

Canada Land Inventory (CLI)

CANADA LAND INVENTORY LEVEL-I DIGITAL DATA

SOIL CAPABILITY FOR AGRICULTURE

SCALE : 1:250,000 ATTRIBUTE LENGTH: 24

PROJECTION : lat/lon RESOLUTION: : .00024414 degrees

ATTRIBUTE SCHEMA:

3 CLASS\_A CHAR (1),

3 PERCENT\_A CHAR (1),

3 SUBCLASS\_A1 CHAR (1),

3 SUBCLASS\_A2 CHAR (1),

3 CLASS\_B CHAR (1),

3 PERCENT\_B CHAR (1),

3 SUBCLASS\_B1 CHAR (1),

3 SUBCLASS\_B2 CHAR (1),

3 CLASS\_C CHAR (1),

3 PERCENT\_C CHAR (1),

3 SUBCLASS\_C1 CHAR (1),

3 SUBCLASS\_C2 CHAR (1),

3 CLASS\_D CHAR (1),

3 PERCENT\_D CHAR (1),

3 SUBCLASS\_D1 CHAR (1),

3 SUBCLASS\_D2 CHAR (1),

3 CLASS\_E CHAR (1),

3 PERCENT\_E CHAR (1),

3 SUBCLASS\_E1 CHAR (1),

3 SUBCLASS\_E2 CHAR (1),

3 CLASS\_F CHAR (1),

3 PERCENT\_F CHAR (1),

3 SUBCLASS\_F1 CHAR (1),

3 SUBCLASS\_F2 CHAR (1),

NOTE1 : THIS COVERAGE HAS NO CAPABILITY IN WATER.

#### VALID CLASSES

1. NO SIGNIFICANT LIMITATIONS

2. MODERATE LIMITATIONS, MODERATE CONSERVATION PRACTICES REQUIRED

3. MODERATELY SEVERE LIMITATIONS, RANGE OF CROPS RESTRICTED OR SPECIAL CONSERVATION PRACTICES REQUIRED.

4. SEVERE LIMITATIONS

5. FORAGE CROPS IMPROVEMENT PRACTICES FEASIBLE

6. FORAGE CROPS IMPROVEMENT PRACTICES NOT FEASIBLE

7. NO CAPABILITY FOR ARABLE CULTURE OR PERMANENT PASTURE

8. SPECIAL CASES - SEE NOTE

0. ORGANIC SOILS

VALID LIMITATION SUBCLASSES

C. ADVERSE CLIMATE

D. UNDESIRABLE SOIL STRUCTURE AND/OR LOW PERMEABILITY

E. EROSION

F. LOW FERTILITY

I. INUNDATION BY STREAMS OR LAKES

M. MOISTURE LIMITATION

N. SALINITY

P. STONINESS

R. CONSOLIDATED BEDROCK

S. CUMULATIVE ADVERSE SOIL CHARACTERISTICS

T. TOPOGRAPHY LIMITATION

W. EXCESS WATER

X. CUMULATIVE MINOR ADVERSE CHARACTERISTICS

NOTE2 : SPECIAL CLASSIFICATIONS ALLOWED ON MAPS FOR COMPUTER INPUTS ARE:

CLASS\_A=8, SUBCLASS\_A1=BLANK - UNMAPPED AREA

CLASS\_A=8, SUBCLASS\_A1=Z - WATER AREA

CLASS\_A=8, SUBCLASS\_A1=T - FOREST RESERVES

CLASS\_A=8, SUBCLASS\_A1=O - NATIONAL PARKS

CLASS\_A=8, SUBCLASS\_A1=B - URBAN AREA

CLASS\_A=8, SUBCLASS\_A1=W - PROVINCIAL PARKS

CLASS\_A=8, SUBCLASS\_A1=I - IRRIGATED RATING ONLY

## NARRATIVE

IN THIS CLASSIFICATION THE MINERAL SOILS ARE GROUPED INTO SEVEN CLASSES ON THE BASIS OF SOIL SURVEY INFORMATION. SOILS CLASSES AS 1,2,3, OR 4 ARE CONSIDERED CAPABLE OF SUSTAINED USE FOR CULTIVATED FIELD CROPS, THOSE IN CLASSES 5 AND 6 ONLY FOR PERENNIAL FORAGE CROPS AND THOSE IN CLASS 7 FOR NEITHER.

SOME OF THE IMPORTANT FACTORS ON WHICH THE CLASSIFICATION IS BASED ARE:

THE SOILS WILL BE WELL MANAGED AND CROPPED, UNDER A LARGELY MECHANIZED SYSTEM.

LAND REQUIRING IMPROVEMENTS, INCLUDING CLEARING, THAT CAN BE MADE ECONOMICALLY BY THE FARMER HIMSELF, IS CLASSED ACCORDING TO ITS LIMITATIONS OR HAZARDS IN USE AFTER THE IMPROVEMENTS HAVE BEEN MADE. LAND REQUIRING IMPROVEMENTS BEYOND THE MEANS OF THE FARMER HIMSELF IS CLASSED ACCORDING TO ITS PRESENT CONDITION.

THE FOLLOWING ARE NOT CONSIDERED: DISTANCES TO MARKET, KIND OF ROADS, LOCATION, SIZE OF FARMS, TYPE OF OWNERSHIP, CULTURAL PATTERNS, SKILL OR RESOURCES OF INDIVIDUAL OPERATORS, AND HAZARD OF CROP DAMAGE BY STORMS.

THE CLASSIFICATION DOES NOT INCLUDE CAPABILITY OF SOILS FOR TREES, TREE FRUITS, SMALL FRUITS, ORNAMENTAL PLANTS, RECREATION, OR WILDLIFE.

THE CLASSES ARE BASED ON INTENSITY, RATHER THAN KIND, OF THEIR LIMITATIONS FOR AGRICULTURE. EACH CLASS INCLUDES MANY KINDS OF SOIL, AND MANY OF THE SOILS IN ANY CLASS REQUIRE UNLIKE MANAGEMENT AND TREATMENT.

FOR PROVINCES OTHER THAN SASKATCHEWAN, ALBERTA AND BRITISH COLUMBIA, ONLY CLASS A TO C FIELDS MAY BE CODED IN ORDER TO CLASSIFY LAND AT ITS PRESENT STATE, WITH NO DISTINCTION BEING MADE BETWEEN IRRIGATED AND NON-IRRIGATED LAND.

IN SASKATCHEWAN AND ALBERTA, LAND IS AGAIN CLASSIFIED ACCORDING TO ITS PRESENT USE, BUT FURTHERMORE A DIFFERENTIATION IS PROVIDED FOR IRRIGATED AND NON-IRRIGATED LAND. IF A LAND UNIT IS ENTIRELY NON-

IRRIGATED, THE CLASSIFICATION FOR THIS LAND WILL BE CODED IN CLASSES A TO C. IF A LAND UNIT IS COMPLETELY IRRIGATED, THE CLASSIFICATION FOR THIS LAND WILL BE CODED IN CLASSES D TO F. SHOULD A LAND UNIT BE

COMPRISED OF BOTH IRRIGATED AND NON-IRRIGATED LAND, THEN A COMPLEX CLASSIFICATION WILL BE REQUIRED TO REPRESENT THIS AREA. THE PORTION OF THE CLASSIFICATION THAT APPLIES TO THE NON-IRRIGATED AREA IN THE LAND

UNIT WILL BE CODED IN CLASSES A TO C WHILE THE PORTION PERTAINING TO THE IRRIGATED LAND WILL BE CODED IN CLASSES D TO F. UP TO THREE OF THE CLASSES A TO F MAY BE CODED FOR ANY SUCH LAND UNIT AND THE PERCENTAGES

MUST ADD UP TO A TOTAL OF 10.

LAND GIVEN A CAPABILITY CLASSIFICATION OF 6 OR 7 WILL NEVER WARRANT IRRIGATION SINCE THE BENEFITS DERIVED FROM IRRIGATION WOULD BE NEGLIGIBLE. FOR THIS REASON, CAPABILITY CLASSES 6 AND 7 WILL ALWAYS APPEAR IN THE NON- IRRIGATED PORTION (CLASSES A TO C) OF A LAND UNIT CLASSIFICATION.

ON THE CANADA LAND INVENTORY AGRICULTURAL MAPS, THE SYMBOLS PERTAINING TO AN IRRIGATED LAND AREA WILL BE PRINTED IN RED.

IN BRITISH COLUMBIA NO CLEAR STANDARD HAS BEEN ADOPTED YET SINCE NO AGRICULTURAL INVENTORY MAPS HAVE BEEN PUBLISHED AT THIS TIME.

#### CLASS DESCRIPTIONS

CLASS 1 SOILS IN THIS CLASS HAVE NO SIGNIFICANT LIMITATIONS IN USE FOR CROPS. THE SOILS ARE DEEP, ARE WELL TO IMPERFECTLY DRAINED, HOLD MOISTURE WELL, AND IN THE

VIRGIN STATE WERE WELL SUPPLIED WITH PLANT NUTRIENTS.

THEY CAN BE MANAGED AND CROPPED WITHOUT DIFFICULTY.

UNDER GOOD MANAGEMENT THEY ARE MODERATELY HIGH TO HIGH IN PRODUCTIVITY FOR A WIDE RANGE OF FIELD CROPS.

CLASS 2 SOILS IN THIS CLASS HAVE MODERATE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE MODERATE

CONSERVATION PRACTICES. THE SOILS ARE DEEP AND HOLD

MOISTURE WILL. THE LIMITATIONS ARE MODERATE AND THE

SOILS CAN BE MANAGED AND CROPPED WITH LITTLE DIFFICULTY.

UNDER GOOD MANAGEMENT THEY ARE MODERATELY HIGH TO HIGH IN PRODUCTIVITY FOR A FAIRLY WIDE RANGE OF CROPS.

CLASS 3 SOILS IN THIS CLASS HAVE MODERATELY SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES. THE LIMITATIONS ARE MORE SEVERE THAN FOR CLASS 2 SOILS. THEY AFFECT ONE OR MORE OF THE FOLLOWING PRACTICES: TIMING AND EASE OF TILLAGE, PLANTING AND HARVESTING, CHOICE OF CROPS, AND METHODS OF CONSERVATION. UNDER GOOD MANAGEMENT THEY ARE FAIR TO MODERATELY HIGH IN PRODUCTIVITY FOR A FAIR RANGE OF CROPS.

CLASS 4 SOILS IN THIS CLASS HAVE SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES, OR BOTH. THE LIMITATIONS SERIOUSLY AFFECT ONE OR MORE OF THE FOLLOWING PRACTICES: TIMING AND EASE OF TILLAGE, PLANTING AND HARVESTING, CHOICE OF CROPS, AND METHODS OF CONSERVATION. THE SOILS ARE LOW TO FAIR IN PRODUCTIVITY FOR A FAIR RANGE OF CROPS BUT MAY HAVE HIGH PRODUCTIVITY FOR A SPECIALLY ADAPTED CROP.

CLASS 5 SOILS IN THIS CLASS HAVE VERY SEVERE LIMITATIONS THAT RESTRICT THEIR CAPABILITY TO PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE FEASIBLE. THE LIMITATIONS ARE SO SEVERE THAT SOILS ARE NOT CAPABLE OF USE FOR SUSTAINED PRODUCTION OF ANNUAL FIELD CROPS. THE SOILS ARE CAPABLE OF PRODUCING NATIVE OR TAME SPECIES OF PERENNIAL FORAGE PLANTS, AND MAY BE IMPROVED BY USE OF FARM MACHINERY. THE IMPROVEMENT PRACTICES MAY INCLUDE CLEARING OF BUSH, CULTIVATION, SEEDING, FERTILIZING, OR WATER CONTROL.

CLASS 6 SOILS IN THIS CLASS ARE CAPABLE ONLY OF PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE NOT FEASIBLE. THE SOILS PROVIDE SOME SUSTAINED GRAZING FOR FARM ANIMALS, BUT THE LIMITATIONS ARE SO SEVER THAT IMPROVEMENT BY USE OF FARM MACHINERY IS IMPRACTICAL TERRAIN MAY BE UNSUITABLE FOR USE OF FARM MACHINERY, OR THE SOILS MAY NOT RESPOND TO IMPROVEMENT, OR THE GRAZING SEASON MAY BE VERY SHORT.

CLASS 7 SOILS IN THIS CLASS HAVE NO CAPABILITY FOR ARABLE CULTURE OR PERMANENT PASTURE. THIS CLASS ALSO INCLUDES

ROCKLAND, OTHER NON-SOIL AREAS, AND BODIES OF WATER TOO SMALL TO SHOW ON THE MAPS.

CLASS 0 ORGANIC SOILS (NOT PLACED IN CAPABILITY CLASSES).

#### SUBCLASS DESCRIPTIONS

'C' ADVERSE CLIMATE - THIS SUBCLASS DENOTES A SIGNIFICANT ADVERSE CLIMATE FOR CROP PRODUCTION AS 'MEDIAN'

CLIMATE WHICH IS DEFINED AS ONE WITH SUFFICIENTLY HIGH  
GROWING-SEASON TEMPERATURES TO BRING CROPS TO MATURITY.

'D' UNDESIRABLE SOIL STRUCTURE AND/OR LOW PERMEABILITY - THIS SUBCLASS INDICATES SOILS THAT ARE DIFFICULT TO TILL OR SOILS WHERE WATER IS ABSORBED VERY SLOWLY OR WHERE THE DEPTH OF ROOTING ZONE IS RESTRICTED BY CONDITIONS OTHER THAN A HIGH WATER TABLE OR CONSOLIDATED BEDROCK.

'E' EROSION - THIS SUBCLASS INCLUDES SOILS WHERE DAMAGE FROM EROSION IS A LIMITATION TO AGRICULTURAL USE. DAMAGE IS ASSESSED ON LOSS OF PRODUCTIVITY AND ON THE DIFFICULTIES IN FARMING LAND WITH GULLIES.

'F' LOW FERTILITY - INCLUDED ARE SOILS HAVING LOW FERTILITY THAT EITHER IS CORRECTABLE WITH CAREFUL MANAGEMENT IN THE USE OF FERTILIZERS AND SOIL AMENDMENTS OR IS DIFFICULT TO CORRECT BY ANY PRACTICAL MEANS. THE LIMITATIONS MAY BE DUE TO LACK OF

PLANT NUTRIENTS, HIGH ACIDITY OR ALKALINITY, LOW EXCHANGE CAPACITY, HIGH LEVELS OF CARBONATES OR PRESENCE OF TOXIC COMPOUNDS.

'I' INUNDATION BY STREAMS OR LAKES - THIS SUBCLASS INCLUDES SOILS SUBJECTED TO INUNDATION CAUSING CROP DAMAGE OR RESTRICTING AGRICULTURAL USE.

'M' MOISTURE LIMITATIONS - THIS CONSISTS OF SOILS WHERE CROPS ARE AFFECTED BY DROUGHT OWING TO INHERENT SOIL CHARACTERISTICS.

THESE SOILS USUALLY HAVE LOW WATER-HOLDING CAPACITY.

'N' SALINITY - SOILS OF THIS SUBCLASS POSSESS EXCESSIVE SOLUBLE SALTS WHICH ADVERSELY AFFECT CROP GROWTH OR RESTRICT THE RANGE OF CROPS THAT MAY BE GROWN.

'P' STONINESS - THESE SOILS ARE SUFFICIENTLY STONEY TO HINDER TILLAGE, PLANTING AND HARVESTING OPERATIONS.

'R' CONSOLIDATED BEDROCK - THIS SUBCLASS INCLUDES SOILS WHERE THE PRESENCE OF BEDROCK NEAR THE SURFACE RESTRICTS THEIR AGRICULTURAL USE. CONSOLIDATED BEDROCK AT DEPTHS GREATER THAN 3 FEET FROM THE SURFACE IS NOT CONSIDERED AS A LIMITATION EXCEPT ON IRRIGATED LANDS WHERE A GREATER DEPTH OF SOIL IS DESIRABLE.

'S' THERE ARE TWO INTERPRETATIONS ACCORDED TO SUBCLASS S. IN THE

CASE OF MAPS GENERALLY PRODUCED BEFORE 1969, SUBCLASS S WILL BE USED IN PLACE OF SUBCLASSES D, F, M OR N. IF TWO OR MORE OF SUBCLASSES D, F, M OR N ARE APPLICABLE TO THE SAME AREA, THEN AGAIN SUBCLASS S WILL BE SUBSTITUTED. ON MOST OF THE MAPS SUBSEQUENT TO 1969, THE APPLICABLE SUBCLASS D,F, M OR N WILL APPEAR IF AN AREA IS CLASSIFIED WITH A SINGLE SUBCLASS.



FOR AREAS CLASSIFIED WITH TWO OR MORE OF D, F, M OR N THEN SUBCLASS S WILL APPEAR, DENOTING A COMBINATION OF SUBCLASSES.

'T' TOPOGRAPHY - THIS SUBCLASS IS MADE UP OF SOILS WHERE

TOPOGRAPHY IS A LIMITATION. BOTH THE PERCENT OF SLOPE AND THE PATTERN OR FREQUENCY OF SLOPES IN DIFFERENT DIRECTIONS AFFECT THE COST OF FARMING AND THE UNIFORMITY OF GROWTH AND MATURITY OF CROPS AS WELL AS THE HAZARD OF EROSION.

'W' EXCESS WATER - THIS SUBCLASS INCLUDES SOILS WHERE EXCESS WATER OTHER THAN BROUGHT ABOUT BY INUNDATION IS A LIMITATION TO AGRICULTURAL USE. EXCESS WATER MAY RESULT FROM INADEQUATE SOIL DRAINAGE, A HIGH WATER TABLE, SEEPAGE OR FROM RUNOFF FROM SURROUNDING AREAS.

'X' THIS SUBCLASS IS COMPRISED OF SOILS HAVING A LIMITATION RESULTING FROM THE CUMULATIVE EFFECT OF TWO OR MORE ADVERSE CHARACTERISTICS.

FOR FULL DETAILS SEE 'THE CANADA LAND INVENTORY, SOIL CAPABILITY CLASSIFICATION FOR AGRICULTURE' REPORT NO. 2, 1969.