Agriculture and Agri-Food Canada
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Rural Municipality of Strathcona

Information Bulletin 97-17

Soils and Terrain

An introduction to the land resource

Land Resource Unit
Brandon Research Centre

Canada

Rural Municipality of Strathcona

Information Bulletin 97-17

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PREFACE

This is one of a new series of information bulletins for individual rural municipalities of Manitoba. They serve to introduce the newly developed digital soil databases and illustrate several typical derived and interpretive map products for agricultural land use planning applications. The bulletins will also be available in diskette format for each rural municipality.

Information contained in this bulletin may be quoted and utilized with appropriate reference to the originating agencies. The authors and originating agencies assume no responsibility for the misuse, alteration, re-packaging, or re-interpretation of the information.

This information bulletin serves as an introduction to the land resource information available for the municipality. More detailed information, including copies of the primary soil and terrain maps at larger scales, may be obtained by contacting

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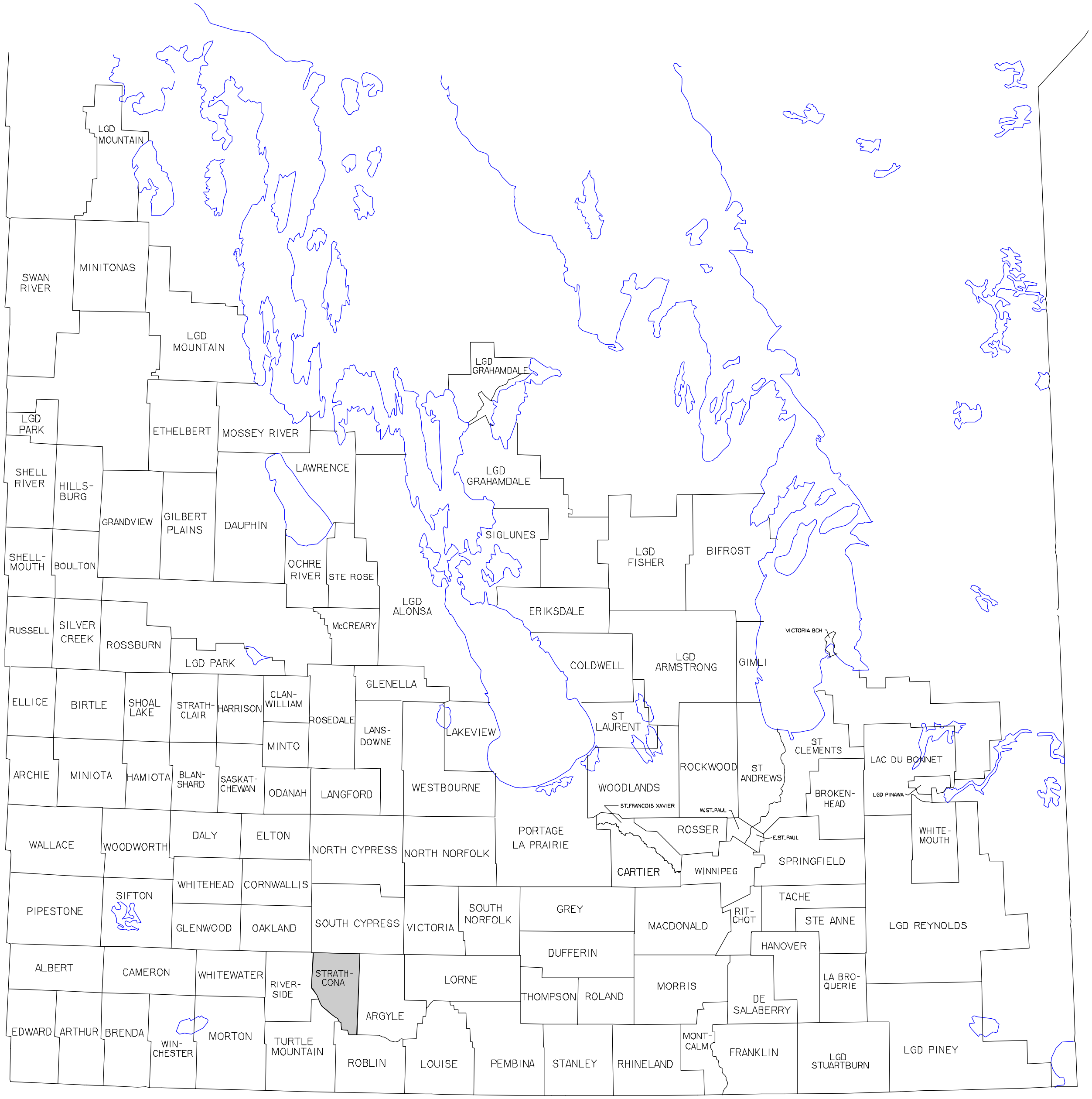


Figure 1. Rural municipalities of southern Manitoba.

INTRODUCTION

The location of the Rural Municipality of Strathcona is shown in Figure 1. A brief overview of the database information, and general environmental conditions for the municipality are presented. A set of maps derived from the data for typical agricultural land use and planning applications are also included.

The soil map and database were compiled and registered using the Geographic Information System (PAMAP GIS) facilities of the Manitoba Land Resource Unit. These databases were used in the GIS to create the generalized, derived and interpretive maps and statistics in this report. The final maps were compiled and printed using Coreldraw.

This bulletin is available in printed or digital format. The digital bulletin is a Windows based executable file which offers additional display options, including the capability to print any portion of the bulletin.

LAND RESOURCE DATA

The soil and terrain information presented in this bulletin was compiled as part of a larger project to provide a uniform level of land resource information for agricultural and regional planning purposes throughout Agro-Manitoba. This information was compiled and analysed in two distinct layers as shown in Figure 2.

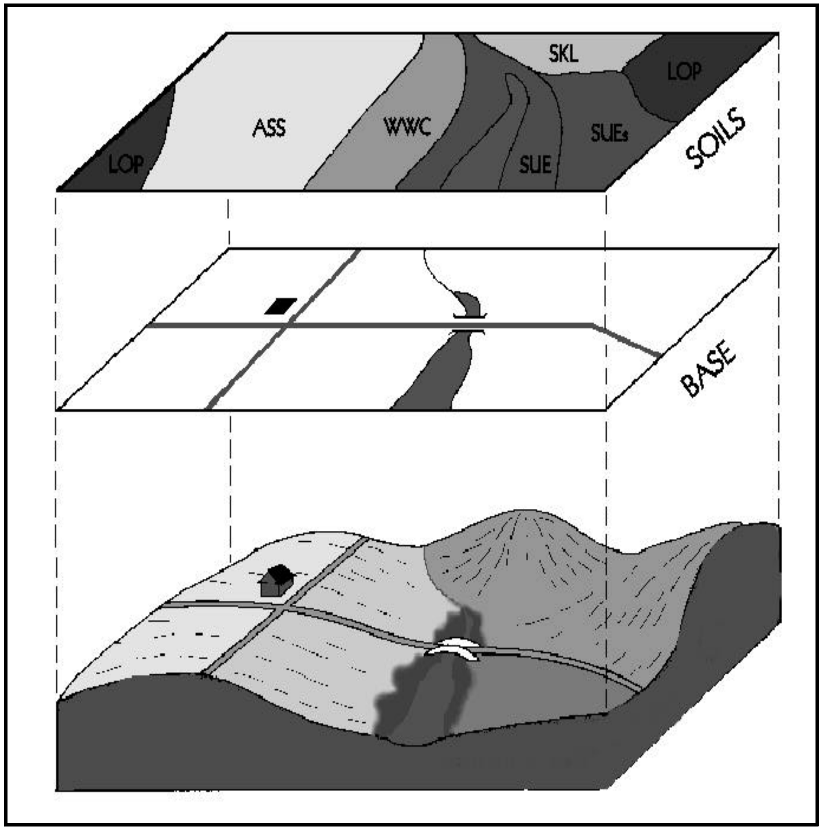


Figure 2. Soil and Base Map data.

Base Layer

Digital base map information includes the municipality and township boundaries, along with major streams, roads and highways. Major rivers and lakes from the base layer were also used as common boundaries for the soil map layer. Water bodies larger than 25 ha in size were digitized as separate polygons.

Soil Layer

The most detailed soil information currently available was selected as the data source for the digital soil layer for each rural municipality.

Comprehensive detailed soil maps (1:20 000 to 1:50 000 scale) have been published for many rural municipalities. Where they were available, the individual soil map sheets were digitized and compiled as a single georeferenced layer to match the digital RM base. Map polygons have one or more soil series components, as well as slope and stoniness classes. Soil database information was produced for each polygon, to meet national standards (MacDonald and Valentine, 1992). Slope length classes were also added, based on photo-interpretation.

Older, reconnaissance scale soil maps (1:126 720 scale) represented the only available soil data source for many rural municipalities. These maps were compiled on a **soil association** basis, in which soil landscape patterns were identified with unique surficial geological deposits and textures. Each soil association consists of a range of different soils ("associates") each of which occurs in a repetitive position in the landscape. Modern soil series that best represent the soil association were identified for each soil polygon. The soil and modifier codes provide a link to additional databases of soil properties. In this way, both detailed and reconnaissance soil map polygons were related to soil drainage, surface texture, and other soil properties to produce various interpretive maps. Slope length classes were also added, based on photo-interpretation.

LAND RESOURCE OVERVIEW

The Rural Municipality (RM) of Strathcona covers an area of 5.8 townships (approximately 53 500 hectares) of land in southwestern Manitoba (page 3). The town of Belmont is the main population and agriculture service centre in the municipality.

The climate in the municipality can be described from weather data from Boissevain. The mean annual temperature is 2.7°C and the mean annual precipitation is 502 mm. The average frost-free period is 121 days, with an average of 1756 degree-days above 5^{0}C (Environment Canada, 1982). The calculated seasonal moisture deficit for the period between May and September for the area is 200 to 250 mm. The estimated effective growing degree days (EGDD) above 5°C accumulated from May to September is 1500 (Agronomic Interpretations Working Group, 1995). These parameters provide an indication of moisture and heat energy available for crop growth.

Physiographically, the RM of Strathcona occupies parts of the Tiger Hills Upland and the Brandon Lakes Plain, both within the Saskatchewan Plain (Canada-Manitoba Soil Survey, 1980). The large meltwater channel of the Pembina Valley forms the southwest boundary of the Tiger Hills Upland and of the municipality. This upland is characterized by a generally hummocky land surface with local relief ranging from 3 to 9 m and slopes usually less than 5 percent. Local areas of higher relief in excess of 9 m with slopes of 9 to 15 percent are scattered throughout the municipality. An area of level terrain adjacent to the Pembina Channel is dissected by numerous, deeply eroded, steeply sloping channels. A portion of the Brandon Lakes Plain occurs in the northeastern part of the municipality below 450 m asl. The land surface here slopes gently to the northeast with gradients generally less than 2 percent (page 9).

The soil materials in this RM are primarily of loam textured glacial till (morainal) deposits. Loamy and clayey lacustrine sediments deposited in glacial Lake Brandon occur below 450 m elevation in the northeast part of the RM. An extensive area of loamy textured glaciofluvial deposits borders the Pembina Channel. Subsoil materials in this area are quite variable as the surface soil is commonly underlain by stratified sands and gravels which in turn are underlain by water-worked loamy glacial till (page 11).

Soils in the municipality have been mapped at a semi-detailed level (1:50 000 scale) in the report, Soils of the Rural Municipality of Strathcona, Soil Report No. D86. (Podolsky, in Preparation). According to the Canadian System of Soil Classification (Expert Committee on Soil Survey, 1987), the soils in the municipality are classified as Black and Dark Gray Chernozems and Humic Gleysols, with local areas of poorly structured Solonetzic soils. Regosolic soils occur on stratified minor stream deposits and on steeply sloping areas of eroded slopes. A more detailed and complete description of the type, distribution and textural variability of soils in the municipality is provided in the soil report.

Surface drainage of the municipality is primarily northeasterly toward Oak Creek and then to the Souris River. A small area drains easterly to the Cypress River and the western part of the RM, bordering the Pembina Valley, drains toward Pelican Lake. Surface drainage of hummocky terrain in the municipality is largely local in nature. The majority of soils in the RM are well drained with significant areas of imperfect drainage and minor local occurrences of poorly drained soils (page 13). Surface runoff collects in poorly drained depressions and potholes, many of which contain shallow ponds and small lakes. Soils bordering the Pembina Channel are well to rapidly drained due in part to deep channels eroded back from the edge of the valley. Larger areas of imperfectly drained soil occur in the more gently sloping terrain of the Brandon Lakes Plain and on lower slopes throughout the municipality.

Areas of weakly salinized soil are localized and usually associated with imperfectly drained soils in drainage channels and bordering depressions (page 15). Salinity is more extensive and severe in portions of the Brandon Lakes Plain. In addition to salinity, other management considerations are primarily related to topography and drainage (page 17). There are no significant soil textural (sandy or clayey soils) or bedrock conditions to contend with in this RM. Local areas of slightly stony soils occur throughout the till landscape while areas of lacustrine soils are generally stone-free.

Approximately 70 percent of lands in the RM are rated as **Class 2** and **3** for agriculture capability (page 19) and 77 percent of the area is rated **Good** to **Fair** for irrigation suitability (page 21). Topography and excess water (wetness) are the main limitations for agriculture.

Well drained soils in gently sloping landscapes are generally rated **Class 2** for agriculture and **Good** for irrigation. Steeply sloping land is rated in **Class 6** and very poorly drained soils are rated **Class 7** for agriculture and **Poor** for irrigation. Salinity affects some 16 percent of the soils in the RM resulting in **Class 3** and **Class 4** rating for agriculture capability and **Poor** rating for irrigation.

A major issue currently receiving considerable attention is the sustainability of agricultural practices and their potential impact on the soil and groundwater environment. To assist in highlighting this concern to land planners and agricultural producers, an assessment of potential environmental impact (EI) under irrigation has been included in this bulletin (page 23). As shown, the majority of the RM is at **Low** risk of degradation. However, areas of sandy soil, coarse sandy and gravelly subsoil, very poorly drained soil and steeply sloping soils are rated as having a **High** potential for impact on the environment under irrigation. These conditions increase the risk for deep leaching of potential contaminants on the soil surface and the potential for rapid runoff from the soil surface into adjacent wetlands or water bodies. This EI map is intended to be used in association with the irrigation suitability map.

Another issue of concern to producers and soil conservation and land use specialists is soil erosion caused by agricultural cropping and tillage practices. To highlight areas with potential for water erosion, a risk map has been included to show where special practices should be adopted to mitigate this risk (page 25). Nearly 25 percent of the land in the RM is at **High** to **Severe** risk to degradation from water erosion. Management practices focus primarily on maintaining adequate crop residues to provide sufficient surface cover. However, protection of the steeper sloping lands most at risk to water erosion may require a shift in land use away from annual cultivation to production of perennial forages and pasture or permanent tree cover.

Land use in the RM of Strathcona is primarily agricultural with significant areas of woodland and grassland. An assessment of the status of land use in 1994 was obtained through an analysis of satellite imagery. It showed that annual crops occupied about 50% of the land in the RM, while the remaining areas were in tree cover (11.7%), grassland (21.8%), and forage production (4.4%). Wetlands and small water bodies occupy nearly 9% of the RM. Much of the woodland and grassland area provides native pasture for livestock. Various non-agricultural uses such as recreation and infrastructure for urban areas and transportation occupy about 2.7 percent of the RM (page 27).

While most of the soils in the RM of Strathcona have moderate to moderately severe limitations for arable agriculture, management of steeply sloping soils requires careful choice of crops and maintenance of adequate surface cover. Coarser textured soils require special management to protect against the risk of wind erosion. This includes leaving adequate crop residues on the surface to provide sufficient trash cover during the early spring period. The provision of shelter belts, minimum tillage practices, and crop rotations including forage will help to reduce the risk of soil degradation and maintain productivity. Implementation of such practices on a site by site basis will help to insure that agriculture land-use is sustainable over the long-term.

DERIVED AND INTERPRETIVE MAPS

A large variety of computer derived and interpretive maps can be generated from the digital soil and landscape databases. These maps are based on selected combinations of database values and assumptions.

Derived maps show information that is given in one or more columns in the computer map legend (such as soil drainage, soil salinity, or slope class).

Interpretive maps portray more complex land evaluations based on a combination of soil and landscape information. Interpretations are based on soil and landscape conditions in each polygon. Interpretative maps typically show land capabilities, suitabilities, or risks related to sustainability.

Several examples of derived and interpretive maps are included in this information bulletin:

Derived Maps
Slope
Surface Texture
Drainage
Salinity
Management Considerations

Interpretative Maps
Agricultural Capability
Irrigation Suitability
Potential Environmental Impact
Water Erosion Risk
Land Use.

The maps have all been reduced in size and generalized (simplified) in order to portray conditions for an entire rural municipality on one page. These generalized maps provide a useful overview of conditions within a municipality, but are not intended to apply to site specific land parcels. On-site evaluations are recommended for localized site specific land use suitability requirements.

Digital databases derived from recent detailed soil inventories contain additional detailed information about significant inclusions of differing soil and slope conditions in each map polygon. This information can be portrayed at larger map scale than shown in this bulletin.

Information concerning particular interpretive maps, and the primary soil and terrain map data, can be obtained by contacting the Manitoba Soil Resource Section of Manitoba Agriculture, the local PFRA office, or the Manitoba Land Resource Unit.

Slope Map.

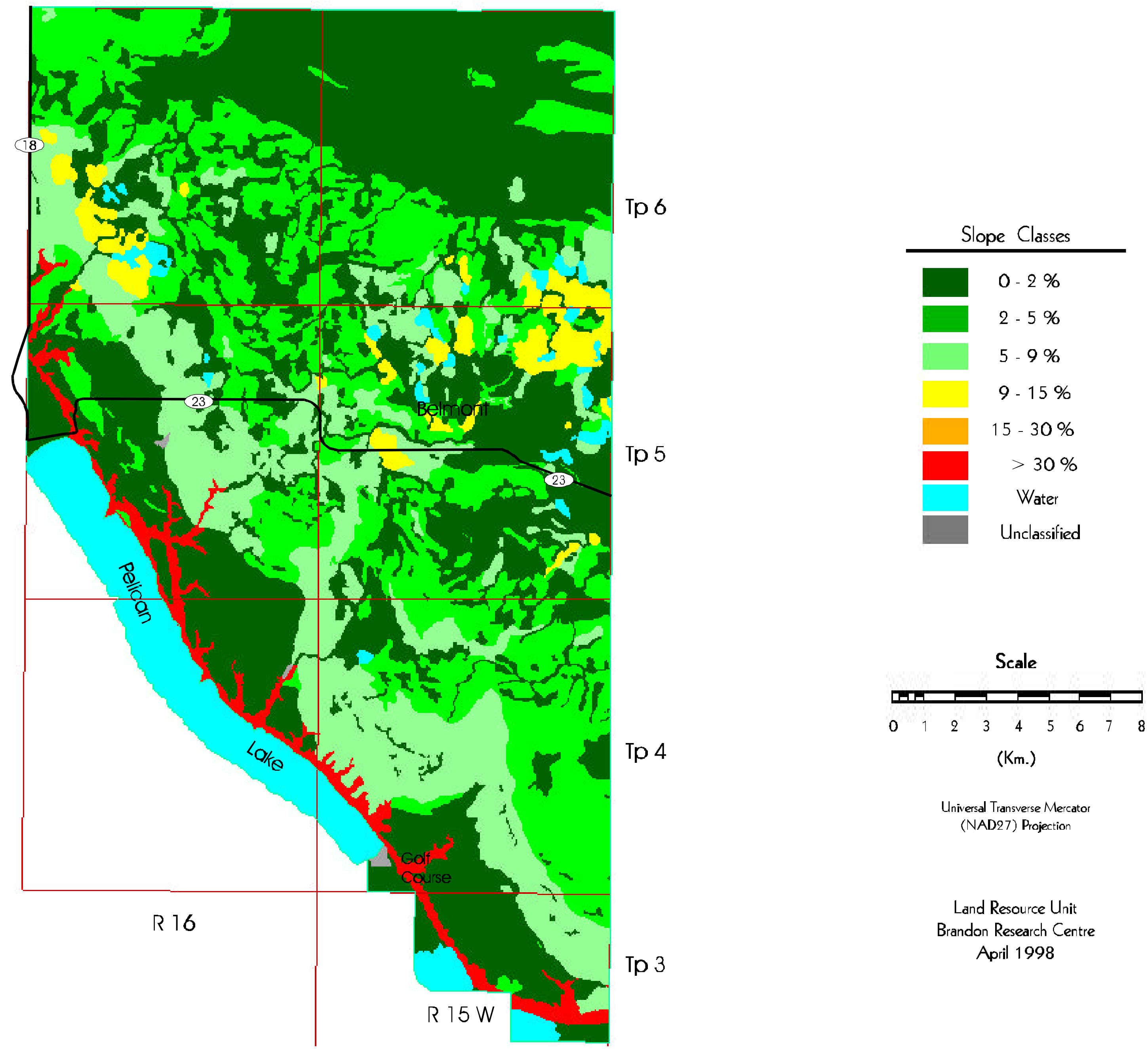
Slope describes the steepness of the landscape surface. The slope classes shown on this map are derived from the digital soil layer database. Specific colours are used to indicate the dominant slope class for each soil polygon in the RM. Additional slope classes may occur in each polygon area, but cannot be portrayed at this reduced map scale.

Table 1. Slope Classes[1]

Slope Class	Area (ha)	Percent of RM
0 - 2 %	23284	43.5
2 - 5 %	13910	26.0
5 - 9 %	9398	17.6
9 - 15 %	1611	3.0
15 - 30 %	0	0.0
> 30 %	1581	3.0
Unclassified	51	0.1
Water	3710	6.9
Total	53545	100.0

[1] Area has been assigned to the dominant slope class in each soil polygon.

Slope Map


18
23
Belmont
Pelican
Lake
Golf Course
Tp 6
Tp 5
Tp 4
Tp 3
R 16
R 15 W
Slope Classes
0 - 2 %
2 - 5 %
5 - 9 %
9 - 15 %
15 - 30 %
> 30 %
Water
Unclassified
Scale
0 1 2 3 4 5 6 7 8
(Km.)
Universal Transverse Mercator
(NAD27) Projection
Land Resource Unit
Brandon Research Centre
April 1998

Surface Texture Map.

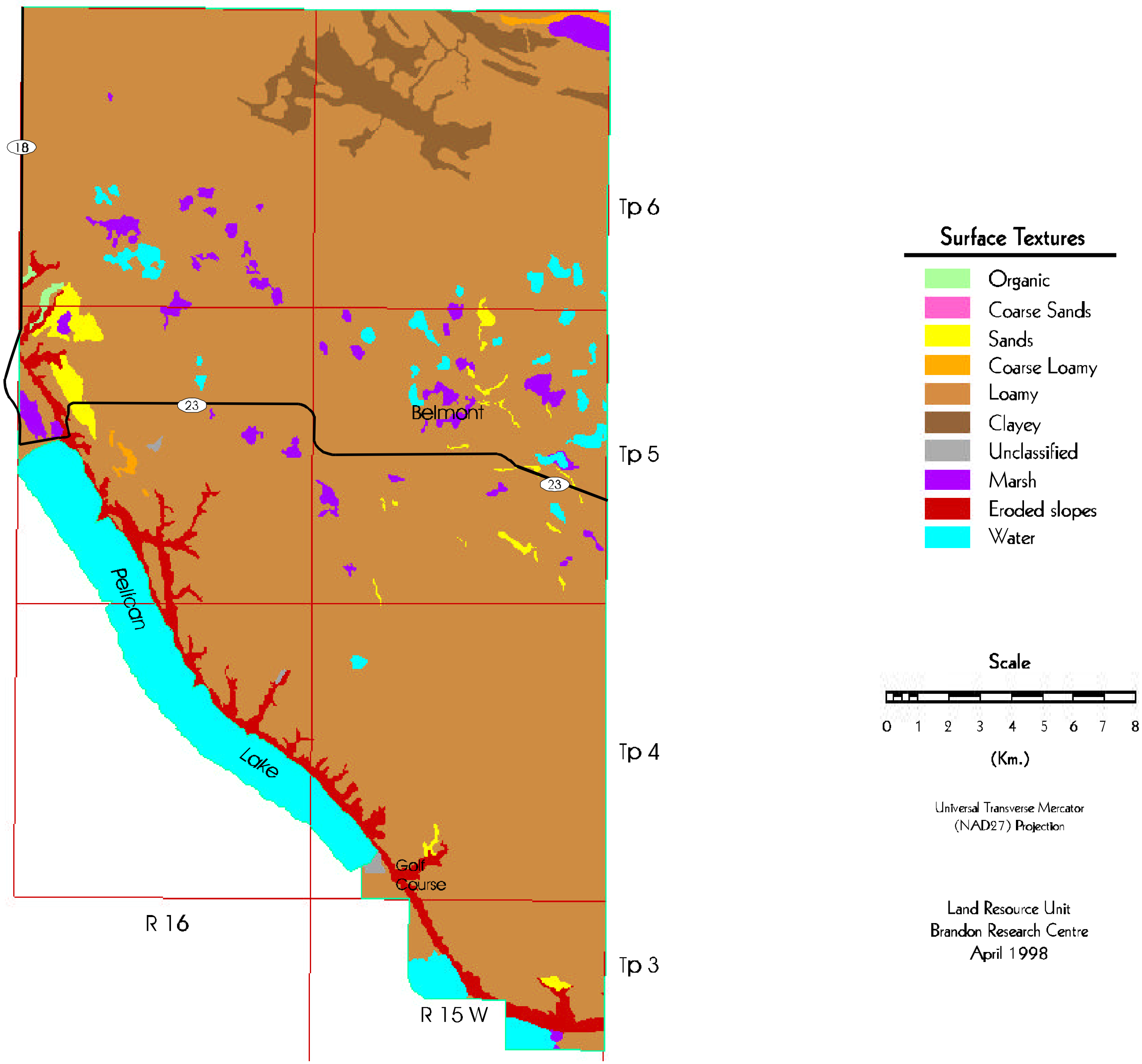
The soil textural class for the upper most soil horizon of the dominant soil series within a soil polygon was utilized for classification. Texture may vary from that shown with soil depth and location within the polygon.

Table 2. Surface Texture[1]

Surface Texture	Area (ha)	Percent of RM
Organics	**50**	**0.1**
Coarse Sands	**0**	**0.0**
Sands	**537**	**1.0**
Coarse Loamy	**132**	**0.2**
Loamy	**44787**	**83.6**
Clayey	**1713**	**3.2**
Eroded Slopes	**1581**	**3.0**
Marsh	**984**	**1.8**
Unclassified	**51**	**0.1**
Water	**3710**	**6.9**
Total	**53545**	**100.0**

[1] Based on the **dominant** soil series for each soil polygon.

Surface Texture Map



Soil Drainage Map.

Drainage is described on the basis of actual moisture content in excess of field capacity, and the length of the saturation period within the plant root zone. Six drainage classes plus four land classes are shown on this map.

Very Poor - Water is removed from the soil so slowly that the water table remains at or on the soil surface for the greater part of the time the soil is not frozen. Excess water is present in the soil throughout most of the year.

Poor - Water is removed so slowly in relation to supply that the soil remains wet for a large part of the time the soil is not frozen. Excess water is available within the soil for a large part of the time.

Imperfect - Water is removed from the soil sufficiently slowly in relation to supply to keep the soil wet for a significant part of the growing season. Excess water moves slowly down the profile if precipitation is the major source.

Well - Water is removed from the soil readily but not rapidly. Excess water flows downward readily into underlying materials or laterally as subsurface flow.

Rapid - Water is removed from the soil rapidly in relation to supply. Excess water flows downward if underlying material is pervious. Subsurface flow may occur on steep slopes during heavy rainfall.

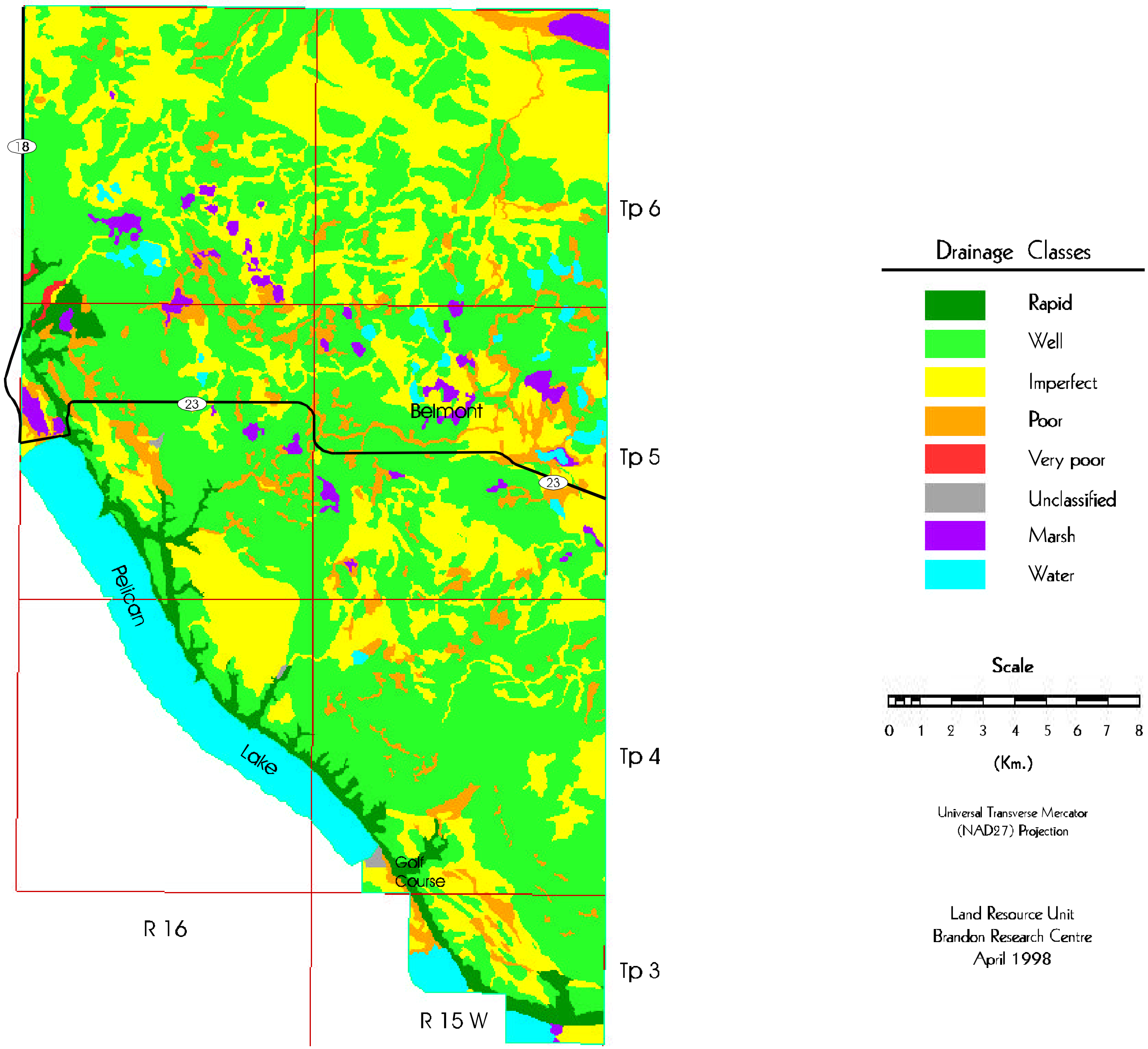
Drainage classification is based on the dominant soil series within each individual soil polygon.

Table 3. Drainage Classes[1]

Drainage Class	Area (ha)	Percent of RM
Very Poor	50	0.1
Poor	3437	6.4
Imperfect	14968	28.0
Well	28528	53.3
Rapid	1816	3.4
Marsh	984	1.8
Unclassified	51	0.1
Water	3710	6.9
Total	53545	100.0

[1] Area has been assigned to the dominant drainage class for each soil polygon.

Soil Drainage Map



Soil Salinity Map.

A saline soil contains soluble salts in such quantities that they interfere with the growth of most crops. Soil salinity is determined by the electrical conductivity of the saturation extract in decisiemens per metre (dS/m). Approximate limits of salinity classes are:

non-saline	< 4 dS/m
weakly	4 to 8 dS/m
moderately saline	8 to 15 dS/m
strongly saline	> 15 dS/m.

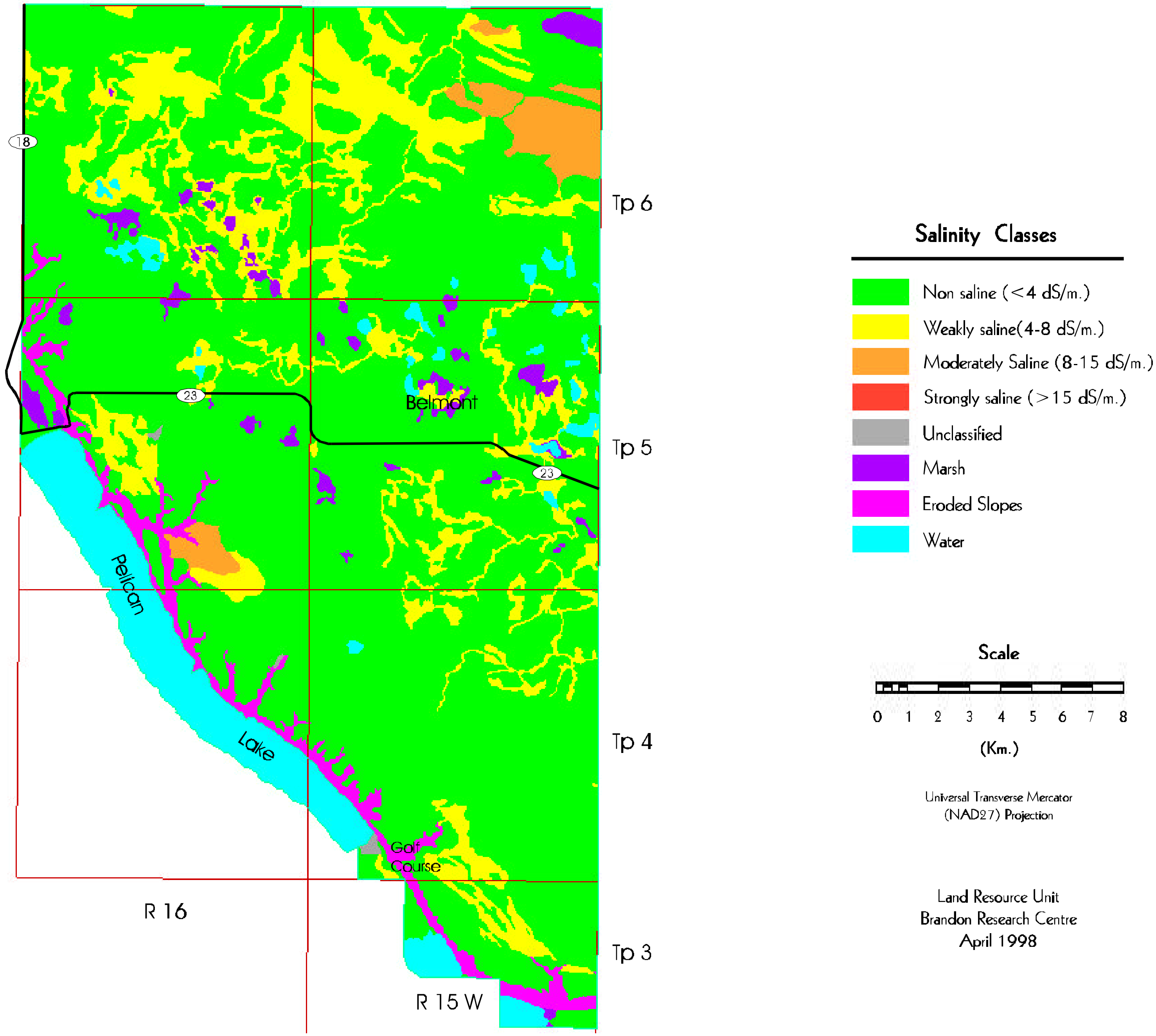
The salinity classification of each individual soil polygon was determined by the most severe salinity classification present within that polygon.

Table 4. Salinity Classes[1]

Salinity Class	Area (ha)	Percent of RM
Non Saline	38263	71.5
Weakly Saline	7736	14.4
Moderately Saline	1219	2.3
Strongly Saline	0	0.0
Eroded Slopes	1581	3.0
Marsh	984	1.8
Unclassified	51	0.1
Water	3710	6.9
Total	53545	100.0

[1] Area has been assigned to the most severe salinity class for each soil polygon.

Soil Salinity Map



Management Considerations Map.

Management consideration maps are provided to focus on awareness of land resource characteristics important to land use. This map does not presume a specific land use. Rather it portrays the most common and wide spread attributes that apply to most soil landscapes in the province.

These maps **highlight attributes** of soil-landscapes that the land manager must consider for any intended land use.

- **Fine texture**
- **Medium texture**
- **Coarse texture**
- **Topography**
- **Wetness**
- **Organic**
- **Bedrock**

F = Fine texture - soil landscapes with **fine textured soils (clays and silty clays)**,have low infiltration and internal permeability rates. These require special considerations to mitigate surface ponding (water logging), runoff, and trafficability. Timing and type of tillage practices used may be restricted.

M = Medium texture - soil landscapes with medium to moderately fine textures **(loams to clay loams)**, and good water and nutrient retention properties. Good management and cropping practices are required to minimize leaching and the risk of erosion.

C = Coarse texture - soil landscapes with **coarse to very coarse textured soils (loamy sands, sands and gravels)** have a high permeability throughout the profile, and require special management practices related to application of agricultural chemicals, animal wastes, and municipal effluent to protect and sustain the long term quality of the soil and water resources. The risk of soil erosion can be minimized through the use of shelterbelts and maintenance of crop residues.

T = Topography - soil landscapes with **slopes greater than 5 %** are steep enough to require special management practices to minimize the risk of erosion.

W = Wetness - soil landscapes that have **poorly drained soils and/or >50 % wetlands** (due to seasonal and annual flooding, surface ponding, permanent water bodies (sloughs), and/or high water tables), require special management practices to mitigate adverse impact on water quality, protect subsurface aquifers, and sustain crop production during periods of high risk of water logging.

O = Organic - soil landscapes with organic soils, requiring special management considerations of drainage, tillage, and cropping to sustain productivity and minimize subsidence and erosion.

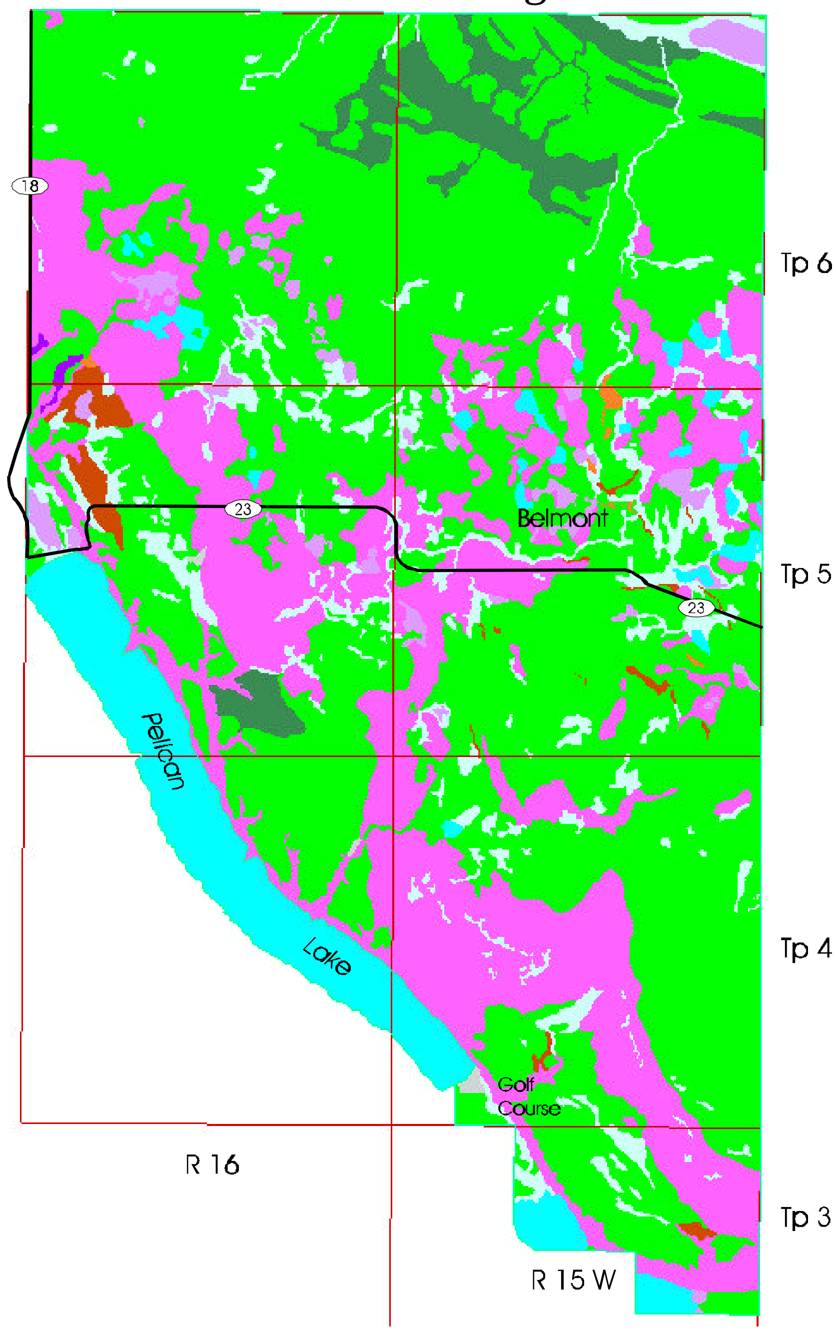
R = Bedrock - soil landscapes that have shallow depth to bedrock (< 50 cm) and/or exposed bedrock which may prevent the use of some or all tillage practices as well as the range of potential crops. They require special cropping and management practices to sustain agricultural production.

Table 5. Management Considerations[1]

Land Resource Characteristics	Area (ha)	Percent of RM
Fine Texture	**1970**	**3.7**
Fine Texture and Wetness	**0**	**0.0**
Fine Texture and Topography	**0**	**0.0**
Medium Texture	**30282**	**56.6**
Coarse Texture	**471**	**0.9**
Coarse Texture and Wetness	**0**	**0.0**
Coarse Texture and Topography	**67**	**0.1**
Topography	**12523**	**23.4**
Topography and Bedrock	**0**	**0.0**
Wetness	**3437**	**6.4**
Wetness and Topography	**0**	**0.0**
Bedrock	**0**	**0.0**
Organic	**50**	**0.1**
Marsh	**984**	**1.8**
Unclassified	**51**	**0.1**
Water	**3710**	**6.9**
Total	**53545**	**100.0**

[1] Based on **dominant** soil series for each soil polygon.

Management Considerations Map



Universal Transverse Mercator
(NAD27) Projection

Land Resource Unit
Brandon Research Centre
April 1998

Agricultural Capability Map.

This evaluation utilizes the 7 class Canada Land Inventory system (CLI, 1965). Classes 1 to 3 represent the prime agricultural land, class 4 land is marginal for sustained cultivation, class 5 land is capable of perennial forages and improvement is feasible, class 6 land is capable of producing native forages and pasture but improvement is not feasible, and class 7 land is considered unsuitable for dryland agriculture. Subclass modifers include structure and/or permeability (D), erosion (E), inundation (I), moisture limitation (M), salinity (N), stoniness (P), consolidated bedrock (R), topography (T), excess water (W) and cumulative minor adverse characteristics (X).

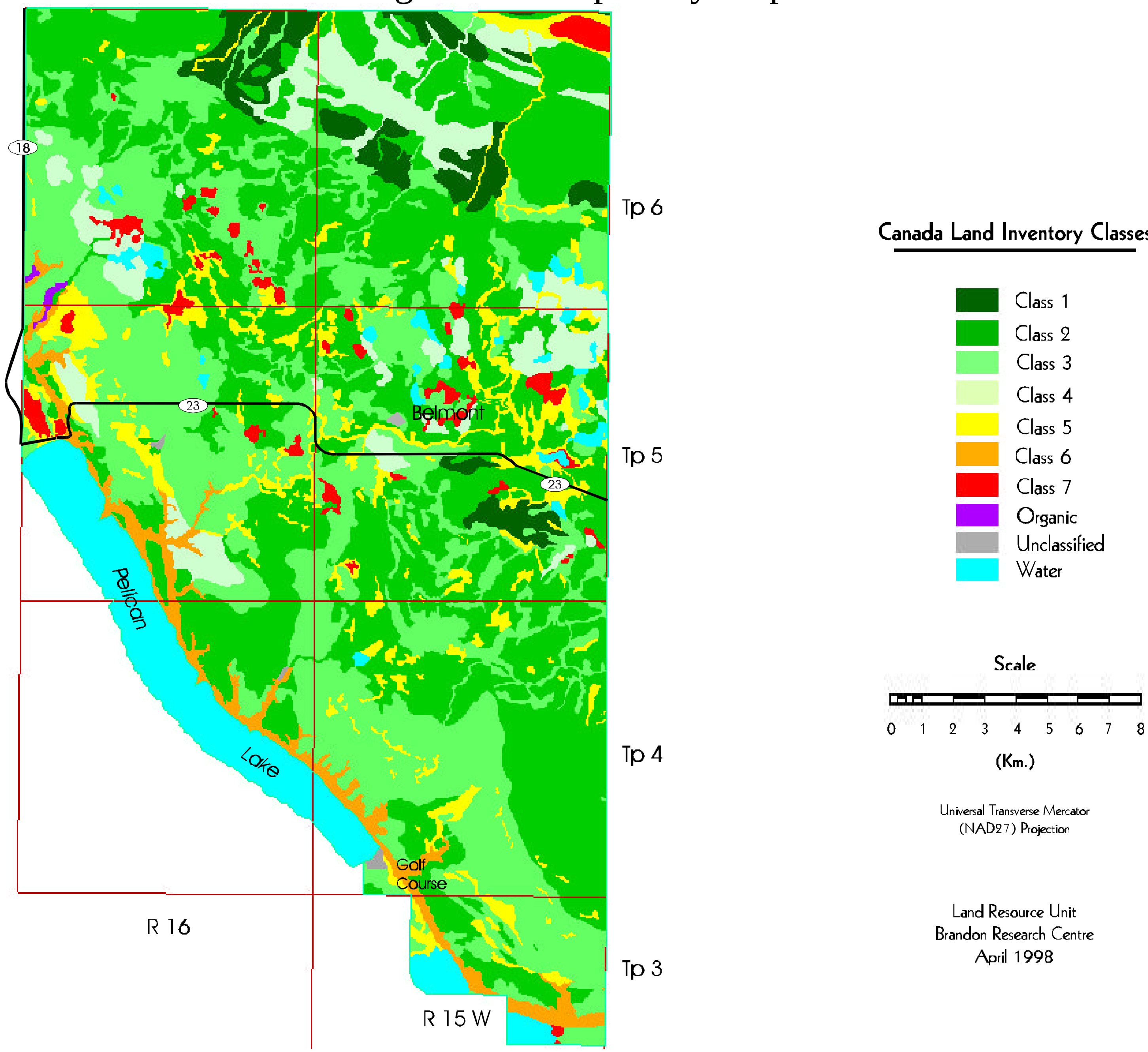
This generalized interpretive map is based on the dominant soil series and phases for each soil polygon. The CLI subclass limitations cannot be portrayed at this generalized map scale.

Table 6. Agricultural Capability[1]

Class Subclass	Area (ha)	Percent of RM
1	**2118**	**4.0**
2	**21299**	**39.8**
2I	55	0.1
2M	114	0.2
2P	1053	2.0
2T	11629	21.7
2TW	1421	2.7
2W	5263	9.8
2WP	639	1.2
2X	1125	2.1
3	**16211**	**30.3**
3I	278	0.5
3M	1210	2.3
3MT	15	0.0
3N	5304	9.9
3NI	47	0.1
3P	53	0.1
3T	9304	17.4
4	**3718**	**6.9**
4D	1603	3.0
4DN	42	0.1
4M	152	0.3
4RD	319	0.6
4T	1602	3.0
5	**3823**	**7.1**
5M	386	0.7
5W	3201	6.0
5WI	236	0.4
6	**1581**	**3.0**
6	1581	3.0
7	**984**	**1.8**
7W	984	1.8
Unclassified	**51**	**0.1**
Water	**3710**	**6.9**
Organic	**50**	**0.1**
Total	**53545**	**100.0**

[1] Based on **dominant** soil, slope gradient, and slope length of each soil polygon.

Agriculture Capability Map



Irrigation Suitability Map.

Irrigation ratings are based on an assessment of the most limiting combination of soil and landscape conditions. Soils in the same class have a similar relative suitability or degree of limitation for irrigation use, although the specific limiting factors may differ. These limiting factors are described by subclass symbols at detailed map scales. The irrigation rating system does not consider water availability, method of application, water quality, or economics of irrigated land use.

Irrigation suitability is a four class rating system. Areas with no or slight soil and/or landscape limitations are rated **Excellent** to **Good** and can be considered irrigable. Areas with moderate soil and/or landscape limitations are rated as **Fair** and considered marginal for irrigation providing adequate management exists so that the soil and adjacent areas are not adversely affected by water application. Soil and landscape areas rated as **Poor** have severe limitations for irrigation.

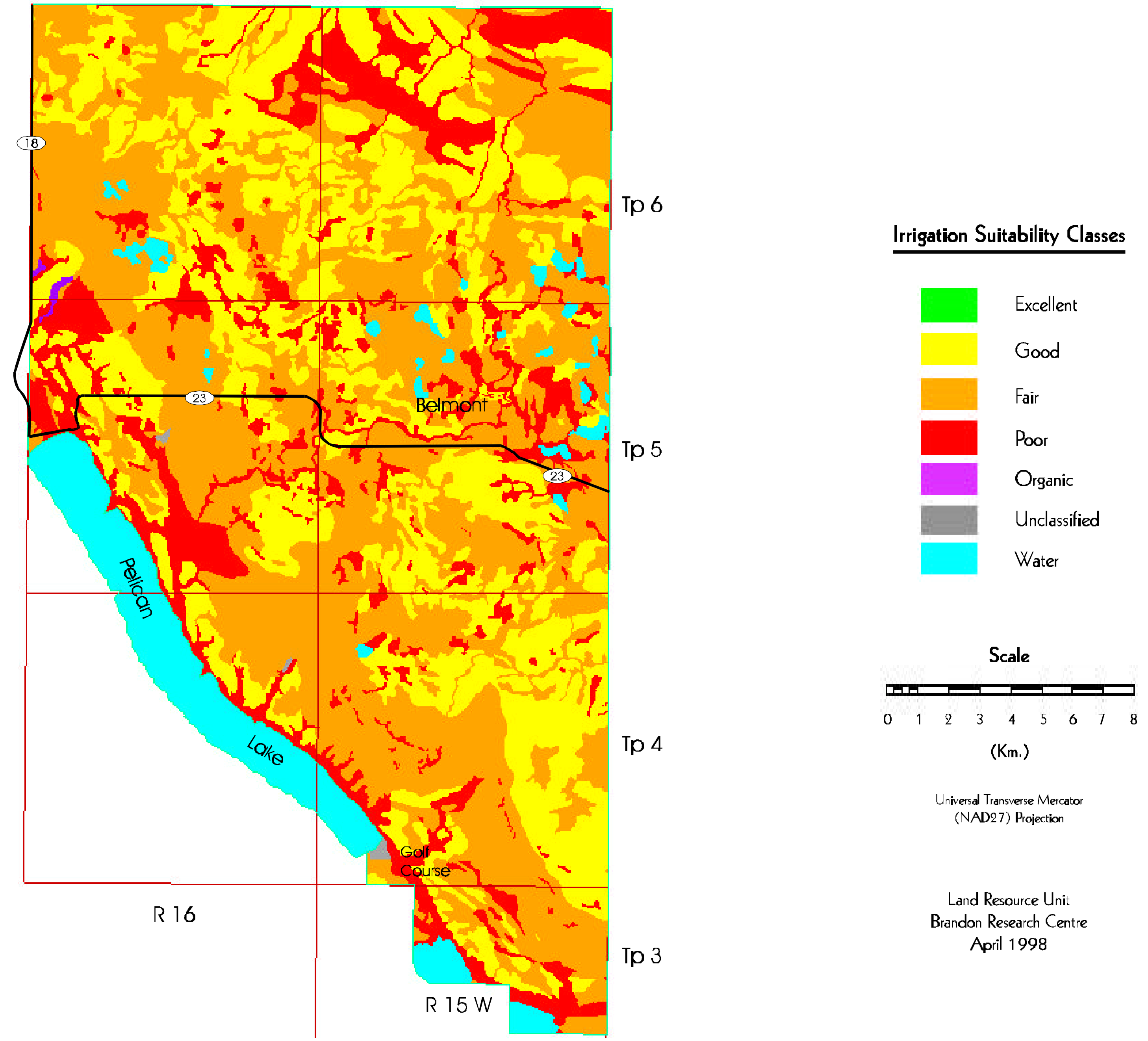
This generalized interpretive map is based on the dominant soil series for each soil polygon, in combination with the dominant slope class. The nature of the subclass limitations and the classification of subdominant components is not shown at this generalized map scale.

Table 7. Irrigation Suitability[1]

Class	Area (ha)	Percent of RM
Excellent	**0**	**0.0**
Good	**17394**	**32.5**
Fair	**23987**	**44.8**
Poor	**8352**	**15.6**
Organic	**50**	**0.1**
Unclassified	**51**	**0.1**
Water	**3710**	**6.9**
Total	**53545**	**100.0**

[1] Based on **dominant** soil, slope gradient, and slope length of each soil polygon.

Irrigation Suitability Map



Potential Environmental Impact Under Irrigation Map.

A major concern for land under irrigated crop production is the possibility that surface and/or ground water may be impacted. The potential environmental impact assessment provides a relative rating of land into 4 classes (minimal, low, moderate and high) based on an evaluation of specific soil factors and landscape conditions that determine the impact potential.

Soil factors considered are those properties that determine water retention and movement through the soil; topographic features are those that affect runoff and redistribution of moisture in the landscape. Several factors are specifically considered: soil texture, hydraulic conductivity, salinity, geological uniformity, depth to water table and topography. The risk of altering surface and subsurface soil drainage regimes, soil salinity, potential for runoff, erosion and flooding is determined by specific criteria for each property.

Use of this rating is intended to serve as a warning of potential environmental concern. It may be possible to design and/or give special consideration to soil-water-crop management practices that will mitigate any adverse impact.

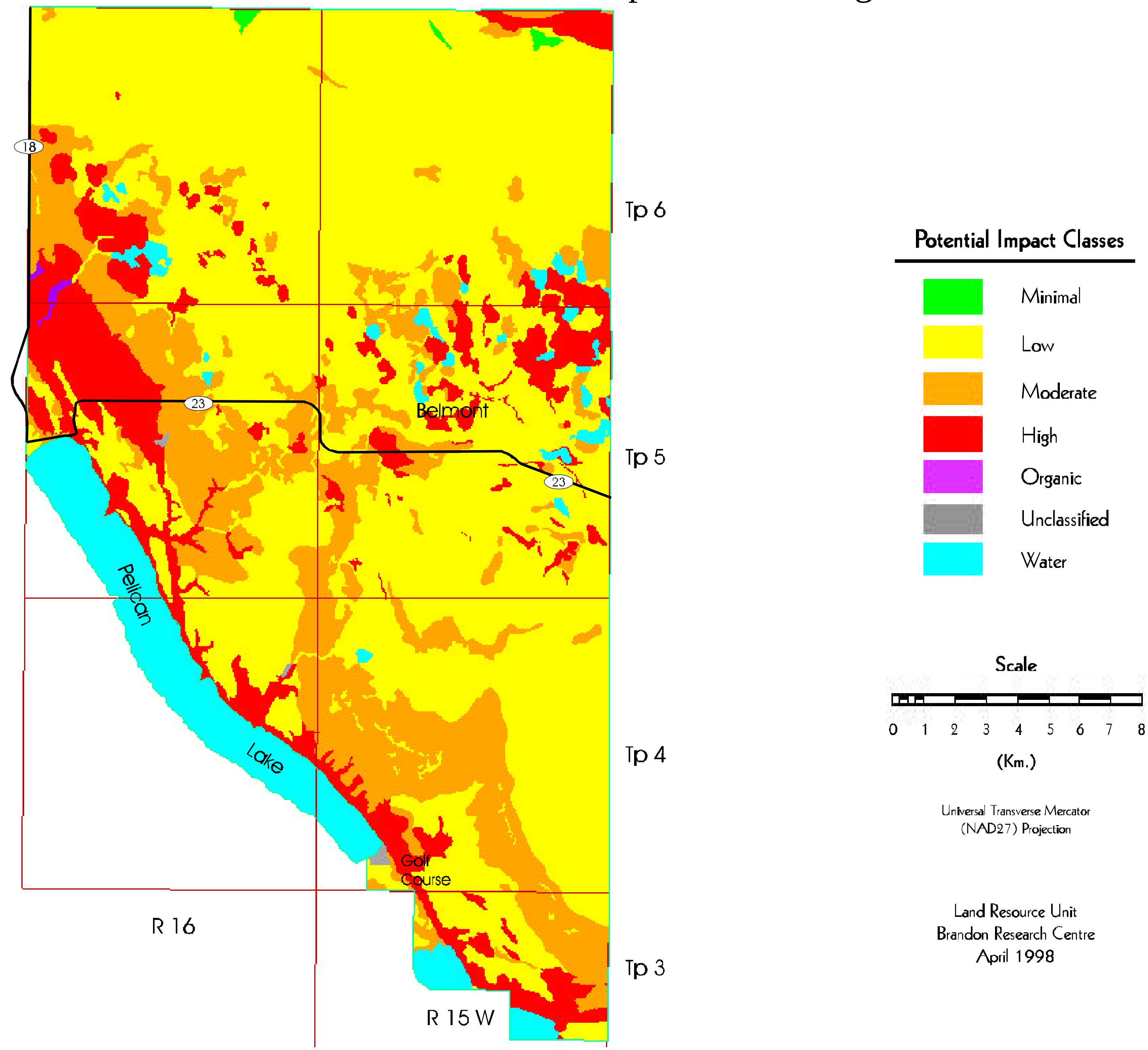
This generalized interpretive map is based on the dominant soil series and slope class for each soil polygon. The nature of the subclass limitations, and the classification of subdominant components is not shown at this generalized map scale.

Table 8. Potential Environmental Impact Under Irrigation[1]

Class	Area (ha)	Percent of RM
Minimal	**98**	**0.2**
Low	**33103**	**61.8**
Moderate	**10068**	**18.8**
High	**6465**	**12.1**
Organic	**50**	**0.1**
Unclassified	**51**	**0.1**
Water	**3710**	**6.9**
Total	**53545**	**100.0**

[1] Based on **dominant** soil, slope gradient, and slope length of each soil polygon.

Potential Environmental Impact Under Irrigation



Water Erosion Risk Map.

The risk of water erosion was estimated using the universal soil loss equation (USLE) developed by Wischmeier and Smith (1965). The USLE predicted soil loss (tons/hectare/year) is calculated for each soil component in each soil map polygon. Erosion risk classes are assigned based on the weighted average soil loss for each map polygon. The map shows 5 classes of soil erosion risk based on bare unprotected soil:

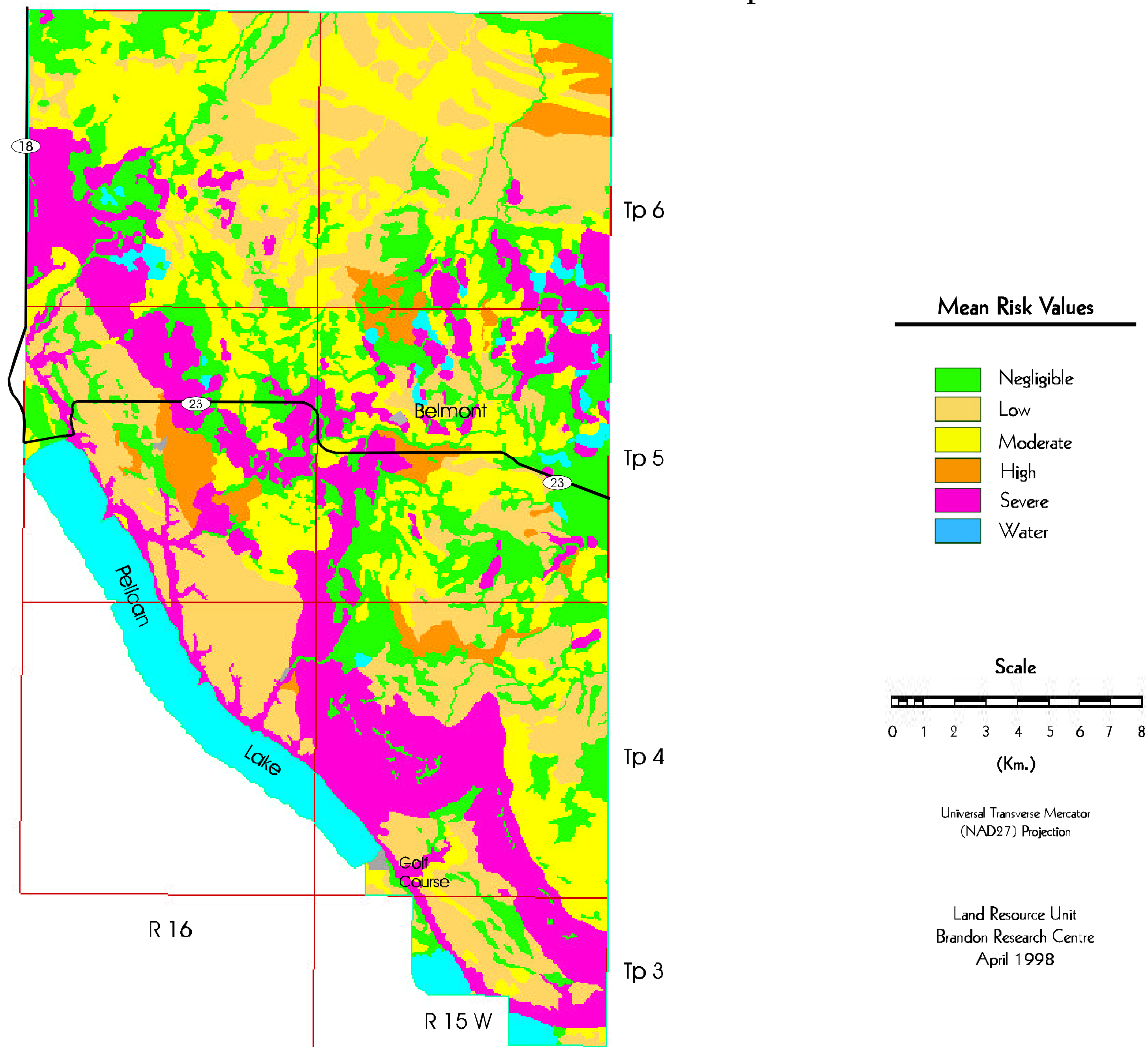
negligible
low
moderate
high
severe.

Cropping and residue management practices will significantly reduce this risk depending on crop rotation program, soil type, and landscape features.

Table 9. Water Erosion Risk

Class	Area (ha)	Percent of RM
Negligible	**10332**	**19.3**
Low	**13263**	**24.8**
Moderate	**13119**	**24.5**
High	**1925**	**3.6**
Severe	**11144**	**20.8**
Unclassified	**51**	**0.1**
Water	**3710**	**6.9**
Total	**53545**	**100.0**

Water Erosion Risk Map



Land Use Map.

The land use classification of the RM has been interpreted from LANDSAT satellite imagery, using supervised computer classification techniques. Many individual spectral signatures were classified and grouped into the seven general land use classes shown here. Although land use changes over time, and some land use practices on individual parcels may occasionally result in similar spectral signatures, this map provides a general representation of the current land use in the RM.

The following is a brief description of the land use classes:

Annual Crop Land - land that is normally cultivated on an annual basis.

Forage - perennial forages, generally alfalfa or clover with blends of tame grasses.

Grasslands - areas of native or tame grasses, may contain scattered stands of shrubs.

Trees - lands that are primarily in tree cover.

Wetlands - areas that are wet, often with sedges, cattails, and rushes.

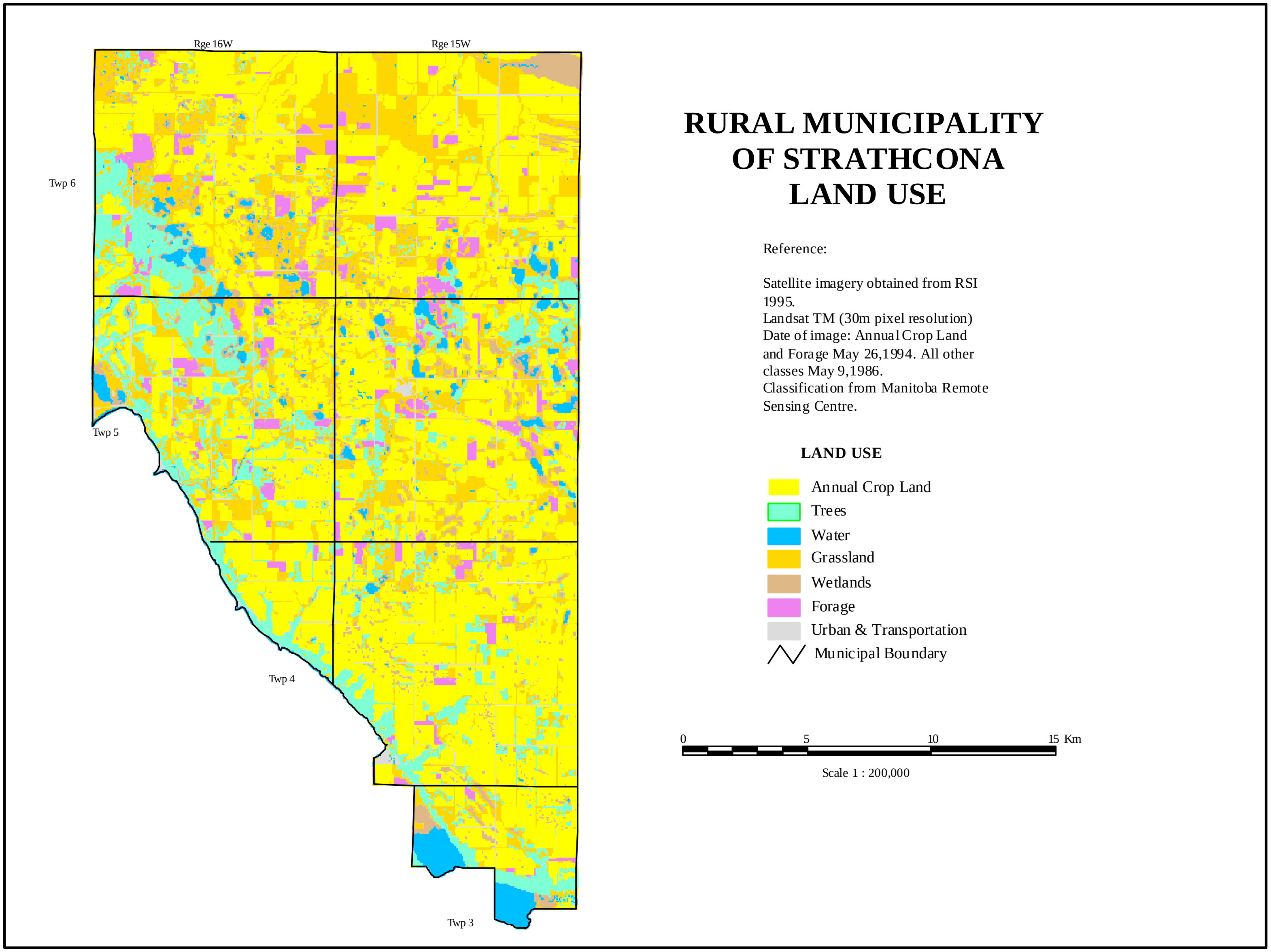
Water - open water - lakes, rivers streams, ponds, and lagoons.

Urban and Transportation - towns, roads, railways, quarries.

Table 10. Land Use[1]

Class	Area (ha)	Percent of RM
Annual Crop Land	**26030**	**50.7**
Forage	**2262**	**4.4**
Grasslands	**11181**	**21.8**
Trees	**5996**	**11.7**
Wetlands	**2710**	**5.3**
Water	**1828**	**3.6**
Urban and Transportation	**1362**	**2.7**
Total	**51369**	**100.0**

[1] Land use information (1995) and map supplied by Prairie Farm Rehabilitation Administration. Areas may vary from previous maps due to differences in analytical procedures.


RURAL MUNICIPALITY
OF STRATHCONA
LAND USE
Reference:
Satellite imagery obtained from RSI 1995.
Landsat TM (30m pixel resolution)
Date of image: Annual Crop Land and Forage May 26,1994. All other classes May 9,1986.
Classification from Manitoba Remote Sensing Centre.
LAND USE
Annual Crop Land
Trees
Water
Grassland
Wetlands
Forage
Urban & Transportation
Municipal Boundary
0
5
10
15 Km
Scale 1 : 200,000
Rge 16W
Rge 15W
Twp 6
Twp 5
Twp 4
Twp 3

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