

Supplemental Information

The Mussel Watch California Pilot Study on Contaminants of Emerging Concern (CECs): Synthesis and Next Steps

Keith A. Maruya, Nathan G. Dodder, Stephen B. Weisberg, Dominic Gregorio, Jonathan S. Bishop, Susan Klosterhaus, David A. Alvarez, Edward T. Furlong, Suzanne Bricker, Kimani L. Kimbrough and Gunnar G. Lauenstein

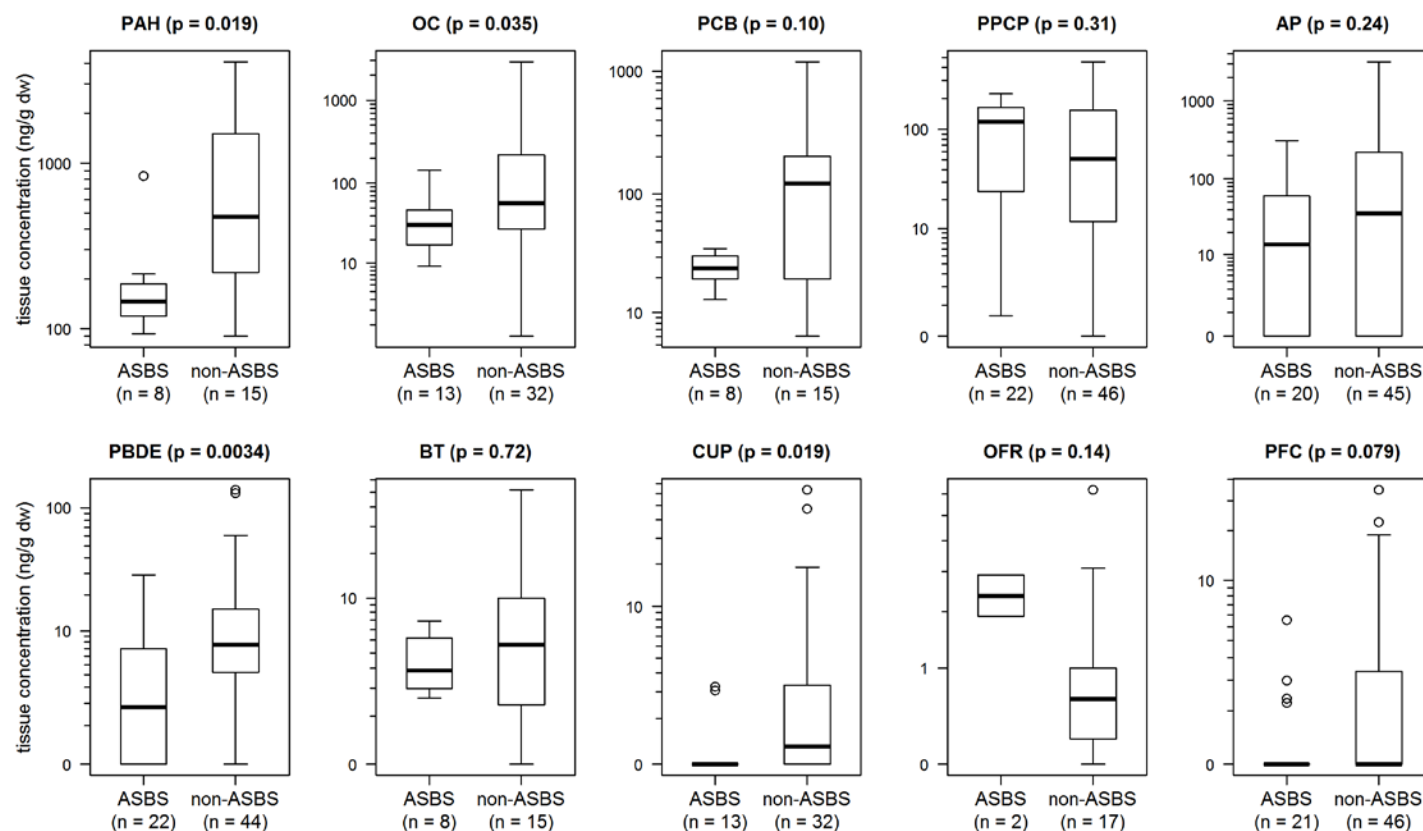


Figure SI-1. Total tissue (*Mytilus* spp.) concentration box plots by analyte class for ASBS and non-ASBS stations. The rectangle, horizontal bar and error bars represent the interquartile range (IQR), median, and minimum and maximum concentrations, respectively. The median concentration was assigned as zero for analytes that were not detected. Concentrations greater than 1.5 times the IQR are shown individual circles. n = number of stations; p -value is for the two-sample Wilcoxon test. PAH - polycyclic aromatic hydrocarbons; OC - organochlorine pesticides; PCB - polychlorinated biphenyls; PPCP - pharmaceuticals and personal care products; AP – alkylphenols/alkylphenol ethoxylates; PBDE - polybrominated diphenyl ethers; BT – butyltins; CUP - current use pesticides; OFR - non-PBDE flame retardants; PFC - perfluorinated chemicals.

Table SI-1. Sampling stations added to existing NOAA National Status & Trends program for the California pilot study on contaminants of emerging concern (CECs) (2009-10).

STATION	LAT	LON	URBAN	MIX_DEV	LOW_DEV	AGR	POTW	STORMH2O	ASBS
AHCM/Arroyo Hondo Canyon Mouth	34.473	-120.142	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE
AHLG/Agua Hedionda Lagoon	33.144	-117.337	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE
ANAI/Ano Nuevo-Ano Nuevo Island	37.145	-122.346	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE
CBAP/Carmel Bay-Arrowhead Point	36.561	-121.940	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE
CCSB/Crystal Cove State Beach	33.569	-117.836	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE
CDRF/Cardiff Reef	33.000	-117.279	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE
CPSB/Carpenteria State Beach ^a	34.387	-119.514	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE
DNPT/Dana Point	33.460	-117.710	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE
DRDP/Duxbury Reef-Duxbury Point	37.893	-122.707	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
FIEL/Farallon Island-East Landing	37.696	-123.000	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	TRUE
GCGC/Gerstle Cove-Gerstle Cove	38.565	-123.332	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
KRFR/Klamath River-Flint Rock Head	41.527	-124.080	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
LARM/LA River-Queen Mary ^a	33.755	-118.195	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
MBSR/Monterey Bay-Salinas River	36.800	-121.787	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE
MBVG/Morro Bay-Virg's	35.371	-120.858	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE	FALSE
MULG/Mugu Lagoon ^a	34.102	-119.104	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE
MUOS/Point Mugu-Old Stairs	34.066	-118.998	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
NHPB/Newport Harbor PCH Bridge ^a	33.617	-117.905	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE
PCFB/Pudding Creek-Fort Bragg	39.461	-123.809	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE	FALSE
PLSR/Point Lobos-Weston Beach	36.511	-121.942	FALSE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE
PPJB/Partington Point-Julia Burns	36.174	-121.696	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
SCFP/Santa Cruz-Fraser Point	34.063	-119.919	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
SCID/San Clemente Island-Darter	33.004	-118.586	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
SCRF/Scripps Reef	32.872	-117.253	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE
SCRJ/Santa Clara River-North Jetty	34.242	-119.269	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE	FALSE

Table SI-1 (cont.)

STATION	LAT	LON	URBAN	MIX_DEV	LOW_DEV	AGR	POTW	STORMH20	ASBS
SFEM/San Francisco Bay-Emeryville	37.821	-122.330	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE
SMOH/San Miguel Otter Harbor	34.050	-120.400	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
SMPS/Santa Maria River-Point Sal	34.905	-120.670	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE
SNIF/San Nicholas Island-Freighter Dock	33.219	-119.444	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
SRDM/Sea Ranch-Del Mar	38.737	-123.494	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE
SYRN/San Ynez River-North	34.734	-120.618	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE
TJRE/Tijuana River Estuary ^a	32.570	-117.127	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
LATI/Los Angeles Harbor Terminal Island ^{a,b}	33.722	-118.243	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE
SFSB/San Francisco Bay-South Bay ^{a,c}	37.477	-121.975	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE
SPNR/San Pablo Bay - Napa River ^{a,c}	38.299	-122.283	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE
SPPR/San Pablo Bay - Petaluma River ^{a,c}	38.133	-122.501	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE	FALSE

POTW – publicly owned treatment works discharging treated municipal wastewater effluent

ASBS – areas of special biological significance

TRUE – station assigned to category; FALSE – station not assigned to category

^a stations with passive sampling devices (PSDs)

^b sampled Jun-Jul 2009

^c sampled Aug-Sep

Table SI-2. Historical NOAA National Centers for Coastal Ocean Science Mussel Watch stations in California (1986-present).

STATION	LAT	LON	URBAN	MIX_DEV	LOW_DEV	AGR	POTW	STORMH20	ASBS
ABWJ/Anaheim Bay-West Jetty	33.733	-118.101	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
BBBE/Bodega Bay-Bay Entrance	38.305	-123.066	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
EUSB/Eureka-Samoa Bridge	40.822	-124.171	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE
HMBJ/Eureka-Humboldt Bay	40.764	-124.238	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE
IBNJ/Imperial Beach-North Jetty	32.588	-117.134	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
LBBW/Long Beach-Breakwater	33.723	-118.175	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
LJLJ/La Jolla-Point La Jolla	32.851	-117.274	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE
MBES/Monterey Bay-Elkhorn Slough	36.810	-121.785	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE
MBML/Monterey Bay-Moss Landing	36.801	-121.790	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE
MBSC/Monterey Bay-Point Santa Cruz	36.954	-122.025	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE
MBVB/Mission Bay-Ventura Bridge	32.768	-117.242	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
MDSJ/Marina Del Rey-South Jetty	33.961	-118.458	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
NBWJ/Newport Beach-West Jetty	33.591	-117.881	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE
OSBJ/Oceanside-Beach Jetty	33.202	-117.394	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE
PALH/Point Arena-Lighthouse	38.953	-123.743	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE
PCPC/Point Conception-Point Conception	34.495	-120.497	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE
PDPD/Point Dume-Point Dume	34.000	-118.807	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE	TRUE
PDSC/Pt. Delgada-Shelter Cove	40.023	-124.073	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
PGLP/Pacific Grove-Lovers Point	36.627	-121.917	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE	TRUE
PRNS/Point Reyes-National Seashore	37.994	-122.971	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
PVRP/Palos Verdes-Royal Palms SP	33.717	-118.323	FALSE	TRUE	FALSE	FALSE	TRUE	TRUE	FALSE
RBMJ/Redondo Beach-Municipal Jetty	33.832	-118.392	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
SBSB/Point Santa Barbara-Santa Barbara	34.396	-119.728	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE
SCBR/Santa Catalina-Bird Rock	33.452	-118.488	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
SDCB/San Diego-Coronado Bridge	32.687	-117.158	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
SDHI/San Diego-Harbor Island ^a	32.725	-117.195	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE

Table SI-2 (cont.)

STATION	LAT	LON	URBAN	MIX_DEV	LOW_DEV	AGR	POTW	STORMH20	ASBS
SFDB/San Francisco Bay-Dumbarton Bridge	37.503	-122.121	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE
SFSM/San Francisco Bay-San Mateo Bridge	37.578	-122.254	FALSE	TRUE	FALSE	FALSE	TRUE	TRUE	FALSE
SFYB/San Francisco-Yerba Buena ^a	37.815	-122.371	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE
SGSG/Pt.St. George-Point Saint George	41.748	-124.208	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE	FALSE
SLSL/San Luis Obispo-San Luis Point	35.161	-120.756	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE
SPFP/San Pedro Harbor-Fishing Pier	33.707	-118.274	TRUE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE
SSSS/San Simeon Point-San Simeon Point	35.635	-121.195	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE
TBSM/Las Tunas Beach-Santa Monica Bay	34.039	-118.597	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE	FALSE
TBSR/Tomales Bay-Spenger's Residence	38.150	-122.904	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE

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TRUE – station assigned to category; FALSE – station not assigned to category

^a stations with passive sampling devices (PSDs)