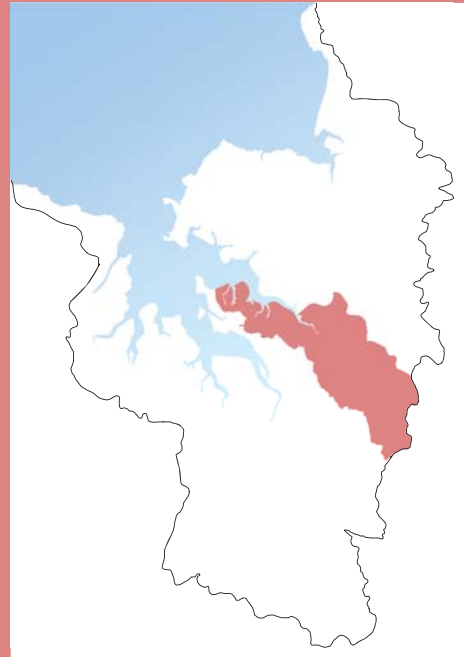


# Elizabeth River and Estuary

## Summary

Water quality at the upper estuary monitoring sites was in excellent condition. Water quality at the freshwater monitoring sites was in very good condition in 2011. The water-bug community at most biological monitoring sites was assessed as being similar to reference condition.



## Nature of system

- Long residence time and poor flushing in the upper estuary
- Higher salinities in upper estuary during the dry season with no freshwater inputs
- Possible light limitation of the upper reaches of the estuary during the wet season due to high turbidity































## Potential sources of pollution

- Sediment and nutrient loads during the wet season from diffuse sources



*Macroinvertebrate sampling*

## Elizabeth River freshwater and marine water quality

Indicator and units	Freshwater		Marine	
	Water quality objective	Compliance	Water quality objective	Compliance
 <b>Electrical conductivity</b> ( $\mu\text{S/cm}$ )	<200	21 	NA	
 <b>Turbidity</b> (NTU)	<20	3.7 	NA	
 <b>pH</b>	6.0–7.5	6.4–7.2 	6–8.5	7.3–8.1 
 <b>Dissolved oxygen</b> (%)	50–100	70–91 	80–100	*
 <b>Total suspended solids</b> (mg/L)	<5	2 	<10	*
 <b>Chlorophyll a</b> ( $\mu\text{g/L}$ )	<2	0.6 	<4	1 
 <b>NO<sub>x</sub></b> ( $\mu\text{g N/L}$ )	<8	5 	<20	7 
 <b>Ammonia</b> ( $\mu\text{g N/L}$ )	NA		<20	15 
 <b>Total nitrogen</b> ( $\mu\text{g N/L}$ )	<230	170 	<300	250 
 <b>Total phosphorus</b> ( $\mu\text{g P/L}$ )	<10	15 	<30	15 
 <b>Filterable reactive phosphorus</b> ( $\mu\text{g P/L}$ )	<5	5 	<10	4 
<b>Number of samples</b>		9		49–54
<b>2011 rating</b>				
<b>2010 rating (2009 data)</b>		A		A
<b>2009 rating (2001–2008 data)</b>		A		C

Note<sup>1</sup>: (nd). Limited or no data available Note<sup>2</sup>: (NA). Not applicable, no WQO developed \* WQO currently under revision.

## Biological health using the AUSRIVAS score

Site	2009	2010	Change
DW26	A	A	No change
DW39	A	A	No change
DW40	A	A	No change
DW44	A	B	Change
DW52	A	A	No change
DW53	A	A	No change
DW71	A	A	No change
DW72	A	A	No change