

# 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 at 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 close the beach if there is a sewage spill or at the order of the County Health Officer. 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. The County Health Officer cautions that contact with ocean water may increase risk of illness. Swimmers are advised to stay out of the water a minimum of 50 yards away from both sides of creek mouths or storm drains.

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

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## When is a beach CLOSED?

Water at this location has been contaminated by fecal bacteria or raw sewage and is closed to the public at the order of the County Health Officer. Contact with ocean water may cause illness. Red 'KEEP OUT' signs have been posted at the beach. The County Health Officer advises the public to stay out of the water a minimum of ¼ mile away from both sides of creek mouths or storm drains. The beach will remain closed until re-sampling results indicate ocean water meets state health standards.

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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, including people. 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:** bacteria commonly found in the environment, such as soil or plants. Generally considered harmless.

### **Fecal coliforms**

a subgroup of total coliform bacteria. Typically found in great quantities in the intestines and feces of people and animals. The presence of these bacteria indicates that the ocean water is contaminated with feces or sewage. Fecal coliform has the potential to cause disease.

**Enterococcus:** Enterococcus: bacteria normally found in the large intestines of humans and other warm-blooded animals. These organisms may not be harmful themselves, but indicate that other potentially harmful organisms may be present. Those include viruses, bacteria, and protozoa that can cause diseases of the skin, eyes, ears, and respiratory tract. The Environmental Protection Agency recommends enterococci as the best indicator of health risk in salt water used for recreation.

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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
- Check social media outlets
- Swim in areas up-current of creek mouths and storm drains
- Avoid water contact with open wounds or sores
- 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