

CASE STUDY: Integrated Water Cycle Management

6. Stormwater is suspected in the dieback of Watanobbi Woollybutt

Reasons for suspecting stormwater

- In the time before the suburb was built, most rain falling on the hillside at Watanobbi soaked into the bush and soil, was used by plants, evaporated back into the atmosphere, or seeped slowly over the ground into the wetland. Building the suburb changed the water cycle of this land.
- The stormwater system of Watanobbi today is designed to keep the streets as dry as possible and prevent flooding. It does this by collecting water from every house, footpath and street and carrying it through pipes to large outlets on the edge of the wetland. This has caused serious water-logging in some places and increased dryness in other places. It has also brought an increased supply of nutrients.
- Reasons for believing that the stormwater outlet had something to do with the tree dieback near Fishburn drain included:
 - the greatest number of dead trees were close to the stormwater outlet;
 - the ground under these trees was permanently waterlogged
 - many plants stopped growing when they were water-logged for long periods
 - similar tree dieback has occurred below other stormwater outlets
 - fresh leaves sprouted on some of the surviving trees during the drought, when the ground in the dieback area dried out.



Sydney Red Gum with land fill around the roots



Land fill causes water to pond at the base of tree



The Sydney Red Gum nine months later

(source: Wetland Web CD)

ACTIVITY: Water Sensitive Urban Design

If we assume that stormwater runoff from the Fishburn drain was in fact the cause of the observed Woollybutt dieback, then suggest two possible measures that could have been taken to reduce the impact of excessive storm water on the Wetland around the Fishburn drain outlet. Explain how these measures would achieve their effect. (Before carrying out this task, take the time to read **Appendix 4**, which briefly outlines the concept of Water Sensitive Urban Design (WSUD)).