

BAY AREA WATER TRAIL



Education and Access Maps for the San Francisco Bay Estuary



November 3 2017







Project Overview

- Set of five maps of regions of the San Francisco Bay Estuary
- Access information
 - Boat facilities, Bay Trail, public lands, etc.
- Interpretation
 - Habitat and wildlife
 - Estuary processes
 - SLR / climate change / restoration
 - History / culture
 - Recreation / safety / ethics



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Purpose and Need

- No existing maps focused on nonmotorized small boat access for regions of the Bay
- Highlight the Bay's rich ecology and its recreation opportunities, and the importance of wetland restoration in a changing climate



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JTC Deliverables

- May 2016 Project proposal to JTC
- April 2017 Draft Map Review
- June 2017 Draft Final Map Review
- Nov 2017 Present Final Maps





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JTC Comments Incorporated

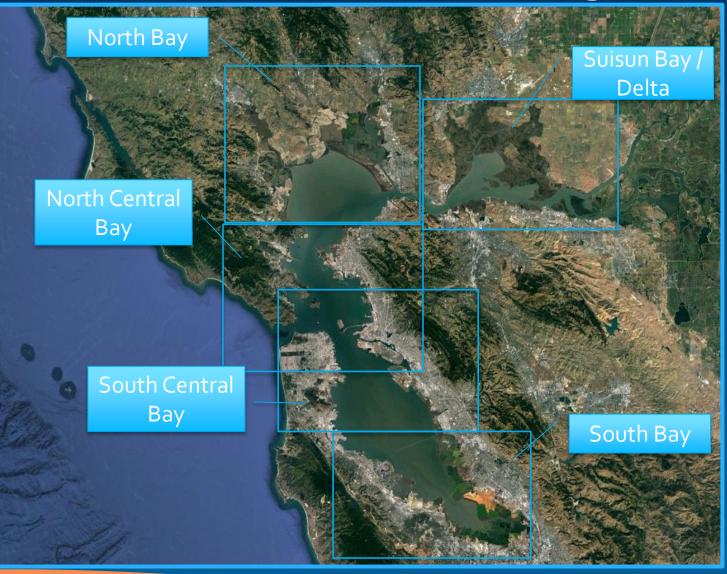
- Ensure map covers all of NBWA area
 - 3/5 maps cover NBWA area
- Species, habitat, watershed, & SLR interpretation + artwork



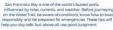




Approximate Map Coverages



SAFETY FIRST



help you stay safe, but above all, use good judgment. KNOW BEFORE YOU GO Bay conditions change rapidly. Review forecasted winds, tides, and currents. Identify shipping lanes, muditas, and other hazards. Find site-specific info at sfbaywatertail.org.

Itbaywatertail.org LEARN FROM THE EXPERTS Seek instruction and practice skills. Joining a club or talking to locals can be a great way to learn about site specific conditions.

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clothing is important to prevent potential cold shock or hypothermia in the Bay's cold waters. Dress for the swim and practice rescue skills before you need them.

PACK AN EMERCENCY KIT Have emergency equipment such as a VHF radio, flares, whistles, repair kits, and lights. Carry a waterproof map and compass, Bring drinking water and food.

SAFETY N NUMBERS Travel with a companion or group. Know how to communicate effectively and understand the skill levels of the whole group.

SHARE YOUR TRIP PLAN Always notify someone you trust of your route and when you plan to return.

LABEL YOUR CEAR Mark all equipment with your name and telephone numbers to the US Coast Guard can contact you if the gear is found adrift. This prevents unnecessarily searching for you if you are safely on shore.

EMERGENCY CONTACTS

VHF MARINE RADIO Channel 16 for emergency and distress calls MOBLE PHONES Call 911 for water rescue COAST GUARD SEARCH & RESCUE \$10-437-3700 COAST GUARD SAN FRANCISCO \$15-399-3479



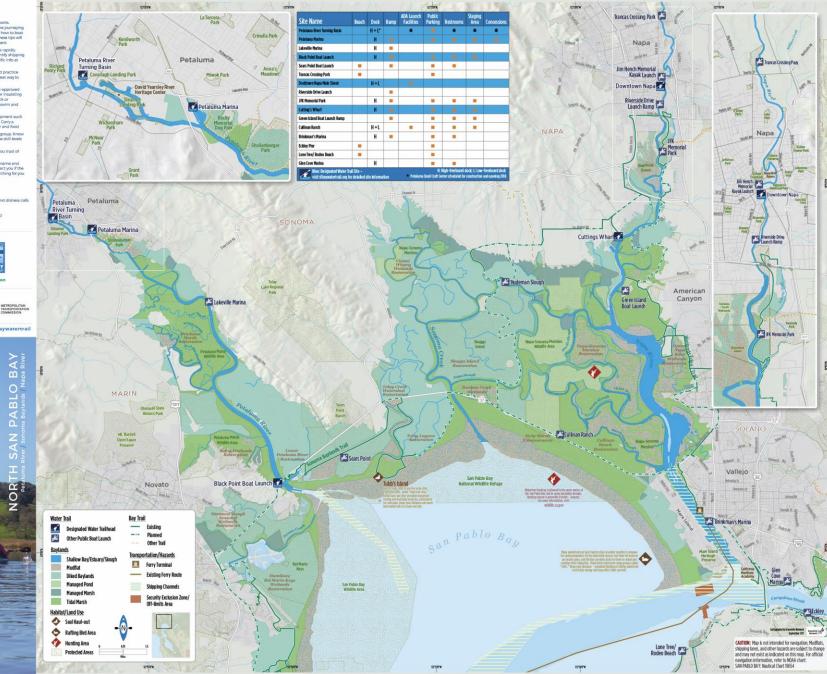
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San Francisco Bay is one of the world's busiest ports, influenced by ticles, currents, and weather. Before journeying on the Water Trail, be aware of conditions, know how to boat esponsibly, and be prepared for emergencies. These tips will help you stay safe, but, above all use good judgment.

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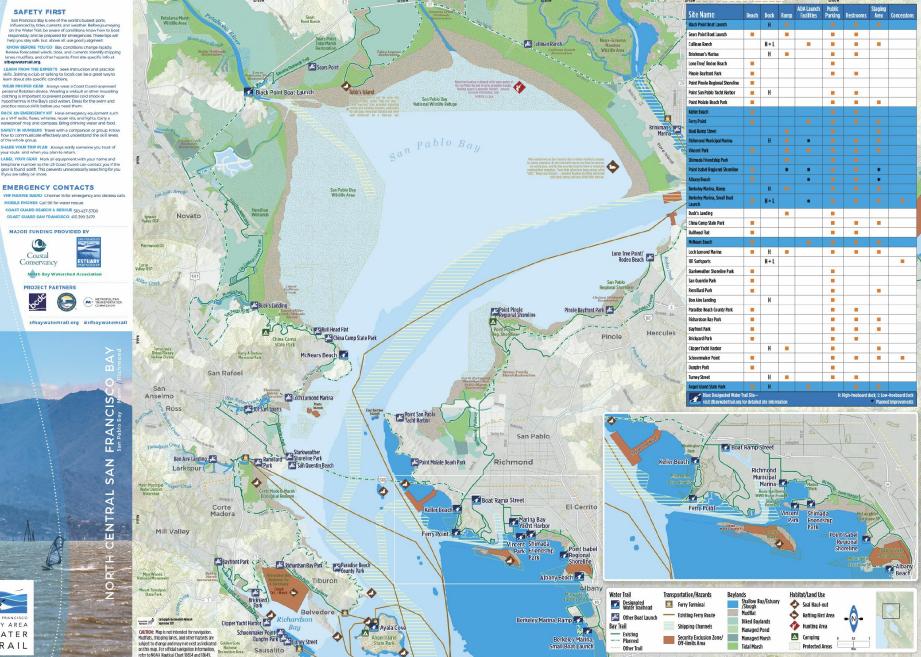
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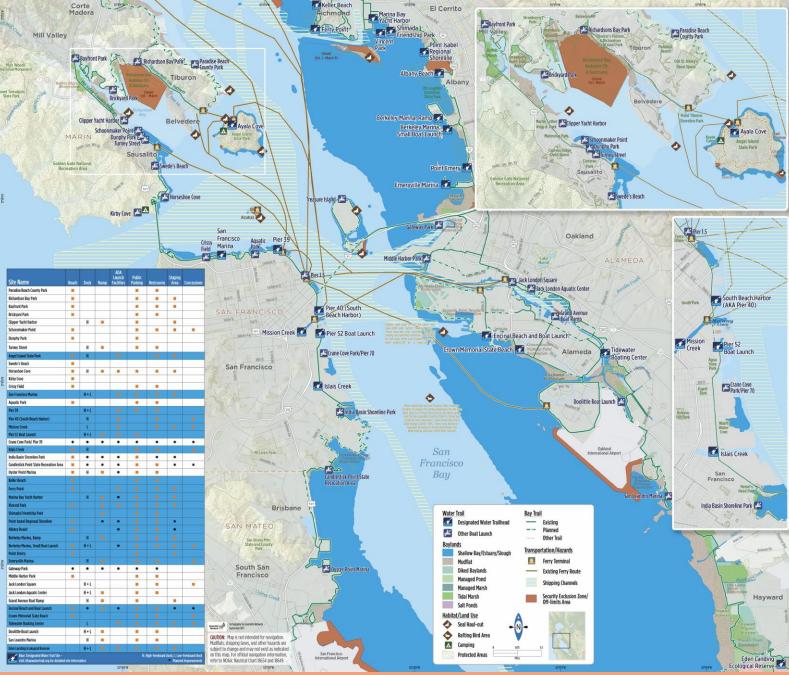
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MAJOR FUNDING PROVIDED BY







THE SAN FRANCISCO BAY ESTUARY In 1769, a squad of Spanish soldiers stumbled upon a vast bay surrounded by marshland teeming with life. This bay and inland delta, which in those days covered 500 square miles of open water and another 850 square miles of marsh wetlands, eventually came to be called the San Francisco Bay Estuary. Early explorers described

As the population of the Bay Area grew, much of this historic abundance was diminished by habitat loss, overexploitation, and pollution. industry, and housing for generations of residents and migrants to the Bay Area. Once plentiful species, like the Ridgway's rail and steelhead trout, became threatened with extinction. By the early 1960s, the Bay was choked with pollution and citizens had access to only a few miles of Bay shoreline

In the past few decades, thanks to the vision and hard work of passionate citizens, thousands of acres of shoreline have been protected we water quality, protect and expand habitat, and to make shorelines more resilient to sea level rise. For the first time in decades, species like harbor porpoises and whales are returning to the Bay.

Alongside this restoration has been a rediscovery of the Bay as a place for recreation. Today, the growing San Francisco Bay Area Water Trail and over 350 miles of San Francisco Bay Trail connect communities to iconic waterfronts and an expanding network of parks, beaches, and open spaces, including one of the nation's largest urban wildlife refuges.

So get out there and explore, learn, and do your part to protect the Bay

CREEKS & RIVERS

The San Francisco Bay watershed begins in the Sierra Nevada Mountains and ends at the Golden Gate. Connecting these two is a vast network of creeks, rivers, and wetlands. While providing wildlife habitat and fantastic places to recreate, these waterways and open lands also provide important ecosystem services that include filtering pollutants, reducing flood hazards, sequestering carbon, and recharging groundwater supplies.

Creeks and rivers form corridors that many species rely on to migrate between upland habitats and the Bay, including river otters and endangered steelhead trout. Restoring creeks and rivers to their natural form and function supports threatened species and will increase the resilience of our region to climate change.

> Go Explore! Paddling on the Napa River provides an excellent opportunity to explore the City's river age and to catch glimpses of herons, kingfishers, osprey, and river otters. From the Downtown Dock, paddlers can follow the tid upstream around the Oxbow into quiet water, where the River narrows

> > and is protected from the wind by the tree-I

being disturbed, such as moving away these behaviors you are too close and should quietly back away.

WILDLIFE ETHICS

Paddle at a Constant Speed. Avoid paddling directly at wildlife. When speed, and avoid sudden stops or changes

water runoff is the single largest source of Bay pollution

birds, and turtles, are killed when they eat or are entangled in trash.

and it is one of the most visible environmental problems plaquing the Bay Area.

In most Bay Area cities, trash in our streets flows directly into curbside storm drain

Plan Your Trip to Avoid Sensitive Habitat Avoid narrow sloughs, seal haul-outs, and species occur. Only land in designated area and respect seasonal closures and wildlife buffer distances



Pay Attention to Behavior.

Save the Bayl The best way to solve our region's trash crisis is by reducing trash at the ource-a responsibility that we all share. Small actions, like using reusable bags and coffee nugs, can make a big difference. Incorporating "Bay Smart" solutions into our commun h as greening urban areas with street trees, rain gardens, and trash capture devices, is also ritical for our Bay to thrive.

and out into San Francisco Bay, untreated, Plastic and Styrofoam, particularly baos, bottles, and

cigarette butts, comprise most of our region's trash. Every year, marine wildlife like harbor seals, sea

SHORELINE & OPEN BAY

The beautiful shoreline and open water of the San Francisco Bay gives the Bay Area its iconic identity, contributing to the guality of life for over 7.5 million residents and drawing visitors from all over the world. But the Bay is more than just a scenic backdrop - below the surface, waters nourish diverse habitats including eelgrass, mudflats, and oyster reefs. These habitats, sustained by nutrients from marine and freshwater systems, create a rich environment critical to a wide variety of species for feeding, shelter, and reproduction. Harbor seals, cormorants, leopard sharks, and Chinook salmon, along with over 380 species of fish and wildlife, live in or pass through this open water habitat during their life cycles.

The San Francisco Bay Estuary attracts over a million shorebirds every year - more than any other wetland area in California. In addition to providing year-round habitat to species like the black-necked stilt and the American avocet. the Estuary is an important winter stopover for migratory shorebirds like sandpipers, terns, and plovers, Because migratory birds often travel thousands of miles, being able to feed and regain energy without disturbance is critical to their health as they make their way along the Pacific Flyway.

Save the Bay! Large groups of floating birds, kno "rafts", are particularly vulnerable to disturbance by boaters. Bafts provide birds with protection from predat and allows them to feed and replenish their energy for th rest of the migration. Disturbing these exhau famished birds depletes their energy and may affect their survival. If you notice rafting birds changing their behavior, you are too

The daily turn of the tides has a profound influence on the San Francisco Bay, Much of the Bay is less than 15 feet deep so as the tide recodes vast mudflats are exposed. These mudflats support a complex

in to feed

Safety First! Before every launch, always know what the

tides are doing and how they might affect your ability to

orly planned, you can get caught fighting strong

rrents or stuck during low tide in m

far from a launch site

return to shore. Plan your trip based on favorable tide. urrent, and weather predictions. If a paddling trip is

ecosystem of crabs, clams, worms and othe invertebrates When exposed at low tides these mudflat organisms provide a rich buffet for birds species, Similarly when the tide turns and these areas become submerged again, aguatic hunters like bat rays and leopard sharks move

MARSHES & SLOUGHS

Where rivers meet ocean tides, life thrives. In the San Francisco Bay, these transition zones of salty and fresh water are home to tidal marshes that harbor an abundance of species. Established marshes are characterized by snaking channels and sloughs winding through habitat dominated by pacific cordgrass and pickleweed - plants specially adapted to survive in salty water. Marshes are rich habitats that provide critical winter feeding grounds for over a million migratory birds, a nursery for young fish and crabs, and a full-time home for many others.

Throughout the Bay, most of the historic tidal marshlands have been filled in or isolated from the Bay's waters by levees and converted for industry, farms, or salt production. Through habitat restoration, many of these diked baylands are being returned to the tides. Wetlands reborn from levee breaches, in managed ponds and marshes that have been disconnected from the tides, have shown speedy recovery rates. These recovering wetlands provide important habitat for wildlife and ideal opportunities for exploration by kayak. canoe, or paddleboard.

Wetlands act as giant sponges, absorbing floodwaters during storm events and slowly releasing runoff back into the Bay. Established marshes act as the first line of flood defense to protect shoreline communities and infrastructure from storm wave action and tidal surge. In order to provide habitat and to protect the shoreline from storms and sea level rise, agencies, non-profits, and the private sector have been working towards a goal of re-establishing 100.000 acres of marsh on the San Francisco Bay shoreline.

Go Explore! Restoration and wildlife-oriented public access go hand-in-hand. The 1,549 acre Cullinan Ranch Restoration Project is underway and features an ADA boat launch that allow paddlers access to the Napa River and beyond. The Sears Point Restoration Project ximately 1,000 acres and includes a 2.5 mile segment of Bay Trail and a boat launch ramp. Paddling these areas offer a unique way to watch for returning wildlife as the tides turn these lands back to tidal marsh



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Bay Miwok, Coast Miwok, Ohlone/Costanoan, Plains Miwok, Yokuts, and Patwin tribes thrived along the San Francisco Bay Estuary for at least 8.000 years and skillfully navigated the Bay in boats made of bundled tule reeds These craft, some of which were large enough to hold 12. people, were used for hunting, fishing, and gathering, and to raverse the Bay for trade.

Go Explore! The Petaluma Watershed contains the large historic tidal wetland in Northern California. Exploring the Bay and its snaking sloughs can make you feel like you're aking a journey back in time. Paddling the northern of the River, from the Petaluma Marina to the Turning Basin. ers opportunities for recreation and nature viewing from tidal ds to Petaluma's urban heart.

INVESTING FOR THE FUTURE

In 2016, Bay Area residents overwhelmingly voted for the San Francisco Bay Clean Water, **Pollution Prevention and Habitat Restoration Measure.**

investments, managed by the San Francisco Bay Restoration Authority, will help our communities to adapt as climate change and sea level rise increasingly stress our natural and urban systems, ensuring Bay Area residents and wildlife a healthier and more resilient



il is a growing network of launch and la ads" that encourage people in non-motorized small boats to onic, cultural, and ecological richness of the Sar ncisco Bay. With over 500-square miles of open water, rivers, and ughs to explore, the waters of the Bay are the **Bay Area's larges** en space. Whether you prefer a kayak, SUP, kiteboard, or outrigge

od 500-mile sho ircle the entire Bay. With over ESTUARY

rking to pro round the San Francisco Bay Delta Estuary. Workin It in studies, projects, and program







Distribution / Outreach

- Part of larger Water Trail campaign
 - Updated Website
 - Bay Day
 - Strategic Implementation Plan
- Distribution
 - NBWA / Partners
 - Vendors/outfitters/marinas/business
 - Schools





Questions / Comments?

