

#### ***14. Land Evaluation And Survey Interpretation***

A report that solely summarises soil types and landform categories is of limited use to land use planners or developers unless they are quite familiar with the procedural and technical aspects of the map unit description involved.

To provide a simple user-orientated land use map, the Land Protection Division (LPD) of the Department of Conservation, Forests and Lands has developed guidelines for land capability assessment which are based upon interpretive systems used by the Food and Agriculture Organisation of the United Nations (FAO) and the United States Department of Agriculture (USDA) Soil Conservation Service.

The land capability assessment is designed to provide basic information to land users on the land's potential. The LPD uses this approach to specifically assist land users with alternative management practices so as to limit land degradation and to develop land management plans in proclaimed water supply catchments.

The approach considers whether the land's natural characteristics will be adversely affected and whether the proposed land use will alter the environment beyond "acceptable limits", from a soil conservation viewpoint. These acceptable limits vary due to social and economical considerations.

Land capability assessment primarily relies on the interpretation of landscape and soil characteristics based upon guidelines proposed by Rowe et al. (1981). Assessment considered land features which are not expected to change over the foreseeable future but which, with appropriate management can be integrated with the ever changing economic and social considerations. Map units are subsequently classed depending on what land use is envisaged.

The land capability class indicated the degree of limitation which is associated with a particular use together with the level of management needed to contain any subsequent land degradation.

The Land Protection Division has found it useful to employ a five class rating system in which class one denotes the most capable land based on the lowest level of physical limitation. It must be stressed that no rating class stipulates that a particular activity can or cannot be undertaken. The system indicates the degree of land degradation risk together with suggested levels of management that would be required to satisfactorily pursue the proposed land use.

With time, management procedures may be evolved or found which will overcome problems more economically with respect to time, money and environmental considerations. When such a development takes place the specific land capability table would be altered to meet the new standards.

This report is restricted to land capability rating systems concerned with:

1. Erosion risk associated with cropping
2. Erosion risk associated with grazing
3. Secondary roads
4. On site effluent septic tank absorption fields
5. Building foundations
6. Earthen farm dams
7. Shallow excavations
8. Urban development (subdivision of 2 ha)
9. Rural residential development (subdivision of 10 ha).

Ratings for erosion risk associated with cropping and grazing are provided as first approximation only and are presented as a guide to enable broad-scale themes to emerge. Site specific ratings may depart from the broad-scale interpretations, however the relative ratings presented in this report are considered to be a reasonable indication.

Further development and refining of the assessment criteria will be needed to improve the precision of the ratings. The basic tables and criteria upon which the ratings are classified are presented in Appendix D.

The knowledge of land capability assessment theory and its application is dynamic and evolving as the understanding of the soil/land use management interactions improve. As such the results presented here must be used only as a guide and not definitive statements of fact.

**Table 14.2 Land Capability Assessment ratings for each Land Unit within their terrain pattern**

Terrain Pattern	Land Units	Erosion Risk Cropping	Erosion Risk Grazing	Secondary Roads	On Site Effluent Absorption	Building Foundations	Earthen Dams	Shallow Excavations	Urban Sub Division	Rural Residential Sub Division
Plateau	P/Hu 2	3	2	3	3	4	4	4	4	3
	P/Ru 2	3	2	3	2	3	3	3	4	2
	P/Hr 3	3	2	4	2	4	5	4	4	2
	P/Hr 4	4	3	4	4	4	4	4	4	3
	P/Hu 4	3	2	3	3	3	4	3	3	2
	P/Lhu 4	3	2	3	3	3	4	3	3	2
	P/LH-u 4	3	2	3	3	3	4	3	3	2
	P/Dsm 4	4	2	4	3	4	4	4	4	3
	P/DSg 4	2	1	3	2	3	3	3	3	2
	P/Ru 4	3	2	3	2	3	4	3	4	3
Escarpment	Es 2	5	4	5	5	5	5	5	5	5
	Em 2	5	4	5	5	5	5	5	5	5
	Sm 2	3	2	4	3	4	4	4	4	4
	Hs 2	5	4	5	5	5	5	5	5	5
	Hr 2	4	3	4	4	4	4	4	4	4
	Hs-r 2	4/5	3/4	4/5	4/5	4/5	4/5	4/5	4/5	4/5
	Es 3	5	4	5	5	5	5	5	5	5
	Es 4	5	4	5	5	5	5	5	5	5
	Hr 4	4	3	4	4	4	4	4	4	4
Mountains	Mr 1	5	3	4	4	4	5	5	5	4
	Mvs 2	5	5	5	5	5	5	5	5	5
	Ms 2	5	4	5	5	5	5	5	5	5
	Mr-s 2	4/5	3/4	4/5	4/5	4/5	4/5	4/5	4/5	3/5
	Mr 2	4	3	4	4	4	4	4	4	3
	Sm 2	3	2	4	3	4	4	4	4	3
	DSm 2	3	2	4	4	4	4	4	4	4
	Ms 3	5	4	5	5	5	5	5	5	5
	Mr 3	5	3	4	4	4	4	4	4	4
	DSm 3	4	3	4	4	4	4	4	5	4

Terrain Pattern	Land Units	Erosion Risk Cropping	Erosion Risk Grazing	Secondary Roads	On Site Effluent Absorption	Building Foundations	Earthen Dams	Shallow Excavations	Urban Sub Division	Rural Residential Sub Division
	Ms 4	5	4	5	5	5	5	5	5	5
	Mr 4	4	3	4	4	4	4	4	4	3
Hilly	Hs 2	5	4	5	5	5	5	5	5	5
	Hr 2	4	3	4	4	4	4	4	4	3
	Hu 2	3	2	3	3	4	4	4	4	3
	Hs-r 2	5/4	4/3	5/4	5/4	5/4	5/4	5/4	5/4	4/3
	Hr-s 2	4/5	$\frac{3}{4}$	4/5	4/5	4/5	4/5	4/5	4/5	$\frac{3}{4}$
	Sm 2	5	4	5	5	5	5	5	5	5
	Hs 4	5	4	5	5	5	5	5	5	5
	Hr 4	4	3	4	4	4	4	4	4	3
	Hu 4	3	2	3	3	3	4	3	3	2
	DSm 4	4	2	4	3	4	4	4	4	3
	Hs 5	5	4	5	5	5	5	5	5	5
	Hr 7	4	2	4	4	4	4	4	4	3
	Hu 7	4	2	4	4	4	4	4	4	3
Low Hills	LH 2	3	2	3	2	3	3	3	3	3
	LHr 2	2	1	3	2	3	3	3	3	2
	LHu 2	2	1	3	2	3	3	3	3	2
	LHu 4	3	2	3	3	3	4	3	3	2
	LHu 7	3	2	3	4	3	4	3	4	2
Rises and Gentle Slopes	Sg 1	1	1	3	1	2	4	3	3	2
	Ru 2	3	2	3	2	3	3	3	4	2
	Sg 2	2	1	3	2	3	3	3	3	2
	Svg 2	1	1	3	2	3	3	3	3	2
	Dsg 2	2	1	4	4	4	3	4	4	3
	DSvg 2	2	1	4	4	4	3	4	4	3
	DSg 2/4	2	1	3/4	2/4	3/4	3	3/4	3/4	2/3
	DSg 3	2	1	4	3	4	5	3	4	2
	DSg 4	2	1	3	2	3	3	3	3	2
	Ru 4	3	2	3	2	3	4	3	4	3
	Sg 4	3	2	3	2	3	3	3	4	3

Terrain Pattern	Land Units	Erosion Risk Cropping	Erosion Risk Grazing	Secondary Roads	On Site Effluent Absorption	Building Foundations	Earthen Dams	Shallow Excavations	Urban Sub Division	Rural Residential Sub Division
	Svg 4	2	1	2	2	3	3	3	3	2
	Ru 5	1	1	2	2	2	3	2	2	1
	Sg 5	1	1	2	2	2	3	2	2	1
	DSg 5/2	1/2	1	3/4	3/4	2/4	3	2/4	2/4	1/4
	Ru 6	4	2	2	3	3	3	3	3	3
	Rug 6	3	2	2	3	3	3	3	3	2
	Ru 7	4	2	4	4	4	4	4	4	3
	Sg 7	4	2	4	4	4	4	4	4	3
	DSg 7	4	2	4	4	4	4	4	4	3
	DSvg 7	4	2	4	4	4	4	4	4	3
	Ru 8	3	2	3	3	3	3	3	3	2
	Svg 8	3	2	3	3	3	3	3	3	2
Plains	Pu 2	2	1	3	2	3	3	3	3	2
	Pl 2	2	1	3	3	3	3	3	3	2
	Pu 5	1	1	2	2	2	2	2	2	1
	Pu 7	4	2	4	4	4	4	4	4	3
	Pu 8	3	2	3	3	3	3	3	3	2
	AP 8	2/5	1/3	1/5	1/5	1/5	2/5	2/5	2/5	1/5
Drainage Course & Flood Plains	DC 2	1/5	1/4	2/5	1/5	2/5	5	2/5	2/5	1/5
	DC 2/3	1/5	1/4	2/5	1/5	2/5	5	2/5	2/5	1/5
	DC 2/7	1/5	1/4	2/5	1/5	2/5	5	2/5	2/5	1/5
	DC 4	1/5	1/4	2/5	2/5	2/5	5	2/5	2/5	1/5
	FP 9	1/5	1/5	2/5	1/5	1/5	2/5	2/5	5	1/5