

Canada Land Inventory (CLI)

CANADA LAND INVENTORY LEVEL-I LAT/LON DIGITAL DATA

REVISED EDITION

LAND CAPABILITY FOR WILDLIFE-UNGULATES

## 1. Coverage Specifications

Original Map Scale: 1:250,000

Resolution : .00024414 of a degree

Map Projection : None, i.e. latitude/longitude  
coordinates

Datum : NAD27

Spheroid : Clarke 1866

Units of Measure : decimal degrees

## 2. CLI Level I Latitude/Longitude Digital Data

This revised version of CLI Ungulates is now free of shoreline and internal lake boundaries and the thematic data has been extended past the shoreline to make it

compatible with the other five CLI themes in latitude longitude coordinates.

CLI Level I latitude/longitude digital data are intended for GIS users who wish to integrate in CLI thematic data with their own topological base maps, i.e. for GIS users who wish to "cookie-cut" the CLI thematic layers with their own topological shoreline layer.

CLI Level I thematic data is intentionally extended past the shoreline and as such does not contain the proper definition of shoreline. The data are not projected and coordinates, areas and perimeters are in decimal degrees.

DO NOT ATTEMPT TO DERIVE AREA STATISTICS FROM THESE DATA UNTIL THEY ARE INTEGRATED WITH A PROPER SHORELINE AND THE RESULTS PROJECTED TO A SUITABLE MAP PROJECTION.

If the above restrictions do not meet your GIS objectives, obtain the equivalent Level II UTM data with integrated base map from the same distribution source.

### 3. Attribute Schema (Polygon Attribute Table - PAT.DBF)

#### a) Standard ArcInfo Polygon Attribute Table (PAT) variables:

AREA Num 13,6 Area, in square degrees

PERIMETER Num 13,6 Perimeter, in decimal degrees

COVER\_# Num 11,0 Standard ArcInfo Polygon Number

COVER\_ID Num 11,0 Standard ArcInfo User ID

#### b) Original Digital Data Classification:

Class\_A Char 1 The primary and/or dominant CLI class

Modifier\_A Char 1 The modifier code (winter range indicator - Class 1,2,3 only)  
for Class\_A

Percent\_A Char 1 The proportion(% base 10) of the polygon in Class\_A (blank = 100%)

Subclas\_A1 Char 1 The primary limitation for the proportion of the polygon in  
Class\_A

Subclas\_A2 Char 1 The secondary limitation for the proportion of the polygon in  
Class\_A

Subclas\_A3 Char 1 The tertiary limitation for the proportion of the polygon in  
Class\_A

Specie\_A Char 3 The species indicators for the proportion of the polygon in  
Class\_A

Class\_B Char 1 The secondary CLI class

Modifier\_B Char 1 The modifier code (winter range indicator - Class 1,2,3 only) for Class\_B

Percent\_B Char 1 The proportion (% base 10) of the polygon in Class\_B (blank = 0%)

Subclas\_B1 Char 1 The primary limitation for the proportion of the polygon in  
Class\_B

Subclas\_B2 Char 1 The secondary limitation for the proportion of the polygon in  
Class\_B

Specie\_B Char 3 The species indicators for the proportion of the polygon in  
Class\_B

Class\_C Char 1 The tertiary CLI class

Modifier\_C Char 1 The modifier code (winter range indicator - Class 1,2,3 only) for Class\_C

Percent\_C Char 1 The proportion (% base 10) of the polygon in Class\_C (blank = 0%)

Subclas\_C1 Char 1 The primary limitation for the proportion of the polygon in  
Class\_C

Subclas\_C2 Char 1 The secondary limitation for the proportion of the polygon in  
Class\_C

Specie\_C Char 3 The species indicators for the proportion of the polygon in  
Class\_C

Spare Char 3 unused (blank)

#### 4. Valid CLI Classes and Modifier Codes

1 Lands having no significant limitations to the production of ungulates.

1W Lands in this special class are Class 1 areas that are winter ranges on which animals from surrounding areas depend.

2 Lands having very slight limitations to the production of ungulates.

2W Lands in this special class are Class 2 areas that are winter ranges on which animals from surrounding areas depend.

3 Lands having slight limitations to the production of ungulates.

3W Lands in this special class are Class 3 areas that are winter ranges on which animals from surrounding areas depend.

4 Lands having moderate limitations to the production of ungulates

5 Lands having moderately severe limitations to the production of ungulates.

6 Lands having severe limitations to the production of ungulates.

7 Lands having limitations so severe that there is little or no ungulate production.

8 Unclassified Areas - see note below.

Note: In this special case where Class\_A is coded as '8', the first character of Subclas\_A1 may be coded as follows:

Blank Unmapped area

Z Water area

T Forest reserves

O National parks

B Urban areas

W Provincial parks

#### 5.Valid CLI Limitation Subclasses

Climate

A - Aridity

C - Combination of climatic factors

Q - Snow Depth, Prolonged periods of snow

U - Exposure

Land

F - Low fertility

G - Poor landform

I - Inundation, excessive water level fluctuation

M - Excessive or deficient soil moisture

N - Adverse soil characteristics

R - Restrictive soil depth

T - Adverse topography, excessive steepness, flatness

## 6.CLI Ungulate Species Indicator

A - Antelope

C - Caribou

D - Deer

E - Elk

G - Goat

M - Moose

S - Mountain sheep

## 7.Narrative Description of CLI Ungulates

In general, the needs of all ungulates are much alike: each individual and species must have a sufficient quality and quantity of food, protective cover, and space

to meet its needs for survival, growth, and reproduction. The ability of the land to meet those needs is determined by the individual requirements of species or group of species under consideration, the physical characteristics of the land, and those factors, such as climate, that influence the plant and animal communities.

The degree of limitation associated with each area determines its capability class. The subclass denotes the primary factor that causes the limitation.

This classification system is based on two important considerations:

Capability ratings are established on the basis of the optimum vegetation stage (successional stage) that can be maintained with good wildlife management practices.

Capability ratings assigned do not reflect present land use (except in extreme cases such as heavily populated urban areas), ownership, lack or access, distance from cities, or amount of hunting pressure.

#### 8. Detailed CLI Ungulates Class Descriptions

CLASS 1 Lands in this class have no significant limitations to the production of ungulates. Capability on these lands is high. They provide a wide variety and abundance of food plants and other habitat elements.

CLASS 1W Lands in this special class are Class 1 areas that are winter ranges on which animals from surrounding areas depend.

CLASS 2 Lands in this class have very slight limitations to the production of ungulates. Capability on these lands is high but less than class 1. Slight limitations are due to climatic or other factors.

CLASS 2W Lands in this special class are Class 2 areas that are winter ranges on which animals from surrounding areas depend.

CLASS 3 Lands in this class have slight limitations to the production of ungulates. Capability on these lands is moderately high, but productivity may be reduced in some years. Slight limitations are due to characteristics of the land that affect the quality and quantity of habitat, or to climatic factors that limit the mobility of ungulates or the availability of food and cover.

CLASS 3W Lands in this special class are class 3 areas that are winter ranges on which animals from surrounding areas depend.



CLASS 4 Lands in this class have moderate limitations to the production of ungulates. Capability on these lands is moderate. Limitations are similar to those in class 3, but the degree is greater.

CLASS 5 Lands in this class have moderately severe limitations to the production of ungulates. Capability on these lands is moderately low. Limitations are usually a combination of two or more of climate, soil moisture, fertility, depth of bedrock or other impervious layers, topography, flooding, exposure, and adverse soil characteristics.

CLASS 6 Lands in this class have severe limitations to the production of ungulates. Capability on these lands is very low. Limitations are so

severe that they are easily recognized; for example, soil depth may be negligible or climatic factors so extreme that ungulate populations are severely reduced.

CLASS 7 Lands in this class have limitations so severe that there is no ungulate production.

## 9. Detailed CLI Ungulates Subclass Descriptions

With the exception of Class 1, the classes are divided into subclasses according to the nature of the limitations, which determine the class. In most cases the limitations do not affect the animals themselves, but rather the ability of the land to produce suitable food and cover plants. For convenience the subclasses are

placed in two main groups: those relating to climate and those relating to inherent characteristics of the land.

### Climate

The following are used to denote significant climatic factors that may affect either the animals or the ability of the land to produce suitable food and cover.

'A' Aridity - drought or aridity that adversely affects the habitat.

'C' Climate - a combination of climatic factors acting to reduce favourable habitat, and the production and survival of ungulates.

'Q' Snow depth - excessive snow depth that reduces the mobility of ungulates and availability of food plants.

'U' Exposure or aspect - special climatic factors, such as exposure to prevailing winter winds, that adversely affect the animals or their habitat.

Land

The following subclasses are used to denote significant characteristics of land that limit its usefulness for producing suitable food and cover. Some may also have a slight adverse effect on the animals.

'F' Fertility - lack of nutrients in the soil for optimum plant growth.

'G' Landform - poor distribution or interspersed landforms necessary for optimum ungulate habitat.

'I' Inundation - excessive water level fluctuation or tidal action that adversely affects the habitat or survival of ungulates.

'M' Soil moisture - poor soil moisture, either excessive or deficient.

'N' Adverse soil characteristics - excessive salinity, lack of essential trace elements, or abundance of toxic elements in the soil.

'R' Soil depth - restriction of the rooting zone by bedrock or other impervious layers.

'T' Adverse topography - either steepness or flatness of the land.

### Examples

An area of Class 5 land with topography and soil fertility limitations to deer production as shown:

5\*\*TF\*D

An area of which 70% is Class 4 for deer with limitations due to snow depth and topography and 30% in Class 3 wintering area for elk and moose with slight

limitations due to snow depth: 4\*7QT\*\*3W3Q\*EM

An important wintering area for deer and mountain sheep of which 60% is class 1 and 40% is class 1 with slight limitations due to exposed bedrock as shown:

1W6\*\*\*DS\*2W4R\*DS

Asterisks (\*) represent blanks

For further information see "The Canada Land Inventory Land Capability Classification for Wildlife", Report no. 7, 1970.

### 10. Accreditation

The Canada Land Inventory extraction and distribution is managed by:

The Canada Centre for Remote Sensing

Natural Resources Canada

Government of Canada

Room 650 - 615 Booth Street

Ottawa, ON, Canada

K1A 0E9

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