

# Southland estuaries' health results




Gross eutrophic conditions occur when sediments exhibit combined symptoms of a high mud content, a shallow layer of oxygen in sediment, elevated nutrient and organic concentrations, displacement of invertebrates sensitive to organic enrichment, and high macroalgal growth (>50% cover).

These conditions will kill or displace most estuarine animals and shellfish, as well as leading to the release of nutrients previously bound in the sediments. These nutrients will further fuel macroalgal growth, causing a cycle of increasing habitat deterioration. Once established this will become increasingly difficult to reverse.

Results as of 2018 show that New River Estuary and Jacobs River Estuary have gross eutrophic conditions. (Not all estuaries are monitored every year – latest results are reported.)
































## HIGH EUTROPHICATION RISK

	SOFT MUD	NUTRIENTS IN SEDIMENT	OXYGEN IN SEDIMENT	MACROPHYTE COVER	SEA GRASS	GEZ*
Waiau Lagoon						
Lake Brunton						
Waituna Lagoon				DOC does this		









Waiau Lagoon (Western Southland), Lake Brunton (Catlins) and Waituna Lagoon are Southland's most sensitive estuary systems and are showing signs of stress. Water quality monitoring carried out by Environment Southland shows Waituna Lagoon is also under stress from contaminants.


## MODERATE EUTROPHICATION RISK

	SOFT MUD	NUTRIENTS IN SEDIMENT	OXYGEN IN SEDIMENT	MACROALGAE COVER	SEA GRASS	GEZ*
New River Estuary						
Jacobs River Estuary						
Waikawa Estuary						
Haldane Estuary					None observed	
Freshwater Estuary						

Although overall risk for these estuaries is moderate, New River and Jacobs River estuaries are clearly eutrophic. They are receiving more contaminants than they can handle. Waikawa Estuary is also showing signs of stress. Freshwater Estuary at Stewart Island has the best results for health.

## LOW EUTROPHICATION RISK

	SOFT MUD	NUTRIENTS IN SEDIMENT	OXYGEN IN SEDIMENT	MACROALGAE COVER	SEA GRASS	GEZ*
Waimatuku Estuary						
Toetoes Estuary						

 Very good       Good       Fair       Poor

\*Gross eutrophic conditions (GEZ) conditions occur when estuaries have the combined effects of high mud content, a shallow RPD (<1cm) and high macroalgal growth (>50% cover).

(At the time of publishing, recent monitoring data for Bluff Harbour/Awarua Bay was not available.)