# How Healthy is the Sound?

**Answer Key**

**Name: Date: \_**

1. Based on the data collected on the water quality of your estuary, how healthy would you describe the water quality to be?

Overall our water quality sample taken from Budd Inlet was fair and was in the acceptable range for most of the parameters. However, Budd inlets water quality could still use our help!

o What are some healthy water quality parameters? Why?

I estimate this test result at between 0 JTU and 4 JTU which puts it right in our good to excellent range. Not too many algal blooms happening in Budd inlet or turning of sediment to cause high turbidity.

The pH of the water sample is roughly a 7, which is neutral or freshwater. This is within our acceptable range of 6-8. It had been raining before the sample was taken which could explain the result being more freshwater than saltwater. Also the testing site is located near the mouth of the estuary where the Deschutes River’s freshwater flows into Budd Inlet.

o What are some concerning water quality parameters? Why?

My best estimate is that the DO is between 0ppm and 4ppm so about 2 ppm. This is poor dissolved oxygen saturation. The water sample has very little available oxygen for organisms to use. Water that is warm or has little movement can release oxygen into the atmosphere causing a low DO result

1. Where does the excess nitrate come from?

Excess nutrients like nitrate increase plant growth and decay, promote bacterial decomposition, and therefore, decrease the amount of oxygen available in the water. Sewage is the main source of excess nitrate added to natural waters, while fertilizer and agricultural runoff also contribute to high levels of nitrate.

1. What does high levels of phosphate lead to?

High levels of this nutrient can lead to overgrowth of plants, increased bacterial activity, and decreased dissolved oxygen levels.

1. Why does salinity vary in estuaries?

Salinity at one place changes daily with the tides and tidal excursions. Salinity also changes dramatically during the seasons. The head of an estuary may experience almost full- strength seawater in the summer, while in the winter floods of freshwater may reach the mouth of an estuary.

1. What can you do to help improve the water quality of your estuary?

Carpool, pick up litter, pick up dog poop, don’t use fertilizer, plant buffers, etc.