

# Bennett Brook

**B**ennett Brook was once a natural creek system but its tributaries to the west have been modified to become deeply incised drains. It discharges into the Swan Estuary upstream of Success Hill in Bassendean.

The Gnangara pine plantation and Whiteman Park cover just over half the catchment. Some native vegetation remains in Whiteman Park but it is very degraded. The remainder of the catchment has been cleared for residential, rural and industrial uses.

Soils in the Bennett Brook catchment consist of leached Bassendean sands in the northern section, Southern River sands in the central portion and a small band of Karrakatta sands on the western edge. Increased groundwater pumping

in the catchment's north for metropolitan water supply has lowered groundwater levels and reduced flow into the brook. Conversely, the catchment's south has higher-than-natural flow due to the construction of drainage networks and the increase in runoff from hard surfaces such as roads and roofs.

Water quality is monitored at a site close to where the brook flows into the Swan Estuary. This site is positioned to indicate what nutrients are leaving the catchment, so the data may not represent nutrient concentrations in upstream or downstream tributaries. Flow was measured from 1988 to 1992 and then again from 2001 to present at the Department of Water gauging station near Benara Road.

## Bennett Brook – facts and figures

Length	~ 13 km
Average rainfall	~ 800 mm per year
Gauging station near monitored site	Site number 616084
Catchment area	112 km <sup>2</sup> (total) 106 km <sup>2</sup> (monitored)
River flow	Permanent No major water supply dams in catchment
Average annual flow	~ 3.0 GL per year (2010–14 average)
Main land uses	Residential, pine plantations, Whiteman Park, livestock agistment and viticulture

### Legend

- Monitored site
- Animal keeping, non-farming
- Offices, commercial & education
- Waterways & drains
- Farm
- Horticulture & plantation
- Industry & manufacturing
- Lifestyle block / hobby farm
- Quarry
- Recreation
- Conservation & natural
- Residential
- Sewerage
- Transport
- Unused, cleared bare soil
- Viticulture



Fountain Park, located on a tributary to Bennett Brook.



Bennett Brook is ephemeral near its headwaters, drying in summer.

## Nutrient Summary: concentrations, loads and HRAP targets

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Annual flow (GL)	4.8*	2.6	2.2	7.0*	2.2*	4.4*	7.8*	4.4*	2.2	6.5*	3.2	1.6	1.4*
TN median (mg/L)	1.00#	0.94#	1.00#	1.05	0.88#	0.98#	1.15	1.10	1.05	0.99#	0.93#	1.00#	1.05
TP median (mg/L)	0.053	0.060	0.056	0.059	0.048	0.044	0.064	0.057	0.060	0.046	0.054	0.065	0.056
TN load (t/yr)	5.61*	2.97	2.30	8.86*	2.22*	5.30*	10.10*	5.41*	2.49	8.16*	3.52	1.66	1.45*
TP load (t/yr)	0.27*	0.15	0.13	0.38*	0.12*	0.23*	0.46*	0.24*	0.13	0.34*	0.18	0.09	0.08*

TN short term target = 2.0 mg/L

TN long term target = 1.0 mg/L

TP short term target = 0.2 mg/L

TP long term target = 0.1 mg/L

insufficient data to test target    failing both short and long-term target    passing short but failing long-term target    passing both short and long-term target

\* best estimate using available data. # Statistical tests that account for the number of samples and large data variability are used for testing against targets on three years of winter data. Thus the annual median value can be above the target even when the site passes the target (or below the target when the site fails).