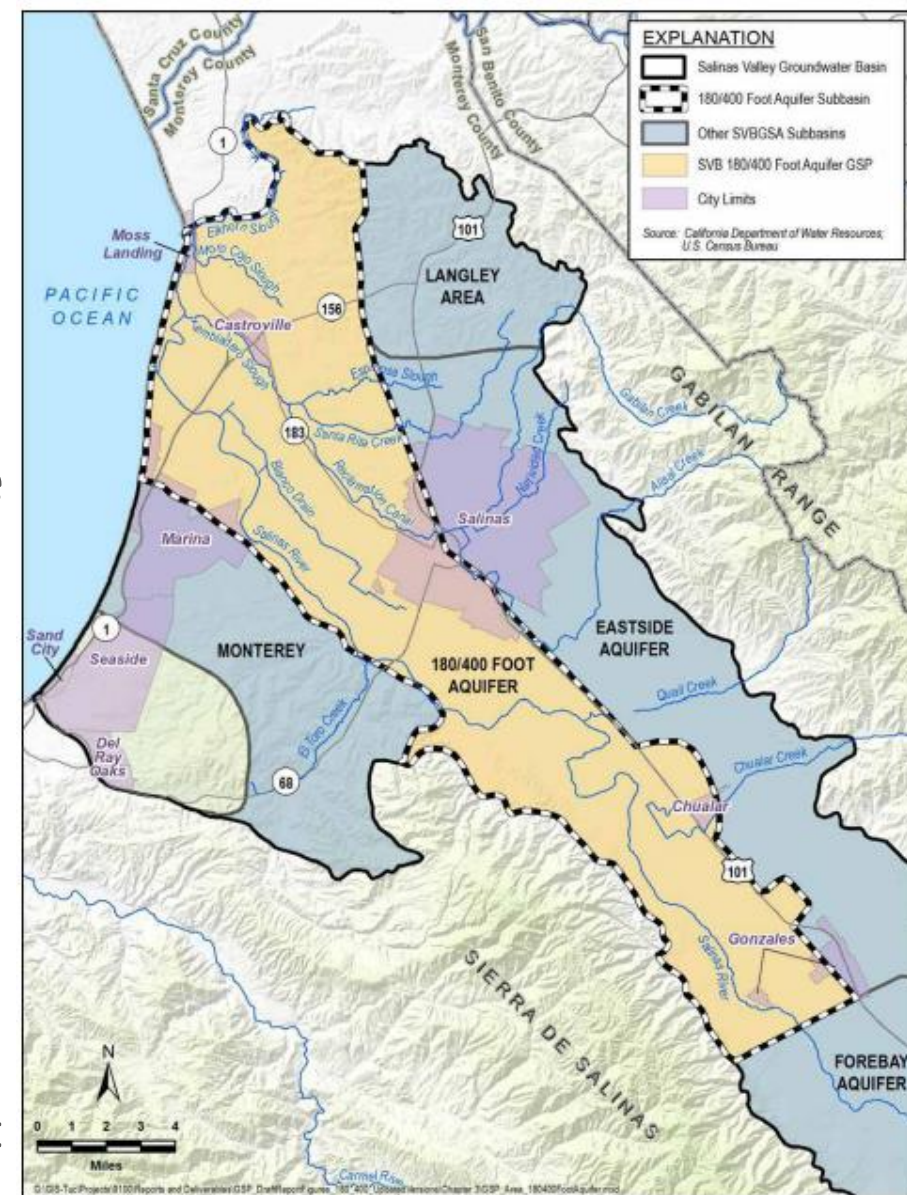


Figure 1. 180/400-Foot Aquifer Subbasin

Source: Salinas Valley Basin Groundwater Sustainability Agency. 2022. Salinas Valley Groundwater Basin 180/400 –Foot Aquifer Subbasin 2022 Update.

¹¹ Marina Coast Water District Groundwater Sustainability Agency and the Salinas Valley Basin Groundwater Sustainability Agency. 2022. Salinas Valley Groundwater Basin Monterey Subbasin Groundwater Sustainability Plan Executive Summary.

Local Water Quality Conditions

- Marina Coast Water District (MCWD) collects and analyzes regulatory water samples, which monitor compliance for over 200 constituents in the drinking water with maximum contaminant levels (provided in MCLs in parentheses below), which are maximum allowed contaminant levels set by the U.S. Environmental Protection Agency. MCWD performs testing for the following:¹²
 - 10 coliform bacteria tests/week (MCL is a positive detection in 5.0% of monthly samples)
 - General minerals such as calcium, magnesium, and hardness: (no drinking water standards)
 - Inorganic chemicals such as salts and metals: arsenic (MCL of 0.01 mg/L), nitrates (MCL of 10 mg/L), selenium (MCL of 0.05 mg/L), and other chemicals
 - Organic chemicals such as solvents, pesticides, and herbicides:
 - Radioactivity: uranium (0.03 mg/L)
 - Disinfection by products such as trihalomethanes (MCL of 0.08 mg/L) and haloacetic acids (MCL of 0.06 mg/L)
- Based on 2021 water quality analyses, there are no contaminants that are above the allowed standard.¹³

¹² Marina Coast Water District & Groundwater Sustainability Agency. 2022. Water Quality. https://www.mcwd.org/gsa_water_quality.html

¹³ Marina Coast Water District & Groundwater Sustainability Agency. 2022. MCWD Consumer Confidence Report 2021.

https://www.mcwd.org/docs/ccr/2021/mcwd_ccr_2021_english.pdf

Impaired Waters

- Impaired waterbodies are those that do not meet water quality standards and are assigned a Total Maximum Daily Load (TMDL), a calculation of the total pollutant loading that a waterbody can receive and still meet water quality standards. The Central Coast Regional Water Quality Control Board sets TMDLs in Monterey County.
- The Lower Salinas Valley River Basin is impaired due to exceedances of criteria for nitrate, un-ionized ammonia, excessive orthophosphate, dissolved oxygen imbalances, toxicity, and excess algal biomass.¹⁴ Sources of nutrients include:
 - Fertilizer application on irrigated cropland
 - Groundwater discharges to streams
- TMDLs have been adopted for the Lower Salinas Valley River Basin and its tributaries to restore clean water. The following actions will improve elevated nutrient levels:¹⁴
 - Requiring growers to develop and implement a farm water quality management plan
 - Incorporating waste load allocations into National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) stormwater permits, which require implementation of Storm Water Management Programs to reduce pollutant discharge

¹⁴ Central Coast Regional Water Quality Control Board. 2014. Fact Sheet #2.

https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/salinas/nutrients/sal_nuts_tmdl_factsheet2_final.pdf

Water Quality and the Former Fort Ord

- The former Fort Ord is a National Priority List federal Superfund site based on groundwater contamination discovered on in 1990.¹⁵ The contamination discovered is trichloroethylene (TCE) and Per-and-Poly-Fluoroalkyl Substances (PFAS).
- TCE is a cleaning solvent previously detected in water supply wells at the former Fort Ord¹⁵
 - The source of TCE contamination is an abandoned landfill and fire training pit used by the Army
 - The Army installed extensive groundwater cleanup systems to remove the contamination and prevent further migration
 - Today, there are no detections of groundwater contaminants at levels of health concern in the presently “active” drinking water wells in the former Fort Ord
- PFAS are long lasting chemicals that break down slowly in the environment used by the Army to put out fuel fires at the former Fort Ord.¹⁶ MCWD performed PFAS testing in 2021 and found one well with an average of 0.7 ng/L of Perfluorohexanoic Acid (PFHxA), which is considered low. All other wells were non-detect for PFAS chemicals. Currently, California has not established MCLs for PFAs. Research on the effects of PFAs chemicals are still ongoing and the level of PFAs chemicals that impacts health is currently unknown.

¹⁵ Marina Coast Water District. 2020. 2020 Urban Water Management Plan.

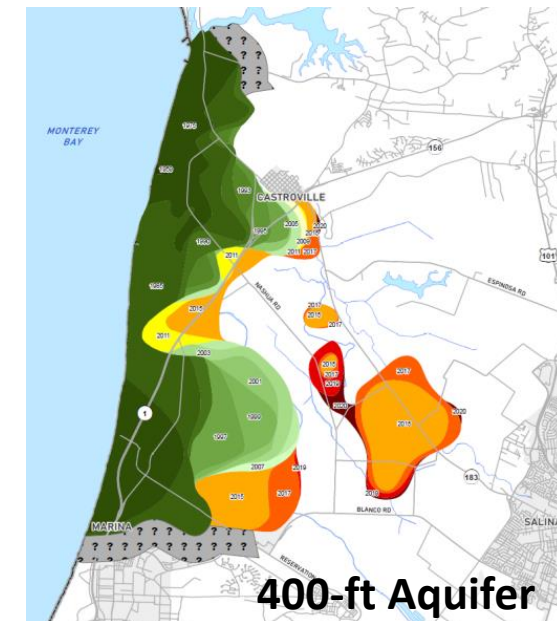
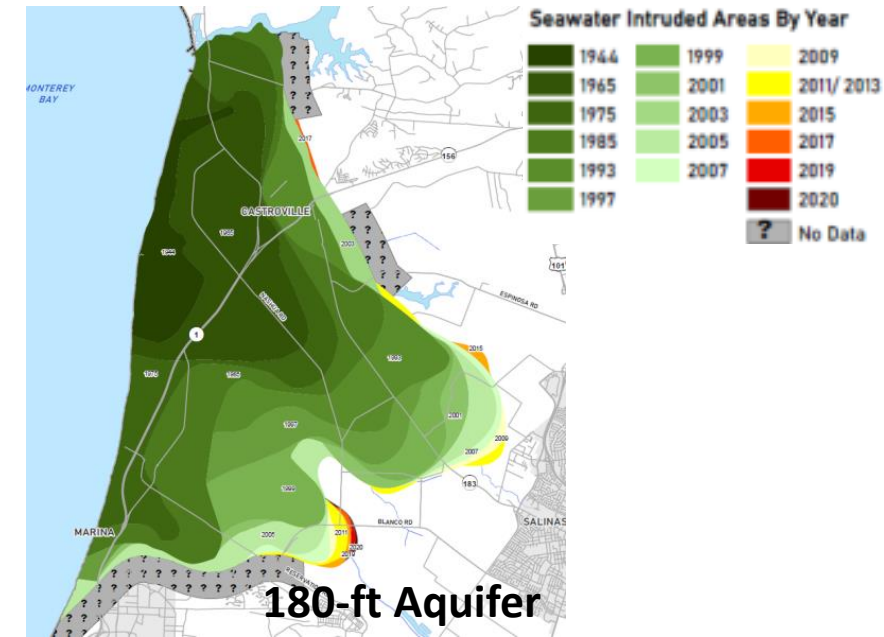
https://www.mcwd.org/docs/2021_uwmp/DRAFT_MCWD_2020_UWMP_v20210520.pdf

¹⁶ Marina Coast Water District & Groundwater Sustainability Agency. 2022. Water Quality. https://www.mcwd.org/gsa_water_quality.html

Seawater Intrusion

- Seawater intrusion was identified in MCWD wells during the 1960s.¹⁷ Affected wells were replaced and moved to deeper aquifers.
- Ongoing monitoring indicates seawater intrusion continues to migrate inland.¹⁷
- Continued groundwater overdraft in the Salinas Valley Groundwater Basin and sea level rise will likely worsen the effects of seawater intrusion.¹⁷ MCWD is working with the Monterey County Water Resources Agency to implement the Salinas Valley Water Project to address seawater intrusion.¹⁷

Historical Seawater Intrusion



¹⁷ Marina Coast Water District. 2020. 2020 Urban Water Management Plan.
https://www.mcwd.org/docs/2021_uwmp/DRAFT_MCWD_2020_UWMP_v20210520.pdf

Key Findings

Key Findings

- Most of Marina's natural resources are located within the former Fort Ord and in the dunes area west of Highway 1
 - Critical habitat is primarily located along the coast, west of Del Monte Blvd, east of the Marina Municipal Airport, and along the Salinas River ¹⁸
 - Three species have critical habitat in Marina
 - The planning area has approximately 6,500 acres of open space, largely consisting of land used for habitat conservation ¹⁸
- The City is preparing the Marina Resource Management Plan to address management of four Habitat Management Areas in Marina. ¹⁹
- The City is also acquiring a City-Wide Incidental Take Permit (ITP) from CDFW to authorize take and mitigation of sand gilia as a result of future planned development.



¹⁸ City of Marina. 2023. General Plan. <https://www.cityofmarina.org/DocumentCenter/View/13219/General-Plan-Last-Update-2023->

¹⁹ City of Marina. 2023. Incidental Take Permit (ITP) and Resource Management Plan. <https://cityofmarina.org/1119/Incidental-Take-Permit-ITP-and-Resource->