

**December 2008 in brief:**

<b>Rainfall at the Royal Botanic Gardens:</b>	<b>83.5 mm</b>
<b>Interception loss:</b>	<b>43.3 mm</b>
<b>Effective rainfall reaching ground:</b>	<b>40.2 mm</b>

The December rainfall was above the long-term average measured by the Bureau of Meteorology at the city observing station, which is 61.1 mm. However, slightly more than half of the rainfall was taken up by canopy interception.

**Table 1: December 2008 rainfall summary, Royal Botanic Gardens, for each rain day.**

<b>Date (2008)</b>	<b>Rainfall (mm)</b>	<b>approximate rain duration (hour)</b>	<b>average rainfall rate (mm/h)</b>
9 December	5.0	2.5	2.0
12 December	20.5	10	2.1
13 December	36.0	11	1.7
14 December	10.0	9	1.1
17 December	4.0	1.75	2.3
18 December	2.0	0.72	2.8
19 December	3.0	7	0.4

**Table 2: December 2008 throughfall summary, Royal Botanic Gardens, for each rain day.** (This Table lists the throughfall expressed as a percentage of the open-field rainfall for each day).

<b>Date (2008)</b>	<b>Throughfall % AFW2</b>	<b>Throughfall % AFW3</b>	<b>Throughfall % AFW4</b>	<b>Throughfall % HB</b>
9 December	27.7	22.5	38.1	12.1
12 December	52.8	46.5	80.7	39.7
13 December	65.2	49.5	64.2	81.8
14 December	30.3	21.6	25.1	38.9
17 December	12.9	21.6	17.3	21.6
18 December	12.9	8.7	34.6	4.3
19 December	11.5	0	20.2	5.8
<b><i>average effective rainfall (mm)</i></b>	<b>39.8</b>	<b>31.7</b>	<b>46.1</b>	<b>43.2</b>

NB: AFW = Australian Forest Walk (sites 2, 3, and 4).  
HB = Herbarium bed.

### **Brief commentary on the results for December 2008:**

On days when there was no active irrigation in the gardens, the total rainfall was 80.5 mm. The rain was of low intensity, only averaging 1.7 mm/h. The total rainfall for the month (83.5 mm) included some rain days when the gardens were irrigated, and data from these days cannot be interpreted, because the throughfall troughs collect some irrigation water.

The average fraction of the open-field rain falling through the tree canopy across the four monitoring sites was 31.0%. The highest proportion was at HB on 12 December (81.8%) and the lowest at AFW3 on 19 December (0%).

The average interception loss rate was 69.0%. This is a high figure but not surprising in view of the low rainfall intensities and mild temperatures. The highest loss was 100% at AFW3 in the small rain event on 19 December and the lowest loss was 18.2% at HB in long period of rain on 13 December.

From the total of 80.5 mm of open-field rainfall, the total effective rainfall arriving at the ground, averaged across AFW2, AFW3, AFW4 and HB, was 40.2 mm. Thus, only half of the open-field rainfall arrived at the ground under the trees and shrubs. There is some

Effective rainfall report, Royal Botanic Gardens, for month of December 2008.

variation among the sites, related to the kind and density of the foliage above the throughfall collectors. The highest effective rain day rainfall was 46.1 mm, or 57.3% of the open-field rainfall, at AFW4, and the lowest was 31.7 mm, or just 39.4% of the open-field rainfall, at AFW3.