



Powlett River. Courtesy WGCMA

West Gippsland Region

The West Gippsland region is diverse and characterised by areas of natural forest, areas of high conservation value, fertile floodplains for agriculture, as well as having major coal deposits and the Loy Yang, Hazelwood and Yallourn power stations.

Three river basins form the region – Thomson (basin 25), Latrobe (basin 26) and South Gippsland (basin 27).

In the north of the region is the Thomson basin, characterised by the naturally forested Eastern Highlands. At the foot of the highlands are two major dams - Lake Glenmaggie and the Thomson dam. Over half (55%) of the stream length in the Thomson basin was found to be in good or excellent condition. Of the remainder, 41% of stream length was in moderate condition and just 3% and 1% in poor and very poor condition respectively.

In the centre of the region is the Latrobe basin. The basin features vast tracts of forest through the Strezlecki Ranges and the Great Dividing Range, where streams rise and flow to Lake Wellington in the east. Although much of the land has been cleared for agriculture, the dominant land use is mining for brown coal, used at major thermal power stations - Loy Yang, Hazelwood and Yallourn - providing 95% of Victoria's electricity. One-third (34%) of the stream length in the Latrobe basin was in good or excellent condition, with a further 44% in moderate condition, 9% in poor condition and 13% in very poor condition.

In the south of the region is the South Gippsland basin, characterised by vast floodplains providing rich, agricultural land as well as areas of high conservation value, such as Wilsons Promontory, Corner Inlet and the Nooramunga Marine and Coastal Park. Almost three-quarters (74%) of the stream length in the South Gippsland basin was in moderate condition. Of the remainder, 10% was in good condition, 10% was in poor condition and 5% was in very poor condition. Only 0.4% (representing 1 reach) of stream length was found to be in excellent condition.

Water Quality

Water quality was monitored at more than a third of the reaches in the West Gippsland region. Results ranged evenly between poor (23%) and excellent (23%) with 20% in moderate condition and 34% in good condition. However, results varied between the three basins.

The Thomson basin had one reach in reference condition (reach 18 on the Aberfeldy River) and another six reaches in near reference condition (reaches 2, 4 and 5 on the Thomson River, reaches 20 and 22 on the Avon River, and reach 17 on Rainbow Creek).

While three reaches in the Latrobe basin had excellent water quality results (reaches 5, 17 and 23 on the Latrobe, Tyers and Tanjil Rivers respectively), four reaches on the Latrobe, Morwell and Moe Rivers (reaches 2-3, 18 and 27 respectively) returned poor results, all showing highly elevated levels of phosphorus and turbidity.

The South Gippsland basin had the poorest results for water quality with no reach in excellent condition and four reaches in poor condition - reaches 10 and 11 on the Tarwin River, reach 6 on the Powlett River and reach 27 on Nine Mile Creek. These reaches showed highly elevated results for phosphorus, turbidity and salinity, attributed to a range of factors including dairying in high rainfall zones, run-off from unsealed roads and the impact of bushfires in 2009.

Hydrology

The hydrological condition of streams across the West Gippsland region reflects the varied land use - from natural and near natural flow regimes in headwater streams in forested areas of the region to flow regimes under immense stress in areas dependent on water supply for domestic and agricultural use.

Thomson Dam provided 12,046 ML of environmental water in 2011-12 for six reaches on the Thomson River (reaches 1-5) and Rainbow Creek (reach 17) and Lake Glenmaggie provided 14,018 ML of environmental water to two reaches on the Macalister River (reaches 7 and 8). The three priority watering actions to both river systems were fully met.

Drought impacted on streams across the entire West Gippsland region. Reaches most heavily affected included reach 14 on Glenmaggie Creek in the Thomson basin (one of the most drought impacted streams in the State); reach 5 on the Latrobe River in the Latrobe basin; and in the South Gippsland basin, reaches 220 on Bennisson Creek, Reach 239 on Merrimans Creeks, reach 221 on the Franklin River and reach 223 on Tidal River.

Water delivery arrangements eased climate stress at a small number of reaches, notably at reaches 7-8 on the Macalister River in the Thomson basin and at reach 27 on Nine Mile Creek in the South Gippsland basin.

Within the Thomson basin, Barkly River (reach 13) had a natural flow regime and reach 18 on the Aberfeldy River, had a near natural regime. Both are headwater streams located in the heavily forested north of the basin. Reaches 16, 26 and 27-28 on Boggy, Blackall and Freestone Creeks respectively, all had highly compromised flow regimes.

In the Latrobe basin, flow stress scores ranged from streams under extreme stress, particularly reaches 4, 16-17 and 18 on the Latrobe, Tyers and Morwell Rivers respectively, to reaches with near natural flow regimes, notably Rintoul Creek (reaches 13-14). Tyers River (reaches 16-17) experienced significant summer and winter stress with highly altered summer high and low flows and winter low flows.

Like the Latrobe basin, flow regimes in the South Gippsland basin ranged from near natural, such as reach 23 on Tidal River, to those under extreme stress, notably the entire length of Merrimans Creek (reaches 39-41) which experienced significant summer stress.

Vegetation

The majority of streamside vegetation in the West Gippsland region was found to be in moderate condition (45% or 51 of the 114 reaches assessed). The remaining reaches ranged from poor to excellent with 32 reaches (28%) in reference or near reference condition, 14 (12%) in good condition and 17 (15%) in poor condition.

This pattern was repeated in all three basins (Latrobe, Thomson, South Gippsland) where vegetation was found to be in moderate condition for 41%, 48% and 46% of reaches respectively.

Of the 34 reaches assessed in the Thomson basin, one was in reference condition (reach 6 on the Jordan River) and a further nine were in near reference condition (reaches 5, 12, 13, 15, 18, 22, 28, 30 and 31).

In contrast, five reaches scored poorly (reaches 11, 16, 17, 20 and 25). With the exception of reach 11 on the Macalister River, all of these reaches are located in the cleared lowlands of the basin. Reach 11 is located in a small cleared corridor alongside the Macalister River, in an area otherwise surrounded by dense vegetation. The reaches in moderate condition (41% or 14 of the 34 assessed) had good results for tree and shrub cover but moderate to poor results for vegetation continuity and width.

Thirty reaches were assessed in the Latrobe basin, where streamside vegetation was found to be in the best condition for the West Gippsland region. Within the basin, reaches 11 and 27 (7% of reaches assessed) were in poor condition, 14 reaches were in moderate condition (46%), two reaches were in good condition (7%) and the remaining 12 reaches (40%) were in excellent condition.

Of those in excellent condition, five reaches (7, 14, 24, 29 and 30) were in reference condition and all are located in the densely forested north and north-western corner of the Latrobe basin.

The majority of reaches in the South Gippsland basin (23 of the 50 reaches assessed) were in moderate condition. This can largely be attributed to the vegetation being highly fragmented along many reaches. Reaches 22 and 35 were in reference condition and a further eight reaches were in near reference condition (reaches 16, 23, 24, 26, 30, 32, 41 and 42). With the exception of reaches 23 and 24 located at Wilsons Promontory, all of the reaches in near reference condition are located in the relatively narrow band of forest hemming the north and north-east boundary of the basin. In contrast, ten reaches scored poorly, with those in the poorest condition (reaches 227, 236 and 239) all located in estuarine zones.

Physical Form

Physical form of over half of the 114 reaches assessed in the West Gippsland region was in excellent condition (61% or 70 reaches). A further 36% (41 reaches) was in good condition and 3% (three reaches) was in moderate condition. Almost a third of the reaches assessed (28% or 32 reaches) were affected by major downstream barriers to fish migration, which were predominantly clustered on streams running through the south-eastern slopes of the Thomson basin, feeding the Thomson Dam and Lake Glenmaggie.

Thomson River. Courtesy WGCMA



Within the Thomson basin, 19 of the 34 reaches assessed were in excellent condition. Of these, 11 reaches were in reference condition - notably, reaches 21-22 on the Avon River, reaches 27-28 on Freestone Creek, reaches 29-30 on Valencia Creek and reach 31 on Ben Cruachan Creek, all of which are located in the heavily vegetated eastern highlands.

Fourteen reaches (41%) were in good condition. Those located on the south-east floodplains, including reaches 16, 19, 20 and 25 scored well for all parameters but had low levels of instream woody habitat. In contrast, reaches on the south-east slopes - notably reaches 10, 11 and 13-15 scored well for instream woody habitat, moderately for bank stability and poorly for major downstream barriers to fish migration (all reaches flow to Lake Glenmaggie).

The poorest reaches in the Thomson basin, assessed as in moderate physical condition, were reaches 9 and 12 on the Macalister River. Both reaches are located above Lake Glenmaggie and therefore scored poorly for fish passage.

Like the Thomson basin, physical condition in the Latrobe basin ranged from excellent to moderate. Over half of the 30 reaches assessed (57% or 17 reaches) were in excellent condition, with reaches 17 and 201 in reference condition. The majority of reaches in near reference condition had minor bank instability, particularly observed on reaches on the south-east floodplains - 2, 3, 8-11 and 23, all located in areas cleared of vegetation. The poorest reach in the Latrobe basin was reach 24 on the Tanjil River immediately above Blue Rock Lake.

Fifty reaches were assessed in the South Gippsland basin and of those, 70% (34 reaches) were in excellent physical condition and the remainder (15 reaches) were in good condition. Of the 34 reaches in excellent condition, 18 were in reference condition, including 11 estuarine reaches and seven inland reaches - 8-10, 14, 18, 20 and 23.

Aquatic Life

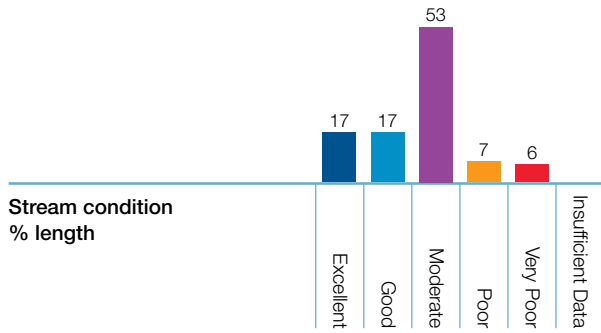
Ninety-one percent of reaches in West Gippsland were sampled for macroinvertebrates. Results for aquatic life were spread evenly between excellent and poor with 24% of the reaches tested classed as excellent, 30% as good, 23% as moderate and 23% as poor. Only one reach in the region (reach 201 in the Latrobe basin) was classed as very poor, this result being influenced by the surrounding cleared stretch of land on the Latrobe River.

Twenty-five reaches were in excellent condition with five of those in reference condition. Reaches in reference condition were all located in densely vegetated areas and included the Jordan River (reach 6) above Thomson dam and Glenmaggie Creek (reach 15) above Lake Glenmaggie in the Thomson basin; upper reaches of the Latrobe (reach 6) and Tyers Rivers (reach 17) in the Latrobe basin; and Merrimans Creek (reach 41) in the South Gippsland basin.

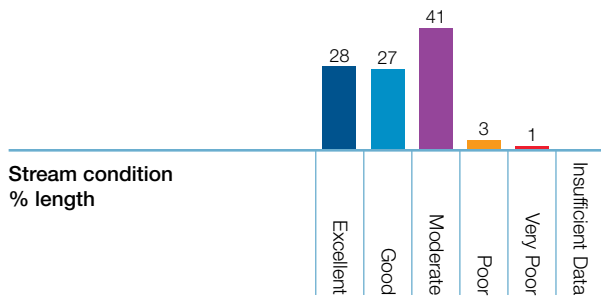
Macalister River downstream of Glenmaggie Weir, upstream of Lanigans Bridge following high flows showing high turbidity. Courtesy Alison Pouliot



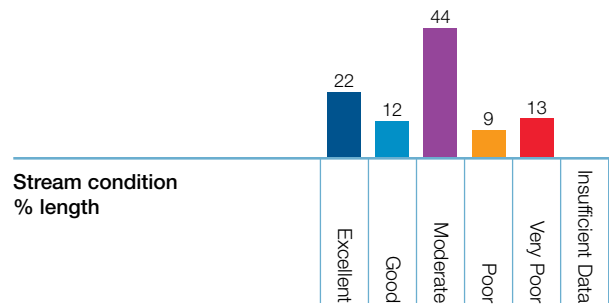
/ West Gippsland Region



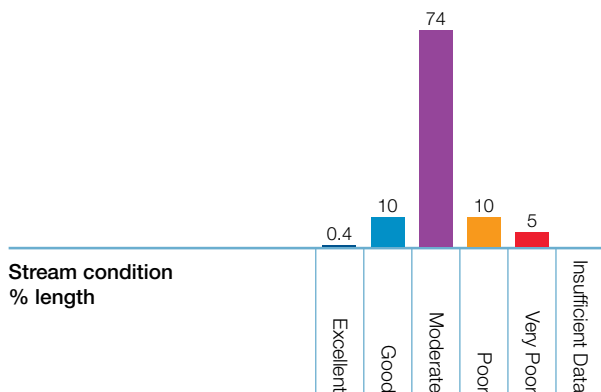
/ Thomson



/ Latrobe



/ South Gippsland



Environmental Condition

- Excellent
- Good
- Moderate
- Poor
- Very Poor
- Insufficient Data

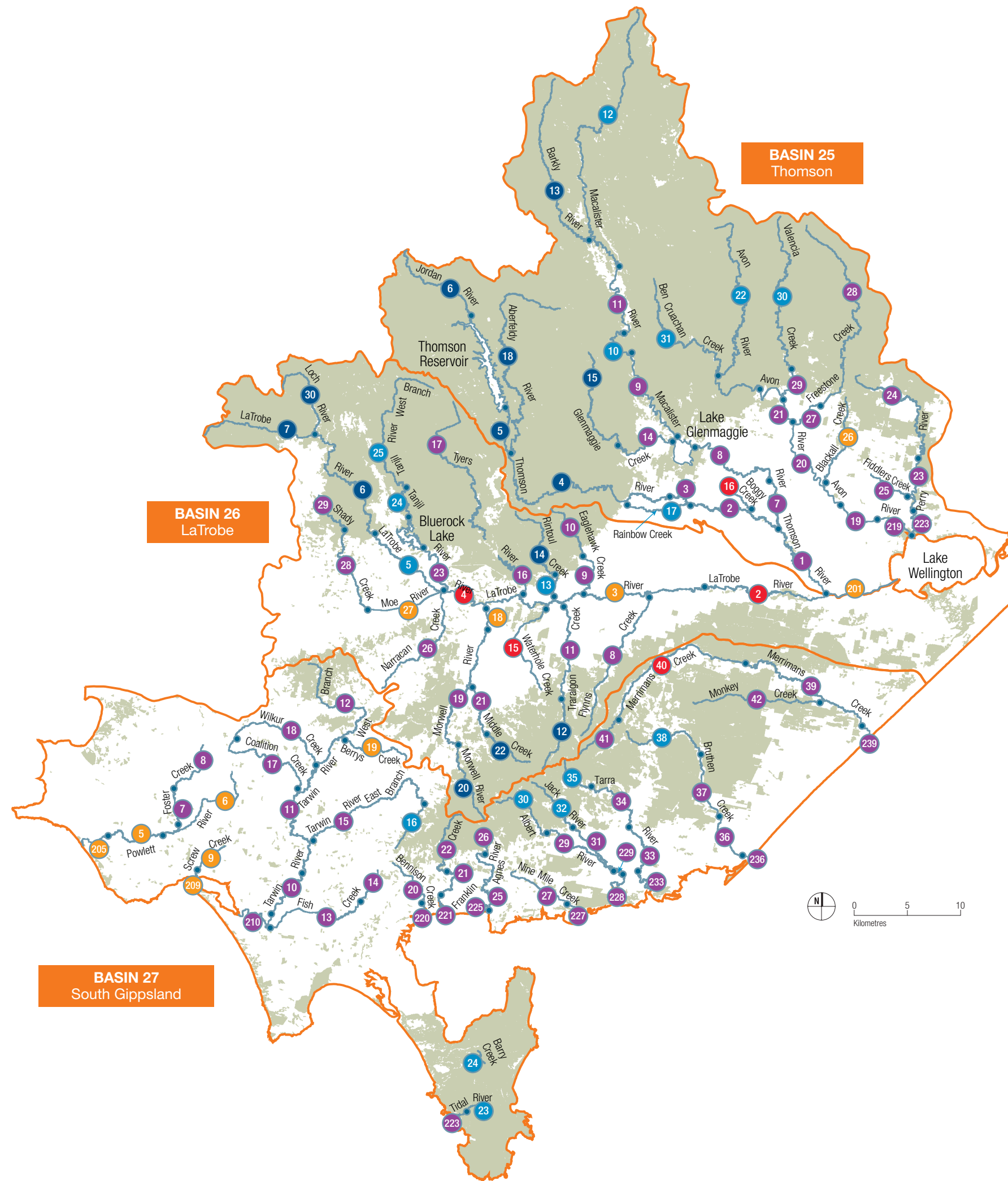


West Gippsland

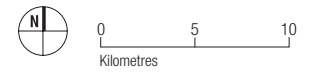
/ Thomson – basin 25

/ Latrobe – basin 26

/ South Gippsland – basin 27 (part)



- Environmental Condition**
- Excellent
 - Good
 - Moderate
 - Poor
 - Very Poor
 - Insufficient Data
 - Reach Division
 - Forest (uncleared)
 - 10 Reach number



Index of Stream Condition

/ Thomson Basin

Basin	Reach	Reach Length (Km)	River	Hydrology	Physical Form	Streamside Zone	Water Quality	Aquatic Life	ISC Score	Condition
25	1	25	Thomson River ²	10	9	7	6	4	31	Moderate
25	2	37.5	Thomson River ²	10	8	6	9	4	32	Moderate
25	3	10.5	Thomson River ²	10	9	5	8	6	34	Moderate
25	4	69.8	Thomson River ²	10	9	8	9		44	Excellent
25	5	15	Thomson River ²	10	10	9	9	7	43	Excellent
25	6	30.5	Jordan River ²	10	7	10		10	43	Excellent
25	7	21.6	Macalister River ²	10	8	6	5	4	28	Moderate
25	8	33.9	Macalister River ²	10	9	5	8	4	31	Moderate
25	9	28.8	Macalister River	8	6	5	8	6	30	Moderate
25	10	14.3	Macalister River	8	7	7			35	Good
25	11	20	Macalister River	8	7	4	6	7	29	Moderate
25	12	77.5	Macalister River ⁴	8	6	9		8	37	Good
25	13	52.6	Barkly River	10	8	9		9	44	Excellent
25	14	19.2	Glenmaggie Creek	7	7	6			33	Moderate
25	15	37	Glenmaggie Creek	7	8	9		10	41	Excellent
25	16	8.3	Boggy Creek		8	3		3	12	VPoor
25	17	15.9	Rainbow Creek ²	10	8	4	9	9	36	Good
25	18	79.7	Aberfeldy River	9	10	9	10	9	46	Excellent
25	19	10.7	Avon River	5	8	5	6	4	25	Moderate
25	20	24	Avon River	5	8	4	9	6	28	Moderate
25	21	14.3	Avon River	6	10	5		6	30	Moderate
25	22	72.7	Avon River	6	10	9	9	8	39	Good
25	23	15.3	Perry River	4	7	7			28	Moderate
25	24	46.8	Perry River	4	9	8		5	29	Moderate
25	25	13.4	Fiddlers Creek	6	8	4		5	26	Moderate
25	26	25.5	Blackall Creek	1	9	5		5	20	Poor
25	27	10	Freestone Creek	3	10	5		6	25	Moderate
25	28	59.3	Freestone Creek	3	10	9		8	33	Moderate
25	29	8.4	Valencia Creek	4	10	5		7	28	Moderate

² Hydrology score based on 2011 environmental watering objectives ⁴ No instream woody habitat score available

Basin	Reach	Reach Length (Km)	River	Hydrology	Physical Form	Streamside Zone	Water Quality	Aquatic Life	ISC Score	Condition
25	30	50.6	Valencia Creek	4	10	9		9	36	Good
25	31	45.4	Ben Cruachan Creek	6	10	9		8	38	Good
25	201	3.9	Thomson River ^{1,4}	1	9	6	6	4	20	Poor
25	219	8.7	Avon River ⁴	5	10	6		4	27	Moderate
25	223	7.1	Perry River ⁴	4	10	6			30	Moderate

/ Latrobe Basin

Basin	Reach	Reach Length (Km)	River	Hydrology	Physical Form	Streamside Zone	Water Quality	Aquatic Life	ISC Score	Condition
26	2	44.1	Latrobe River	2	9	6	4	3	18	VPoor
26	3	41.9	Latrobe River	2	9	6	4	4	20	Poor
26	4	42.3	Latrobe River	1	7	5	8	4	19	VPoor
26	5	30.3	Latrobe River	8	7	5	9	9	35	Good
26	6	44.2	Latrobe River	8	8	9		10	42	Excellent
26	7	27.9	Latrobe River	8	9	10	8	9	42	Excellent
26	8	49.3	Flynns Creek	4	9	5		6	26	Moderate
26	9	15	Eaglehawk Creek	6	9	5		5	28	Moderate
26	10	19.4	Eaglehawk Creek	6	9	9		3	29	Moderate
26	11	35.1	Traralgon Creek	8	9	4	6	7	30	Moderate
26	12	21.8	Traralgon Creek	8	9	8		9	42	Excellent
26	13	9.2	Rintoul Creek	9	7	7		7	36	Good
26	14	29.3	Rintoul Creek	9	9	10		8	44	Excellent
26	15	24.3	Waterhole Creek	2	8	6		3	19	VPoor
26	16	25.2	Tyers River		8	9		8	24	Moderate
26	17	57.5	Tyers River		10	9	9	10	31	Moderate
26	18	6.5	Morwell River	1	9	5	4	9	21	Poor
26	19	49.1	Morwell River	8	7	5		9	33	Moderate
26	20	21.4	Morwell River	8	8	9		9	42	Excellent
26	21	19	Middle Creek	7	7	6		9	34	Moderate

¹ Used hydrology result from 2004 ISC ⁴ No instream woody habitat score available

/ Latrobe Basin

Basin	Reach	Reach Length (Km)	River	Hydrology	Physical Form	Streamside Zone	Water Quality	Aquatic Life	ISC Score	Condition
26	22	16.5	Middle Creek	7	9	9		9	42	Excellent
26	23	18.6	Tanjil River	2	9	6	9	6	26	Moderate
26	24	12.6	Tanjil River	7	5	10	8	9	35	Good
26	25	45.4	Tanjil River West Branch	7	7	9		9	38	Good
26	26	36.6	Narracan Creek	2	8	6	8	8	27	Moderate
26	27	14.8	Moe River	4	8	4	4	4	21	Poor
26	28	32.1	Shady Creek	4	9	6		7	29	Moderate
26	29	15.9	Shady Creek	4	9	10		5	30	Moderate
26	30	26.3	Loch River	8	9	10		9	44	Excellent
26	201	14.9	Latrobe River ^{1,4}	3	10	6		2	20	Poor

/ South Gippsland Basin

Basin	Reach	Reach Length (Km)	River	Hydrology	Physical Form	Streamside Zone	Water Quality	Aquatic Life	ISC Score	Condition
27	5	20.5	Powlett River ⁴	5	9	4		3	22	Poor
27	6	28.9	Powlett River ⁴	5	8	4	4	3	20	Poor
27	7	14.5	Foster Creek ⁴	6	9	6		4	28	Moderate
27	8	19.2	Foster Creek ⁴	6	10	5		3	25	Moderate
27	9	10	Screw Creek ⁴	2	10	5		4	20	Poor
27	10	18.1	Tarwin River ³	4	10	4	4	8	25	Moderate
27	11	56	Tarwin River West Branch	6	9	6	4	8	29	Moderate
27	12	59.3	Tarwin River West Branch	6	9	7		5	31	Moderate
27	13	31.8	Fish Creek	5	8	6			29	Moderate
27	14	9.9	Fish Creek	5	10	6		3	25	Moderate
27	15	49.8	Tarwin River East Branch	6	9	5		8	32	Moderate
27	16	12.2	Tarwin River East Branch	6	7	9		9	36	Good
27	17	35.9	Coalition Creek	3	9	6		6	26	Moderate
27	18	30.8	Wilkur Creek	6	10	6		5	30	Moderate
27	19	25.5	Berrys Creek	1	9	6		5	20	Poor

¹ Used hydrology result from 2004 ISC ³ Only 1 year water quality data available ⁴ No instream woody habitat score available

Basin	Reach	Reach Length (Km)	River	Hydrology	Physical Form	Streamside Zone	Water Quality	Aquatic Life	ISC Score	Condition
27	20	18.3	Bennison Creek ³	3	10	7	5	6	26	Moderate
27	21	19.2	Franklin River	5	9	6	5	8	29	Moderate
27	22	23.9	Franklin River	5	8	10		7	34	Moderate
27	23	4.9	Tidal River	9	10	9		4	36	Good
27	24	4.3	Barry Creek ¹	10	9	9			45	Excellent
27	25	30.4	Agnes River	4	8	6	7	6	28	Moderate
27	26	2.1	Agnes River ³	4	8	9	8	7	32	Moderate
27	27	18.1	Nine Mile Creek ³	6	9	5	3	6	25	Moderate
27	29	25.6	Albert River	5	7	5		9	30	Moderate
27	30	21.3	Albert River	5	9	9		8	36	Good
27	31	29.8	Jack River ³	5	7	4	8	9	29	Moderate
27	32	22	Jack River	5	9	9		8	36	Good
27	33	25.8	Tarra River	3	8	4		8	24	Moderate
27	34	23.1	Tarra River	5	7	5	8	6	28	Moderate
27	35	10.4	Tarra River	5	8	10	8	9	36	Good
27	36	11.5	Bruthen Creek	5	7	6		5	27	Moderate
27	37	15.3	Bruthen Creek	5	7	6		8	31	Moderate
27	38	26.8	Bruthen Creek	5	9	8		8	35	Good
27	39	57	Merrimans Creek		9	7	7	8	25	Moderate
27	40	47.8	Merrimans Creek		9	6			19	VPoor
27	41	12.1	Merrimans Creek		7	9		10	26	Moderate
27	42	30.8	Monkey Creek	5	8	9			33	Moderate
27	205	8.9	Powlett River ⁴	5	9	4	3	4	21	Poor
27	209	2	Screw Creek ⁴	2	10	8		4	23	Poor
27	210	14.6	Tarwin River ⁴	4	10	5	3	8	24	Moderate
27	220	0.7	Bennison Creek ⁴	3	10	4		6	24	Moderate
27	221	4.1	Franklin River ^{3,4}	5	9	6	5	8	29	Moderate
27	223	2.4	Tidal River ⁴	9	10	7		4	33	Moderate

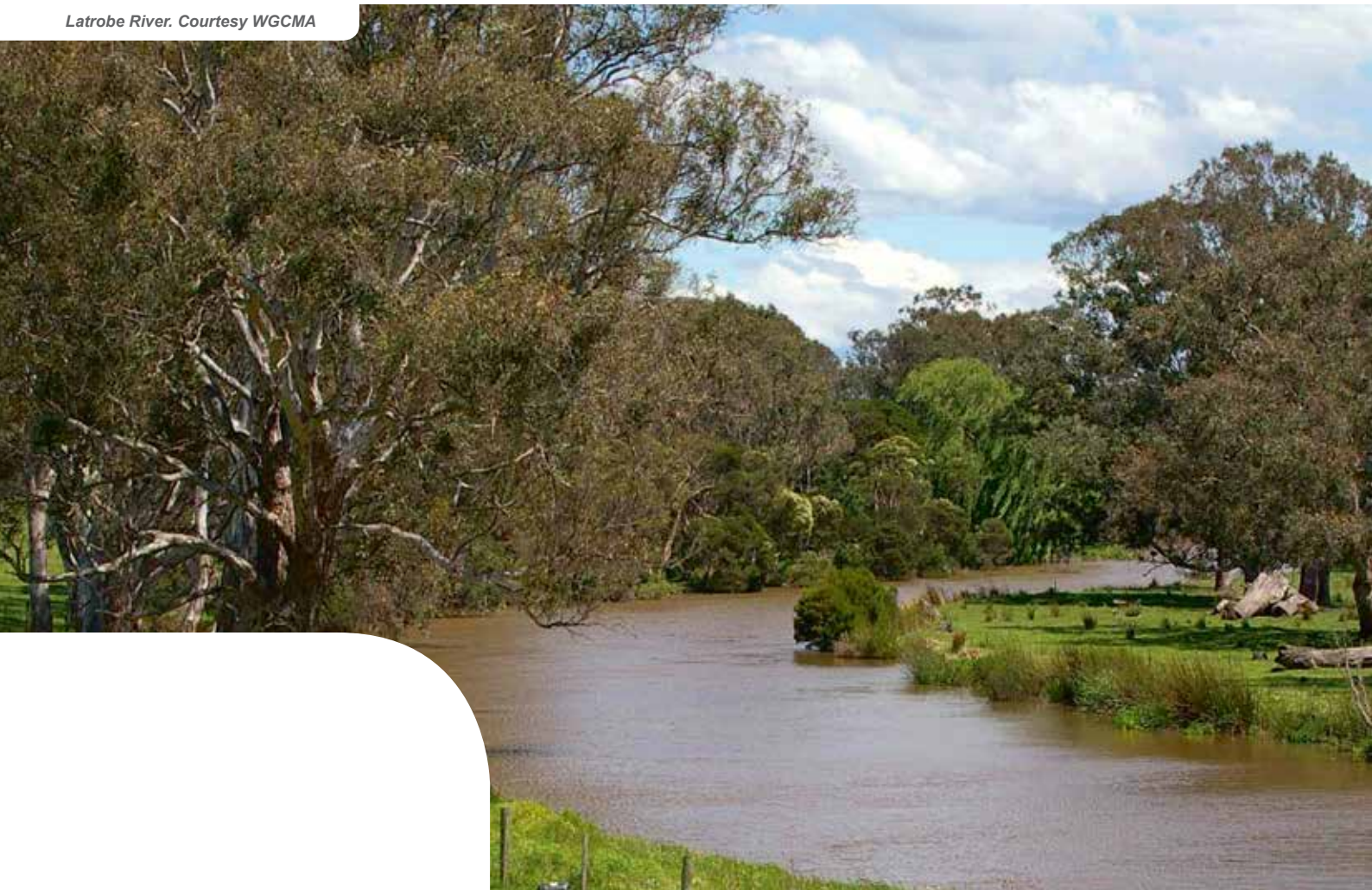
¹ Used hydrology result from 2004 ISC ³ Only 1 year water quality data available ⁴ No instream woody habitat score available

/ South Gippsland Basin

Basin	Reach	Reach Length (Km)	River	Hydrology	Physical Form	Streamside Zone	Water Quality	Aquatic Life	ISC Score	Condition
27	225	1.3	Agnes River ^{3,4}	4	10	8	7	7	32	Moderate
27	227	1.1	Nine Mile Creek ⁴	6	10	3		6	26	Moderate
27	228	8.3	Albert River ⁴	5	10	5		8	31	Moderate
27	229	0.9	Albert River ⁴	5	10	6		9	34	Moderate
27	233	11.8	Tarra River ⁴	3	10	5		8	27	Moderate
27	236	0.3	Bruthen Creek ^{1,4}	5	10	3		5	24	Moderate
27	239	2.5	Merrimans Creek ^{3,4}	5	10	3	7	8	27	Moderate

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Latrobe River. Courtesy WGCMA



Latrobe River. Courtesy WGCMA

