

32 Portland Coast basin

Table 32-1 Key features of the Portland Coast basin, 2005/06

- Inflows were 19% of the long term average.
- Outflows were 48,600 ML, down from 585,700 ML in 2004/05.

32.1 Portland Coast basin seasonal overview for 2005/06

In 2005/06, rainfall in the Portland Coast basin ranged between 80% and 100% of the long term average, broadly in line with 2004/05, but less than 2003/04 (100-125%). Despite this, inflows in the catchment were significantly less than the two previous years, especially 2004/05. Overall, inflows were 19% of the long term average (361,000 ML) in 2005/06, down from 168% in 2004/05 and 58% in 2003/04.

32.2 Responsibilities for management of water resources

Table 32-2 shows the responsibilities of various authorities within the Portland Coast basin.

Table 32-2 Responsibilities for water resources management within the Portland Coast 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 diversion		
Wannon Water			Water supply to Koroit ⁽¹⁾ , Port Fairy ⁽²⁾ , Heywood ⁽²⁾ and Portland ⁽²⁾	
Glenelg Hopkins Catchment Management Authority				Waterway management

Note:

- (1) Supplied from the Otway Coast basin.
- (2) Supplied from groundwater.

32.3 Total water resources in the basin

The total volumes of water available and supplied from water resources in the Portland Coast basin are shown in Table 32-3.

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

32.4 Location of water resources

Figure 32-1 Map of the Portland Coast basin

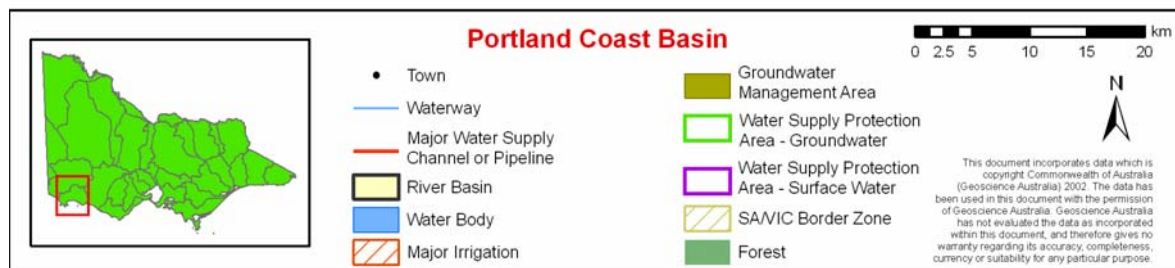


Table 32-3 Summary of total water resources and water use in the Portland Coast basin, 2005/06

Water source	Total water resource (ML)	Total use (ML)
Surface water	69,600	16,600
Groundwater ⁽¹⁾	Not available	Not available
Recycled water	2,130	260

Note:

- (1) The total groundwater resource and use is provided only where all GMAs and WSPAs have more than 90% of their surface areas within the river basin boundary.

32.5 Surface water resources

32.5.1 Water balance

A water balance for the Portland Coast basin is shown in Table 32-4. There are no major storages (greater than 1,000 ML in size) in the basin.

Approximately 24% of the total inflows were diverted for consumptive use, with the largest diversions estimated to be due to consumption and losses from small catchment dams. All towns serviced by Wannon Water in this basin are supplied by groundwater or from other river basins and hence urban surface water diversions are zero.

Table 32-4 Balance of surface water in the Portland Coast basin

Water account component	2005/06 (ML)	2004/05 (ML)
Major on-stream storage		
Volume in storage at start of year	0	0
Volume in storage at end of year	0	0
Change in storage	0	0
Inflows		
Catchment inflow ⁽¹⁾	69,600	607,200
Transfers from other basins	0	0
Return flow from irrigation	0	0
Treated wastewater discharged back to river	0	40
Sub-total	69,600	607,200
Usage		
Urban diversions	0	0
Licensed private diversions from unregulated streams	400	800
Small catchment dams	16,200	16,200
Sub-total	16,600	17,000
Losses		
Net evaporation losses from major storages	0	0
Evaporation from small catchment dams	4,400	4,500
In-stream infiltration to groundwater, flows to floodplain and evaporation ⁽²⁾	0	0
Sub-total	4,400	4,500
Water passed at outlet of basin		
River outflows to the ocean	48,600	585,700

Notes:

- (1) Inflows have been back-calculated from outflows plus diversions.
(2) Assumed to be zero because data is not readily available.

32.5.2 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 32-5 below are based on the estimated average annual impact. Small catchment dams represent an estimated 98% of surface water usage in the basin.

Table 32-5 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	2,300	Not available
Registered commercial and irrigation	16,500	13,900	Not available
Total	21,000	16,200	20,600

32.5.3 Water entitlement transfers

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

32.5.4 Volume diverted

The only licences utilised in the Portland Coast basin are licences on unregulated streams. In 2005/06, licensed volume totalled 1,224 ML and use was estimated to be 400 ML.

32.6 Groundwater resources

A summary of the licensed entitlements and use for groundwater management units that overlap the Portland Coast basin, excluding domestic and stock use, is presented in Table 32-6.

The Portland Coast basin contains all of the Heywood GMA as well as part of the Condah WSPA, Yangery WSPA and Portland GMA. The volumes described in tables below and are totals for the management areas and include the area that falls outside the Portland Coast basin. Groundwater entitlements and use for unincorporated areas have not been included in the 2005/06 water accounts.

The Portland GMA comprises the deep, geothermal waters of the Dilwyn Formation aquifer. This aquifer is recharged in its northern parts where it is closer to the ground surface. The increasing area of plantation forests in the recharge zones of the Dilwyn aquifer of the Portland GMA has the potential to deplete recharge to the aquifer. The impact of these plantations is being considered in the management of the groundwater resource.

Table 32-6 Compliance with licensed groundwater volumes, Portland Coast basin 2005/06

Water supply protection area/ Groundwater management area ⁽¹⁾	GMA/ WSPA depth limits ⁽²⁾ (m)	Allocation limit ⁽³⁾ (ML/year)	Licensed entitlement allocated ⁽⁴⁾ (ML/year)	Metered use (ML)	Estimated use in unmetered bores ⁽⁵⁾ (ML)	Total licensed groundwater use (ML) 2005/06	Total licensed groundwater use (ML) 2004/05
Heywood GMA (100%)	≤70	21,763	6,474	0	1,942	1,942	2,255
Portland GMA (72%)	>200	20,683	2,340	0	702	702	576
Condah WSPA (53%)	70-200	7,568	7,568	2,710	0	2,710	3,270
Yangery WSPA (40%)	≤100	14,488	14,488	3,270	0	3,270	4,520

Notes:

- (1) The percentage of the GMA/WSPA by surface area within the river basin is given in the parentheses. Those GMAs/WSPAs with <5% surface area within the basin have not been included.
- (2) This column indicates the aquifer depth limits for which the GMA/WSPA applies.
- (3) The allocation limit represents the sum of licensed entitlements for WSPAs and the permissible consumptive volume (PCV) for GMAs.
- (4) Allocated volume includes domestic and stock usage in those cases where it is part of a licensed allocation.
- (5) In non-metered areas, Southern Rural Water has estimated use at 30% of licensed entitlement.

An estimate of domestic and stock groundwater use is provided in Table 32-7.

Table 32-7 Number of domestic and stock bores and estimated use, 2005/06

Water supply protection area/ Groundwater management area	No. of domestic and stock bores ⁽¹⁾⁽²⁾	Estimated domestic and stock use (assuming 2ML/bore) (ML)
Heywood GMA	1,735	3,470
Portland GMA	63	126
Condah WSPA	58	116
Yangery WSPA	1,432	2,864

Note:

- (1) There are a number of licensed groundwater allocations that also incorporate domestic and stock use. The estimated use for these bores is included in the licensed allocation in the Table 32-6.
- (2) The numbers of domestic and stock bores are those registered in the state database as being drilled since 1965.

Groundwater is used as an urban water supply for the townships of Portland, Port Fairy and Heywood. The licensed entitlements and metered use for these groundwater supplies is provided in Table 32-8.

Table 32-8 Urban groundwater usage

Town supplied	Licensed allocation (ML)	Metered use 2005/06	Metered use 2004/05
Heywood	333	247	212
Port Fairy	1,026	727	790
Portland	6,222	2,258	1,989

32.7 Seasonal allocations and restrictions on water use, diversions and extractions

Restrictions applying to urban customers and licensed diversions are shown in Table 32-9.

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

Table 32-9 Seasonal allocations and restrictions on water use in Portland Coast basin, 2005/06

Type of restriction	Area	Nature of restriction
Urban	No restrictions	No restrictions Permanent water savings measures introduced March 2006
Licensed diversions from unregulated streams	Darlots Creek	Stage 2 (25% reduction) in July 2005, from May to June 2006
	Condah Drain	Stage 2 in July 2005, from January to June 2006
	Eumarella River	Stage 1 (roster) July 2005, irrigation ban from January to April 2006
	Surry River	Irrigation ban in July 2005, from January to April 2006
	Moyne River	Irrigation ban in July 2005, from January to June 2006
	Fitzroy River	Irrigation ban January to June 2006

32.8 Recycled water

Within the Portland Coast basin the wastewater treatment systems are operated by Wannon Water. In 2005/06, 12% of the total wastewater produced in the basin was reused, including 100% from the Heywood treatment plant for wood lot irrigation. All wastewater from the Portland and Port Fairy treatment plants is discharged to the ocean (Table 32-10).

Table 32-10 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) ⁽³⁾
				Urban & industrial	Agriculture	Beneficial allocation ⁽¹⁾	Within process ⁽²⁾		
Heywood	256	256	100%	0	256	0	0	0	0
Port Fairy ⁽⁴⁾	822	0	0%	0	0	0	0	0	822
Portland ⁽⁴⁾	1,054	0	0%	0	0	0	0	0	1,054
Total 2005/06	2,132	256	12%	0	256	0	0	0	1,876
Total 2004/05	2,364	257	11%	0	257	0	0	42	2,065

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.
- (4) In the State Water Report 2004/05, volumes of wastewater for Port Fairy and Portland were inadvertently transposed. Portland treatment plant should have been 1,258 ML and Port Fairy 807 ML.

32.9 Water for the environment

32.9.1 Environmental Water Reserve (EWR)

In 2005/06 the Portland Coast basin EWR comprised of water in the basin not otherwise allocated for consumptive use i.e water above cap.

32.9.2 Compliance with passing flow requirements

There are currently no bulk entitlements in operation in the Portland Coast basin.

32.9.3 Water leaving the basin

The amount of water flowing from the Portland Coast basin into Bass Strait was 48,600 ML in 2005/06. This represents 70% of the total inflows into the basin, compared to 96% in 2004/05. This water comprises consumptive water that was not used under entitlements and the EWR (water above cap).

32.10 Portland Coast basin

The Portland Coast basin experienced the largest decline in streamflow of any Victorian basin in 2005/06 compared with 2004/05. The basin's 2005/06 streamflows were 19% of the long term average, compared with 168% of the long term average recorded in 2004/05.

The low streamflows led to irrigation bans on a number of unregulated streams for most of the second half of the year. Urban customers, who receive most of their water from groundwater, did not experience any restrictions on use until permanent water savings measures were announced in March 2006.

