



Middle Murray River

The middle Murray River starts on the Darling Plateau south of Dwellingup and flows towards Pinjarra. The Marrinup and Oakley brooks also start on the plateau north of Dwellingup, both flowing west to join the Murray River.

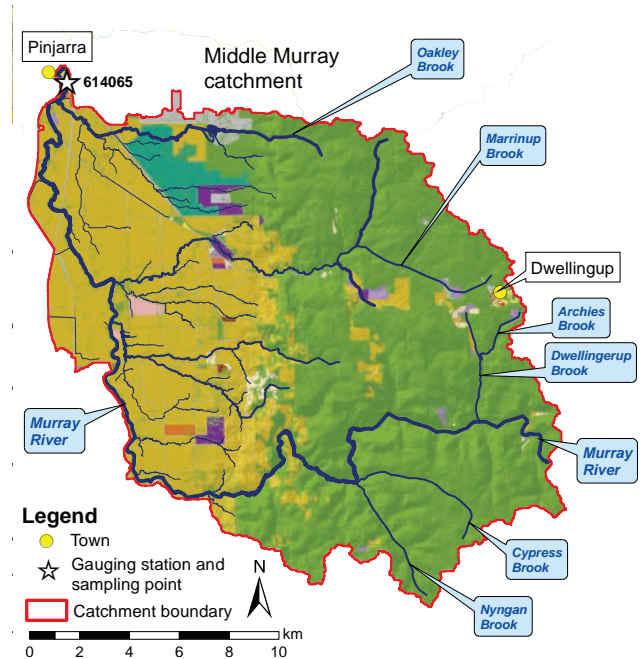
The sampling site on the Murray River at Pinjarra Road (614065) is one of three long-term monitoring sites within the Peel-Harvey catchment. Nutrients have been monitored at the site since 1983 (except 1994 and 1995) and flow since 1992. The Murray River flows year-round with river height varying by more than 4 m in wet years (i.e. 2009).



Flooding at Pinjarra, highest flow for the year – August 2009

Much of the catchment lies on the Darling Plateau where the soils are mostly ironstone gravel with hard acidic red or yellow soils, although to the west sandy acidic yellow mottled soils dominate. The catchment is not subject to seasonal inundation and only a small percentage has a high or very high risk of phosphorus leaching to waterways (7.5%).

To the Darling Scarp's east the catchment remains relatively undisturbed. West of the scarp the land has been cleared, mostly for agriculture such as stock grazing, as well as horticulture (plantations). Industrial land uses are also present with roads, railways and the southern end of Alcoa's alumina refinery within the catchment. Most of the refinery is located in the lower Murray catchment to the north.



Land use classification (2006)	Area	
	(km ²)	(%)
Animal keeping – non-farming (horses)	0.76	0.26
Cattle for beef (predominantly)	94	32
Cattle for dairy	0.01	0.01
Conservation and natural	177	60
Cropping	0.10	0.03
Horticulture	1.5	0.52
Industry, manufacturing and transport	6.2	2.1
Intensive animal use	0.14	0.05
Lifestyle block	1.6	0.56
Mixed grazing	2.6	0.89
Offices, commercial and education	0.10	0.03
Plantation	7.0	2.4
Recreation	0.05	0.02
Residential	0.33	0.11
Viticulture	0.92	0.31
Total	293	100

In 2013 the Murray River had the lowest median TN and TP concentrations of the 13 sites sampled in the Peel-Harvey catchment.

Nutrient summary: median concentrations, loads and status classification at 614065

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Annual flow (GL)	354	81	184	293	244	334	85	226	237	314	61	189	109	173
TN median (mg/L)	0.75	0.45	0.45	0.51	0.32	0.39	0.35	0.67	0.53	0.49	0.54	0.74	0.49	0.59
TP median (mg/L)	0.012	0.015	0.021	0.017	0.017	0.019	0.014	0.015	0.019	0.014	0.016	0.022	0.009	0.010
TN load (t/year)	565	46	149	293	276	345	77	266	257	419	34	228	78	165
TP load (t/year)	9.5	1.4	4.1	7.5	6.2	11	2.4	9.6	7.9	12	1.3	5.3	1.7	3.6

Status classification: Low Moderate High Very high

Status reported for three-year period end (i.e. 2011–13 reported in 2013)

TN = total nitrogen TP = total phosphorus

* best estimate using available data