

# 18 Tambo basin

**Table 18-1 Key features of the Tambo basin, 2005/06**

- Inflows were 29% of long term average.
- 96% of total inflows passed through the basin to the Gippsland Lakes.

## 18.1 Rainfall and inflows in 2005/06

In 2005/06, rainfall in the Tambo basin ranged between 80% and 100% of the long term average, however inflows were 29% of the long term average (570,000 ML). Nevertheless, this represented an improvement from the two previous years when inflows were less than 20% of the long term average.

## 18.2 Responsibilities for management of water resources

Table 18-2 shows the responsibilities of various authorities within the Tambo basin.

**Table 18-2 Responsibilities for water resources management within the Tambo basin, 2005/06**

Authority	Irrigation and rural water supply	Licensing	Urban water supply	Storage management, waterway management, environmental obligations
Southern Rural Water		Groundwater and surface water licensed diversions		
East Gippsland Water			Including Lakes Entrance, Bruthen, and Swifts Creek	Obligation to meet passing flow requirements
East Gippsland Catchment Management Authority				Waterway management in the whole of the Tambo basin

## 18.3 Total water resources in the basin

The total volumes of water available and supplied from water resources in the Tambo basin are shown in Table 18-3.

The total diversions do not include the surface water transferred from the Mitchell River to the towns of Bruthen, Nicholson, Johnsonville, Swan Reach, Metung and Lakes Entrance, which are located in this basin. Consumptive allocations are low compared to the available resource in the basin.

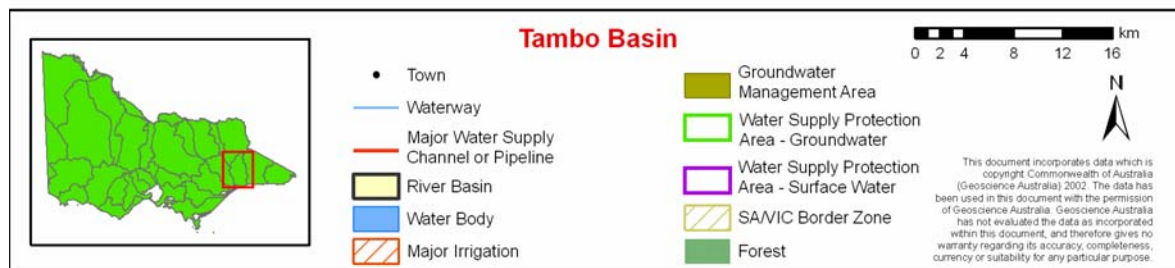
An overview of the methodology used to derive the information presented in this chapter is set out in Chapter 5.

**Table 18-3 Summary of total water resources and water use in the Tambo basin, 2005/06**

Water source	Total water resource (ML)	Total use (ML)
Surface water	167,500	5,400
Groundwater	0	0
Recycled water	780	780

### 18.4 Location of water resources

Figure 18-1 Map of the Tambo basin



## 18.5 Surface water resources

### 18.5.1 Water balance

A surface water balance for the Tambo basin is shown in Table 18-4. Inflows to the Tambo basin were 29% of the long term average, which is 570,000 ML a year. The largest diversion of water from the basin was via small catchment dams.

No reservoir information is recorded in the water balance as there is no reservoir in the Tambo basin with a capacity greater than 1,000 ML.

**Table 18-4 Balance of surface water in the Tambo basin**

Water account component	2005/06 (ML)	2004/05 (ML)
<b>Major on-stream storage</b>		
Volume in storage at start of year	0	0
Volume in storage at end of year	0	0
<b>Change in storage</b>	<b>0</b>	<b>0</b>
<b>Inflows</b>		
Catchment inflow <sup>(1)</sup>	167,500	97,400
Transfers from other basins	0	0
Return flow from irrigation	0	0
Treated wastewater discharged back to river	0	0
<b>Sub-total</b>	<b>167,500</b>	<b>97,400</b>
<b>Usage</b>		
Urban diversions	60	60
Licensed private diversions from unregulated streams	1,400	2,500
Small catchment dams	3,900	3,900
<b>Sub-total</b>	<b>5,400</b>	<b>6,500</b>
<b>Losses</b>		
Net evaporation losses from major storages	0	0
Evaporation from small catchment dams	2,100	2,000
In-stream infiltration to groundwater, flows to floodplain and evaporation <sup>(2)</sup>	0	0
<b>Sub-total</b>	<b>2,100</b>	<b>2,000</b>
<b>Water passed at outlet of basin</b>		
River outflows to the ocean	160,000	88,900

Notes:

(1) Inflows have been back-calculated from outflows plus diversions.

(2) Assumed to be zero because data is not readily available.

### 18.5.2 Small catchment dams

Specific information on small catchment dam usage and losses for 2005/06 is not readily available, and the values provided in Table 18-5 below are based on the estimated average annual impact.

**Table 18-5 Small catchment dam information, 2005/06**

Type of small catchment dam	Capacity (ML)	Usage (ML)	Total water harvested (ML)
Domestic and stock (not licensed)	4,500	2,200	Not available
Registered commercial and irrigation	2,100	1,700	Not available
<b>Total</b>	<b>6,600</b>	<b>3,900</b>	<b>6,000</b>

### 18.5.3 Water entitlement transfers

There were no temporary or permanent transfers of water entitlements or diversion licences within the basin in 2005/06.

### 18.5.4 Volume diverted

The volume of water diverted under East Gippsland Water's bulk water entitlement is shown in Table 18-6. Compliance with individual bulk entitlement volumes is deemed to occur if water use is not more than the maximum volume allowed to be diverted in 2005/06.

Licensed diversions from unregulated streams are estimated based on irrigation demand modelling and climate information.

No water was extracted under the Bruthen and Lakes Entrance bulk entitlements. These towns were supplied with water diverted from the Mitchell basin under East Gippsland Water's Bairnsdale bulk entitlement.

**Table 18-6 Volume of water diverted under surface water entitlements in the Tambo basin**

Bulk entitlement	Bulk entitlement period (years)	Average bulk entitlement over period (ML/year)	Net temporary transfer 2005/06 (ML)	Volume diverted 2005/06 (ML)	Entitlement volume compliance?
<i>East Gippsland Water</i>					
Bruthen	1	313	0	0	Yes
Lakes Entrance	1	2,993	0	0	Yes
Nowa Nowa	1	118	0	23	Yes
Swifts Creek	1	224	0	36	Yes
<b>Total annual volume of bulk entitlements 2005/06</b>		<b>3,648</b>	<b>0</b>	<b>59</b>	<b>Yes</b>
<b>Total annual volume of bulk entitlements 2004/05</b>		<b>3,648</b>	<b>0</b>	<b>59</b>	
<i>Licensed diversions from unregulated streams 2005/06</i>		<i>3,789</i>		<i>1,400</i>	
<i>Licensed diversions from unregulated streams 2004/05</i>		<i>4,082</i>		<i>2,500</i>	

### 18.6 Groundwater resources

There are no groundwater management areas or water supply protection areas located within the Tambo basin.

Groundwater allocation and use for unincorporated areas have not been included in the 2005/06 water accounts.

There was no urban groundwater supply in the Tambo basin.

### 18.7 Seasonal allocations and restrictions on water use, diversions and extractions

There were no domestic or rural restrictions in the Tambo basin in 2005/06.

No bans or restrictions were imposed on groundwater use in the Tambo basin during 2005/06.

**Table 18-7 Seasonal allocations and restrictions on water use in Tambo basin, 2005/06**

Type of restriction	Area	Nature of restriction
Urban	All towns	No restrictions Permanent water savings measures were introduced in October 2005
Licensed diversions from unregulated streams	All streams	No restrictions

## 18.8 Recycled water

The wastewater treatment plants at Lakes Entrance and Metung are operated by East Gippsland Water. All of the wastewater that passed through these treatment plants was recycled and used for a number of applications including pasture and tree plantations, racecourses and golf courses (Table 18-8).

**Table 18-8 Volume of recycled water**

Treatment plant	Volume produced (ML)	Volume recycled (ML)	% Recycled	End use type for recycled water (ML)				Volume discharged to the environment (ML)	Release to ocean/ Other (ML) <sup>(3)</sup>
				Urban & industrial	Agriculture	Beneficial allocation <sup>(1)</sup>	Within process <sup>(2)</sup>		
Lakes Entrance	629	629	100%	0	629	0	0	0	0
Metung	149	149	100%	0	149	0	0	0	0
<b>Total 2005/06</b>	<b>778</b>	<b>778</b>	<b>100%</b>	<b>0</b>	<b>778</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total 2004/05</b>	<b>772</b>	<b>772</b>	<b>100%</b>	<b>66</b>	<b>706</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Notes:

- (1) Volume used to deliver specific environmental flow benefits.
- (2) Water that is reused in wastewater treatment processes, e.g. backflushing of filters.
- (3) Other refers to a change in on-site wastewater storage, or other item affecting the annual water balance for recycled water that is not otherwise accounted for.

## 18.9 Water for the environment

### 18.9.1 Environmental Water Reserve (EWR)

In 2005/06 the Tambo basin EWR comprised the following components:

- passing flows released as a condition of consumptive bulk entitlements held by East Gippsland Water
- all other water in the basin not allocated for consumptive use, i.e. water above cap.

### 18.9.2 Compliance with passing flow requirements

Table 18-9 shows the passing flow requirements in the Tambo basin for a selected bulk entitlement compliance point. While there are other compliance points, the point below has been chosen as it was judged to be of community interest.

**Table 18-9 Selected passing flow requirements in the Tambo basin**

River	Passing flow	
Nicholson River	Instrument where passing flows are specified	Bulk Entitlement (Lakes Entrance) Conversion Order 1997
	Responsible authority	East Gippsland Water
	Compliance point	Nicholson River Reservoir Weir
	Passing flow rules	<ul style="list-style-type: none"> <li>• From June to November inclusive:                             <ul style="list-style-type: none"> <li>• When flow is less than 60 ML/day, the authority must pass half the flow</li> <li>• When flow is greater than 60 ML/day the authority must pass 30 ML/day</li> </ul> </li> <li>• From December to May inclusive:                             <ul style="list-style-type: none"> <li>• When flow is less than 14 ML/day, the authority must pass half the flow</li> <li>• When flow is greater than 14 ML/day the authority must pass 7 ML/day</li> </ul> </li> <li>• Instantaneous minimum passing flow:                             <ul style="list-style-type: none"> <li>• When flow is less than 6 ML/day, the authority must pass half the flow</li> <li>• When flow is greater than 6 ML/day the authority must pass 3 ML/day</li> </ul> </li> </ul>

### 18.9.3 Water leaving the basin

The amount of water flowing from the Tambo basin into the Gippsland Lakes was 160,000 ML in 2005/06. This represents 96% of the total inflows into the basin, compared to 91% in 2004/05. This water comprises consumptive water that was not used under entitlements and the EWR (passing flows, and any water above cap).

The Mitchell, Tambo, Latrobe and Thomson basins are capped at the current level of diversions. An additional 2,000 ML across the four basins has also been provided for the interim period, pending the findings of an investigation of the freshwater needs of the Gippsland Lakes.

There are important environmental assets dependent on water from the EWR in the Tambo basin. The Gippsland Lakes are listed as internationally significant wetlands under the Ramsar convention and rely on the freshwater inputs from the Tambo basin for their ecological functioning.

### 18.10 Tambo basin summary

Water availability improved in the Tambo basin in 2005/06 due to average rainfall. However, because consumptive allocations are very low compared to average inflows, there was little impact on consumptive use.