

## *Near Shore Water Quality is important for our health and the health of other living organisms in the sea.*

Since activities on land affect the quality of coastal waters surrounding our islands, PacIOOS aims to monitor and measure the interactions between the water coming from the land and the near shore waters of our ocean. Water quality data provide early warning of potentially polluted runoff and/or sewage spills in near real-time.

**Turbidity:** the measure of water clarity.

Tiny solids, like soil and algae can scatter light and limit the amount of light that can reach sea life like corals.

Rainfall, soil erosion, sewage spills, and algae can increase turbidity levels in coastal waters.

**Salinity:** the amount of salt in water.

The ocean has higher salinity than freshwater sources, like streams.

Heavy rainfall and pollutants can lower the salinity of coastal waters.

*How do you measure near shore water quality?*

**Depth:** the measure of distance from the ocean surface down to the sea floor.

In the coastal waters of Hawai'i, changes in depth occur because of tides.

Tides are bulges of water in the ocean caused by gravity of the sun and moon.

In some coastal areas, tides can re-suspend sediment, causing the water to become more turbid.

**Temperature:** the measure of hotness or coldness in water.

Changes in temperature may affect photosynthesis in aquatic plants.

Corals have tiny photosynthetic organisms in them called zooxanthellae. Changes in ocean temperature can change how well zooxanthellae photosynthesize.

**Chlorophyll:** the pigment (color) that makes leaves look green.

Microscopic plants called phytoplankton contain chlorophyll and use it to produce half of the amount of oxygen we use to breathe.

High chlorophyll in coastal waters can mean that lots of nutrients are present.

