Mid-season groundwater update: Loddon Highlands WSPA

December 2015

Loddon Highlands WSPA

The Loddon Highlands Water Supply Protection Area (WSPA) extends from Newlyn, Learmonth and Waubra in the south to Dunolly in the north.

Groundwater resources are managed under the Loddon Highlands WSPA Groundwater Management Plan (the Plan), which was approved by the Minister for Water in November 2012.

2015/16 allocations

Allocations of 100% were announced in September 2015 for all management zones except the Newlyn Zone which received an allocation of 75% of licence entitlement.

GMW has continued to monitoring groundwater levels during spring, but unfortunately due to continued dry conditions and low rainfall there has not been sufficient groundwater level recovery to increase the Newlyn Zone allocation.

Trading

Groundwater licence holders can trade their entitlement temporarily or permanently. There are limits on where entitlement can be traded to protect existing users and the environment. Refer to the Plan on the GMW website www.gmwater.com.au for more information on Loddon Highlands WSPA trading rules.

It is important to remember that when trading within a zone where restrictions are imposed, the allocation applies to the entitlement traded. For example, if 100 ML is traded within the Newlyn Zone then the buyer will only be able to take 75 ML as the allocation is only 75% this season.

Licence holders are reminded not to extract more than their licence volume without first obtaining approval from Goulburn-Murray Water and should apply to trade well in advance of requiring the water.

Carryover

Licence holders in the Loddon Highlands WSPA can carryover 15% of their unused allocation. There was a total of 2,736 ML carried over in to the 2015/16 season. If you are unsure of your carryover volume please call GMW on 1800 013 357.

Groundwater levels

Graphs showing the change in groundwater level over time for key bores are available on the GMW website www.gmwater.com.au.

The graphs illustrate that groundwater levels have been falling in recent years. The rate of fall is greatest in the Ascot and Blampied Zones.

Looking ahead to 2016/17

Forecasting groundwater allocations is very difficult. It requires being able to determine how much groundwater levels may recover or make assumptions about how much aquifer recharge may occur.

Recharge is influenced by a number of factors including the amount, rate and timing of rainfall; evapotranspiration; the rate at which water may move through the soil profile; vegetation and land use; topography; and water table depth.

Groundwater pumping can also impact on the recovery levels because of the volume extracted from the aquifer, as well as the timing of pumping.

By using observed groundwater level and rainfall data we can estimate how groundwater levels might respond in certain conditions.

Rainfall

Figure 1 illustrates that annual rainfall has been largely below average since the mid-1990s with very dry conditions experienced in 2002, 2006, 2008, 2014 and 2015. Rainfall was only well above average in 2010 and 2011.

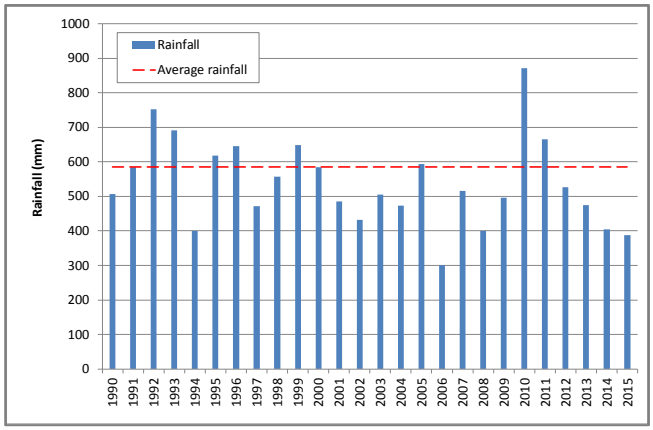

Figure 1 Annual rainfall

Current Bureau of Meteorology outlooks suggest that across most of Australia, the chances of a wetter or drier summer are roughly equal in 2015/16. Refer to their website www.bom.com.au for more information.

Groundwater recovery and allocations

Groundwater recovery occurs when a groundwater level reaches its highest point, typically during spring. The maximum seasonal recovery level is used to determine groundwater allocations as shown in the figures over page.

If we compare the annual change in the groundwater recovery level with annual rainfall we can get an indication of possible allocations in 2015/16 as shown in the tables over page.

Newlyn Zone

The groundwater recovery level for 2015/16 was 532.8 metres above sea level (Figure 3).

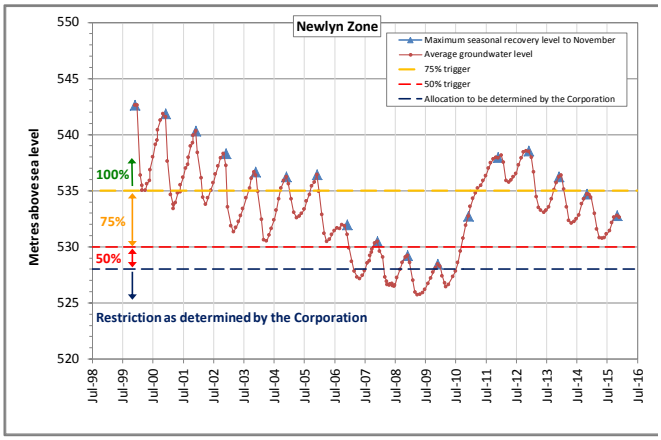

Figure 3 Allocation trigger plot for the Newlyn Zone

Based on previous observations of rainfall and groundwater recovery the following scenarios are possible in the Newlyn Zone.

Rainfall	Groundwater level shift (metres)	Possible allocation in 2016/17
Wet	1.8 to 7.9	75 or 100%
Average	-0.8 to 0.2	75%
Dry	-2.1 to 0.4	75%
Very dry	-1.3 to -4.5	50% or 75%

Ascot Zone

The groundwater recovery level for 2015/16 was 370.1 metres above sea level (Figure 4).

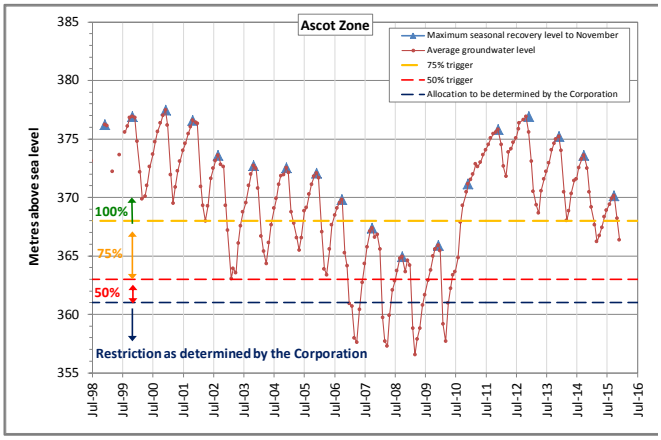

Figure 4 Allocation trigger plot for the Ascot Zone

Based on previous observations of rainfall and groundwater recovery the following scenarios are possible in the Ascot Zone.

Rainfall	Groundwater level shift (metres)	Possible allocation in 2016/17
Wet	1.0 to 8.1	100%
Average	-0.2 to 0.7	100%
Dry	-0.3 to 1.8	75% or 100%
Very dry	-2.4 to -0.4	75% or 100%

Blampied Zone

The groundwater recovery level for 2015/16 was 521.5 metres above sea level (Figure 5).

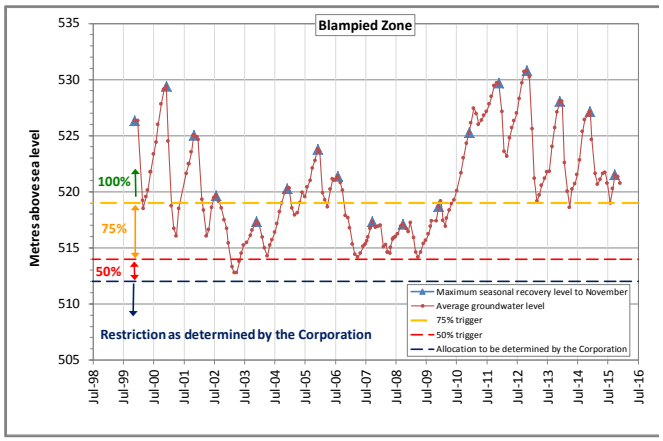

Figure 5 Allocation trigger plot for the Blampied Zone

Based on previous observations of rainfall and groundwater recovery the following scenarios are possible in the Blampied Zone.

Rainfall	Groundwater level shift (metres)	Possible allocation in 2016/17
Wet	2.0 to 8.2	100%
Average	3.0	100%
Dry	3.1 to -5.4	75% to 100%
Very dry	3.5 to -4.4	75% to 100%

Waubra Zone

Based on previous observations it is more likely that Waubra will have a 100% allocation in 2016/17.

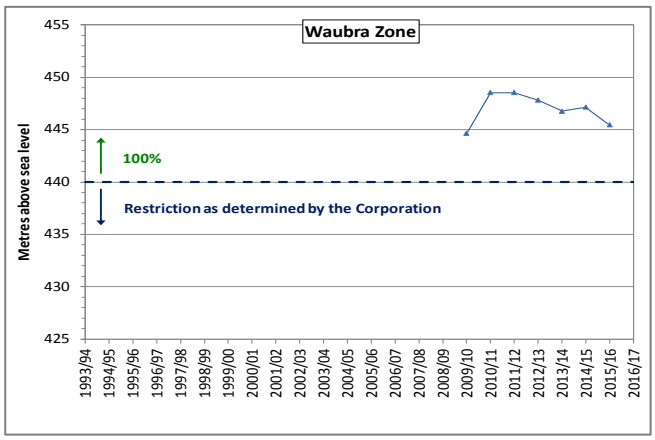

Figure 4 Allocation trigger plot for the Waubra Zone

Where can I get more information?

You can download a copy of the Loddon Highlands WSPA Groundwater Management Plan or the annual report from the GMW website www.gmwater.com.au, or call 1800 013 357.