



UPPER RIVER TORRENS
LANDCARE GROUP

Data Sheet

Farm Dams

for stock, wildlife and improved water quality

A well managed farm dam can be a valuable asset to your property. With careful planning, farm dams can be attractive features that will provide:

- Good quality water for on-farm uses and downstream users
- Good wildlife habitat
- Shelter
- Reduced impact on the downstream environment

Water Allocation Planning and Farm Dams

The Water Allocation Plan (WAP) was developed by the former Adelaide and Mount Lofty Ranges Natural Resources Management Board in collaboration with the community and supported by community-based WAP advisory committees in the Fleurieu, Adelaide Hills and McLaren Vale areas.

In almost all circumstances, it is not permissible to construct a new farm dam in the Western Mount Lofty Ranges Prescribed Water Resources Area (WMLR PWRA), even for stock and domestic purposes. There are exceptional circumstances in which they may be permitted, such as where no alternative water sources are available and water is needed for critical stock or human needs. These circumstances can be discussed with the Department for Environment and Water (DEW).

Further to this, any modification of a dam will need to gain approval by DEW, which may require an application for a Water Affecting Activity Permit (WAA) or approval under the Planning, Development and Infrastructure Act 2016 via your local council. WAA permits do not cover the taking of water. The taking of water from dams for most purposes except stock and domestic use requires a water licence and allocation in a prescribed area. For more information in relation to water licensing and prior to constructing a dam or taking water, contact the DEW.

Remember, if your property is located in the Western Mount Lofty Ranges, you are not likely to be permitted to construct a new dam.

Managing an existing dam

Deepening or enlarging an existing dam is an example of a WAA that may require a permit. The criteria for determining which Act your proposed dam works falls under are: If the dam is smaller than 5ML and has a wall height less than 3 metres, you will need a permit for undertaking a WAA. Permit application forms for water affecting activities are available [here](#) at the Hills and Fleurieu Landscape Board website.

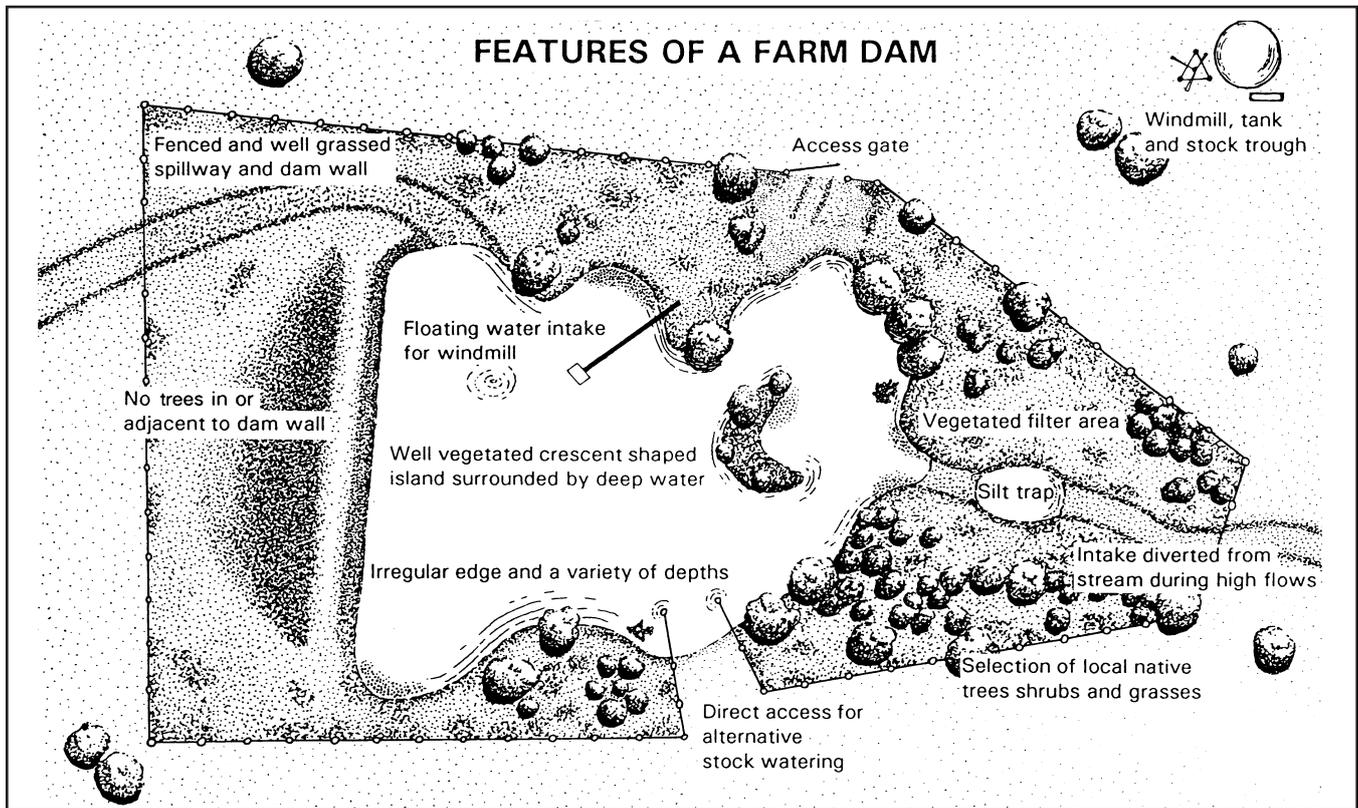
If the dam is bigger than 5ML, or has a wall height greater than 3 metres, or if your dam is located in the hills face zone, you must apply for development approval from your local council. If you have any queries, please contact the Policy Officer - Water Permits, Hills and Fleurieu Landscape Board. Please contact the appropriate authorities for approvals or/and permits.

Features of a farm dam - the ideal

The illustration shows the features of an ideal farm dam. The main ones are discussed on the following page.

Intake

To maintain a healthy downstream environment and to supply your dam with good quality water, the intake should be intended for filling only



during periods of high flow. This will ensure that the downstream channel receives the water that it needs to maintain a healthy environment during periods of low flow.

Silt trap

Silt traps can be effective in catchments where erosion and siltation are a problem. They will have the dual benefit of extending the life of your dam by maintaining capacity and improving water quality as much of the incoming nutrients will be trapped with the silt. A typical silt trap would be about one-tenth the size of the dam. Refer to following page for diagram of Silt trap.

Vegetated filters

The aim of vegetated filters is to improve water quality for both the dam and downstream users. A good cover of pasture or trees and shrubs throughout the dam catchment will maintain a good quality of water entering the dam. This can be further improved by passing water entering the dam through a fenced and well grassed 'filter zone'. By maintaining a perennial cover of native grasses and sedges, much of the incoming silt, nutrients and organic matter can be removed.

Stock fencing

For the same reasons that stock should be excluded from the riparian zone along watercourses, stock should also have restricted access to dams.

In addition to improving water quality and protecting wildlife habitat, fencing will also protect the vital earth-bank and spillway by allowing a good stabilising cover of grasses. Access gates should be placed in fenced areas to allow for maintenance. Ideally, stock watering should be through troughs away from the dam. If this is not possible, access should be controlled to an area with a shallow sloping bank.

Irregular edge and a variety of depths

By creating an irregular edge to the dam, the perimeter will be greatly increased, thereby increasing the habitat value. Similarly, creating a variety of depths will increase the habitat available to a greater variety of plants and animals. An area of at least one-third the total dam area should be 2 metres deep or greater for habitat variety, to help maintain a suitable water temperature and to provide a drought refuge. A large area of shallow water (less than 50 cm) is also valuable to a variety of wading birds such as ibis and herons.

Islands

Islands are particularly useful for creating safe refuges from predators. They should be located in a deep section of the dam so that they always remain an island to prevent predator access. To maximise their habitat value, islands should be well vegetated, to encourage nesting and roosting, and irregular in shape (crescent or star shaped, not

round) to provide increased shelter. Dead logs and branches can also be useful for additional habitat.

Vegetation

Strategically planted vegetation can fulfil a variety of functions, providing shade for stock, habitat for wildlife, a reduction in evaporation loss from the dam and an aesthetically pleasing outlook.

Aquatic vegetation can be transplanted from nearby wetlands and, for increased diversity, should include submerged plants (such as milfoil, *Myriophyllum sp.*, broad leaved pond weed, *Potamogeton sp.* and ribbon weed, *Vallisneria sp.*) and emergent species (such as sedges, *Cyperus sp.* and reeds, *Phragmites australis*). Advice should be sought regarding suitable species as some species (e.g. *Typha domingensis*, Bulrush) have the ability to rapidly spread and choke small dams.

Trees, shrubs, ground cover and pasture species for the banks should also be carefully chosen and located. Follow these general rules:

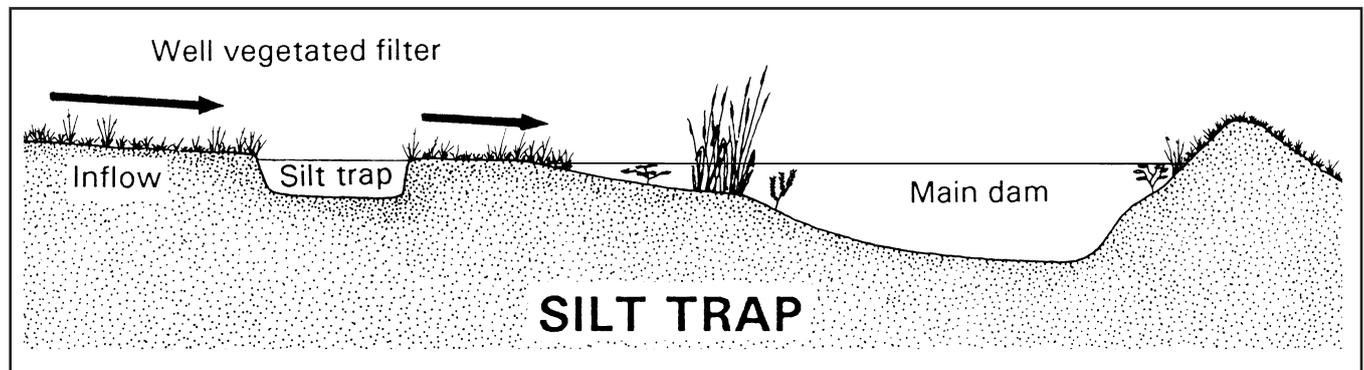
- **Plant only locally occurring native species to maximise the value of the wildlife habitat.**
- **Do not plant trees and shrubs on the earth embankment or spillway.**

- **Do not surround the whole dam with tall trees as this will interfere with the flight path of large birds.**

Protecting farm dams and water supply after a bushfire

Farm dams, water supplies and waterways are at risk of [contamination](#) after a bushfire event.

Livestock need a sufficient and reliable supply of unpolluted water. Organic material and sediment can be washed into farm water supplies, such as a dam after heavy rainfall. Farm and environmental assets need to be protected and there are various actions that can be taken to assist in [bushfire recovery](#). The issues on your property, resulting from a bushfire can be prevented and managed. To prevent organic matter and sediment from entering the water supply such as a dam, silt traps, vegetation, netting or fencing or surface earth works can be employed. Organic material (straw and manure) can be removed from the surrounding areas of the dam prior to heavy rainfall or from the water once contaminated, but early on. If organic material and sediment has already accumulated on the bottom, the dam may need to be de-silted. Contaminated water can also be treated using various treatments such as aeration, chlorination or adding Barley straw.



References

Water Affecting Activities, Dams factsheet (2015), Natural Resources Adelaide and Mt Lofty Ranges.

Resources

Landscape SA H&F:

- [Bushfire recovery, erosion and water supply](#), factsheet, January 2020.
- <https://landscape.sa.gov.au/hf/water/managing-water/water-affecting-activities>

- <https://landscape.sa.gov.au/hf/water/water-planning/water-allocation-planning/western-mount-lofty-ranges>
- [Dam development, NR AMLR Factsheet \(2015\)](#)
- **EPA, DEW & PIRSA:** [post-bushfire water quality in farm dams and creeks \(with respect to livestock\)](#)