

Alberta Biodiversity
Monitoring Institute

www.abmi.ca

Human Footprint Map Layer 3x7 Areas Version 1.0 - Metadata

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Contact Information

If you have questions or concerns about this publication, you can contact:

ABMI Information Centre
CW-405 Biological Sciences Centre
University of Alberta
Edmonton, Alberta, Canada, T6G 2E9
Phone: (780) 492-5766
E-mail: abmiinfo@ualberta.ca

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1 Summary

The Alberta Biodiversity Monitoring Institute (ABMI) tracks changes in human footprint across the province of Alberta. One of the goals of the Institute is to provide credible and understandable information on the amount and location of multiple human footprints to support natural resources management. This document provides metadata related to the Human Footprint Map Layer that ABMI has created for 3x7 km rectangular areas centered on its core sampling sites with the long side oriented east-west.

At each of the 1656 locations, a 3x7 km rectangle was examined at a 1:5000 scale to delineate any human footprint present (see Sections 2 and 3 below for further detail). This process was conducted for 1999 using Valtis imagery, 2001-2005 using IRS imagery for each year and 2007-2011 using SPOT 5 imagery for each year. Note that there is no metadata available for IRS mosaics 2001-2004, and many of the tiles may have been repeated among these years.

2 Background on the Alberta Biodiversity Monitoring Institute

The ABMI was initiated in 1997 through a broad partnership of industry, government and academia. ABMI is tasked with tracking status and change to biodiversity at regional and provincial scales, and providing relevant and objective information to policy makers, scientists and the general public.

The Institute collects information on thousands of terrestrial and aquatic species (mammals, birds, mites, aquatic invertebrates, vascular plants, lichens, and moss), habitat structures, and human footprints. Each of the 1656 sites is sampled once every five years using a set of scientifically reviewed protocols. In addition, human footprint data is compiled across the province and summarized on an ongoing basis. This standardized data collection is designed to reduce duplication and increase cost efficiency for provincial and regional monitoring commitments, and to provide managers with better understanding of cumulative impacts on the environment from multiple industries and human activities.

3 Human Footprint in the 3x7 Layer

3.1 Footprints

Human footprint refers to the geographic extent of areas under human use that either have lost their natural cover (e.g., cities, roads, agricultural land, industrial areas) or whose natural cover is periodically or temporarily replaced by resource extraction activities (e.g., forestry, seismic lines, surface mining). Human footprint areas can maintain many native and introduced species, particularly as temporary disturbances recover through time. ABMI monitoring of species and habitat elements includes the components of biodiversity that occur in these areas. This layer includes all human footprint areas that have been created.

4 Sub-layers

The ABMI Human 3X7 Footprint Map Layer, Version 1.0, is the product of multiple sub-layers. Each sub-layer is described below, as is the final single layer that combines the sub-layers. Also provided is a brief description of the layer contents, the source of the data, geometric (shape)

type (i.e., polygon, linear, point), modifications made to the layer by ABMI, and the associated human footprint codes. Note that a given sub-layer may contribute to multiple human footprint codes. Linear features were buffered into polygons according to the buffer widths which were determined with the aid of the (5.8 m resolutions) SPOT 5 (2.5 m resolution) imagery. The order of precedence of each sub-layer in the creation of the Human Footprint Layer, Version 1.0 is given in Table 2. Each type of human footprint was given a 4-digit code and feature type. A list of these codes and a brief description is given in Table 3.

4.1 Reservoirs

Order of Precedence: A

Layer Contents: Water Reservoirs

Source Data: SRD Base Layer Database (Hydropoly); additions made by ABMI using the IRS or SPOT 5 imagery.

Original Shape Type: Polygon

Modifications: Data were verified against IRS or SPOT imagery.

Layer Contributes to the Following HF Codes¹:

- **1903** Reservoir

Accuracy: Created by SRD using 1:20 000 Access data updated IRS and SPOTS 5 imagery using 1:5000. Spatial accuracy is 8m

4.2 Borrow Pits, Sump, Dug-outs and Lagoons

Order of Precedence: B

Layer Contents: **Borrow Pits:** Includes pits dug to build forestry and well-site roads. They are always associated with a road, are rectangular in shape, usually <1ha and may or may not be filled with water.

Sump & Lagoons: Interpreted the same as borrow pits but were closely associated with well-sites.

Dugouts: Interpreted the same as borrow pits but were more typically in pasture.

Source Data: Borrow pits, sumps and dugouts were created by ABMI using the IRS or SPOT 5 imagery. The SRD Base Layer was used as a reference in interpretation. Lagoons were extracted from the SRD Base Layer Database (Hydropoly).

Original Shape Type: Polygon

Layer Contributes to the Following HF Codes:

- **1901** Dug-out, Borrow-pit, Sump
- **1902** Lagoon

Accuracy: Digitized as polygon from IRS or SPOT 5 imagery at 1:5000 scale. Data have a spatial accuracy of approximately 9m.

¹ Note that a given sub-layer may contribute to multiple HF codes. Similarly, a given HF code may be derived from several sub-layers.

4.3 Roads (Paved and Gravel Surface)

Order of Precedence: C

Layer Contents: All paved and gravel roads, does not include vegetated margins.

Source Data: SRD Base Layer Database (Paved and Gravel Roads), additions made by ABMI using the IRS or SPOT 5 imagery.

Original Shape Type: Linear, with buffers added.

Modifications: Features were verified against IRS or SPOT 5 imagery.

Layer Contributes to the Following HF Codes:

- **1301** Lin20Hard. Linear road/industrial features >20 m wide
- **1302** Lin10Hard. Linear road/industrial features 10-20 m wide
- **1401** Lin5Hard. Linear road/trail/path/industrial features 2-10 m wide

Accuracy: Linear portion was created by SRD using 1:20 000 Access data updated using IRS or SPOT 5 imagery. Data for the center line of the feature have a spatial accuracy of approximately 6m. Features were buffered according to the measurement on imagery.

4.4 Rail Lines Hard Surface

Order of Precedence: D

Layer Contents: Railway tracks and associated gravel pad; does not include vegetated margins.

Source Data: SRD Base Layer Database (Rail Line), additions made by ABMI using IRS or SPOT 5 imagery.

Original Shape Type: Linear, with buffers added.

Modifications: Features were verified against IRS or SPOT 5 imagery.

Layer Contributes to the Following HF Codes:

- **1301** Lin20Hard. Linear road/rail/industrial features >20 m wide

Accuracy: Linear portion was created by SRD using 1:20 000 Access data updated using IRS and SPOT imagery. Data for the center line of the feature have a spatial accuracy of approximately 4m. Features were buffered according to the measurement on imagery.

4.5 Canals

Order of Precedence: E

Layer Contents: Canals, Human-created Water Passageway

Source Data: SRD Base Layer Database (Hydropoly, Streamline), additions made by ABMI using the IRS or SPOT 5 imagery.

Original Shape Type: Linear with buffer added

Modifications: Data were verified against IRS or SPOT 5 imagery.

Layer Contributes to the Following HF Codes:

- **1910** Canal

Accuracy: Linear portion was created by SRD using 1:20 000 Access data updated using Indian Remote Sensing (IRS) and SPOT 5 Imagery. Data for the center line of

the canals have a spatial accuracy of approximately 4m. Features were buffered according to the measurement on imagery.

4.6 Vegetated Surfaces of Roads, Trails, and Railways

Order of Precedence: F

Layer Contents: Green margin (verge) of roads, trails, and railways. Does not include the hard surface (e.g., paved portion of roads, or rail/gravel portion of railways).

Source Data: SRD Base Layer Database, additions made by ABMI using IRS or SPOT 5 imagery.

Original Shape Type: Linear with buffers added

Modifications: Features were verified against IRS or SPOT 5 imagery.

Layer Contributes to the Following HF Codes:

- **1701** VegetatedRoad. Roads, trails and paths with unimproved surfaces
- **1702** RoadVerge. Vegetated verges and ditches along roads and railways.
- **1501** Lin20Soft. Linear urban/industrial features >20 m wide
- **1502** Lin10Soft. Linear urban/industrial features 10-20 m wide
- **1601** Lin5Soft. Linear urban/industrial features 2-10 m wide

Accuracy: Linear portion was created by SRD using 1:20 000 Access updated using IRS and SPOT imagery. Data for the center line of the feature have a spatial accuracy of approximately 5m. Features were buffered according to the measurement on imagery.

4.7 Mine Sites

Order of Precedence: G

Layer Contents: Areas of ground that were consistently open and/or expanding over multiple years, usually close to lakes or rivers, were considered to be mines/gravel pits.

Source Data: Created by ABMI using IRS or SPOT 5 imagery. Features already in the SRD Base Layer were used as a reference during interpretation.

Original Shape Type: Polygon

Modifications: Checked against IRS or SPOT 5 imagery and updated accordingly.

Layer Contributes to the Following HF Codes:

- **1205** Heavy Industry (Low human density). Bare and/or Vegetated Ground clear for Industry (coal and mineral surface mines, gravel pits, heavy oil sand development, spoil piles, etc.)

Accuracy: Digitized from IRS or SPOT 5 imagery at 1:5000 scale. Mines <1ha (e.g., small gravel pits) were included. Data have a spatial accuracy of approximately 15 m.

4.8 Industrial Sites

Order of Precedence: H

Layer Contents: Industrial sites.

Source Data: Created by ABMI using the IRS or SPOT 5 imagery. The SRD Base Layer was used as a reference in interpretation.

Original Shape Type: Polygons

Modifications: Created by ABMI.

Layer Contributes to the Following HF Codes:

- **1204** Heavy Commercial/Industry (High human density). Intense industrial & commercial development (airports, industrial parks, factories, refineries, hydro generating stations, pulp & paper mills, pump stations, malls, parking lots, zoos, etc.)
- **1205** Heavy Industry (Low human density). Bare and/or Vegetated Ground clear for Industry (communication towers, etc.)

Accuracy: Digitized from IRS or SPOT 5 imagery at 1:5000 scale. Data have a spatial accuracy of approximately 5m.

4.9 Well Sites (Energy)

Order of Precedence: I

Layer Contents: Well sites.

Source Data: SRD Base Layer Database (Well Sites), checked by ABMI with sites added or removed as required

Original Shape Type: Polygon

Modifications: Well sites within the SRD base layer were verified against the IRS or SPOT 5 imagery

Layer Contributes to the Following HF Codes:

- **1205** Heavy Industry (Low human density). Bare and/or Vegetated Ground cleared for Industry (oil and gas well pads)

Accuracy: SRD data was supplied by the Energy Utilities Board (EUB) and acquired through IHS Energy (Canada) Ltd. This data contains Active, Abandoned and Newly Licensed Wells. Sites added/removed by ABMI based on viewing the imagery at a scale of 1:5000, and were required to have a road leading to the site; the presence/absence of a gravel pad was not consistently used as a criteria. Data have a spatial accuracy of approximately 5m.

4.10 Recreation & Other Vegetated Facility

Order of Precedence: J

Layer Contents: Unpaved aircraft runways, grave yards, golf courses, campgrounds, and baseball diamonds, parks, shelterbelts, ski hills, DND exercise areas, low vegetation surrounding airport runways, clearings from old industrial activity that is now vegetated. This layer was also used to identify green-space features that do not fit into other categories such as storage areas and parking lots.

Source Data: Created by ABMI

Original Shape Type: Polygon

Modifications: Created by ABMI using IRS or SPOT 5 imagery. The SRD Base Layer was used as a reference.

Layer Contributes to the Following HF Codes:

- **1103** Urban/Rural Greenspace – grave yards, race tracks, religious areas, golf courses, campgrounds, shelterbelts, ski hills, DND exercise areas, low vegetation surrounding airport runways, clearings from old industrial activity that is now vegetated, etc.)

Accuracy: Digitized from IRS or SPOT 5 at 1:5000 scale. Data have a spatial accuracy of approximately 8m.

4.11 Wind Generation Facility

Order of Precedence: K

Layer Contents: Wind turbines. Turbines were identified by their long shadows with three blades.

Source Data: Created by ABMI

Original Shape Type: Polygon

Modifications: Created by ABMI using IRS or SPOT5 imagery.

Layer Contributes to the Following HF Codes:

- **1205** Heavy Industry (Low human density). Bare and/or Vegetated Ground clear for Industry (wind mills)

Accuracy: Digitized from IRS or SPOT 5 imagery at 1:5000 scale. Data for the center point have a spatial accuracy of approximately 6m.

4.12 Transmission Lines

Order of Precedence: L

Layer Contents: Electrical Transmission Lines

Source Data: SRD Base Layer Database (Powerlines)

Original Shape Type: Linear with buffer added

Modifications: Features were verified against IRS or SPOT 5 imagery.

Layer Contributes to the Following HF Codes:

- **1501** Lin20Soft. Linear urban/industrial features >20 m wide

Accuracy: Linear portion was created by SRD using 1:20 000 Access data updated using IRS or SPOT 5 Imagery. Data for the center line of the feature have a spatial accuracy of approximately 6m. Features were buffered according to the measurement on the imagery.

4.13 CFO, and Other High Density Livestock

Order of Precedence: M

Layer Contents: Confined feeding operations (CFO), interpreted as the presence of large buildings and fenced pens appearing to be used for the purpose of feeding and confining pigs, chickens, or cows.

Source Data: SRD - Lethbridge

Original Shape Type: Polygon

Modifications: ABMI added to this layer using the IRS or SPOT 5 imagery as reference.

Layer Contributes to the Following HF Codes:

- **1205** Heavy Industry (Low human density). Bare and/or Vegetated Ground clear for Industry (CFO)

Accuracy: ABMI additions were drawn at a 1:5000 scale. Data have a spatial accuracy of approximately 5m.

4.14 Urban and Rural Residential

Order of Precedence: N

Layer Contents: **Urban Residences:** A polygon was drawn around areas having >100 buildings per quarter section. These polygons included both residential and industrial development. Areas within the urban/residential polygons >5ha with natural vegetation were excluded.

Acreages: A polygon was drawn around developments having a density of 10 - 100 buildings per quarter section. The buildings may be either residential or industrial. Areas within quarter sections not associated with the development (i.e., natural spaces) were not included. May include industrial sites if these could not be distinguished from acreage developments.

Rural Residences: For rural developments <5 ha with less than ten buildings per quarter section, a polygon was drawn around the developed area.

Future Residential: Areas cleared for building developments but did not yet have any buildings.

Source Data: IRS or SPOT 5 imagery

Modifications: New layer was created by ABMI from IRS or SPOT 5 imagery.

Layer Contributes to the Following HF Codes:

- **1101** Urban. Residential Urban (residential areas in cities, towns, villages, cottages, ribbon developments, etc.; areas that are dominated by dwellings – usually >1 building per ha)
- **1102** Rural. Residential Rural Dominated by Buildings (usually >1 building per ha; e.g. farmstead, ranch, acreages, lodges, etc.)

Accuracy: Digitized from IRS or SPOT 5 at 1:5000. Each building must have an associated road. Data have a spatial accuracy of approximately 8m.

4.15 Cultivation

Order of Precedence: O

Layer Contents: Agricultural Areas used for Cultivation

Source Data: Created by ABMI using the IRS or SPOT 5 imagery. GVI and AVI were used for reference when available.

Original Shape Type: Polygon

Modifications: None. Created by ABMI.

Layer Contributes to the Following HF Codes:

- **2000** (Agricultural Cultivation)

Accuracy: Digitized by ABMI using IRS or SPOT 5 at a scale of 1:5000. Cultivated areas <5ha were not included in layer. For the overall footprint layer, the polygon

borders were clipped by existing features in other sub-layers (e.g., road buffers). Data have a spatial accuracy of approximately 6m.

4.16 Cut Blocks

Order of Precedence: P

Layer Contents: Areas where forestry operations have occurred (clear-cuts, selective harvest, salvage logging, etc.)

Source Data: SRD, FRI & individual companies.

Original Shape Type: Polygon

Modifications: AVI data was updated by FRI and company data where available. ABMI added to and corrected this layer using IRS or SPOT 5 imagery as reference.

Layer Contributes to the Following HF Codes:

- **3501** CBClear10. Clearcut block <10 years with no ground disturbance during reforestation (<20% of the live trees retained at harvest)
- **3511** CBClear 20. Clearcut block 11-30 years with no ground disturbance during reforestation (<20% of the live trees retained at harvest)
- **3521** CBClear30. Clearcut block >30 years with no ground disturbance during reforestation (<20% of the live trees retained at harvest)
- **3531** CBClearUnknow. ClearCut block unknown years with no ground disturbance during reforestation

Accuracy: Digitized by ABMI using IRS or SPOT 5 at a scale of 1:5000. Cut blocks <0.01 ha were not included in layer. For the overall footprint layer, the polygon borders were clipped by existing features in other sub-layers (e.g., road buffers). Data have a spatial accuracy of approximately 6m.

4.17 Pipelines

Order of Precedence: Q

Layer Contents: Oil & Gas Pipelines

Source Data: SRD Base Layer Database (Pipelines)

Original Shape Type: Linear with buffer added

Modifications: Features dated December 31, 2010 or earlier were retained as were polygons without dates. Features dated January 1, 2011 or later were removed. Data were not verified against IRS or SPOT 5 imagery. Features were buffered according to Table 1.

Layer Contributes to the Following HF Codes:

- **1501** Lin20Soft. Linear urban/industrial features >20 m wide

Accuracy: Linear portion was created by SRD using 1:20 000 Access data updated using IRS or SPOT 5 imagery. Data for the center line of the feature have a spatial accuracy of approximately 5m. Features were buffered according to the measurement on the imagery.

4.18 Seismic Lines

Order of Precedence: R

Layer Contents: Seismic Lines

Source Data: SRD Base Layer Database

Original Shape Type: Linear with buffer added.

Modifications: Seismic lines were verified against IRS or SPOT 5 imagery.

Layer Contributes to the Following HF Codes:

- **1601** Lin5Soft. Linear urban/industrial features 2-10 m wide

Accuracy: Linear portion was created by SRD using 1:20 000 Access data updated using IRS or SPOT 5 imagery. Data for the center line of the feature have a spatial accuracy of approximately 3m. Features were buffered according to the measurement on imagery.

5 Creation of Single Human Footprint Layer

The sub-layers described in Section 4 were processed using the ArcGIS command “UPDATE” to create a single layer. The layers were organized according to their order of precedence (Table 1) such that a sub-layer with high precedence (e.g. sub-layer A) would mask all layers of lower precedence (e.g. sub-layers B-R).

The Human Footprint 3x7 Layer, Version 1.0 is a polygon layer in which each polygon indicates the footprint type (see Table 3). A list of all human footprint types (FEATURE_TY) in the Human Footprint 3x7 Map Layer is provided in Table 4.

The Human Footprint 3x7 Layer, Version 1.0 is available in ArcGIS FGDB (v9.3):

Table 1. Order of precedence for sub-layers contributing to the Human Footprint 3x7 Layer, Version 1.0.

Sub-layer	Order of Precedence
Reservoirs	A
Borrow Pits, Sump, Dug-outs and Lagoons	B
Roads (Paved and Gravel Surfaces)	C
Rail Lines Hard surface	D
Canals	E
Vegetated Surfaces of Road, Trails, and Railway	F
Mine Sites	G
Industrial Sites	H
Well Sites (Energy)	I
Landfill	J
Recreation & Other Vegetated Facility	K
Wind Generation Facility	L
Transmission Lines	M
CFO, and Other High Density Livestock	N
Urban and Rural Residential	O
Cultivation	P
Cut Blocks	Q
Pipelines	R
Seismic Lines	S

Table 2. Human Footprint Codes and a Brief Description

1000 Urban & Industrial Features & Infrastructure

1100 Urban & Rural Features (habitats where people live, non-industrial)

- 1101 Urban. Residential Urban (residential areas in cities, towns, villages, cottages, ribbon developments, etc; areas that are dominated by dwellings – usually >1 building per ha)
- 1102 Rural. Residential Rural Dominated by Buildings (usually >1 building per ha; eg. farmstead, ranch, acreages, lodges, etc)
- 1103 Urban/Rural Greenspace – grave yards, religious areas, golf courses, campgrounds, shelterbelts, ski hills, DND exercise areas, low vegetation surrounding airport runways, clearings from old industrial activity that is now vegetated, etc.)

1200 Industrial & Resource Extraction Features (habitats associated with heavy industrial development)

- 1204 Heavy Commercial/Industry (High human density). Intense industrial & commercial development (airports, industrial parks, factories, refineries, hydro generating stations, pulp & paper mills, pump stations, malls, parking lots, zoos, etc.)
- 1205 Heavy Industry (Low human density). Bare and/or Vegetated Ground clear for Industry (coal and mineral surface mines, oil and gas well pads, wind mills, CFO, communication towers, gravel pits, heavy oil sand development, spoil piles, etc.)

1300 Hard & Wide Linear Features (length >50 times the width, >10m wide, hard surface /non-vegetated [gravel road, paved road, railway, paved airport runway, etc.]

- 1301 Lin20Hard. Linear road/rail/industrial features >20 m wide
- 1302 Lin10Hard. Linear road/rail/industrial features 10-20 m wide

1400 Hard & Narrow Linear Features (length >50 times the width, ≤10m wide, hard surface /non-vegetated [gravel or paved linear feature])

- 1401 Lin5Hard. Linear road/trail/path/rail/industrial features 2-10 m wide

1500 Soft & Wide Linear Features (length >50 times the width, >10m wide, soft surface /vegetated [packed soil, pipeline right of way, transmission line, etc.], not including roads)

- 1501 Lin20Soft. Linear urban/industrial features >20 m wide
- 1502 Lin10Soft. Linear urban/industrial features 10-20 m wide

1600 Soft & Narrow Linear Features (length >50 times the width, ≤10m wide, soft surface /vegetated [packed soil, pipeline right of way, transmission line, etc.], not including roads)

- 1601 Lin5Soft. Linear urban/industrial features 2-10 m wide

1700 Vegetated Roads, Verges and Ditches (unimproved vegetated roads and the areas along the edge of roads)

- 1701 VegetatedRoad. Roads, trails and paths with unimproved surfaces
- 1702 RoadVerge. Vegetated verges and ditches along roads

1900 Human-created Water Bodies

- 1901 Dug-out, Borrow-pit, Sump
- 1902 Lagoon
- 1903 Reservoir
- 1910 Canal

2000 Agricultural Cover Types

2100 Cultivated Crops (must be evidence of cultivation visible during the photo interpretation)

2101 Crop. Annual cereal crop

2102 Irrig. Irrigated land

2103 Other agriculture (orchard, horticulture, etc.)

2104 ArgBare. Bare soil that is created as part of agricultural activities

2200 Pasture & Forage

2205 Pasture

2206 Forage crop

3000 Managed Forest

3501 CBClear10. Clearcut block <10 years with no ground disturbance during reforestation (<20% of the live trees retained at harvest)

3502 CBStructure10. Structured cut block <10 years with no ground disturbance during reforestation (\geq 20% of the live trees retained at harvest, this includes tree retention harvest, thinning, & understory protection)

3503 CBDisturb10. Cutblock <10 years with ground disturbance during reforestation visual on the air photo (ploughing, mounding, etc.)

3511 CBClear 20. Clearcut block 11-30 years with no ground disturbance during reforestation (<20% of the live trees retained at harvest)

3512 CBStructure 20. Structured cut block 11-30 years with no ground disturbance during reforestation (\geq 20% of the live trees retained at harvest, this includes tree retention harvest, thinning, & understory protection)

3513 CBDisturb20. Cutblock 11-30 years with ground disturbance during reforestation visual on the air photo

3521 CBClear30. Clearcut block >30 years with no ground disturbance during reforestation (<20% of the live trees retained at harvest)

3522 CBStructure30. Structured cut block >30 years with no ground disturbance during reforestation (\geq 20% of the live trees retained at harvest, this includes tree retention harvest, thinning, & understory protection)

3523 CBDisturb30. Cutblock >30 years with ground disturbance during reforestation visual on the air photo

3531 CBClearUnknow. ClearCut block unknown years with no ground disturbance during reforestation

3532 CBStructureUnknow. Structured cutblock unknown years with no ground disturbance during reforestation

3533 HumanDisturbUnknow, Human modified forests unknown years with ground disturbance during reforestation visual on the air photo

Table 3. List of all human footprint types (FEATURE_TY) in the Human Footprint 3x7 Map Layer, Version 1.0.

FEATURE_TY	FOOTPRINT CODE
RESIDENCE_CLEARING	1101
URBAN_RESIDENCE	1101
ACREAGE	1102
RURAL_1-5ha	1102
RURAL_GT_5ha	1102
RURAL_LESS_1ha	1102
RECREATION	1103
IND-HIGH	1204
CFO	1205
GRVL-SAND-PIT	1205
IND-LOW	1205
MINES	1205
OPEN-PIT-MINE	1205
PEAT	1205
TAILING-PILE	1205
WELL	1205
WELL-ABAND	1205
WELL-CBM	1205
WELL-GAS	1205
WELL-GAS-ABAND	1205
WELL-GAS-CAPPED	1205
WELL-OIL	1205
WELL-OIL-ABAND	1205
WELL-SPOT07	1205
WELL-WATER	1205
WELL-WATER-ABAND	1205
WELL_MODEL_FOREST	1205
WINDMILLS	1205
INTERCHANGE-RAMP	1301
RLWY-DBL-TRACK	1301
RLWY-MLT-TRACK	1301
RLWY-SGL-TRACK	1301
RLWY-SPUR	1301
ROAD-PAVED-DIV	1301
ROAD-PAVED-UNDIV-2L	1301
ROAD-PAVED-UNDIV-4L	1301
RLWY-ABANDONED	1302
RLWY-FORMER	1302
ROAD-GRAVEL-1L	1302

ROAD-GRAVEL-2L	1302
ROAD-PAVED-UNDIV-1L	1302
PIPELINE	1502
TRANS-LINE	1502
CUTLINE-TRAIL	1601
CUTLINE-TRAIL-WITHIN-CLEARING	1601
FORD-WINTER-XING	1701
ROAD-UNIMPROVED	1701
ROAD-UNCLASSIFIED	1701
ROAD-WINTER-ROAD	1701
TRAIL-ATV	1701
TRAIL-ATV-INDEFINITE	1701
TRUCK-TRAIL	1701
SOFT_INTERCHANGE-RAMP	1702
SOFT_RLWY-ABANDONED	1702
SOFT_RLWY-DBL-TRACK	1702
SOFT_RLWY-MLT-TRACK	1702
SOFT_RLWY-SGL-TRACK	1702
SOFT_RLWY-SPUR	1702
SOFT_ROAD-GRAVEL-1L	1702
SOFT_ROAD-GRAVEL-2L	1702
SOFT_ROAD-PAVED-DIV	1702
SOFT_ROAD-PAVED-UNDIV-1L	1702
SOFT_ROAD-PAVED-UNDIV-2L	1702
BORROWPITS	1901
DUGOUT	1901
SUMPS	1901
LAGOON	1902
RESERVOIR	1903
CANAL	1910
CANAL-MAJ	1910
CANAL-MAJ-REP-PRI	1910
CULTIVATION	2000
AGRICULTURE_CLEARING	2205
CUTBLOCK	3501, 3511, 3521, 3531