

Susannah Brook

Susannah Brook is an ephemeral stream that drains the Darling Scarp, it has several small dams in its upper reaches but is otherwise relatively unmodified. The brook flows into the Swan River just west of the Swan Valley Sports Ground in Herne Hill.

Agriculture is the dominant land use in the Susannah Brook catchment. The brook's lower reaches are flanked by horticulture such as orchards and vineyards, while the upper catchment is dominated by pasture. There is an area of remnant vegetation (about 20% of the catchment) near the middle catchment, but it is mostly in poor condition. The upper catchment has been extensively cleared and very little natural vegetation remains on the lower, coastal plain, section of the catchment.

Soils in the catchment range from lateritic and ironstone gravels in the upper reaches to the east, through to shallow red and yellow earths and rock outcrops on the slopes of the Darling Scarp, to gravelly and sandy Forrestfield and Guildford soils on the western plains. There is a small area of more fertile alluvial soils is close to the Swan River which is used for intensive horticulture and orchards.

Surface flow is the dominant transport pathway of nutrients, with groundwater tending to make a relatively minor contribution to flow in Susannah Brook.

Water quality is monitored fortnightly at the Department of Water and Environmental Regulation gauging station near the catchment's lower end, shortly before the brook flows into the Swan River in Herne Hill. This site is positioned to indicate the nutrients leaving the catchment and entering the Swan River, so the data do not accurately represent nutrient concentrations in upstream areas.



Photo: Water Science Branch

Downstream of Susannah Brook sampling site, November 2005

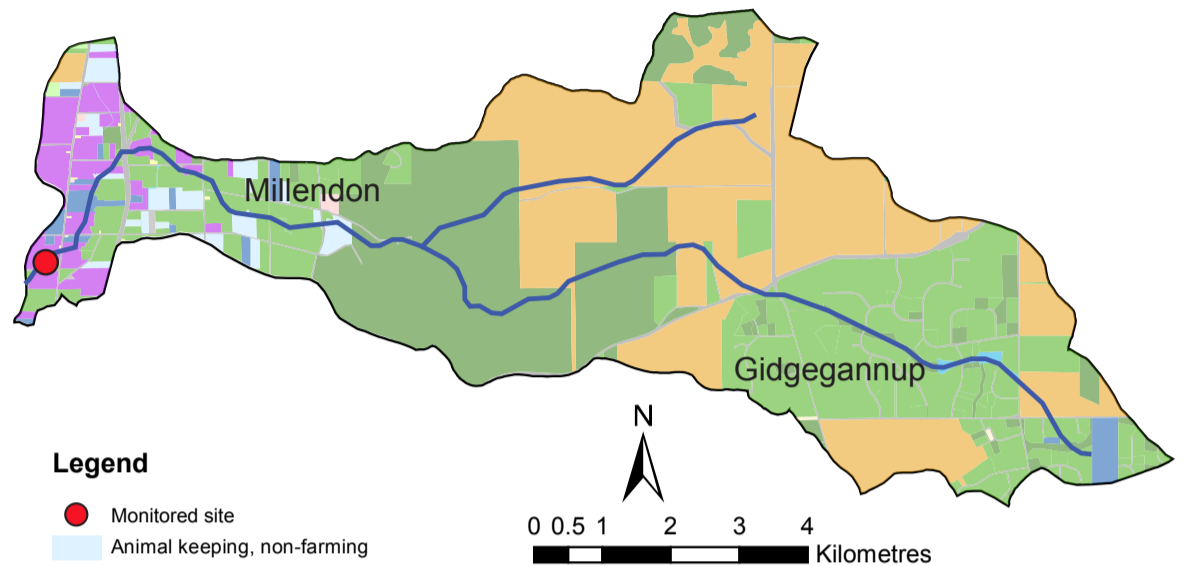


Photo: Emma van Looij
 Susannah Brook in Millendon, September 2017.

Susannah Brook – facts and figures

Average rainfall (2014–18)	~ 720 mm per year (Perth metro)
Catchment area	55 km ²
Per cent cleared area (2005)	66%
River flow	Ephemeral (June to November) No major water supply dams in catchment
Average annual flow	~ 3.2 GL per year (2014–18 average)
Main land uses (2005)	Farms, lifestyle blocks/hobby farms and conservation and natural

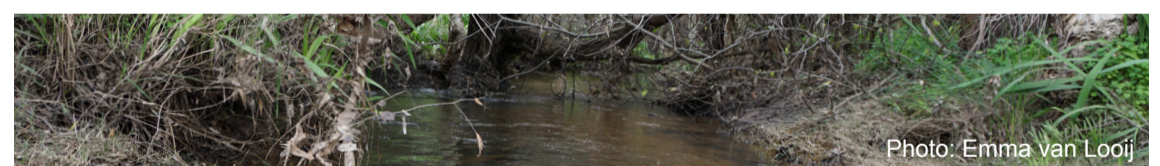


Photo: Emma van Looij
 Susannah Brook in Millendon, September 2017.

Nutrient summary: concentrations, estimated loads and targets

Year	Site	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Annual flow (GL)	616099	4.0*	5.5*	0.4	3.4*	3.2*	4.9	4.0*	0.7*	3.1*	3.8*	4.6*
TN median (mg/L)	SWN11	0.50	0.76	0.73	1.50 [#]	1.03 [#]	0.74	0.64	0.44	0.58	0.65	0.85
TP median (mg/L)	SWN11	0.016	0.020	0.012	0.022	0.014	0.015	0.012	0.012	0.015	0.017	0.016
TN load (t/yr)	SWN11	4.05*	5.50*	0.25	3.43*	2.93*	4.93	3.46*	0.46*	2.43*	3.53*	4.65*
TP load (t/yr)	SWN11	0.11*	0.15*	0.01	0.07*	0.06*	0.13	0.07*	0.01*	0.05*	0.10*	0.11*

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).