CCMP SUMMARY

ESTUARY BLUEPRINT

In late 2016 more than 70 organizations reached collaborative agreement on four long-term goals and 32 actions to be taken over the next five years to protect, restore, and sustain the San Francisco Estuary. Their *Comprehensive Conservation and Management Plan* or CCMP is the third in a series, updating 1992 and 2007 plans undertaken by the San Francisco Estuary Partnership.

This landmark update addresses current concerns and future uncertainties — ranging from rising sea levels to drought, habitat loss, and failing fish and wildlife – and provides our partners with the following priorities for 2016-2021:

- Close the gap in our understanding and monitoring of how watersheds support aquatic resources, and make the management connection between streams, rivers and Estuary habitats downstream.
- Optimize the region's significant past investment in wetland habitats by protecting and growing a healthy mosaic of different kinds of habitats along our shorelines, coasts, rivers, and stream banks.
- Weave together these tidal wetlands, mudflats, eelgrass meadows, fledgling oyster reefs, shorebird ponds, nesting islands, high water refuges, and vegetated levees, and connect them to our watersheds. Then protect as many of the immediately adjacent areas as possible for future migration into these critical buffer zones inland.
- Remain vigilant in controlling the stresses imposed on our native species and natural habitats by weeds, exotic species, invaders, and predators.

GOALS

- **Sustain and improve the Estuary's habitats and living resources.**
- **Bolster the resilience of Estuary ecosystems, shorelines, and communities to climate change.**
- **Improve water quality and increase the quantity of fresh water available to the Estuary.**
- **Champion the Estuary.**

- Help the ecosystem continue to function, rather than falter, by harmonizing human activities with natural processes. Bolster the "system" in "ecosystems," — the food webs, the connections between habitats, and the movement of fresh water and sediments through the Estuary — so that the system can sustain fish, birds, wildlife, and their habitats.
- Support natural solutions to protecting our shores and overcome the planning, legal, and policy roadblocks to adaptation and flexibility as we adapt to the challenge of rising sea levels. Build natural infrastructure (wetlands, horizontal levees, buffering habitats) and resilience into our shorelines.
- Acknowledge that the supply of fresh water for all kinds of uses, human and wild, is shrinking, and plan for long term droughts so we aren't caught short. Push for more water conservation, recycling, and regional planning so we can increase supply without diverting more from fish to cities.
- Don't ease up on tackling lingering pollution problems and try to stay ahead of new ones. Follow through

- continued on back page

32 ACTIONS FOR A HEALTHY RESILIENT ESTUARY

ACTION		DESCRIPTION
1	**Develop and implement a comprehensive, watershed-based approach to aquatic resource protection**	*Develop a watershed-based assessment, planning, management, and reporting process that improves protection for aquatic resources in the context of human population growth and climate change. Improve coordination of public policies and programs related to aquatic resource management.*
2	**Establish a regional wetland and stream monitoring program**	*Plan and implement a regional monitoring program for wetlands and streams in the Bay Area and the Delta to help local, regional, state, and federal agencies evaluate the effectiveness of efforts to sustain healthy aquatic habitats and resources.*
3	**Protect, restore, and enhance tidal marsh and tidal flat habitat**	*Restore tidal marsh and tidal flat habitats within the Estuary for multiple ecosystem benefits including recovery of threatened and endangered species. Consider connections between habitats. Strive to protect and restore complete tidal wetland systems.*
4	**Identify, protect, and create transition zones around the Estuary**	*Protect areas between estuarine and terrestrial ecosystems (transition zones), and their ecosystem services, to help the Estuary adapt to rising sea levels. Integrate transition zones into baylands restoration and enhancement projects to provide both migration space and high water refugia.*
5	**Protect, restore, and enhance intertidal and subtidal habitats**	*Protect, restore, and enhance intertidal and subtidal habitats to improve delivery of ecosystem services and water quality benefits to the Estuary. Consider connections between habitats within the full range of tidal elevations, from upland to subtidal, striving to protect and restore complete systems.*
6	**Maximize habitat benefits of managed wetlands and ponds**	*Maximize habitat benefits of managed wetlands and ponds for all species. In the near term, continue to support studies on bird use of managed ponds and sensitive species in managed wetlands to inform long-term management options for how these habitats can sustain these species.*
7	**Conserve and enhance riparian and in-stream habitats throughout the Estuary's watersheds**	*Conserve habitats by identifying priority streams and stream reaches, defining impairments and threats, filling data gaps, developing science based tools, and designing, advancing, and collaborating on projects.*
8	**Protect, restore, and enhance seasonal wetlands**	*Protect and enhance seasonal wetlands within the region using conservation easements, related protection tools, and improved grazing management practices.*
9	**Minimize the impact of invasive species**	*Reduce the impact of invasive species through prevention, early detection, rapid response, eradication, and control. Conduct work with national and regional coordinating bodies and the key agencies implementing specific programs.*
10	**Increase the efficacy of terrestrial predator management**	*Increase the efficacy of terrestrial predator management activities to promote healthy populations of wildlife around the Estuary. Assess and guide management of terrestrial nuisance species with access to shoreline habitats that prey on threatened and endangered species.*
11	**Develop processes for increasing carbon sequestration through wetland restoration, creation, and management**	*Sequester carbon in wetland restoration, enhancement, and creation projects to reverse subsidence of agricultural lands, reduce greenhouse gases in the atmosphere, and advance scientific understanding of carbon sequestration. Focus near-term projects in more subsided locations on conversion to managed wetlands and in less subsided locations on conversion to tidal wetlands.*
12	**Restore watershed connections to the Estuary to improve habitat, flood protection, and water quality**	*Plan and implement multi-benefit projects that connect watersheds to the Estuary and enhance habitats, natural processes, and ecosystem services. Integrated projects should be able to provide more than one benefit.*
13	**Manage sediment on a regional scale and advance beneficial reuse**	*Manage sediment on a watershed and regional scale to enhance Estuary habitats and shoreline flood protection efforts. Assess and harness natural processes and human activities that move sediment (such as dredging, erosion control, and construction) to optimize opportunities for restoration and adaptation to sea level rise.*
14	**Demonstrate how natural habitats and nature-based shoreline infrastructure can provide increased resiliency to changes in the Estuary environment**	*Promote projects that demonstrate how tidal habitats, oyster beds, habitat levees, restored beaches, and other natural and nature-based features of Estuary shorelines can make the region more resilient to rising sea level, drought, water pollution, and other future stresses. Identify locations where these kinds of features can provide the most benefits.*
15	**Advance natural resource protection while increasing resiliency of shoreline communities in the Bay Area**	*Protect natural resources such as estuarine habitats and wildlife as an integral part of any effort to increase the resilience of shoreline communities at risk from flooding and rising seas.*
16	**Integrate natural resource protection into state and local government hazard mitigation, response, and recovery planning**	*Provide technical support and resources to local governments so they can better protect and support the value of natural resources in resilience and hazard planning.*

ACTION		DESCRIPTION
17	**Improve regulatory review, permitting, and monitoring processes for multi-benefit climate adaptation projects**	*Improve and update regulatory processes to facilitate innovative multi-benefit climate adaptation projects such as new approaches to integrated flood management, shoreline alteration, sediment disposal, and habitat restoration. Support and assist existing efforts to address permitting challenges posed by changing conditions and coordinate permitting to encourage synergies and efficiencies among projects.*
18	**Improve the timing, amount, and duration of freshwater flows critical to Estuary health**	*Inform elected officials and the public about the critical importance of freshwater flows from the watershed through the Estuary. Work with partners and through other CCMP actions to adjust the timing and amount of freshwater flows through the Delta and San Francisco Bay to better support all public trust uses.*
19	**Develop long-term drought plans**	*Incorporate planning for long-term droughts of at least five years duration into all levels of water supply planning. Document efforts that will help sustain the Estuary through future extended droughts.*
20	**Increase regional agricultural water use efficiency**	*Assess opportunities to expand implementation of agricultural water use efficiency practices in the region. With partners, promote modification of small, private water storage methods with the intent of reducing direct instream diversions, promoting groundwater recharge, and providing greater water supply reliability for Bay and Delta farmers.*
21	**Reduce water use for landscaping around the Estuary**	*Facilitate more efficient use of water, whether recycled or potable, on landscaping. Collaborate with municipalities, water supply agencies, land use agencies, and others to reduce overall water use on landscaping. Create standards for measuring progress regionwide.*
22	**Expand the use of recycled water**	*Work with water agencies, municipalities, and stakeholders to reduce barriers to the broader use of recycled water. Encourage the use of the right water at the right time and in the right place.*
23	**Integrate water into the updated Plan Bay Area and other regional planning efforts**	*Expand the focus of the Plan Bay Area update to incorporate a full range of issues related to water and San Francisco Bay. Incorporate water related issues in other regional planning efforts related to transportation, housing, and greenhouse gas reduction.*
24	**Manage stormwater with low impact development and green infrastructure**	*Implement green infrastructure (GI) and low impact development (LID) to reduce pollution from stormwater runoff into the Estuary. Develop planning and tracking tools, technical materials, policy recommendations, and financing strategy guidance to aid local and regional public agencies with implementation.*
25	**Address emerging contaminants**	*Advance the existing regional management strategy for contaminants of emerging concern (CECs), action plans for specific CECs, and the associated Regional Monitoring Program (RMP) CECs monitoring strategy.*
26	**Decrease raw sewage discharges into the Estuary**	*Reduce the input of raw sewage into the Estuary by supporting and expanding sewer lateral repair programs and developing resources for marinas and recreational boaters to better manage sewage discharge. Create a mobile application for boaters to find pumpout stations and report repair needs.*
27	**Implement Total Maximum Daily Load projects in the Estuary, including projects to reduce mercury, methylmercury, pesticides, and areas of low dissolved oxygen**	*Develop and fund projects to reduce mercury loads from the Guadalupe watershed into San Francisco Bay. Reduce pesticide impacts to the region's urban streams. Explore opportunities to manage low dissolved oxygen and methyl-mercury in Suisun Marsh.*
28	**Advance nutrient management in the Estuary**	*Support water quality investigations, consistent monitoring and modeling, and analysis of management alternatives for nutrients.*
29	**Engage the scientific community in efforts to improve baseline monitoring of ocean acidification and hypoxia effects in the Estuary**	*Research and monitor the potential threats to the Estuary of ocean acidification and hypoxia.*
30	**Reduce trash input into the Estuary**	*Assist regional municipalities and agencies in attaining trash reduction objectives by assisting in source reduction activities, such as extended producer responsibility strategies that can reduce trash before it reaches the Estuary, and by highlighting trash reduction rates in the State of the Estuary Report.*
31	**Foster support for resource protection and restoration by providing Estuary-oriented public access and recreational opportunities compatible with wildlife**	*Provide Estuary-oriented public access and recreational opportunities that avoid or minimize adverse impacts to sensitive habitats and wildlife while accommodating environmental education, biking, hiking, paddling, wildlife viewing, and other activities.*
32	**Champion and implement the CCMP**	*Educate partners, stakeholders, national, local, and regional leaders, and other targeted audiences about the CCMP and engage them in advancing its goals, objectives, and actions. Provide local decision makers and the public with the kind of reliable information necessary to make policy and personal decisions in favor of Estuary health.*

on regional efforts to reduce mercury, PCBs, pesticides, trash, and the suffocating effects of hypoxia on aquatic organisms, and to curb direct sewage discharges. Spearhead new initiatives to better manage alarming new challenges, whether it's algae blooms, toxins in Dungeness crab, or pharmaceuticals in our wastewater.

- Keep pushing to solve the thornier challenges, like how to trap carbon in wetlands to reduce the greenhouse effect or reuse bay bottom sediments to raise the elevations of shorelines drowning under rising seas. Even thornier, keep pushing to make resilient land use planning practices more pervasive, retreating from floodplains and eroding cliffs, and greening grey pavements throughout our cities so they can better filter runoff and pollutants.
- And keep the public in the loop about why they should care about all these things, and what their tax-dollars are doing to keep our Bay and Delta healthy, and how they can help champion protection of the shoreline trails and parks that everyone has come to associate with the quality of life around the San Francisco Estuary.

ESTUARY BLUEPRINT ON THE WEB

The entire 76-page plan, as well as related informational materials and progress updates, can be found at www.sfestuary.org/ccmp

On the website or in the plan, you will find:

- Description of four goals, 10 objectives, and 32 actions. Each action includes tasks, milestones, background, and a list of owners and collaborating partners.
- Analysis of how the CCMP relates to State of the Estuary 2015 indicators.
- Analysis of how CCMP actions support sensitive species.
- Tools for tracking environmental outcomes and CCMP implementation progress.
- Analysis of funding required to implement the CCMP.

QUESTIONS?

https://www.sfestuary.org

The San Francisco Estuary Partnership was established more than 25 years ago by the State of California and the U.S. Environmental Protection Agency to prepare and implement a plan to better protect and restore the Estuary. Today, the Partnership manages over $100 million in regional restoration, water quality and climate resiliency projects. The Partnership is one of 28 National Estuary Programs across the country. The Estuary Partnership's host entity is the Association of Bay Area Governments.

San Francisco Estuary Partnership
1515 Clay Street, 14th Floor
Oakland, CA 94612

Please cite as 2016 Comprehensive Conservation and Management Plan for the San Francisco Estuary (Estuary Blueprint), San Francisco Estuary Parnership.

Design: Darren Campeau; collage art: Afsoon Razavi

CCMP Summary Version 2; 3/3/2017