County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

Beach and Bay Water Quality Monitoring Program

Since 1999 the Department of Environmental Health (DEH) has contracted with the California Department of Public Health, and now the State Water Resources Control Board, to use funds from the Beach Safety Act (AB 411) to perform water quality sampling, act as a clearing house for beach water quality monitoring data from other agencies and to notify the public when water quality standards are not met at recreational beaches (ocean and bays). The Beach and Bay Water Quality Monitoring Program coordinates the sampling and posting of signs warning of contaminated water at beaches affected by sewage spills, when monitoring indicates bacteria levels exceed State standards, or during other events that may pose a threat to public health.

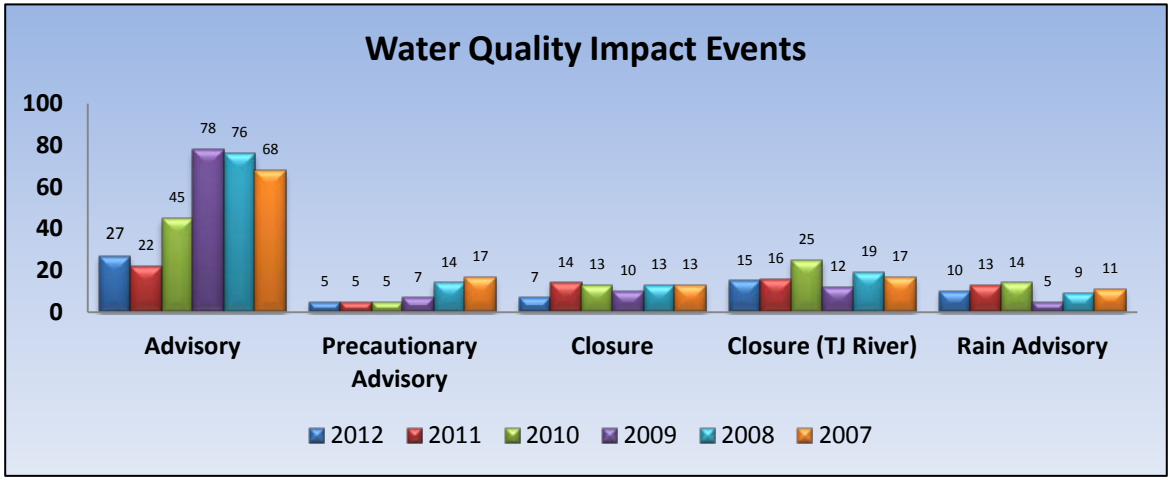
Testing, Monitoring and Data Analysis

Dry Weather (April 1st through October 31st)

- Sample and analyze data from 45 locations (50 samples) every week
- Analyze sampling data from another 38 locations provided by wastewater agencies
- Post advisories when standards are exceeded and resample until health standards are met

Wet Weather (November 1st through March 31st)

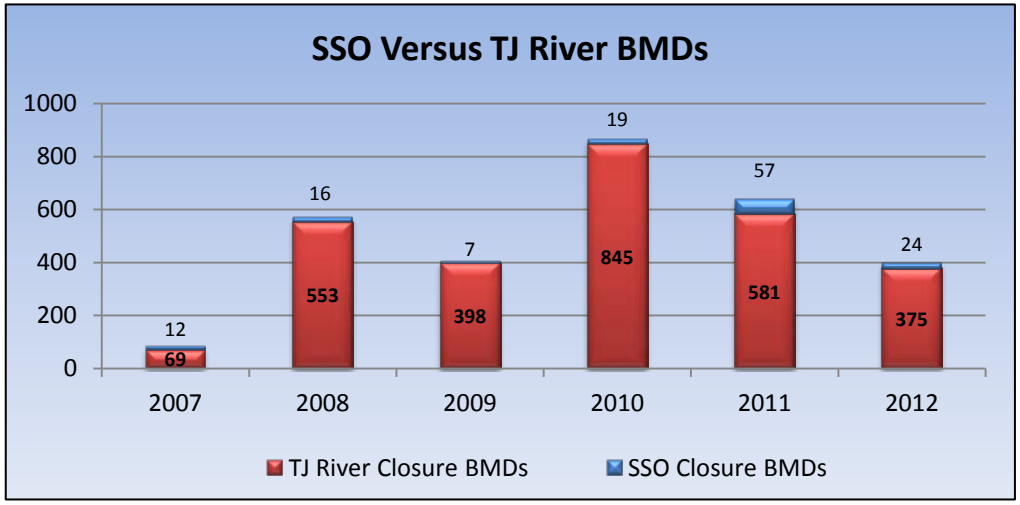
- Sample and analyze data from 15 high risk locations (20 samples) each week
- Analyze sampling data from another 38 locations provided by wastewater agencies
- Post advisories when standards are exceeded and resample until health standards are met



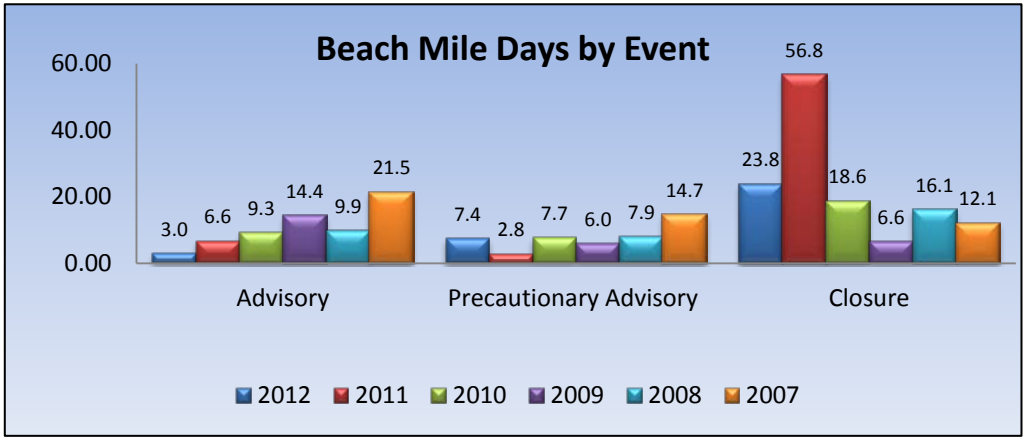
There are five types of water quality impact events as outlined above. An event is defined as a change in beach status from open to potentially impacted. The duration of these events can span from a couple days (typical advisory) to several months (typical Tijuana River impacts).

Category	2012			2011			2010			2009			2008			2007		
	# Events	# Days	# BMDs	# Events	# Days	# BMDs	# Events	# Days	# BMDs	# Events	# Days	# BMDs	# Events	# Days	# BMDs	# Events	# Days	# BMDs
Advisory	27	53	3.01	22	117	6.65	45	163	9.26	78	254	14.43	76	174	9.88	68	350	21.53
Precautionary Advisory	5	68	7.44	5	30	2.84	5	40	7.74	7	24	5.99	14	57	7.92	17	85	14.68
Closure	7	30	23.83	14	67*	56.76	13	61	18.65	10	23	6.62	13	55	16.07	13	26	12.05
Closure (TJ River)	15	131	375.46	16	218	581.21	25	266	845.10	12	112	398.49	19	153	553.08	17	128	69.25
Rain Advisory	10	42	--	13	70	--	14	70	--	5	30	--	9	38	--	11	37	--

Beach Water Quality – Beach health is commonly measured in units called Beach Mile Days (BMDs). BMDs are calculated by multiplying the distance of the event in miles (advisory, closure, etc.) by the duration of the event in days. BMDs are typically summed by event category for a specified period of time to provide an indication of beach health. This industry standard approach allows the comparison of different event categories, time periods, and areas. The adjacent graphs outline the number of BMDs by year since 2007 for common event types in San Diego County.



Sanitary Sewer Overflows (SSO) and Tijuana (TJ) River flows impact ocean and bay waters with untreated sewage. As identified above, TJ River impacts alone represent the majority of the beach closures issued throughout San Diego County.



The closures represented in this graph do not include those associated with the Tijuana River and are solely related to sanitary sewer overflows. The spike of 56.8 BMDs identified in 2011 is associated with a County wide power outage.

Public Notification Signage – The public is warned of unhealthful water quality conditions through a number methods including the Beach website (www.sdbeachinfo.com), phone hotline (619-338-2073), and email notifications. However the most direct public notification method is signage posted at potentially impacted beaches.

Permanent metal signs, like the example to the right, are posted at lagoon, creek, river, and storm drain outfalls across the county warning the public of potential impacts associated with both wet and dry weather runoff. Ocean water should be avoided anywhere surface runoff enters the ocean.

Water Quality Impacts – Water samples are typically analyzed for Total Coliform, Fecal Coliform and Enterococcus, which have been determined through numerous studies to be indicators for a host human pathogens associated with marine waters.

Pathogenic organisms commonly found in marine waters can cause a number of debilitating illnesses and diseases ranging from hepatitis, cryptosporidiosis, giardiasis, cholera, poliomyelitis, and typhoid to less sever infections including gastroenteritis, ear infections, and a host of respiratory illnesses. Recent studies have found viruses to be more pervasive than originally thought in marine waters.

Closure signs, like the example to the left, are posted in beach areas impacted by sewage, typically from a sanitary sewer overflow or for flows associated with the Tijuana River. Avoid contact with ocean water where closure signs are posted

Advisory signs, like the example to the left, are posted in beach areas where water quality monitoring (water sampling) indicates that bacterial levels exceed State Health Standards. These signs are typically posted 150 feet on either side of the impacted sample location. Avoid contact with ocean water where advisory signs are posted.