

INTRODUCTION

The 61 actions presented in “The Plan for Action” are the heart of the CCMP—they are both a blueprint for and a call to action. These actions have been developed through the hard work and dedication of the many stakeholders in the Morro Bay National Estuary Program (MBNEP). These actions are based on scientific studies, the goals and objectives developed for each of the priority issues, and significant input from the stakeholders of the Morro Bay Estuary and its watershed. Not all of these actions represent new activities or approaches—some of them build on or expand existing efforts already underway by agencies and organizations, while others identify new opportunities.

The actions are organized by the priority issue they most directly address and include seven broad cross-cutting actions—Land Acquisition, Drainage, TMDLs, Urban Runoff, Stream Geomorphology & Water Quality, Volunteer Monitoring Program, and Watershed Crew, which have been organized separately due to the multitude of issues they address. Table 4.1 provides a breakdown of the organization of actions by priority issue. Table 4.2 describes the specific components of each action plan. Table 4.3 provides a complete listing of all of the action plans. Please note that all costs and timeframes are estimates used for planning purposes, dependent upon many variables that are not currently within the MBNEP’s control such as, funding, jurisdiction, and competing interests.

Table 4.1 Number of Actions by Priority Issue

Priority Issue	# of Actions
Cross-Cutting Actions	7
Sedimentation	8
Bacteria	9
Nutrients	4
Freshwater Flow	4
Heavy Metals & Toxics	4
Habitat	10
Steelhead	4
Public Outreach & Education	11
Total	61

Many actions outlined in this chapter address nonpoint source pollution through fieldwork to achieve environmental results. In California, nonpoint sources of pollution (as defined by the Clean Water Act and California Law) are reduced through the implementation of specific management measures. The California Nonpoint Source Pollution Control Program provides accepted management measure to address this type of pollution. A summary of recommended management measure is located in Appendix E. For example, keeping grazing animals out of streams is a management measure for agricultural sources of NPS pollution. The MBNEP will work to incorporate California’s recommended management measures into projects that implement the actions outlined in this chapter. The management measures come from guidance developed by EPA and NOAA titled the *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (g-Guidance)* (USEPA [1993]).

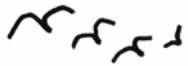


Table 4.2 Action Plan Components

COMPONENT	DESCRIPTION
Action Title:	Describes a specific means to address one or more of the priority issues.
“>”	Designates a Priority Action.
Background/Major Issues:	Discusses why the action is important and identifies which of the priority issues are being addressed, what has contributed to the problems, and previous or ongoing management activities.
Example of Similar In-Place Actions:	Provides examples of similar actions that have proven successful in addressing the priority issues.
Benefit of the Action:	Describes the environmental and/or programmatic benefits that may be realized by implementing the action.
Implementation:	Describes methods and/or steps for implementing the action. This is not an exhaustive list, but rather suggestions for approaches or tools believed to best address the action at this time. The approaches and tools will be evaluated by the implementing agencies and organizations and potentially revised over time.
When:	Provides a suggested timeframe for initiating and completing implementation of the action. Short term is one year, Medium term is two to four years, and Long term is five years and beyond.
Who—Primary:	Defines who would take the lead in implementing the action. The responsibilities of the “primary” implementers are to: (1) secure financial support; (2) provide in-kind services; (3) provide technical and administrative expertise; (3) implement regulations, if appropriate; (4) obtain commitments; (5) initiate actions; (6) communicate progress; (7) advocate with constituencies; and (8) enter into written agreements.
Who—Support:	Defines who would need to be involved with the implementation of the action—coordination, communication, funding, personnel, equipment, technical assistance, in-kind services, etc. The role of supporting partners will vary depending on the action and statutory responsibilities.
Where:	Describes location of action.
Cost:	Provides preliminary cost estimates for implementation of the action. Actual costs will be further refined and determined by the primary implementer as funding sources are identified.
Basis for Cost:	Describes rationale for preliminary cost estimates (i.e., comparison of costs of similar project, agency estimate).
Potential Funding Sources:	Identifies potential funding sources for the action. Chapter 7 discusses sources of funding in more detail.
Evaluation:	Describes how the progress of the action will be measured. Some measures are environmental (i.e., reduced pollution, species recovery) and other are programmatic (i.e., progression or status of the action).
Related Actions:	Provides cross-referencing to other related actions in the CCMP.

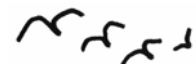
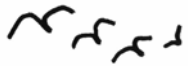


Table 4.3 List of Action Plans

ACTION PLAN #	ACTION PLAN DESCRIPTION	PAGE #
*	Indicates actions that will be traced for progress on restoring habitat as measured by the Government Performance Results Act (GPRRA)	
CC-1 * ➤	HABITAT AQUISITION: Acquire or otherwise protect lands that contain ecologically valuable habitat or habitats that provide beneficial functions to the estuary, in order to minimize nonpoint sources of pollution entering the estuary. Such acquisition will occur in cooperation with willing public and private landowners.	11
CC-2 * ➤	DRAINAGE: Reduce Los Osos drainage problems by acquiring low lying parcels for use as detention and retention areas.	14
CC-3	TMDLs: Develop and implement Total Maximum Daily Loads for siltation, pathogens, nutrients, metals, and priority organics.	17
CC-4 ➤	URBAN RUNOFF: Implement urban storm water Best Management Practices (BMPs) to reduce pollutants entering Morro Bay and its tributaries.	21
CC-5 *	STREAM GEOMORPHOLOGY & WATER QUALITY: Maintain, restore, and enhance stream geomorphology and water quality to provide quality habitat for steelhead.	25
CC-6 ➤	VOLUNTEER MONITORING: Expand and maintain the existing Volunteer Monitoring Program (VMP).	29
CC-7	WATERSHED CREW: Establish Watershed Crew to provide planning, labor, outreach, and mapping services throughout the watershed and across the breadth of the priority issues.	32
SED-1 *	Increase use of management measures for road maintenance and construction activities to reduce damage to streams and the Morro Bay estuary.	38
SED-2 * ➤	Install new and maintain existing sediment traps in order to reduce the delivery of sediment to Morro Bay.	41
SED-3 ➤	Develop and implement a watershed fire management plan to create and maintain an uneven age class of brush.	44
SED-4 * ➤	Supply the technical and financial assistance to landowners to implement Best Management Practices (BMPs) on their land.	47
SED-5 * ➤	Supply the technical and financial assistance to landowners to implement creek restoration projects (including re-establishing floodplains and meander patterns) in Los Osos and Chorro Creeks.	50
SED-6 *	Re-vegetate north sandspit areas without impacting snowy plover or least tern habitat.	53
SED-7 *	Provide incentives for landowners to encourage implementation of Best Management Practices (BMPs) for erosion control and sediment retention.	55
SED-8 *	Improve degraded navigation channels and estuary habitat condition, and increase circulation patterns.	58
BACT-1 * ➤	Implement grazing management measures that are successful at reducing bacteria levels.	64
BACT-2	Upgrade existing pump-out facilities (where needed), improve accessibility, and provide new pump-out facilities at additional locations where feasible, to minimize the impacts of waste discharges and improperly functioning marine sanitation devices (MSDs - vessel restrooms).	67



BACT-3 ➤	Remove illegal moorings (and prevent future illegal occurrences) in the backbay to reduce the potential for high-concentrations of bacterial pollution in the vicinity of shellfish harvest areas.	70
BACT-4 ➤	Remove abandoned, derelict boats, and vessels in the backbay to reduce the potential for high-concentrations of bacterial pollution in the vicinity of shellfish harvest areas.	72
BACT-5	Decrease levels of bacteria from liveaboard boats (both within and outside the City of Morro Bay limits).	75
BACT-6	Explore the bio-filtration potential of the Pacific Oyster (<i>Crassostrea gigas</i>) to decrease bacterial levels and increase the overall water quality of the bay.	77
BACT-7	Install and maintain bird deterrent floats in shellfish growing areas to reduce the potential for avian fecal contamination of harvestable shellfish.	79
BACT-8	Support the establishment of an off-leash dog park and provide supplies around high use recreational areas for the pick-up of pet waste, and promote protection of creekbeds from horse trails during low flow periods.	81
BACT-9	Coordinate state and local bacteriological water quality standards and monitoring efforts so they are consistent and comprehensive.	83
NUTR-1 * ➤	Support the efforts of the Los Osos Community Services District to increase and improve the level of wastewater treatment in the community of Los Osos.	87
NUTR-2 ➤	Develop nitrogen-control measures for wastewater effluent at the California Men's Colony (CMC).	90
NUTR-3	Implement agricultural management measures that are successful at reducing nutrient levels.	92
NUTR-4	Implement Best Management Practices (BMPs) to decrease fertilizer runoff from residential and other urban areas.	94
FLOW-1 *	Support City of Morro Bay efforts to reclaim water for the support of instream resources by providing technical assistance for construction of a new reclamation treatment plant in Chorro Valley that would discharge effluent to Chorro Creek and reclaim water from the new Los Osos Wastewater Treatment Facility.	99
FLOW-2	Maintain a Chorro Valley Water Users Workgroup and continue to seek agreements, such as the County of San Luis Obispo agreement to work with other Chorro Valley water users, to maintain minimum stream flows in Chorro Creek at or above 1.5 cubic feet per second (as stated in the County Board of Supervisors action related to the Dairy Creek Golf Course).	101
FLOW-3 ➤	Promote water conservation and reuse among all water users with a focus on Los Osos groundwater.	103
FLOW-4 *	Support and abide by the terms of existing agreements between the California Men's Colony, California Department of Fish and Game, Central Coast Regional Water Quality Control Board, and County of San Luis Obispo to maintain and dedicate wastewater treatment plant releases to Chorro Creek to prevent the reduction of present Chorro Creek streamflows, and where possible, enhance the fishery, wildlife and other instream uses of Chorro Creek.	105
HMT-1 * ➤	Remediate inactive/abandoned chromium and nickel mines in the upper Chorro Creek watershed to reduce heavy metals and sediment loading to the estuary and creeks.	109
HMT-2	Implement marina (harbor and waterfront) Best Management Practices (BMPs).	112
HMT-3	Support the City of Morro Bay's development and design of a new environmentally-friendly boat haul-out and maintenance facility for large vessels (generally over 30 feet).	115
HMT-4	Establish a network of easily accessible hazardous waste facilities, including bayside locations near pump-out facilities, fuel docks, shower facilities, marinas, and launch facilities, in the City of Morro Bay and the community of Los Osos.	117



HAB-1 * ➤	Develop planning overlay maps for sensitive habitat and listed species within the watershed, based on habitat functions and values, particularly wetlands and dune habitat in and near the bay.	123
HAB-2 *	Inventory and protect ecologically significant upland habitat required by bay and wetland species.	126
HAB-3 *	Map shoreline, near shoreline wetlands, upland vernal pools, and riparian vegetation along all creeks and their tributaries in conjunction with San Luis Obispo County (currently a proposed Combining Designation Program within the draft Estero Area Plan).	128
HAB-4	Implement appropriate actions in existing and future species recovery plans, in alignment with MBNEP goals and objectives.	130
HAB-5 *	Implement policies and projects to protect, restore, and create habitats, including wetlands, in connection with dredging activities.	133
HAB-6 *	Maintain and promote adequate wetland resources and riparian vegetation through identification and implementation of proven management techniques.	135
HAB-7 *	Develop methods, including voluntary and incentive programs, and possibly standards, to provide additional protection to riparian and wetland resources.	138
HAB-8 * ➤	Implement restoration activities to improve the quality and quantity of eelgrass habitat.	141
HAB-9 * ➤	Implement management measures to control the impacts of non-indigenous species on wetland and upland habitats.	143
HAB-10 *	Implement a pilot project to remove <i>A. donax</i> from riparian vegetation corridors along Chorro Creek and its tributaries, and continue treatment based on monitoring.	146
STL-1	Implement agency decision-making in the Morro Bay watershed consistent with steelhead trout recovery goals, and support the implementation of the United States National Marine Fisheries Service (USNMFS) Recovery Plan.	151
STL-2 * ➤	Restore and enhance access to critical habitat for steelhead trout.	154
STL-3 * ➤	Maintain and enhance pool/riffle structure and other aspects of instream habitat in trout bearing waters.	158
STL-4 *	Maintain and enhance riparian corridors adjacent to trout bearing waters to improve bank stability and structure, creek shading, and biological productivity	161
EDU-1 ➤	Conduct general public outreach and education focused on the value of a healthy environment and the role of individuals in protecting the natural resources of the Morro Bay watershed.	167
EDU-2 ➤	Develop educational materials and programs regarding marine pollution and habitat issues geared toward the commercial and recreational boating community of Morro Bay.	170
EDU-3 ➤	Develop educational materials regarding erosion, sedimentation, sensitive resources, fertilizers, and habitats within the watershed geared toward agricultural and ranch landowners and various public agencies to improve partnering, lessen impacts and educate all parties of pressing issues.	172
EDU-4 ➤	Conduct cross-educational workshops and individual orientations on the positive and negative uses of pesticides.	174
EDU-5 ➤	Coordinate and seek funding for a biennial “State of the Estuary” conference to support the biennial review process, share progress reports, address challenges, recognize environmentally responsible citizens and businesses, and provide public education.	176
EDU-6 ➤	Develop an interactive monitoring display for the Morro Bay Natural History Museum Morro Bay State Park and support other Central Coast Natural History Association education projects.	178



EDU-7 ➤	Increase communication to the public through media [i.e., graphic/text, television, continuation of “Turning the Tide,” MBNEP newsletter, and website] to spotlight collaborative efforts, forums, ongoing status, and informational messages.	180
EDU-8 ➤	Improve existing locations of public access to the estuary within the community of Los Osos by balancing various user needs and protection of sensitive species.	182
EDU-9 ➤	Develop a strategic education plan to provide educational opportunities focusing on natural resources and watershed enhancement for K-12 schools.	184
EDU-10 ➤	Develop a mini-grants program for community organizations and students to assist in implementation of the CCMP.	186
EDU-11 ➤	Review and refine the CEQA/NEPA initial study environmental checklist to increase awareness of beneficial uses of water and estuarine resources.	188