

# Environment Waikato-Estuarine Water Quality Guidelines and Standards

These guideline values for satisfactory water quality for contact recreation and for shellfish gathering are from New Zealand’s “Microbiological water quality guidelines for marine and freshwater recreational areas” (Ministry for the Environment and Ministry of Health 2003).

The guidelines for satisfactory water quality for ecological health are from the Australian and New Zealand Environment and Conservation Council’s “Australian and New Zealand guidelines for fresh and marine water quality” (2000). Noting that no guidelines for New Zealand estuaries were available, ANZECC recommended that the guidelines for estuaries in south-east Australia be used instead. This has been done here.

In each case, expert judgement has been used to identify the guidelines for excellent water quality.

**Table 1: Guidelines and standards used to assess estuarine water quality for ecological health, for contact recreation and for shellfish gathering.**

Water quality variable (units)	Relevance	EW Categories			WDC RC971390
		Excellent	Satisfactory	Unsatisfactory	Raglan Limits
<b>Ecological health</b>					
Dissolved oxygen (% of saturation)	Oxygen for aquatic animals to breathe	>90	80 – 90	<80	
pH	Can affect plants and fish	7.5 – 8	7 – 7.5 or 8 – 8.5	<7 or >8.5	
Turbidity (NTU)	Can restrict plant growth	<2	2 - 10	>10	
Total ammonia (g N/m3)	Toxic to fish	<0.1	0.1 - 0.91	>0.91	
Nitrate (g N/m3)	Causes nuisance plant growth	<0.005	0.005 – 0.015	>0.015	
Total phosphorus (g/m3)	Causes nuisance plant growth	<0.01	0.01 – 0.03	<0.03	
Chlorophyll a (g/m3)	Algal blooms	<0.002	0.002 – 0.004	>0.004	
<b>Contact recreation</b>					
Enterococci, single sample (no./100 mL)	Human health	<28	28 – 280	>280	<b>&lt;35</b>
<b>Shellfish-gathering</b>					
Faecal coliforms, median (no./100 mL)	Human health	<2	2 – 14	>14	<b>&lt;14</b>
Faecal coliforms, 90 percentile (no./100 mL)	Human health	<6	6 - 43	>43	<b>&lt;43</b>

<http://www.ew.govt.nz/Environmental-information/Environmental-indicators/Coasts/Coastal-water-quality/Estuarine-water-quality-technifo/>