Natural paddocks help soil conservation

G W. Spencer
The rocky area to the right is a typical natural boundary. The fence along its edge does not cut through any cultivated area. In fact it separates arable land from non-arable.

NATURAL PADDOCKS HELP SOIL CONSERVATION

... says Soil Conservation Service Adviser G. W. SPENCER in this article, adapted from a series of A.B.C. radio talks.

On most farms, particularly in the cereal and sheep districts, the paddocks as we know them are fenced off into neat squares or rectangles. The original fencing was done in such a way that the paddock layout, as well as the fences, completely disregards the topography or natural features of the land. Often this has encouraged soil erosion. In properly laid out paddocks there should be a very close relationship between the natural features of the farm, the fence plan, and soil conservation.

Now, a little more about these natural features. Actually, I think it’s quite in order to refer to them as natural boundaries because that’s what they really are, especially for soil conservation farm plans. For this farm planning, apart from farm boundaries and surveyed roads, the main natural boundaries we take into account are creeks and gullies, uneroded depressions, which shouldn’t be cultivated anyway, especially if they carry water, rocky ridges and large clumps or belts of timber or scrub. Quite often, special areas such as salt land, sandy country and swampy areas can also be considered. With no fences at all then, most farms can be divided into natural paddocks by a number of these natural boundaries. This becomes very obvious if all these features, but none of the existing fences, are drawn onto a map of your farm.

At this stage, just think about your own farm. Try to visualise some of these natural paddocks. I’m sure you’ll now
realise that most of the natural paddocks or natural cultivation areas are cut through with fences that make many sections almost impossible to work. On your own and other farms, how many paddocks do you know of with long narrow corners, many already gullied, washed out gateways, boggy and washed out wheeltracks, and firebreaks that are an erosion problem year after year.

I think you'll agree that fences can cause erosion. After all fences are permanent features that influence the pattern of cultivation, and the position of tracks and firebreaks. Surely then, if these fences are in the wrong place, something must go wrong with the tracks, the firebreaks and the cultivation. On the other hand, however, when fences are correctly located, erosion due to these things can be greatly reduced or even completely avoided. Also, if and when contour works are necessary, it is a lot easier to make use of them.

Eventually, old fences reach the stage when they need to be replaced, and many are now getting to just that stage. If for the last fifty odd years these fences have been the cause of much inconvenience, as well as a fair amount of erosion, there certainly doesn't seem to be any real reason for putting the new fencing in exactly the same place. Coupled with this is the fact that on most farms, even the existing water supplies can be made to serve more paddocks by a better arrangement of fencing.

Putting these ideas into practice is best done by obtaining a soil conservation farm plan. Quite a number of these plans have been prepared by the Department of Agriculture's Soil Conservation officers, but unfortunately it is not possible for the officers to prepare as many plans as they would like, or to prepare them as soon as they would like.

This should not stop the farmer from going ahead with his re-fencing programme; nor should it be an excuse for re-fencing on the present unsatisfactory layout.

A careful look at Department of Agriculture bulletin 2592 dealing with farm planning, should give a good idea of the general principles to follow. By applying these to his own farm any farmer can
decide on a number of major fence lines—
for example, one might be a fence along
a main creek which runs right through
the property. Such obvious and main
fences could be planned and constructed
immediately, as they would certainly fit
into a complete farm plan which could
be prepared later.
In this way, the farmer can start on
re-fencing according to natural paddocks
without having to wait for the complete
plan.

The first point to think about when
planning the subdivision of these large
incomplete natural paddocks is probably
availability of water in each paddock.
There is no point in putting in extra
fencing to give another paddock unless
there is a separate water supply in each of
the new paddocks.

SUBDIVIDING NATURAL PADDOCKS
Natural fence lines obviously make it
much easier to plan a complete farm lay­
out which not only enables easier farming
in many ways, but also makes for safer
farming, that is, soil conservation farm­
ing.
This idea of natural paddocks is very
good for as far as it goes, but using only
natural boundaries is never likely to give
a sufficient number of paddocks, or pad­
docks small enough for the proper opera­
tion of a farm in the cereal and sheep
areas. Quite often the natural boundaries
do not completely enclose the natural
paddocks. This means some subdivision
fences will need to cut across good ground
that can be cultivated. Special care is
therefore needed to make sure that fences
do not, either directly or indirectly, cause
erosion because of the way they influence
the pattern of cultivation and firebreaks,
and the location of tracks and roads.

For the benefit of the stock, water
should be readily available, but in addi­
tion soil conservationists are particularly
interested in how these water supplies
can affect the paddock and the soil.
First of all, water in each paddock must
result in more efficient grazing and this
in turn means less overgrazing near water
points, leaving a better plant cover on the
soil. This added cover is a real factor in
the control of both wind and water
erosion. Another aspect is that these
separate water supplies go a long way
towards eliminating the all too familiar
sight of the eroded gateway. In this case
the damage has been caused mainly by
the continual travelling of sheep with
feed in one paddock and the water supply
in another. This problem is best beaten

Erosion in this gateway is due to the top paddock not having its own water supply. Sheep grazing in that paddock have to travel through this gate each day to drink at a dam in the lower paddock. Subdivision fences should depend on the availability of water in each paddock.
not by moving the gate, but by supplying water in each paddock.

**Another factor closely linked with this is the economy of water reticulation.**

Fortunately, water supplies such as soak, wells and sometimes bores and dams occur either on or close to natural drainage lines and boundaries between different soil types. As these features can also be satisfactory paddock boundaries there is no problem in making use of the same water supply for 2, 3 or even 4 paddocks. Properly planned fencing can make more efficient and more economical use of existing water supplies—a most important consideration on properties where it is difficult to develop new water supplies.

Further, when the relative costs of extra fencing and piping water over long distances are taken into account, it soon becomes obvious that it is a much better proposition to run the fences through or to the water supplies than to reticulate the water several chains to the present paddock system.

**PLANNING THE FENCING**

Fencing should take into account not only existing erosion control measures but also any that may be intended or are likely to become necessary in the future.

It is therefore best to determine where contour practices may be necessary before deciding on the fence lines. When the only way to subdivide an area is with a fence downhill it should be placed directly downhill, that is, at right angles to the contour, and in cases where contour banks may be necessary the fence should not separate the natural waterway or water disposal system from the banked area. Building contour banks through fences should be avoided as much as possible.

Fences following eroded waterways should not be placed too close to the gully, because at some time in the future that extra space may be needed for work to stabilise and even completely reclaim the gully to the stage of growing a good grass cover.

In farm plans so far prepared, very little use has been made of contour fencing. When a contour fence is the only possibility it should be placed halfway between two contour banks and approximately following the contour in short strains of say 5 or 10 chains.

**Another aspect closely linked with this is the safety of tracks and firebreaks, as well as cultivation.**

When fences are placed on ridges, along the contour or at right angles to the contour, they are also either parallel to or at right angles to the general pattern of contour cultivation. This automatically makes such cultivation quite safe with very little in the way of inconvenient or awkward working.

This fence following the natural drainage line is out of the way of cultivation. In addition it makes it possible to use the same water supply for two paddocks.
This contour fence is a series of straight sections as close as possible to the contour. The farm road can follow the fence. In this case the road and the fence make a guide for contour working of the adjoining lands.

All roads and tracks around the farm should be properly formed so that correct drainage can be achieved. This presents no problem when the fences are already following ridges or are taken directly downhill. In somewhat the same way, firebreaks along the contours are quite safe, and when following fences downhill they can easily be made in such a way that they do not become erosion hazards.

The convenience of moving vehicles and stock around the farm will be a direct result of the way the fence layout is planned. A good system of all-weather tracks to all parts of the farm is an essential part of a well managed and smooth running property. Fences placed without regard to the need for such tracks will be a continual source of annoyance, inconvenience and an almost certain cause of erosion.

Economy of fencing need not always be a major consideration. Admittedly extra fencing should be avoided whenever possible, but the temporary inconvenience of paying for and erecting a longer fence needs to be carefully weighed against the long term advantages expected from putting in a fence that may be a few chains longer.

**Paddock size is an obvious point to be considered in any farm plan, but it is also the most difficult to define.**

The paddock size will depend very much on each farmer and his own ideas—whether he’s essentially a cropping man or a sheep man, how many sheep he has and how many separate flocks he wants to run. General management methods and cropping rotation could also affect the number of paddocks and their size. It seems from plans so far prepared that paddocks can vary from 60 to 150 acres on farms of 1,000 to 3,000 acres.

One point worth making here is that it is not necessary to have a contour map of the farm to make up a farm plan. The plan is drawn up on the farm, which is itself a full scale model.

I have mentioned that the farmer’s ideas, resources and management have a major influence on the fence plan finally prepared. For this reason, many of the points discussed can be put into effect whenever any new fencing is being done, without having to wait for a complete farm plan.
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