



Description

Clearing methodology will depend on the size of the area being cleared, the state of the vegetation and the intended land use. Generally, clearing for broad acre farming, pastoral grazing or urban subdivision of newly released land will involve clear felling of timber with a chain dragged between two bulldozers. Smaller clearing activities may involve a single machine or chemical application. However regardless of the size of the clearing, timing of works, management of groundcover and installation of temporary or permanent erosion control measures are essential considerations.

Application and Function

The state (ie. age, height, density) of the vegetation to be cleared will influence the clearing method, the length of time clearing will take and the costs involved. For example, clearing regrowth is likely to be cheaper, easier and faster to clear than intact (never previously cleared) vegetation.

Clearing design/layout will also have a bearing on method, duration and cost – as well as other management implications. For example: clearing a square paddock for annually cultivated horticulture, compared to selectively clearing regrowth for improved pasture.

Soil type, slope and length of slope, clearing method, clearing design/layout, retention of vegetation buffers/corridors, timing of works, groundcover management and implementation of temporary and permanent erosion controls will all influence the risk of erosion.

Limitations

Soil moisture can be a limiting factor. If soils are too wet, machinery will get bogged and track/wheel ruts will concentrate overland flows and cause gullyng. Whereas if soils are too dry, trees are likely to snap off, leaving roots in the ground and promoting regrowth.

Windrow management can also be a limiting factor as they can concentrate overland flows and cause gullyng; or promote wind and dust erosion during the dry season, if formed too early.

Seasonal conditions are often unpredictable and the window of opportunity to clear, stick rake, windrow, burn, till and plant in one wet season may not be long enough.

Clearing of native vegetation is subject to statutory controls and therefore will require a permit. Allowing sufficient time for successful completion of the permit application process is an important consideration when planning your clearing works.

Advantages

Ensuring soil moisture conditions are optimal for clearing will reduce the need and cost of maintaining regrowth.

Clear felling with a chain and bulldozers will enable large areas to be cleared quickly.

Effective clearing design/layout can reduce the need for installation of more expensive and involved erosion controls.

Clearing can be staged over a number of wet seasons, to better manage costs and erosion potential.

Alternatives

Depending on the intended land use, clearing can be undertaken in a variety of ways: clear felling, strip clearing, staged clearing or selective clearing (also called parkland clearing).

Subsequent tillage practices (such as blade ploughing) will also vary, depending on the intended land use. Regardless of method, all works should be undertaken on the contour (ie. across the slope) to help reduce the risk of erosion associated with soil disturbance and overland flows.

Construction

To allow for unpredictable seasonal conditions, DLRM recommend that clearing for horticultural or agricultural purposes in the Top End should be undertaken over two wet seasons (following the permit application process the previous dry season).

Permitted clearing areas and designated retention areas (such as vegetation buffers) should be flagged prior to the commencement of works.

The recommended timing of works for broad acre farming and pastoral grazing is as follows:

FIRST YEAR

•**Late wet season** – once the heavy wet season rains have ended, chain on the contour when soil moisture is optimal. Felled timber should be left in situ (where it falls) for the longest amount of time possible, as it will protect the disturbed soil surface from unexpected downpours and dry season wind erosion.

SECOND YEAR

•**Late dry season** – stick rake on the contour and form windrows aligned at right angles to the contour (ie. directly up and down slope). Burn, level remaining windrows and construct erosion and sediment controls (eg. contour banks).

•**Early wet season** – all soil preparatory works and planting to be undertaken on the contour (ie. across the slope) at the start of the wet season when soil moisture conditions are optimal and to promote soil-stabilising crop establishment. Plants will also benefit from a long 'growing season'.

Retention of strategically located permanent or temporary vegetation buffers can negate the need for erosion controls such as contour banks and associated waterways.

Post-clearing groundcover management practices are also vital in reducing the risk of erosion. For example: horticultural properties should plant wet season cover crops; tree cropping or forestry properties should ensure effective inter-row groundcover; and agricultural properties should plant a mix of perennial and annual crops.

Pastures should be well established prior to the introduction of stock (this may take more than one wet season); paddocks should be routinely spelled; and stocking rates managed effectively.

Forestry plantations should avoid mounding and all plantation rows should be aligned on the contour (ie. across the slope), to reduce channelling runoff.

Maintenance

Maintenance requirements and methods will depend on land use and implemented erosion control measures.

Clearing of regrowth should be timed as recommended above, as a 'clean' pull will reduce the required frequency.

Permanent vegetation buffers should have stock excluded (to promote dense groundcover) and be protected against the introduction of weeds, spreading crops, feral animals and destructive fire.

Control structures such as contour banks and level sills should be regularly checked during the wet season. Frequency of reforming banks will depend on land use

Contact details

For further information contact the DLRM Land Management Unit in your region. Additional Technical Notes and Erosion and Sediment Control Guidelines are available on the website: <http://www.lrm.nt.gov.au/soil/management>

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