

PFRA Generalized Landcover

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Introduction

The Landcover Generalization process was undertaken because of the unwieldy/overwhelming size and rendering problems of the original vectorized landcover data.

LANDSAT 7 imagery used in the project was collected during the Western Grains Transition Payment Program (WGTPP). This landcover imagery has a 30 metre resolution and is stored in over 1,100 vectorized 1:50,000 map sheet tiles. The data requires over seven gigabytes of disc space. If the user wishes to view a specific area, they must identify the 1:50,000 map sheet, then browse to the desired mapsheet. Due to the great detail, this vector product (102 in GIS_LIB) becomes computationally impossible on the desktop computer when multiple mapsheets are drawn. Spatial analysis and modeling at provincial or western Canada extents are also impossible in the mapsheet format.

Description

The WGTPP Generalized Landcover is a seamless vector coverage of the agricultural extent of Western Canada which may be used with desktop GIS applications. The generalized vector coverage is 124 MB in size, and requires roughly 60 times less space than the mapsheet tiles. An algorithm was created using the processing tools of the ArcINFO GRID module. A series of AMLs and digital rules have been implemented in case new satellite imagery is acquired.

The results of the generalization process are quite interesting and it has been suggested that



the percentage of some landcover types in the generalized format (such as Cropland) may actually be more accurate than the original imagery. This generalization process is an excellent example of a value-added remote sensing product.

"Generalized format may actually be more accurate than the original imagery."

The Files

This CD contains four main folders: documentation, data, graphics and Mr. Sid.

Documentation

There are two documentation files:

- 1) **documentation.pdf** is the file you are presently reading.
- 2) **landcover.pdf** describes the methodology and issues addressed in creating this product.

Data

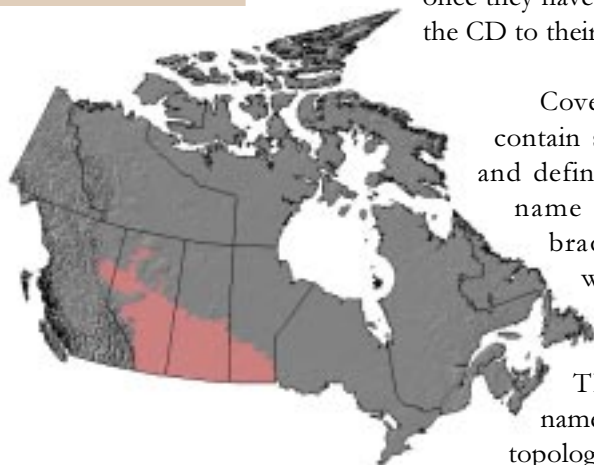
There are 15 data files in ArcExport (.e00) format which can be used in ARC/INFO or in ArcView. The .e00s have been created by exporting the ARC/INFO coverages (no compression). Provincial coverages are supplied in Geographic coordinates, and the agricultural extent coverage is in Lambert Conic Conformal projection. All coverages are in NAD83. The file names used on this CD reflect the naming convention used in the PFRA GIS Unit digital library.



Geographic Information Systems

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Only the data files on this CD use this convention. Users may change the file names once they have copied the files from the CD to their systems.



This map indicates the extent of the seamless vector coverage.

Coverage attribute tables contain standard item names and definitions (Note: item name definitions are in brackets and represent width, output, type and number of decimal places respectively). These standard item names contain spatial and topologic information.

The polygon attribute tables (.pat) of polygon coverages will all contain the following items:

AREA (8 18 F 5) COV-# (4 5 B -)
 PERIMETER (8 18 F 5) COV-ID (4 5 B -)

The arc attribute tables (.aat) of arc coverages will all contain:

FNODE# (4 5 B -) TNODE# (4 5 B -)
 LPOLY# (4 5 B -) RPOLY# (4 5 B -)
 LENGTH (4 12 F 3) COV-# (4 5 B -)
 COV-ID (4 5 B -)

The user should not edit these item names.

Additional items have been added to the .pat for the coverages. GRID-CODE (4 8 B -) contains the number from the original classified landcover imagery. CLASS (18 18 C -) is the landcover class associated with that original imagery number. ACRES (8 18 F 2) is a calculation of the AREA field into acres.

All coverages are built with polygon topology, and are in Geographic co-ordinates:

- 1) **107g_pf.e00** - Landcover extent for Northern BC, Alberta, Saskatchewan, and Manitoba. The .e00 size is 198.0 MB.

Graphics

There is one graphics file.

- 1) **lcv.pdf** - is a poster of the Generalized product.

Mr Sid

There are Mr. Sid files included on this CD for use with mapping applications. They follow the same naming conventions as the coverages and are supplied in the native UTM projection for each province. The agricultural extent coverage is in Lamberts Conic Conformal projection.

- 1) **107p_pf.sid** - Landcover extent for Northern BC, Alberta, Saskatchewan, and Manitoba. (Compressed UTM Imagery)
- 2) **107g_bc.sid** - Landcover for Northern BC. (Compressed UTM Imagery)
- 3) **107g_ab.sid** - Landcover for Alberta. (Compressed UTM Imagery)
- 4) **107g_sk.sid** - Landcover for Saskatchewan. (Compressed UTM Imagery)
- 5) **107g_mb.sid** - Landcover for Manitoba. (Compressed UTM Imagery)

Intended Use and Spatial Representation

The intended use for the Generalized Landcover is for provincial or agricultural extent analysis and modeling. The Generalized Landcover may also be useful cartographically, as well as for internet mapping applications. This product should NOT be used for detailed mapping. Product 102 in the PFRA GIS Library is more appropriate for detailed mapping.

On a provincial or larger extent the landcover class area distributions are within 4% of the original 30 meter imagery. For example, in the province of Saskatchewan the original imagery contained 56% cropland, and the generalized vector coverage contains 58% cropland. Data from the WGTTP program and 1996 Statistics Canada census numbers were used to verify accuracy.

Updates

If you discover any data quality issues that you feel should be addressed, please contact PFRA. When reporting an error please identify the location where the issue is found and describe the error clearly. Please provide your name and contact number in case further information is required.

This data is available at <http://www.agr.ca/pfra/gis/index.htm>

Please feel free to make suggestions about how this product may be improved.



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Estimated Accuracy

"The intended use for the Generalized Landcover is NOT detailed mapping...at a provincial or larger extent the landcover class area distributions are within 4% of the original 30 meter imagery."