

Summary of Implementation Status of the SMBNEP Comprehensive Monitoring Program

Remaining data gaps identified in the 2007 CMP

Remaining data gaps identified in the 2015 State of the Bay Report

Habitat/ Ecosystem	Program Objective and Component	Implementation Status	Next Steps (If Needed)
Pelagic	Existing CalCOFI grid (101 stations in So. Cal.) for chlorophyll, zooplankton, sea surface temperature, salinity, thermocline depth, dissolved oxygen, silicate, nutrients, primary productivity	On-going, LACSD conducted a review of CalCOFI data collected in SM Bay over the last 30 years	Continue
	Existing Central Bight Cooperative Water Quality Survey (CBCWQS, 84 stations) for chlorophyll, sea surface temperature, salinity, dissolved oxygen, transmissivity, pH, dissolved organic matter, thermocline depth. ADD: nutrients (nitrates, phosphates, ammonia, 15 stations)	On-going, except for monitoring of nitrate, nitrite, phosphate and silicate	Add nutrients to the program. Add new mooring for continuously monitor pH, oxygen, chlorophyll, and other water parameters
	Fish larvae transects for measuring changes in relative abundance and frequency of occurrence of key species	A review of pelagic monitoring data collected through the CalCOFI program was conducted, and a special study was proposed to assess the applicability of ichthyoplankton meta-barcoding for routine monitoring	Continue
	Existing shoreline temperature network	On-going	Continue
	Existing CDFW recreational catch estimates, by fishing blocks (10)	On-going	Continue
	Existing NMFS Recfin sampling sites for numbers of recreational fishing trips and weight and # of fish caught	On-going	Continue
	Bottlenose dolphin & seabird surveys for relative abundance, location, timing, behavior, tissue contaminant levels on 30 inshore and offshore individuals	Several annual surveys were conducted in 2000s. Discontinued after 2010 due to lack of funding. Seabird tissue contamination survey was conducted as part of Bight 13.	Seeking support; secure funding or in-kind service for implementation
	Existing CDPH Marine Biotxin Monitoring Program for toxin levels in shellfish and incidence of toxic blooms	On-going, multiple locations in Santa Monica Bay	Continue
	Existing Coastal power plant impingement & entrainment	On-going	Continue
	Existing American Cetacean Society Gray Whale Census	On-going	Continue
	Existing SCCOOS Oceanography buoys	On-going	Continue
	Existing NMFS marine mammal stranding network	On-going	Continue
Existing USFWS seabird conservation program for monitoring abundance, population status, and threats.	On-going	Continue	

	Special harmful algal blooms studies	- Bight' 13 nutrient survey is underway and will continue through 2016	Continue
Soft Bottom	Existing POTW and Bight Program for determining status of infauna, demersal fish, and macrofauna, tracking fish tissue contamination, sediment chemistry, and toxicity over time.	On-going	Continue
	Existing CDFW recreational and commercial catch estimates, by fishing blocks	On-going	Continue
	North Bay ASBS survey (as portion of the Bight Program) for determining status of infauna, demersal fish, and macrofauna, tracking fish tissue contamination, and sediment chemistry, and toxicity over time.	Partially carried out as part of the Bight '08	Next step TBD with SWRCB
	Special study for investigating inshore halibut nursery grounds	To be implemented	Seek funding to initiate the study
	Soft-bottom habitat vulnerability index (exposure of soft-bottom habitat to disturbing activities such as trawling)	To be developed	Seek funding and venue for its development
	Fish community condition (Fish response index)	To be revamped	Seek funding and venue for its development
Hard Bottom	Random grid, 5 strata survey (120 stations) using CRANE protocol for invertebrates, fish, and algae	Partially carried out by LACSD, MPA Monitoring Enterprise, and SMBNEP's kelp restoration program	Seeking support; secure funding or in-kind service for long-term implementation
	CRKSC over-flights for estimating kelp canopy coverage	Implemented since 2002	Continue
	Existing CDFW recreational and commercial catch estimates, by fishing blocks	On-going	Continue
	Existing coastal power plant impingement of rocky reef organisms.	On-going	Continue
	Existing long-term rock-reef fish survey at Palos Verdes Point and King Harbor	On-going but intermittent due to lack of stable funding	Seek stable funding to ensure its continuation
	Existing Ocean Resource Enhancement Hatchery Program gill net assessment	On-going	Continue
	North Bay annual ASBS survey using CRANE protocol for invertebrates, fish, and algae	Partially implemented	Seeking support; secure funding or in-kind service for implementation
	Reconnaissance and 1/10 year survey of deep banks, canyons, shelf edge for species list, abundance, and distribution	To be implemented	Seeking support; secure funding or in-kind service for implementation

	Special study for assessing potential MPA sites	Completed as part of State MLPA process and through SMBNEP-sponsored studies	Transition to long-term MPA monitoring under the auspices of State MPA Monitoring Enterprise
	Special study for initial assessment of kelp reefs	Completed through SMBNEP-sponsored studies	n/a
	Special study for developing index of reef community condition	An index based on fish guild was developed as part of SMBNEP rocky reef study and Bight '08 survey. Further development of a community index is underway as part of the Bight 13 survey	Continue and complete development of the index
	Rocky reef fish guild index data	Data are available (see above), but not analyzed	Seek resource and venue for conducting analysis.
	Spiny lobster abundance	Data are available (though outdated), but not analyzed.	Seek resource and venue for conducting analysis.
Rocky and Sandy Intertidal	3 existing and 8 additional MARINE rocky intertidal survey stations for suite of indicators (13 indicator species and physical conditions)	On-going but intermittent due to lack of stable funding	Seeking support; secure funding or in-kind service for implementation
	Existing annual grunion survey for location, frequency, relative intensity of grunion runs (7 stations).	On-going but intermittently due to lack of stable funding	Seek stable funding to ensure its continuation
	Annual surf-zone fish survey (3 stations)	To be implemented	Seeking support; secure funding or in-kind service for implementation
	Bird roosting site (6 stations) and existing estuary (5 stations) survey for presence/absence, counts, timing of gulls, terns, and shorebirds	To be implemented	Seeking support; secure funding or in-kind service for implementation
	Existing CDFW rare bird species survey for abundance of adults, young, total nesting attempt, etc. (4 beaches)	On-going	Continue
	Annual regional sandy beach plant survey for species, relative abundance, and location	Pilot surveys were conducted using the newly developed beach ecology monitoring protocol. More surveys are on hold due to lack of funding	Seeking support; secure funding or in-kind service for implementation
	Special study for developing index of rocky intertidal community condition	Expert panel continued developing the index with logistical support from SCCWRP.	
	Special study for potential grunion egg indicator	To be implemented	
	Special study for archiving historical bird survey data	To be implemented	
	Special study for developing index of regional bird community condition	To be implemented	
Special study for investigating tissue contamination in surf-zone fish and sand crabs	To be implemented		

	Reconnaissance study of shallow nearshore infauna community	To be implemented	
	Sandy beach vulnerability index (beach front development, coastal armoring, habitat protection)	Coastal armoring data is available as part of NOAA Environmental Sensitivity Index data	Seek funding/venue to carry out the research and development of coastal development and
	Sandy beach structure and disturbance index (sediment supply, beach management practice, nutrient input, vegetation status)	Beach management practice info is available	Seek funding/venue to carry out the research and development of sediment supply and
	Extent of surfgrasses	To be implemented	Seek funding/venue to carry out the research and survey
Wetlands	Wetland Bight-wide grid (60 stations bight-wide) for a suite of indicators (Stressors, CRAM, hydrology, physical processes, contamination, biochemistry, eutrophication, fish and bird diversity)	Partially implemented as part of Bight '08	Seek stable funding to ensure its continuation
	Intensified random grid in the Bay (60 stations) for CRAM, inlet condition, tidal range, and plant community)	Partially implemented at targeted wetlands (Ballona and Malibu) as part of restoration project and EPA Wetlands Development Program	Seek stable funding to ensure its continuation
	Project-specific evaluations of hydrology, soils, key plant and animal taxa, including infauna, water quality, sediment chemistry, and sediment toxicity		
	Indices/indicators for benthic invertebrate community, nursery function for fish, foraging function for birds	To be developed and implemented	Seek funding/venue to carry out the research and development
Rivers and Creeks	Watershed Vulnerability Index (climate change index, land cover change, water use, fire index)		Seek funding/venue to carry out the research and development
	Water quality	Data are available from storm water agencies	Seek funding/venue to compile and analyze existing data
	Physical and biological components of the stream health index (CRAM, PHAB, CSCI, algae, amphibians, anadromous fish)	RAM and PHAB scores are available for the SMM watershed, CSCI data collected by SCCWRP and are available for SMM watershed, the % of monitored streams with different amphibian species present and amphibian species diversity data collected by SMMRCD. Percentage of monitored streamswith steelhead trout and Pacific lamprey present.data collected by SMMRCD	Seek funding/venue to compile and analyze existing data. Seeking support; secure funding or in-kind service for implementation
	Periodic and systematic survey of invasive species	Partially implemented by SMBRC	Seek stable funding to ensure its continuation