

Soil conservation planning in cropping lands

When controlling erosion in cropping lands it is important to consider three principles:

- use land in accordance with its capability
- protect the soil surface with a growing crop, stubble from the previous crop, or pasture
- control runoff.

This fact sheet deals with the third of these principles, planning runoff control measures in cropping lands.

On sloping lands, contour banks are used to intercept overland flows and divert them into grassed waterways that safely carry runoff downhill until it reaches a natural drainage line. On flood plains that are flat and subject to erosive flooding, strip cropping is used to reduce the velocity of flood flows by encouraging them to spread across the floodplain.

Why is planning needed?

Careful planning is required to ensure that any runoff control layout will be effective. Factors including soil types, current use and management of the land and the existing paddock layout must all be considered. The planning process also provides an opportunity to improve the overall property layout to achieve greater efficiencies in managing the property. Figure 1 shows an example of a soil conservation plan.

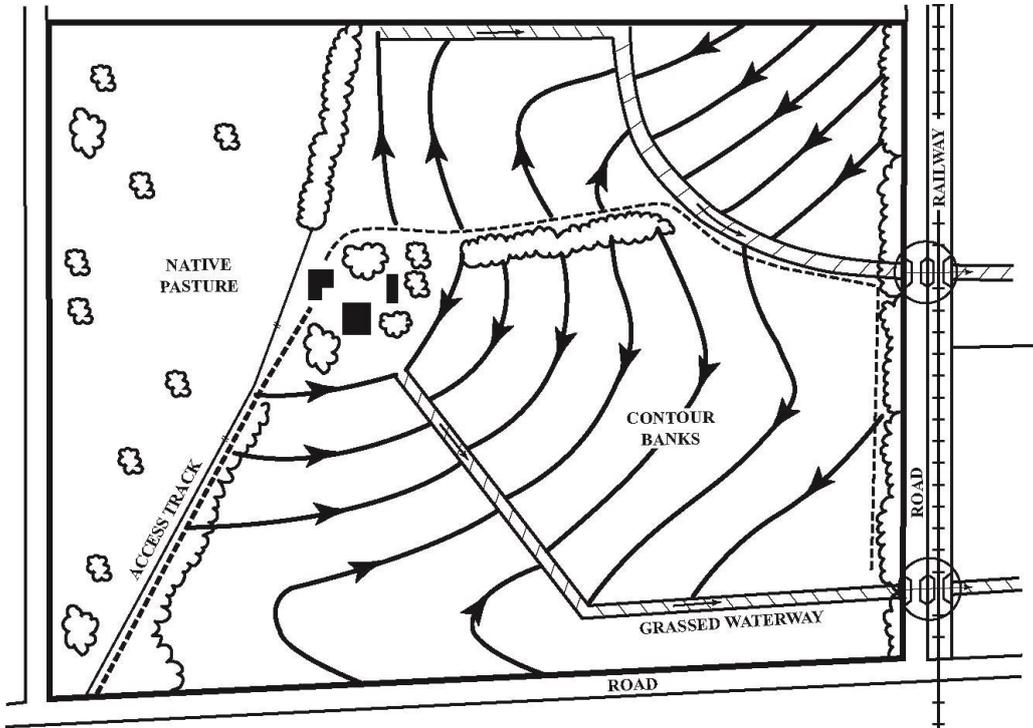


Figure 1 – Contour bank layouts require careful planning

A key step in any soil conservation plan is to determine how runoff flows through the catchment. Commonly runoff will need to be coordinated from one property to another and across roads, railway lines and tramlines in sugar cane areas. Utilities such as pipelines and underground cables also need to be taken into account.

As a general rule it should be planned that a property will accept the runoff from higher land that it would receive under natural conditions. Situations where runoff is diverted to another property or along a road reserve away from the natural flow patterns should be avoided.

While this is usually easy to apply, there are occasions when the manner in which the land was originally subdivided may lead to some debate as to how runoff should be handled. Such situations are easily handled when neighbours are cooperative. However, the situation can become complex if neighbours disagree on how runoff should be directed.

Soil Conservation Act 1986

The *Soil Conservation Act 1986* provides for the approval of soil conservation plans to coordinate runoff for erosion control.

The plans can take two forms:

- property plans
- project plans.

Property plans

An approved property plan is a plan approved under the provisions of the *Soil Conservation Act 1986*. For the purposes of the Act, the plan consists of a map and specifications for the soil conservation structures and practices necessary to control erosion covering the whole of a property or just part of it.

The Act does not require that a plan be prepared and approved for every situation. However, it is recommended that a property plan be prepared for approval wherever proposed soil conservation works will have an effect on one or more neighbouring properties.

There are three principal benefits for preparing and seeking approval of a property plan:

- it provides an enduring mechanism to coordinate runoff flow between adjoining properties. The runoff pattern cannot be changed even if a property changes hands, without formal agreement to amend the plan
- the plan approval process provides a means for dealing with objections from neighbours who do not agree with any proposed soil conservation measures
- the Act protects a landholder from liability for claims of damage or injury from another party resulting from the soil conservation measures, provided they are implemented in accordance with the approved plan.

Getting a property plan approved

The plan is developed in consultation with the landowner, neighbours affected by the plan and other relevant authorities such as those responsible for roads, railway lines and tramlines in sugar cane areas.

The Act defines the circumstances where a proposal is deemed to affect other land. As a general rule, land is considered to be impacted if implementation of the plan will change or concentrate the runoff flow pattern between the land covered by the plan and adjoining land, or land separated from it only by a road.

After the plan has been finalised, affected landholders and authorities may indicate their agreement by signing their acceptance of the plan and it can then be approved.

If one or more landholders object to the proposals contained in the plan, it may be publicly advertised. This requires that the plan be opened for public inspection for a minimum of 21 days. Determinations will then be

made on any objections that are submitted. Objectors may, within 21 days, lodge an appeal against such a determination with the Land Court. The plan may then be approved or rejected in accordance with the final ruling.

Legal implications of a property plan

Where runoff flow is directed not in accordance with an approved property plan, a runoff coordination notice may be issued requiring an owner to take appropriate action to discharge or receive runoff in accordance with the plan. Failure to comply with a notice can result in the issue of a court order to comply and/or a fine.

Project plans

The project planning provisions of the Act were created to assist in planning works that extend across a group of properties in a catchment. They are also used where key soil conservation works (referred to as community works) are the responsibility of a statutory authority.

Project plans usually cover 10 to 20 properties. Project plans have mostly been prepared for areas in the eastern Darling Downs and in cane growing districts of the Kolan and Isis Shires near Bundaberg.

Getting a project plan approved

A project plan is prepared in consultation with all property owners impacted as well as representatives of local authorities and other relevant government agencies. The plan is required to be opened for public comment for a minimum of 21 days. Determinations are then made on any objections that are submitted. Objectors may, within 21 days, lodge an appeal against such a determination with the Land Court. Depending on the outcome of any appeals, a project plan may then be submitted to Governor in Council for approval.

Legal implications of a project plan

As with approved property plans, approved project plans are binding on all present and future owners and the Crown unless amended through formal agreement by all parties. A soil conservation order can be issued requiring an owner of land to comply with a project plan. Failure to comply with a soil conservation order can result in the issue of a court order and/or a fine. Alternatively, the Director-General of the Government Department responsible for the Act can take whatever action is necessary to ensure compliance with the plan, and the owner is liable for the expenses incurred.

Plan amendment or revocation

Both approved property plans and project plans can be modified to accommodate circumstances that differ from those applying at the time of approval. Plans may be amended or their approval may be revoked. This involves similar procedures to those used in the initial approval process.

Further information

This and other science notes are available from the Queensland Government website www.qld.gov.au – search ‘science notes’ or for further information about this science notes series phone **13 QGOV** (13 74 68) – Ask for science notes – Land series. Other science notes related to this topic include:

- L1 Understanding soil