Department of Water
Department of Parks and Wildlife
GOVERNMENT OF WESTERN AUSTRALIA

South Belmont Main Drain

The catchment of South Belmont Main Drain consists of a network of deeply incised drains that combine to form the South Belmont Main Drain itself. The drain discharges into the middle Swan Estuary in Belmont, opposite Clarkson Reserve.

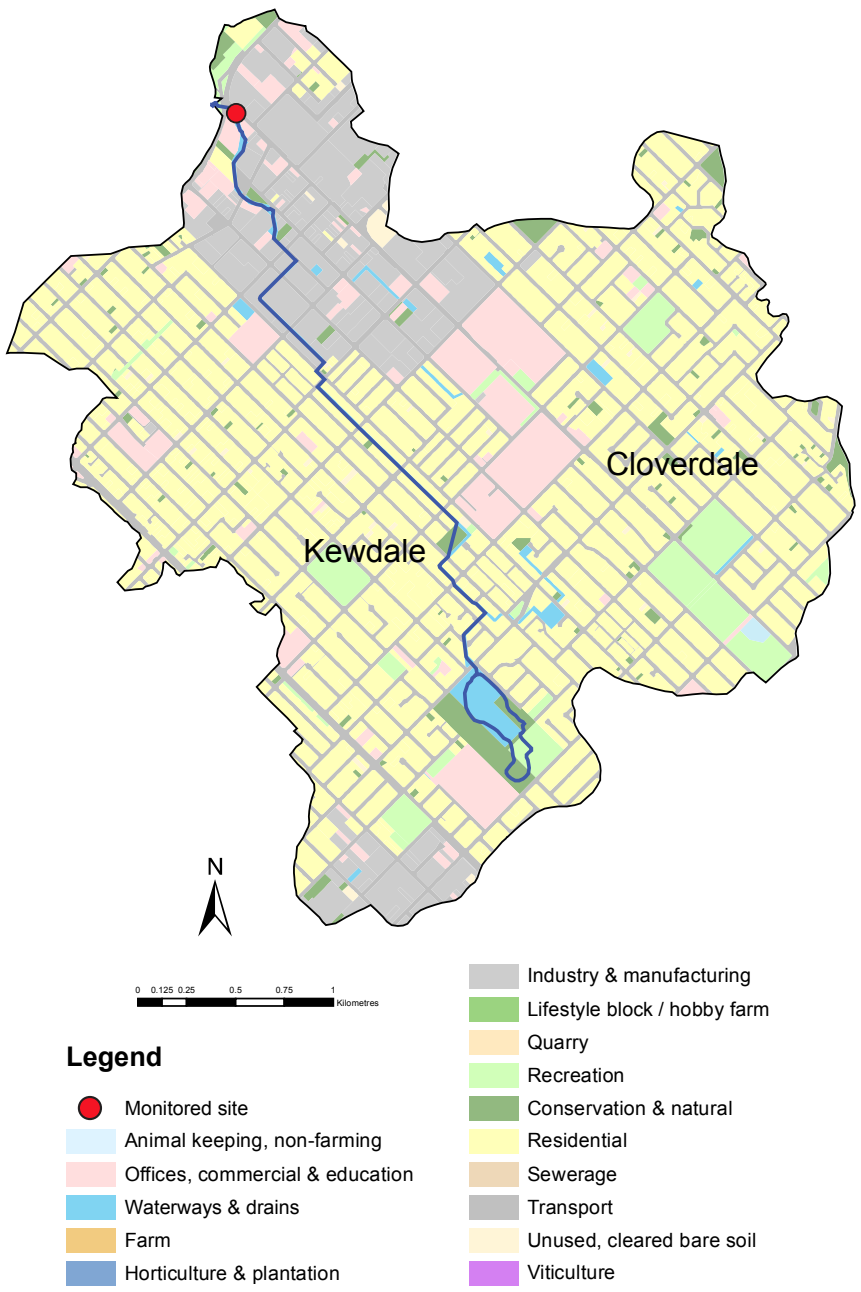
The catchment is highly modified and comprises urban uses such as light service industries and medium- to high-density residential developments. The middle and upper catchment is almost entirely residential, while the lower catchment above the monitoring site is a commercial and industrial area. There are no areas of remnant vegetation in the catchment.

The catchment of the South Belmont Main Drain is situated almost entirely over permeable Bassendean sands. The deeply incised drains intercept the groundwater in low-lying areas.

Water quality monitoring and flow gauging was once undertaken just near the end of the catchment. In 2008 the gauging station was shifted approximately 400 m upstream because it was being tidally influenced. In 2011 the water quality monitoring site was moved 100 m upstream from its original location for the same reason. This site is positioned to indicate the nutrients entering the estuary, and so the data do not accurately represent nutrient concentrations in upstream areas.

South Belmont MD – facts and figures

Length	~ 5.4 km (main drain); ~ 24.6 km (total length of Water Corporation drains)
Average rainfall	~ 800 mm per year
Gauging station near monitored site	Site number 616133 (2008 to present), 616087 (1987–11)
Catchment area	10 km² (total) 10 km² (monitored)
River flow	Permanently flowing drainage network No major water supply dams in catchment
Average annual flow	~ 1.5 GL per year (2010–14 average)
Main land uses	High-density residential and light to medium industry



The South Belmont Main Drain showing a large amount of emergent vegetation.

Downstream of the sampling site, with exotic species lining the drain.

Nutrient Summary: concentrations, loads and HRAP targets

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Annual flow (GL)						1.3*	2.2*	1.6*	1.0*	1.7*	1.3*	1.6	1.9*
TN median (mg/L)	0.67	0.70	0.66	0.83	0.67	0.69	0.76	0.80	0.66	0.78	0.65	0.63	0.69
TP median (mg/L)	0.081#	0.096#	0.100#	0.110	0.080#	0.082#	0.096	0.150#	0.130#	0.100	0.096	0.110#	0.130#
TN load (t/yr)						0.97*	1.54*	1.19*	0.69*	1.10*	0.93*	1.10	1.37*
TP load (t/yr)						0.14*	0.22*	0.17*	0.11*	0.17*	0.13*	0.16	0.20*

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).

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