

(Excerpt from the MSA Monitoring Strategy, June 27, 2011)

Appendix D. Database constructed for this Monitoring Plan, including all former and current monitoring efforts within the MSA

organization	general	specific	methods	start_date	end_date	monitoring_frequency
University of Washington Friday Harbor Lab	rocky intertidal shore community	~80 species	permanent quadrat	1989	ongoing	1 (spring)
University of Washington Friday Harbor Lab	muddy intertidal zone	~80 species	size data on clams, random counts	1993	2007	1 (summer)
University of Washington Friday Harbor Lab	eelgrass	eelgrass	visual survey by boat	1998	2007	2 total
Friday Harbor Elementary School	invasive clam	purple varnish clam	beach cores	2000	ongoing	1 (spring)
University of Washington Friday Harbor Lab	subtidal surveys	eelgrass, invasive algae, ke	subtidal surveys - baseline	2006	till 2008	1 to 2
University of Washington Friday Harbor Lab	rocky subtidal surveys	>100 species	counts, photo quadrats, transects	2005	ongoing	1 (fall)
Washington State Department of Ecology	marine sediments	toxins, metals, macroinvertebrates	organics	2002	ongoing	0.1 (once every 10 years)
Marine Resources Committee	bottomfish	bottomfish	dive surveys	1998	ongoing	
US Forest Service	marbled murrelet	marbled murrelet	transects for seabird abundance	2000	ongoing	fortnightly May-Sept
	juvenile salmon	juvenile salmon	beach seines for juvenile salmon	2008	ongoing	monthly (Mar-Sep)
Soundwatch	vessel compliance		whalewatch and other vessel compliance with marine mammals	1980	ongoing	seasonal (May-Sept)
University of Washington Friday Harbor Lab	barnacle	Balanus glandula	photographed fixed quadrats	1975	1980	photographs 2 (spring & summer)
Center for Whale Research	southern resident killer whales	southern resident killer whales	annual census	1977	ongoing	1
US Geological Survey	eelgrass	eelgrass	physical oceanographic data in	2007	ongoing	12
National Oceanic and Atmospheric Administration	killer whales	killer whales	vessel impacts on behavior	2004	2006	everday for 3 months during
National Oceanic and Atmospheric Administration	killer whales	killer whales	ambient noise & vocal responses	2007	ongoing	everday for 3 months of summer
National Oceanic and Atmospheric Administration	killer whales	killer whales	fecal samples, prey samples, 12004	2004	ongoing	
National Oceanic and Atmospheric Administration	killer whales	killer whales	annual census	1974	ongoing	every summer
University of Washington	seagrass	Phyllospadix scouleri	line transect	June 2005	ongoing	0.5 (every two years)
University of Washington	seagrass	Zostera japonica	line transect and grid sampling	May 2006	ongoing	0.5 (every two years)
Washington Department of Natural Resources	seagrass	Zostera marina	line transect	May 2006	ongoing	1 (annual)
University of Washington	seagrass	Zostera marina	fixed plots	June 2005	ongoing	1 (annual)
University of Washington, Friday Harbor Lab	seagrass	Zostera marina	line transect	June 2005	ongoing	1 (annual)
National Oceanic and Atmospheric Administration	porpoises	Phocoena phocoena & Phocoena	Aerial and some small boat surveys	1991	ongoing	once every 5 years
National Oceanic and Atmospheric Administration	harbor seal	Phoca vitulina	Aerial and some small boat surveys	1978	ongoing	once every 5 years
Shannon Point Marine Center	water profile	temperature, salinity, chlorophyll a, phaeopigments, nitrate		2000	ongoing	4
Washington Department of Fish & Wildlife	lingcod	lingcod nest	scuba	1992	ongoing	annual
Washington Department of Fish & Wildlife	bottomfish	rockfish, lingcod, greenling	scuba	1998	1998	once
Washington Department of Fish & Wildlife	bottomfish	rockfish, lingcod, greenling	scuba	1992	ongoing	sporadic
Puget Sound Restoration Fund	oyster	Olympia oyster	seeding oysters	2004	ongoing?	1 (annual)
Puget Sound Restoration Fund	PSP in mussels	Paraletic Shellfish Poisoning	tested for PSP at DOH	1990s	ongoing	monthly to seasonal
University of Washington Friday Harbor Lab	intertidal fucus zone	macroscopic invertebrates & algae	random quadrats in Fucus zone	2002	2004	1 (annual)
University of Washington Friday Harbor Lab	oyster	oyster in Fucus zone	random quadrats in Fucus zone	2002	2004	1 (annual)
University of Washington Friday Harbor Lab	temperature	temperature in Fucus zone	random quadrats in Fucus zone	2002	2004	1 (annual)
Washington State Department of Health	fecal bacteria	entero	water samples	5/15/06	9/11/06	monthly
Pelagic Ecosystem Function - University of Washington	pelagic ecosystem	temperature, salinity, density	CTD, trawl net, acoustics, observations	2004	ongoing	annual (fall only)
Washington Department of Fish & Wildlife	invasive species	mussels, plankton, invertebrates	sampling of dock fouling (organisms)	9/8/98	9/16/98	once
University of Washington	fish	rockfish, lingcod, kelp greenling	SCUBA diving along transect	1974	2006	6 times total
National Oceanic and Atmospheric Administration	juv salmon	juv salmon	surface trawling at shallow areas	March 2000	2010	
National Oceanic and Atmospheric Administration	juv salmon	juv salmon	surface trawling at shallow areas	1975	1978	
National Oceanic and Atmospheric Administration	blackmouth	blackmouth (resident chinook)	marked release & monitoring	fall 2008	2013?	ongoing
Reef Environmental Education Foundation	all megafauna	fish, tunicates, anemones	trained ~300 recreational SCUBA divers	1990	ongoing	
Puget Sound Ambient Monitoring Program	fish	English sole	monitoring muscle tissue chemistry	1989	historic	
Puget Sound Ambient Monitoring Program	fish	rockfish	baseline monitoring of rockfish	1989	1997	2 (biannual)
Department of Health, Office of Shellfish Administration	shellfish toxin	fecal coliform	collection of shellfish and analysis	2002	ongoing	6 (once every two months)
Puget Sound Ambient Monitoring Program	marine sediments	toxins, invertebrates	Sediments were analyzed to detect	1986	1995	1 (annual)
Puget Sound Ambient Monitoring Program	marine sediments	toxins, invertebrates		2002	ongoing	0.1 (once every 10 years)
Washington Department of Fish & Wildlife	urchin	red sea urchin, subtidal species	index stations	1995	ongoing	3 total (1995, 2005, 2007)
University of Washington, Washington Department of Fish & Wildlife	pinto abalone, scallops, sea urchin	pinto abalone, scallops, sea urchin	recruitment modules	spring 2005	spring 2007	4 (every 3 months)
National Oceanic and Atmospheric Administration	porpoises	Phocoena phocoena & Phocoena	telemetry & mitochondrial genotyping	1997	2003	
National Oceanic and Atmospheric Administration	porpoises	Phocoena phocoena & Phocoena	necropsy & stomach contents	1996	ongoing	haphazard
Marine Invasive Species Monitoring, Washington State Department of Fish & Wildlife	invasive crab	European green crab	use of volunteers to search intertidal	1999	2007	
Marine Invasive Species Monitoring, Washington State Department of Fish & Wildlife	invasive species	32 species from plants to animals	use of volunteers to search for late	2007	2009	
Coastal Observation and Seabird Survey Team	birds	dead bird counts	use of volunteers to survey beach	2000	ongoing	12 (twelve times / year for 10 years)
Waldron Citizen Science	plankton	copepods, crustaceans, polychaetes	long-term zooplankton counts	June 2007	ongoing	24 (twice monthly)
Washington Beach Environmental Assessment	bacteria	entero	measurement of bacteria levels	5/15/06	9/11/06	5 (monthly)
Washington State Toxics Monitoring Program	fish toxics	kokane, largemouth bass	analyzed for mercury, chlorinated hydrocarbons	9/29/04	9/30/04	once
University of Washington, School of Marine and Estuarine Studies	seagrass	Zostera marina	Recovery plot	1996	2001	1 (annual)
University of Washington, Friday Harbor Lab	seagrass	Zostera marina	line transect	June 2005	ongoing	at funding dependent
Washington Department of Fish & Wildlife	intertidal clams		surveys asking harvesters how many clams they harvest	1987	ongoing	1 (annual)
Washington Department of Fish & Wildlife	intertidal clams		effort surveys done by flying	1984	ongoing	7 (monthly between April and October)
Washington Department of Fish & Wildlife	intertidal clams		abundance estimates given by	1998	ongoing	1 (annual)
Washington Department of Fish & Wildlife	shrimp		gauging abundance and sex ratio at 10 sites	ongoing	ongoing	2 (biannual)
Washington Department of Fish & Wildlife	crab	tanner, Dungeness, and rock	June abundance and shell counts	1995	ongoing	1 (annual)
Washington Department of Fish & Wildlife	crab	tanner, Dungeness, and rock	number harvested assessed by	1970s	ongoing	
Washington Department of Fish & Wildlife	forage fish	anchovies, sand lance, sardines	abundance by acoustic trawl	1980s	ongoing	1 (annual)
Washington Department of Fish & Wildlife	birds	seaducks & loons (predominant)	(aerial surveys) fly shorelines	1992	ongoing	1 (annual)
Washington Department of Fish & Wildlife	bald eagle	bald eagle	(aerial surveys) fly overhead	1980s	2002	1 (annual)
Washington Department of Fish & Wildlife	bald eagle	bald eagle	(aerial surveys) fly overhead	2005	ongoing	sporadic
Marine Resources Committee	forage fish spawning areas	surf smelt	aerial survey	6/1/2000	7/1/2000	once
Marine Resources Committee	forage fish spawning areas	Pacific sand lance	aerial survey	6/1/2000	7/1/2000	once
Marine Resources Committee	forage fish spawning areas	Pacific herring	aerial survey	6/1/2000	7/1/2000	once
FRIENDS of the San Juans, Washington Department of Fish & Wildlife	forage fish spawning areas	surf smelt	bulk samples	7/1/2001	12/1/2003	1 to 11
FRIENDS of the San Juans, Washington Department of Fish & Wildlife	forage fish spawning areas	Pacific sand lance	bulk samples	7/1/2001	12/1/2003	1 to 11
FRIENDS of the San Juans, Washington Department of Fish & Wildlife	forage fish spawning areas	Pacific herring	grappling rake	winter 2003	spring 2004	2 to 6
Washington Department of Fish & Wildlife	forage fish spawning areas	Pacific herring	grappling rake	1970s	ongoing	1
FRIENDS of the San Juans, Department of Bull Kelp		Bull kelp	infrared aerial photographs	photo 2004	photo 2006	once
FRIENDS of the San Juans, Department of Eelgrass		eelgrass	underwater video along deep	2003	2003	once
FRIENDS of the San Juans, University of Washington	water profiles	temperature, salinity, conductivity	seabird, seacat profiler	fall 2005	ongoing	monthly
FRIENDS of the San Juans, University of Washington	water profiles	temperature, salinity, conductivity	seabird, seacat profiler	fall 2005	ongoing	quarterly
FRIENDS of the San Juans, Department of Eelgrass		eelgrass	underwater video of embankment	2000	ongoing	1
FRIENDS of the San Juans	green crab	green crab	baited traps	2001	2004	monthly in summer
Graduate School of Oceanography, University of Rhode Island	diatom	Pseudo-nitzschia spp.	water sample	May-96	May-98	twice
Graduate School of Oceanography, University of Rhode Island	diatom	Chaetoceros socialis	water sample	May-96	May-98	twice
Washington Department of Fish & Wildlife	pinto abalone	Haliotis kamtschatkana	SCUBA investigation of index	1992	ongoing	1
Washington State Department of Ecology, Washington Department of Health, Division of Environmental Health	water profiles	temperature, salinity, density	float plane, CTD profiler, Secc	1988	ongoing	1 to 12
Washington Department of Fish & Wildlife	groundfish					
Washington Department of Fish & Wildlife	marine birds					
Washington Department of Fish & Wildlife	scoters					
Wildlife Science						
UW PRISM						
Washington State Department of Natural Resources	nearshore habitat					
Washington Department of Fish & Wildlife	toxics in biota					