

CASE STUDY: Integrated Water Cycle Management

7. The response to the Woollybutt dieback

Water Sensitive Urban Design

Definition 1. WSUD means designing and building towns and suburbs so that they use rainwater efficiently and allow rainwater to flow in much the same way as the original bushland.

Definition 2. WSUD is the design of urban areas so that they:

- . use water in an ecologically sustainable way
- . mimic the absorption and flow of rainwater in the natural landscape
- . deliver clean water to the natural streams, wetlands, lakes and estuaries.

Example - the Fishburn Drain Project

- As a result of research into the causes of the tree dieback and other vegetation changes in the vicinity of the Fishburn Crescent stormwater drain, decisions were taken by Wyong Shire to improve the stormwater outlet to reduce its impact on the Porters Creek wetland.
- A Gross Pollutant Trap (GPT) was designed to slow down the out flow of the stormwater during periods of heavy runoff, to trap sediments and to disperse the filtered outflow widely rather than narrowly into a channel
- The narrow, deep, bare-earth drain was replaced with a wide, shallow, vegetated swale which spread the outflow broadly over a wider area to prevent the ponding of water in the Woollybutt woodland that had previously occurred at the end of the channel.



Constructed GPT



Outlet from the GPT



The swale ready to be planted

(source: Wyong Shire Council)

ACTIVITY: The effectiveness of the Fishburn Drain Project.

Examine the photos above and consider the steps carried out to improve the Fishburn stormwater outlet.

1. What do you think would be the principle effect of these measures on the wetting and drying cycle of the Woollybutt woodland community?
2. What effect, if any, do you think these measures might have on the nutrient (e.g. phosphorus) outflow into the Woodland?
3. What kind of plant species do you think would have been used to vegetate the swale? Would this be expected to have any effect on the flow of nutrients like phosphorus and nitrogen into the Woodland?
4. What other measures do you think might have been taken in the Watanobbi urban areas to reduce the negative impacts of outflows from the Fishburn Crescent stormwater outlet?