

# Introduction

Santa Barbara County Environmental Health Services began regular ocean water monitoring in September of 1996. The ocean water monitoring program was established in response to public concerns about the deteriorating ocean water quality, and the need to protect the public's health.

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### How does the County of Santa Barbara monitor ocean water quality?

Currently, sixteen beaches between Carpinteria and Guadalupe Dunes are monitored weekly for three indicator bacteria. Samples are collected 25 yards down current from the creek mouth, in ankle-to-knee deep surf zone water.

Sampling is performed usually on Mondays, with the results available 24 to 36 hours later. Re-samples of beaches that did not meet state bacteriological standards are taken usually on Wednesdays.

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### How can I find out about the weekly sampling results?

The ocean water sample results are available to the public in the following ways:

- Local newspapers such as the Santa Barbara News-Press(Saturdays) and the Independent(Thursdays).
- Santa Barbara County web site
- Ocean Water Quality Hotline 805-681-4949

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With the implementation of Assembly Bill 411 in July of 1999, the County of Santa Barbara is required to sample public beaches, post warning signs when the standards are exceeded, and and close the beach if there is a sewage spill. California state regulations mandate that total coliform, fecal coliform, and enterococcus are to be used as indicator bacteria for monitoring marine recreational water quality.

## When is a beach placed on WARNING status?

If a water sample fails to meet one or more of the health standards, a WARNING status for the beach will be issued. Yellow WARNING signs stating "**Warning! Ocean Water Contact May Cause Illness! Bacteria Levels Exceed Health Standards.**" will be posted at the beach. Health standards are exceeded when:

- Total coliform exceeds: 10,000 MPN (Most Probable Number)
- Fecal coliform exceeds: 400 MPN
- Enterococcus exceeds: 104 MPN
- Fecal coliform:total coliform ratio exceeds 0.1, and the total coliform count exceeds 1,000 MPN

\*Most Probable Number = Bacterial count per 100 ml of water

When a beach is listed under WARNING status, swimmers should stay a minimum of 50 yards away from creek mouths and storm drains.

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## When is a beach CLOSED?

A beach will be CLOSED only in the case of a sewage spill or at the discretion of the County Health Officer if there is an imminent public health concern. Red signs stating "**KEEP OUT. Sewage Contaminated Water. Contact with Water May Cause Illness.**" will be posted at the beach.

When a beach is listed under CLOSED status, stay at least 1/4 of a mile away from both sides of the creek mouths and storm drains.

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## What are indicator bacteria?

Microorganisms are a natural component of the environment, and they also inhabit the intestinal tracts of birds and mammals. When these bacteria are released into the environment, there is a chance that they may cause illnesses in people who come in contact with contaminated water.

Indicator bacteria are selected groups of microorganisms which are found to indicate the likelihood of the presence of disease-causing pathogens. It is difficult to detect every pathogenic organism in the water due to the wide array of the microbes in the natural environment. As a solution, indicator organisms are used because they are easy to detect. It is important to realize that indicator bacteria only suggest the presence of disease-causing organisms, and generally are not pathogenic themselves. The indicator bacteria currently used by the state health standards are total coliform, fecal coliform, and enterococcus.

## What exactly are total coliforms, fecal coliforms, and enterococcus?

**Total coliforms** consist of a large group of bacteria that may inhabit the intestinal tracts of both humans and animals. They may also be found in water as well as occurring naturally on leaves and in the soil.

**Fecal coliforms** are a subgroup of total coliform bacteria. Their presence is highly correlated with fecal contamination from warm-blooded animals.

**Enterococcus**, sometimes referred to as fecal streptococcus, is also an intestinal bacterium used to indicate fecal contamination from mammals and birds.

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### **Does the health risk to swimmers increase as indicator bacterial levels increase?**

Swimming in water with sewage contamination or elevated bacterial levels may increase the risk of contracting illnesses such as skin rashes, diarrhea, and ear infections.

Past studies show that as the indicator bacteria levels increase, the swimming-associated illness rate increases. Several studies have established a statistically significant relationship between increasing bacterial levels and increased rates of illness.

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### **How do I protect myself from illness-causing bacteria in the ocean?**

When a beach is listed under WARNING status, swimmers should stay a minimum of 50 yards away from creek mouths and storm drains. When a beach is listed under CLOSED status, stay at least 1/4 of a mile away from both sides of the creek mouths and storm drains. Also please remember to do the following at all times:

- Watch for WARNING signs
- Swim in areas up-current of creek mouths and storm drains
- Do not wade in the creeks or swallow creek or ocean water
- Rinse off thoroughly (including mouth, nose, and ears) as soon as possible after swimming in the ocean
- Do not swim in the ocean within 72 hours after a rainfall event
- Stay out of discolored water