Department of **Water and Environmental Regulation**
Department of **Biodiversity, Conservation and Attractions**
GOVERNMENT OF WESTERN AUSTRALIA

Mills Street Main Drain

Mills Street Main Drain is an artificial drainage network with numerous lined and unlined segments. The drain is deeply incised and flows year-round (though it did stop flowing in the summer of 2010–11 after a very dry winter). It discharges into the Wilson Wetlands, which then drains into the Canning Estuary below the Kent Street Weir in Cannington.

The catchment is almost entirely cleared for industrial, commercial and residential use. Wilson Wetlands are a small pocket of remnant vegetation and are part of the Canning River Regional Park. The park has a high conservation value as it contains the best-condition estuarine vegetation in the Swan Canning river system.

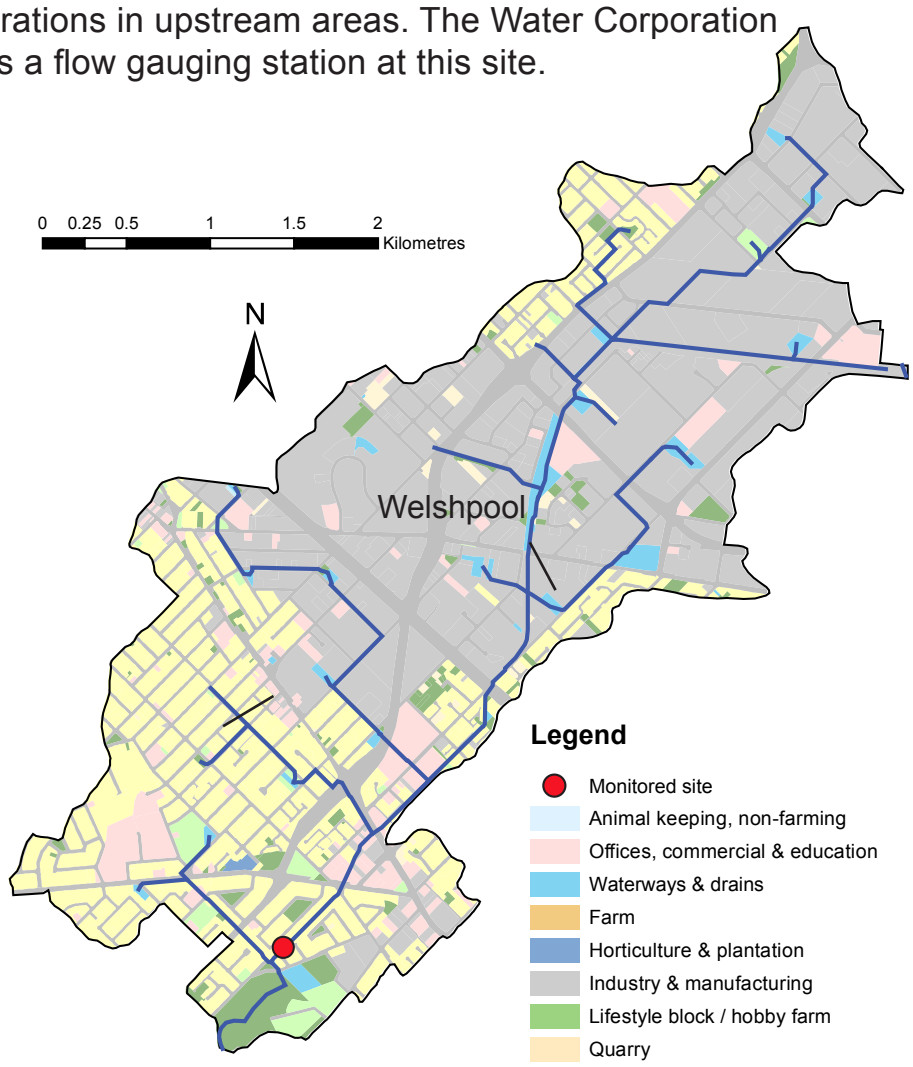
The predominant soils in the Mills Street Main Drain catchment are highly permeable Bassendean sands. Groundwater is very close to the surface (approximately 2–3 m) and flows towards the river. The combination of permeable soils and a high water table means a high risk of groundwater contamination exists. Any surface chemical or nutrient spill can leach rapidly to the groundwater and travel to the drains and river.

Water quality is monitored fortnightly at the catchment's lower end near Palm Place, Wilson. This site was chosen to estimate the nutrients leaving the catchment and entering the Canning Estuary, so the data do not represent nutrient concentrations in upstream areas. The Water Corporation operates a flow gauging station at this site.

Mills St Main Drain – facts and figures

Average rainfall (2013–17)	~ 730 mm per year (Perth metro)
Catchment area	12 km^2
Per cent cleared area (2005)	96%
River flow	Permanent No major water supply dams in catchment
Average annual flow	~ 3.8 GL per year (2015–17 average)
Main land uses (2005)	Industry and manufacturing, residential and associated transport infrastructure (roads)

Mills St Main Drain flowing under Fern Road and discharging into Wilson Wetands during high flow, April 2016.



Nutrient Summary: concentrations, estimated loads and targets

Year	Site	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Annual flow (GL)	616043	2.8*	4.3*	3.2*	2.2*	3.6*				2.8*	4.2*	4.5*
TN median (mg/L)	SWS1	1.40	1.40	1.05	0.99#	1.00#	0.97#	0.97#	0.86#	0.99#	0.87#	0.93#
TP median (mg/L)	SWS1	0.130	0.135	0.120	0.088#	0.095#	0.097#	0.100#	0.085	0.098	0.082	0.120#
TN load (t/yr)	SWS1	3.66*	5.44*	4.06*	2.78*	4.50*				2.88*	4.37*	4.45*
TP load (t/yr)	SWS1	0.39*	0.59*	0.44*	0.30*	0.48*				0.33*	0.50*	0.51*

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).

For further information please contact the
Water Science Branch, Department of Water and Environmental Regulation
catchmentnutrients@dwer.wa.gov.au

ISSN 2209-6779 (online only)
Publication date: April 2019