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Assessment of Information for Habitat Modelling in Agricultural Regions of Canada



Technical Series 2006

Photos:

Bottom Left- clockwise

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**NATIONAL AGRI-ENVIRONMENTAL STANDARDS INITIATIVE
TECHNICAL SERIES**

**ASSESSMENT OF INFORMATION FOR HABITAT MODELLING IN
AGRICULTURAL REGIONS OF CANADA**

REPORT NO. 2-21

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NOTE TO READERS

The National Agri-Environmental Standards Initiative (NAESI) is a four-year (2004-2008) project between Environment Canada (EC) and Agriculture and Agri-Food Canada (AAFC) and is one of many initiatives under AAFC's Agriculture Policy Framework (APF). The goals of the National Agri-Environmental Standards Initiative include:

- Establishing non-regulatory national environmental performance standards (with regional application) that support common EC and AAFC goals for the environment
- Evaluating standards attainable by environmentally-beneficial agricultural production and management practices; and
- Increasing understanding of relationships between agriculture and the environment.

Under NAESI, agri-environmental performance standards (i.e., outcome-based standards) will be established that identify both desired levels of environmental condition and levels considered achievable based on available technology and practice. These standards will be integrated by AAFC into beneficial agricultural management systems and practices to help reduce environmental risks. Additionally, these will provide benefits to the health and supply of water, health of soils, health of air and the atmosphere; and ensure compatibility between biodiversity and agriculture. Standards are being developed in four thematic areas: Air, Biodiversity, Pesticides, and Water. Outcomes from NAESI will contribute to the APF goals of improved stewardship by agricultural producers of land, water, air and biodiversity and increased Canadian and international confidence that food from the Canadian agriculture and food sector is being produced in a safe and environmentally sound manner.

The development of agri-environmental performance standards involves science-based assessments of relative risk and the determination of desired environmental quality. As such, the National Agri-Environmental Standards Initiative (NAESI) Technical Series is dedicated to the consolidation and dissemination of the scientific knowledge, information, and tools produced through this program that will be used by Environment Canada as the scientific basis for the development and delivery of environmental performance standards. Reports in the Technical Series are available in the language (English or French) in which they were originally prepared and represent theme-specific deliverables. As the intention of this series is to provide an easily navigable and consolidated means of reporting on NAESI's yearly activities and progress, the detailed findings summarized in this series may, in fact, be published elsewhere, for example, as scientific papers in peer-reviewed journals.

This report provides scientific information to partially fulfill deliverables under the Biodiversity Theme of NAESI. This report was written by GeoSpatial Consulting Inc. and ERIN Consulting Ltd. The report was edited and formatted by Denise Davy to meet the criteria of the NAESI Technical Series. The information in this document is current as of when the document was originally prepared. For additional information regarding this publication, please contact:

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NOTE À L'INTENTION DES LECTEURS

L'Initiative nationale d'élaboration de normes agroenvironnementales (INENA) est un projet de quatre ans (2004-2008) mené conjointement par Environnement Canada (EC) et Agriculture et Agroalimentaire Canada (AAC) et l'une des nombreuses initiatives qui s'inscrit dans le Cadre stratégique pour l'agriculture (CSA) d'AAC. Elle a notamment comme objectifs :

- d'établir des normes nationales de rendement environnemental non réglementaires (applicables dans les régions) qui soutiennent les objectifs communs d'EC et d'AAC en ce qui concerne l'environnement;
- d'évaluer des normes qui sont réalisables par des pratiques de production et de gestion agricoles avantageuses pour l'environnement;
- de faire mieux comprendre les liens entre l'agriculture et l'environnement.

Dans le cadre de l'INENA, des normes de rendement agroenvironnementales (c.-à-d. des normes axées sur les résultats) seront établies pour déterminer les niveaux de qualité environnementale souhaités et les niveaux considérés comme réalisables au moyen des meilleures technologies et pratiques disponibles. AAC intégrera ces normes dans des systèmes et pratiques de gestion bénéfiques en agriculture afin d'aider à réduire les risques pour l'environnement. De plus, elles amélioreront l'approvisionnement en eau et la qualité de celle-ci, la qualité des sols et celle de l'air et de l'atmosphère, et assureront la compatibilité entre la biodiversité et l'agriculture. Des normes sont en voie d'être élaborées dans quatre domaines thématiques : l'air, la biodiversité, les pesticides et l'eau. Les résultats de l'INENA contribueront aux objectifs du CSA, soit d'améliorer la gestion des terres, de l'eau, de l'air et de la biodiversité par les producteurs agricoles et d'accroître la confiance du Canada et d'autres pays dans le fait que les aliments produits par les agriculteurs et le secteur de l'alimentation du Canada le sont d'une manière sécuritaire et soucieuse de l'environnement.

L'élaboration de normes de rendement agroenvironnementales comporte des évaluations scientifiques des risques relatifs et la détermination de la qualité environnementale souhaitée. Comme telle, la Série technique de l'INENA vise à regrouper et diffuser les connaissances, les informations et les outils scientifiques qui sont produits grâce à ce programme et dont Environnement Canada se servira comme fondement scientifique afin d'élaborer et de transmettre des normes de rendement environnemental. Les rapports compris dans la Série technique sont disponibles dans la langue (français ou anglais) dans laquelle ils ont été rédigés au départ et constituent des réalisations attendues propres à un thème en particulier. Comme cette série a pour objectif de fournir un moyen intégré et facile à consulter de faire rapport sur les activités et les progrès réalisés durant l'année dans le cadre de l'INENA, les conclusions détaillées qui sont résumées dans la série peuvent, en fait, être publiées ailleurs comme sous forme d'articles scientifiques de journaux soumis à l'évaluation par les pairs.

Le présent rapport fournit des données scientifiques afin de produire en partie les réalisations attendues pour le thème de la biodiversité dans le cadre de l'INENA. Ce rapport a été rédigé par GeoSpatial Consulting Inc. et ERIN Consulting Ltée. De plus, il a été révisé et formaté par Denise Davy selon les critères établis pour la Série technique de l'INENA. L'information contenue dans ce document était à jour au moment de sa rédaction. Pour plus de renseignements sur cette publication, veuillez communiquer avec l'organisme suivant :

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TABLE OF CONTENTS

NOTE TO READERS.....	I
NOTE À L'INTENTION DES LECTEURS.....	II
TABLE OF CONTENTS.....	III
LIST OF TABLES	IX
LIST OF FIGURES	X
LIST OF APPENDICES.....	XI
EXECUTIVE SUMMARY	XII
1 INTRODUCTION AND BACKGROUND.....	17
1.1 INTRODUCTION	17
1.2 BACKGROUND.....	18
2 METHODS.....	23
2.1 DATA APPLICATIONS TO MODELLING	24
2.2 SCOPING THROUGH REVIEW OF BACKGROUND MATERIALS	28
2.3 DEVELOP 'NAESI DATABASE'	30
2.4 INITIAL DATA SOURCES INVESTIGATION	34
2.5 DATASET SEARCH & CATALOGUING	35
2.6 NOTE ON CITATION OF METADATA THROUGHOUT THIS REPORT AND ASSOCIATED DATABASE	35
2.7 DATA TYPES	36
2.7.1 <i>Data sources and Locations</i>	37
2.7.1.1 Internet Search.....	37
2.7.1.2 Contact Sources.....	40
3 RESULTS AND ASSESSMENT OF DATA FINDINGS	40
3.1 RESULTS	40
3.2 ASSESSMENT.....	42
3.3 GAP ANALYSIS.....	44
4 BRITISH COLUMBIA	55
4.1 BIOLOGICAL - AQUATIC -POPULATION	55
4.1.1 <i>Provincial Fish Ranges BC</i>	55
4.2 BIOLOGICAL - SPECIES AT RISK -FAUNA.....	57
4.2.1 <i>Grizzly Bear Wildlife Habitat - Various Districts - Lower Mainland</i>	57
4.2.2 <i>Grizzly Bear Population Units (GBPU) BC</i>	59
4.3 BIOLOGICAL - TERRESTRIAL -HABITAT	61
4.3.1 <i>Mule Deer Winter Range – Shelter</i>	61
4.4 BIOLOGICAL - TERRESTRIAL -HABITAT	63
4.4.1 <i>Bighorn Sheep Winter Range SIR</i>	63
4.4.2 <i>Elk Winter Range Southern Interior Region</i>	65
4.4.3 <i>Mule Deer Winter Range – Forage</i>	67
4.4.4 <i>Sharp-Tailed Grouse Dancing Grounds SIR</i>	69
4.4.5 <i>Moose Winter Range Capability Model SIR</i>	71
4.5 IMAGERY - AIRBORNE -VARIOUS	73
4.5.1 <i>BC Air Photo Inventory</i>	73
4.6 LAND BASE - TOPOGRAPHY -	75
4.6.1 <i>DEM - Points – BC</i>	75
4.7 LAND BASE - VARIOUS	77
4.7.1 <i>BC Watershed Boundaries</i>	77

4.7.2	Digital Baseline Mapping at 1:250,000 (NTS).....	79
4.7.3	Terrain Resource Information Mgmt Program - (TRIM) for BC	81
4.7.4	Terrestrial Ecosystem Mapping BC	83
4.8	LAND COVER - AQUATIC - WATERBODIES	85
4.8.1	Lake Classification BC.....	85
4.8.2	Stream Classifications BC.....	88
4.8.3	Ducks Unlimited Canada BC Intermountain Wetland Database	90
4.8.4	BC WATERSHED ATLAS 50K.....	92
4.9	LAND COVER - TERRESTRIAL -ECOSYSTEM	95
4.9.1	Biogeoclimatic Ecosystem Classification BC.....	95
4.10	LAND COVER - TERRESTRIAL -ECOSYSTEM	97
4.10.1	Sensitive Ecosystems Inventory BC	97
4.11	LAND COVER - TERRESTRIAL -ECOSYSTEM	100
4.11.1	Grasslands Conservation Council of British Columbia GIS data inventory	100
4.12	LAND COVER - TERRESTRIAL -LAND USE.....	103
4.12.1	Agriculture, Food and Fisheries District Boundaries SIR.....	103
4.12.2	Baseline Thematic Mapping Present Land Use Mapping at 1:250000	105
4.12.3	Range Pastures BC.....	107
4.12.4	Land Use Classification Fraser Valley and Greater Vancouver Regional Districts	109
4.12.5	Agricultural Land Reserve BC.....	111
4.13	LAND COVER - TERRESTRIAL -VARIOUS.....	113
4.13.1	Vegetation Resources Inventory BC	113
4.13.2	Vegetation Ground Inventory Samples BC.....	115
4.13.3	Predictive Ecosystem Mapping (PEM).....	117
5	ALBERTA.....	120
5.1	BIOLOGICAL - SPECIES AT RISK -VARIOUS.....	120
5.1.1	Species and Elements of Conservation Concern for Alberta, Canada	120
5.2	BIOLOGICAL - TERRESTRIAL -HABITAT	123
5.2.1	Ecological Site Information (ESIS)	123
5.3	BIOLOGICAL - TERRESTRIAL -MANAGEMENT/CONSERVATION	126
5.4	IMAGERY - AIRBORNE -VARIOUS	128
5.4.1	Alberta Orthophotography.....	128
5.5	LAND BASE - POLITICAL/ADMINISTRATIVE -	130
5.5.1	Protected Areas in Alberta, Canada.....	130
5.6	LAND BASE - SOILS.....	133
5.6.1	AGRASID Version 3.0 Polygon Attribute Table.....	133
5.7	LAND BASE - TOPOGRAPHY -	135
5.7.1	Contours – Alberta	135
5.7.2	DEM – Alberta	137
5.8	LAND BASE - TRANSPORTATION -	139
5.8.1	Road Network - Alberta 1:20,000 (2).....	139
5.9	LAND BASE - VARIOUS	141
5.9.1	Alberta Ecodistricts (1995)	141
5.9.2	Environmentally Significant Areas.....	144
5.9.3	Agriculture Land Resources Atlas of Alberta.....	147
5.10	LAND COVER - AQUATIC - WATERBODIES	151
5.10.1	Lakes - Alberta 1:20,000	151
5.10.2	Stream Network - AB - 1:20,000.....	153
5.11	LAND COVER - TERRESTRIAL -LAND USE.....	155
5.11.1	Alberta Vegetation Inventory.....	155
5.11.2	Alberta Land Inventory (ALI) / Canada Land Inventory (CLI) Landform.....	157
5.11.3	PFRA Land Practices Groups	160
5.12	LAND COVER - TERRESTRIAL -VARIOUS.....	162
5.12.1	Central Parkland Native Vegetation Inventory - Version 1.2.....	162

5.13	LAND COVER - TERRESTRIAL -VEGETATION.....	165
5.13.1	<i>Native Prairie Vegetation Inventory.....</i>	165
6	SASKATCHEWAN.....	169
6.1	BIOLOGICAL - SPECIES AT RISK -FAUNA.....	169
6.1.1	<i>Wildlife - Species at Risk.....</i>	169
6.2	BIOLOGICAL - SPECIES AT RISK -VARIOUS.....	171
6.2.1	<i>SK Conservation Data Centre (CDC) Element Occurrence Database</i>	171
6.3	BIOLOGICAL - TERRESTRIAL -MANAGEMENT/CONSERVATION	175
6.3.1	<i>Grassland Bird Conservation Areas – Saskatchewan</i>	175
6.3.2	<i>Northern Extent of Native Grass Data Set</i>	176
6.4	IMAGERY - SPACEBORNE -MULTISPECTRAL.....	178
6.4.1	<i>Northern Digital Land Cover Classification (NDLC) for Saskatchewan.....</i>	178
6.5	LAND BASE - POLITICAL/ADMINISTRATIVE -	181
6.5.1	<i>Saskatchewan Designated Areas Digital Data.....</i>	181
6.5.2	<i>SaskGIS Township Fabric Map (TFM) Dataset.....</i>	185
6.5.3	<i>Saskatchewan Environment Land Use Planning.....</i>	187
6.6	LAND BASE - TRANSPORTATION -	189
6.6.1	<i>Saskatchewan Upgraded Road Network (SURN) – Enhanced.....</i>	189
6.7	LAND BASE - VARIOUS -	191
6.7.1	<i>SaskGIS Cadastral Dataset – Rural.....</i>	191
6.8	LAND COVER - AQUATIC -WATERBODIES.....	194
6.8.1	<i>Saskatchewan Stream Network.....</i>	194
6.9	LAND COVER - AQUATIC -WATERSHEDS	196
6.9.1	<i>SK Drainage Basins</i>	196
6.10	LAND COVER - TERRESTRIAL -ECOSYSTEM	198
6.10.1	<i>Saskatchewan Terrestrial Wildlife Habitat.....</i>	198
6.11	LAND COVER - TERRESTRIAL -LAND USE.....	200
6.11.1	<i>Crown Land Inventory.....</i>	200
6.12	LAND COVER - TERRESTRIAL -VEGETATION.....	202
6.12.1	<i>Status of Native Prairie Habitat in the Boreal Transition Ecoregion, Saskatchewan (Canadian Plains Research Center, University of Regina, Regina, Saskatchewan; Gauthier, D.A. and L. Patino; 2004)</i>	202
6.12.2	<i>Status of Native Prairie Habitat, Prairie Ecozone, Saskatchewan (Contract Report 8.65A.1R-01/02, Wildlife Habitat Canada, Ottawa, Ontario; Canadian Plains Research Center, University of Regina; Gauthier, D.A., L. Patino and K. McGovern; 2002).....</i>	204
7	MANITOBA.....	206
7.1	BIOLOGICAL - SPECIES AT RISK -VARIOUS.....	206
7.1.1	<i>Species & Plant Community Database for Manitoba.....</i>	206
7.2	LAND BASE - TOPOGRAPHY -	209
7.2.1	<i>Topographic Maps (1:20,000) for Manitoba.....</i>	209
7.3	LAND COVER - AQUATIC -WATERSHEDS	212
7.3.1	<i>Manitoba Gross and Effective Watersheds.....</i>	212
7.4	LAND COVER - TERRESTRIAL -LAND USE.....	214
7.4.1	<i>Protected Area Boundaries in Manitoba.....</i>	214
7.5	LAND COVER - TERRESTRIAL -VEGETATION.....	217
7.5.1	<i>Forest Resource Inventory of Manitoba.....</i>	217
8	PRARIES.....	221
8.1	LAND COVER - AQUATIC -WATERSHEDS	221
8.1.1	<i>PFRA Sub-basins of the PFRA Watershed Project</i>	221
9	ONTARIO.....	225
9.1	BIOLOGICAL - TERRESTRIAL -HABITAT	225
9.1.1	<i>Bald Eagle Feeding Area</i>	225

9.1.2	<i>Aquatic Feeding Area</i>	227
9.1.3	<i>Calving Fawning Site – NRVIS</i>	229
9.1.4	<i>Nesting Site – NRVIS</i>	231
9.2	BIOLOGICAL - TERRESTRIAL -MANAGEMENT/CONSERVATION	234
9.2.1	<i>Staging Area – NRVIS</i>	234
9.3	BIOLOGICAL - TERRESTRIAL -MANAGEMENT/CONSERVATION	237
9.3.1	<i>Ontario NHIC Element Occurrence Database (EODB)</i>	237
9.3.2	<i>Peat Production Area</i>	240
9.4	IMAGERY - AIRBORNE -VARIOUS	242
9.4.1	<i>Air Photos Ontario</i>	242
9.5	IMAGERY - SPACEBORNE -MULTISPECTRAL.....	244
9.5.1	<i>MODIS - 44 products to choose from</i>	244
9.6	LAND BASE - SOILS -	246
9.6.1	<i>Soils: Provincial compilations-ON</i>	246
9.7	LAND BASE - TOPOGRAPHY	249
9.7.1	<i>Digital Northern Ontario Engineering Geology Terrain Study (NOEGTS) (MRD160)</i>	249
9.8	LAND BASE - TRANSPORTATION	251
9.8.1	<i>Ontario Road Network (ORN)</i>	251
9.9	LAND BASE - VARIOUS -	254
9.9.1	<i>Assessment Parcel - Digital Assessment Parcel Fabric (DAFP)</i>	254
9.9.2	<i>Oak Ridges Moraine Project, Canada</i>	256
9.9.3	<i>Ontario Base Maps (OBM)</i>	258
9.9.4	<i>Ownership Parcel - Digital Ownership Parcel Fabric (DOPF)</i>	261
9.9.5	<i>Forest Cover (Forest Resources Inventory Unit) (FRI) Ontario</i>	263
9.9.6	<i>Ontario Provincial Parks</i>	266
9.10	LAND COVER - TERRESTRIAL -VARIOUS	268
9.10.1	<i>Ontario Land Cover</i>	268
9.10.2	<i>Eastern Ontario Forest Resource Inventory with Southern Ontario Silvicultural Forest Types</i> ...	270
10	QUEBEC	272
10.1	BIOLOGICAL - AQUATIC -POPULATION	272
10.1.1	<i>The Distribution of Species Database</i>	272
10.2	BIOLOGICAL - SPECIES AT RISK -VARIOUS.....	274
10.2.1	<i>Banque de données sur les espèces menacées ou vulnérables du Québec</i>	274
10.3	IMAGERY - AIRBORNE -VARIOUS.....	277
10.3.1	<i>Air Photographs and Orthophotos Quebec</i>	277
10.4	LAND BASE - TOPOGRAPHY -	279
10.4.1	<i>QC Dem</i>	279
10.5	LAND BASE - VARIOUS -	281
10.5.1	<i>QC Groundwater maps</i>	281
10.5.2	<i>Base Data For Regional Planning 1:100,000</i>	283
10.5.3	<i>Base Topographic and Administrative Data 1:250,000</i>	286
10.6	LAND COVER - TERRESTRIAL -ECOSYSTEM	288
10.6.1	<i>The Protection of the Biodiversity of the St. Lawrence</i>	288
10.7	LAND COVER - TERRESTRIAL -LAND USE.....	290
10.7.1	<i>The Anthropogenic Modifications Database - Loss of Wetlands</i>	290
10.7.2	<i>The Anthropogenic Modifications Database - The Disappearance of Natural Shorelines</i>	292
10.8	LAND COVER - TERRESTRIAL -VEGETATION.....	295
10.8.1	<i>1990 - 2002 - Mapping of St. Lawrence River Wetlands by Remote Sensing</i>	295
10.8.2	<i>Conservation Atlas of Woodlands in the Agricultural Landscape</i>	297
11	MARITIMES	300
11.1	BIOLOGICAL - SPECIES AT RISK -VARIOUS.....	300
11.1.1	<i>Atlantic Canada CDC Georeferenced Rare Species Data - Rare Anadromous Fish, Rare Marine Birds, Rare Marine Mammals</i>	300

11.2	LAND COVER - AQUATIC - WATERBODIES	303
11.2.1	<i>Maritime Wetlands Inventory (Note - excludes Newfoundland)</i>	303
11.3	LAND COVER - TERRESTRIAL - VARIOUS	306
11.3.1	<i>Maritime Strategic (1987) Land Use Study Database (SLUD)</i>	306
12	NEW BRUNSWICK.....	309
12.1	BIOLOGICAL - SPECIES AT RISK - VARIOUS.....	309
12.1.1	<i>Environmentally Significant Areas in New Brunswick</i>	309
12.2	LAND BASE - TOPOGRAPHY -	312
12.2.1	<i>Topographic Database for New Brunswick.....</i>	312
12.3	LAND BASE - TOPOGRAPHY -	315
12.3.1	<i>Peatland Database for New Brunswick.....</i>	315
12.4	LAND COVER - TERRESTRIAL - VEGETATION.....	317
12.4.1	<i>Forest Inventory for New Brunswick.....</i>	317
13	NOVA SCOTIA	320
13.1	BIOLOGICAL - SPECIES AT RISK - VARIOUS.....	320
13.1.1	<i>.Significant Species and Habitats Database for Nova Scotia</i>	320
13.2	LAND BASE - TOPOGRAPHY -	324
13.2.1	<i>Digital 1:10,000 Topographic Series Maps for Nova Scotia.....</i>	324
13.3	LAND COVER - AQUATIC - WATERBODIES	327
13.3.1	<i>Nova Scotia Wetlands and Coastal Habitats Inventory.....</i>	327
13.4	LAND COVER - TERRESTRIAL - ECOSYSTEM	331
13.4.1	<i>Ecological Land Classification (ELC) Map and Database for Nova Scotia</i>	331
13.5	LAND COVER - TERRESTRIAL - LAND USE	334
13.5.1	<i>Agricultural Land Identification Project for Nova Scotia</i>	334
13.6	LAND COVER - TERRESTRIAL - VEGETATION.....	337
13.6.1	<i>Forest Resources Database of Nova Scotia.....</i>	337
14	PRINCE EDWARD ISLAND.....	341
14.1	LAND BASE - SOILS -.....	341
14.1.1	<i>Soil Survey of PEI.....</i>	341
14.2	LAND BASE - TOPOGRAPHY -	344
14.2.1	<i>LRIS 1985 Basemap at 1:10,000 for PEI.....</i>	344
14.3	LAND COVER - AQUATIC - WATERBODIES	346
14.3.1	<i>Wetland Inventory of PEI (2000).....</i>	346
14.3.2	<i>PEI Watershed Boundaries.....</i>	350
14.4	LAND COVER - TERRESTRIAL - LAND USE	352
14.4.1	<i>Agricultural Outline of PEI 1997</i>	352
14.5	LAND COVER - TERRESTRIAL - LAND USE	354
14.5.1	<i>Corporate Resource Inventory of PEI (2000).....</i>	354
14.6	LAND COVER - TERRESTRIAL - VEGETATION.....	357
14.6.1	<i>Forest Inventory of PEI (1990).....</i>	357
15	NEWFOUNDLAND	361
15.1	LAND BASE - TOPOGRAPHY -	361
15.1	<i>Resource Maps for Newfoundland and Labrador (1:50,000)</i>	361
15.2	LAND COVER - TERRESTRIAL - LAND USE	364
15.2.1	<i>Large Scale Mapping of Provincial Parks & Reserves for Newfoundland & Labrador</i>	364
15.2.2	<i>Agriculture Atlas for Newfoundland and Labrador.....</i>	367
15.3	LAND COVER - TERRESTRIAL - VEGETATION.....	370
15.3.1	<i>Provincial Forest Inventory for Newfoundland & Labrador.....</i>	370
16	CANADA.....	373
16.1	BIOLOGICAL - SPECIES AT RISK - VARIOUS.....	373

16.1.1	NatureServe Canada Managed Areas	373
16.2	BIOLOGICAL - TERRESTRIAL -MANAGEMENT/CONSERVATION	377
16.2.1	Canada Land Inventory - Land Capability for Ungulates.....	377
16.2.2	Canada Land Inventory - Land Capability for Waterfowl.....	379
16.3	BIOLOGICAL - TERRESTRIAL -POPULATION.....	381
16.3.1	Canadian Breeding Bird (Mapping) Census Database	381
16.3.2	Bird Studies Canada - BirdMap WFS.....	383
16.4	IMAGERY - SPACEBORNE -MULTISPECTRAL.....	385
16.4.1	ASTER.....	385
16.5	IMAGERY - SPACEBORNE -VARIOUS.....	387
16.5.1	CARTERRA High Resolution IKONOS Imagery	387
16.6	LAND BASE - SOILS -	389
16.6.1	Soil Landscapes of Canada Working Group v3.0. - Agriculture and Agri-Food Canada.	389
16.6.2	CA Surficial Materials of Canada, Map 1880A.....	391
16.7	LAND BASE - TRANSPORTATION -	393
16.7.1	Road Network - National - 1: 50,000	393
16.7.2	CanMap Streetfiles - prov boundaries, regional municipality boundaries.....	394
16.7.3	Canada Land Inventory - Land Capability for Agriculture.....	396
16.7.4	Census Agricultural Regions Boundary File	398
16.7.5	Canada Land Inventory - Land Capability for Forestry.....	399
16.7.6	Canada Land Use Monitoring Program (CLUMP) Prime Resource Lands.....	401
16.7.7	Enhanced Points of Interest (EPOI)	404
16.8	LAND COVER - TERRESTRIAL -ECOSYSTEM	407
16.8.1	State of Canada's Ecosystems in Maps (EcoMap).....	407
16.8.2	Ecozones, Ecoregions and Ecodistricts of Canada	411
16.9	LAND COVER - TERRESTRIAL -LAND USE	413
16.9.1	AAFC National Land Cover Classification Circa 2000	413
16.9.2	City Land Capability for Agriculture - Canada Land Inventory (1:50 000).....	414
16.9.3	Canadian Conservation Areas Database.....	418
16.10	LAND COVER - TERRESTRIAL -VEGETATION.....	422
16.10.1	Canadian National Forest Information System (NFIS)	422
APPENDICES		424

LIST OF TABLES

TABLE 1: DATA FEATURES REQUIRED FOR ELEMENTS OF HABITAT MODELLING..... 26

TABLE 2: GENERAL METADATA ATTRIBUTES IN NAESI DATABASE 31

TABLE 3: DATA THEMES INVESTIGATED 36

TABLE 4: PRIMARY ON-LINE SERVICES FOR RETRIEVING METADATA..... 37

TABLE 5: OVERALL DATASET COUNT BY JURISDICTION AND BY BUSINESS THEME FROM ALL 935 NAESI DATASETS IDENTIFIED. 47

TABLE 6: COUNT OF 187 HIGH PRIORITY REPORT DATASETS - THESE DATASETS HAVE BEEN REVIEWED AS THE MOST RELEVANT TO HABITAT MODELLING IN EACH JURISDICTION AND ARE THE PRIMARY ONE'S RECOMMENDED FOR RETRIEVAL. THESE DATASETS ARE DESCRIBED IN DETAIL IN SECTIONS 16 TO 15..... 48

TABLE 7: RANKING OF ECOREGIONS MOST LIKELY TO HAVE HIGH QUALITY DATASETS AVAILABLE FOR ANALYSIS. ANY ECOREGIONS < 100 KM² HAVE BEEN EXCLUDED. AREAS REPRESENT THE AREA OF THE ECOREGION INSIDE THE EXTENT OF AGRICULTURE. RANKED IN DECREASING ORDER OF PRIORITY. 52

LIST OF FIGURES

FIGURE 1: APPROXIMATE DENSITY OF HIGH PRIORITY ‘REPORT DATASETS’. HIGH RANKED AREAS HAVE MORE DATA AVAILABLE FOR CONDUCTING HABITAT MODELLING OR CREATING BIODIVERSITY STANDARDS..... 50

FIGURE 2 ECOREGIONS WITH AN AREA-WEIGHTED DENSITY OF REPORT DATASETS. HIGH RANKED ECOREGIONS WILL HAVE MORE DATA AVAILABLE CURRENTLY FOR CONDUCTING HABITAT MODELLING OR CREATING BIODIVERSITY STANDARDS..... 51

LIST OF APPENDICES

APPENDIX A: PROJECT COMMUNICATIONS LOG 424

APPENDIX B: PROJECT TEAM AND PROJECT MANAGEMENT..... 437

APPENDIX C: ADDITIONAL RELEVANT DATASETS NOT DESCRIBED IN DETAIL IN REPORT... 440

APPENDIX D: INDEX 465

EXECUTIVE SUMMARY

Environment Canada (EC) and Agriculture and Agri-Food Canada (AAFC) are developing Agri-Environmental performance standards for agriculture through the National Agri-Environmental Standards Initiative (NAESI) program. NAESI standards will focus on the effects of agricultural activities on habitat quantity and quality, representing the elements of biodiversity most influenced by the sector. To achieve biodiversity goals in this regard, a process is being developed to implement biodiversity standards based upon measurable indicators and targets for wildlife habitat quality and lead to sustainable wildlife populations. Modelling for biodiversity standards require existing data types of sufficient detail and geographic scope across agricultural areas that describe the location, extent and quality of habitat features such as grasslands, wetlands, forests and riparian areas and critical habitat locations. Data is further required to be able to monitor future progress towards these thresholds and targets and measuring progress toward meeting biodiversity goals.

GeoSpatial Consulting Inc. and ERIN Consulting Ltd. were contracted to undertake this project to research and review existing data types describing habitat and habitat related features (with a focus on spatial datasets) that are available from federal, provincial, municipal, Non-government Organization (NGO) and other agencies across Canada. The Project Team included representation and expertise in database design and implementation, modelling and spatial analysis, remote sensing, forest and natural resource management, and agriculture and wildlife habitat assessment. Data types reviewed included satellite-borne imagery, inventories of wetlands, forests and vegetation, specific wildlife population and habitat related surveys and agriculture assessments from the jurisdictions across Canada that include the major agricultural zones. Scoping at the outset of the project included review of the NAESI program requirements

and modelling requirements for assessment of wildlife habitat as it pertains to biodiversity across agricultural landscapes (in support of NAESI goals, stressors, indicators, thresholds, and targets).

The data search resulted in a total of 935 datasets being catalogued in the NAESI Database. The datasets catalogued provide information on a wide range of land and resource features that can have apply to wildlife habitat modelling, and for describing biodiversity in agricultural areas. The distribution of these datasets by jurisdiction, ecoregion, and by general data theme is provided in this report. Datasets catalogued through the search process included information on many sought out features that had been identified in the scoping process as targeted data types in support of the NAESI program. They include data on the following.

- Land cover types (forest, grassland, wetland, agriculture lands) for assessment of such elements as: patch characteristics, proximity, shape, configuration, corridor characteristics, proximity to negative influences, minimum and maximum distances, amount and quality of habitat.
- Water cover types for assessment of such elements as: riparian and aquatic habitats, proximity, minimum and maximum distances, amount and quality of habitat.
- Rare ecosystem identification to enable assessment of unique habitat needs.
- Agricultural activities and locations (extent, type, amount (increase/decrease in practices) to enable assessment of impact of agriculture on habitat quantity and quality.
- Land use/cover features such as urban area identification, infrastructure (roads, buildings), utilities (hydro, pipelines) and other features on the land to enable analysis and assessment of potential impact on habitat such as: fragmentation, connectivity, corridors, limitations to quantity or quality of habitat.

- Landscape features (including soils, terrain, and elevation) to enable analysis and assessment of direct influence on habitat or for application as a proxy for indirect analysis (such as use of soil types associated to vegetation types).
- Unique wildlife habitat features providing information on location, extent and quality of critical wildlife use areas (for feeding, reproduction, cover, etc.).
- Protected areas that can support assessment of protection of areas supplying ecological needs
- Wildlife occurrence and location data, including in particular, data on species at risk, for use in correlation to habitat assessment and to establish wildlife trends and response to habitat changes.
- Temporal land cover and other data from above categories that provides data for the same geographic landscape over a period of time to enable trend analysis and assist in assessing the role of succession on wildlife habitat and biodiversity.

From the full suite of 935 datasets catalogued in the NAESI Database, a ranking process was undertaken to highlight the most applicable datasets in terms of the overall goal of the project. Ranking included consideration of: geographical nature (spatial versus non-spatial); level of detail offered (larger scale versus smaller scale for spatial characteristics); geographical coverage (extent of coverage across province or Canada); relevance to wildlife habitat in terms of the ability of the attribute information to be utilized to describe the quantity, quality, capability, suitability or location of habitat or some component of habitat; and, availability in agricultural regions. The ranking process resulted in the selection of 187 highly ranked datasets, for which fact sheets were prepared for inclusion in this report providing a description of key characteristics

of the dataset, and a summary of observations and recommendations on the suitability and usefulness for application to wildlife habitat modelling and assessment of biodiversity. The fact sheets are provided in sections 4 to 16 of this report, and include:

- Abstract, providing a brief overview summary of the dataset
- Agency, including the type (federal, provincial, NGO, etc.) and the name of the agency
- Access to the data, describing access and use constraints identified in the metadata
- Scope of the dataset, in terms of geography covered as compared to the overall geographic boundaries
- Website, for more information on the Web as available
- Currency of the data, as identified by data collection/data maintenance frequency
- Accuracy of the data, in terms of geographic scale
- Link to the NAESI Database, record number to provide the reader with additional detail
- Summary of observations and recommendations, for utility of findings to the development of habitat based biodiversity standards.

The full detail on these 187 datasets and the full 935 datasets are contained in the accompanying 'naesi_habitat.mdb' MS Access database.

It should be noted that in populating the NAESI Database for this project that members of the Project Team have often copied descriptive material directly from the metadata records from the various data warehouse sites. At times this information was modified or abbreviated in order to focus on the types of information being researched for the NAESI project, and at other times it

was copied over directly.

1 INTRODUCTION AND BACKGROUND

1.1 Introduction

The Environment Chapter, under the Agricultural Policy Framework, has established the goal of decreasing risk and increasing benefits of agriculture to the environmental themes of air, water and biodiversity. Environment Canada (EC) and Agriculture and Agri-Food Canada (AAFC) have signed a Memorandum of Understanding (MOU) to develop Agri-Environmental performance standards for agriculture through the National Agri-Environmental Standards Initiative (NAESI) program.

It has been indicated that NAESI standards will be established for both ecologically ideal, and for achievable conditions, with achievable standards taking into account current landscape condition and available management practices. NAESI standards will be focused on elements of biodiversity over which the agricultural sector has influence and control with focus upon elements that are judged to be at highest risk from agricultural activities. Effects on habitat quantity and quality have been identified as the major impact of agriculture on biodiversity.

The Biodiversity Thematic Group has recognized that the ultimate goal is to conserve biodiversity that is critical to maintaining and restoring ecosystem function and integrity at multiple scales. Biodiversity includes all living organisms and the ecosystems that sustain them. As such, biodiversity can not be represented by a single measurable element but by a suite of elements that together represent the coarse and fine scale dimensions of biodiversity and address the conservation of common elements as well as sensitive and rare elements.

For this project the focus is upon the use of wildlife habitat as a key reflection of biodiversity within Canadian agricultural landscapes. In order to achieve biodiversity goals in this regard it is

key that measures are put into place to demonstrate that there is habitat of sufficient quality and quantity to sustain and enhance wildlife populations. To move towards this process it is necessary to bring together data types of sufficient quality and quantities in order to be in position to model requirements, establish indicators, thresholds and targets and be able to monitor progress towards these criteria. Only with the use of such data will it be possible to develop appropriate frameworks to determine the achievement of habitat and biodiversity requirements. This translates to the need to seek out, capitalize upon, and develop data sources that describe the location, extent and quality of key features such as grasslands, wetlands, forests and riparian areas as well as critical habitat locations that exist with sufficient geographic scope across agricultural areas to serve in determining if there is sufficient and appropriate habitat available for a variety of wildlife populations, in order to meet biodiversity goals.

This project has focussed on researching and reviewing the data types describing habitat and habitat related features (with a focus on spatial datasets) that are available from federal, provincial, municipal and NGO agencies across Canada. This review has included all data types from satellite-borne imagery, to wetland, forest and vegetation mapping derived from aerial photography/ground sampling, to more specific wildlife population and habitat related surveys and studies, including some related to wildlife population studies. The review has focussed upon jurisdictions across Canada that include the major agricultural zones.

1.2 Background

The work undertaken in this project is in support of the broader work being undertaken, and yet to be done, to achieve the overall goals of the NAESI initiative. At the start-up of this project, the Project Team was provided with an assembly of documents and presentation materials providing

background and history pertaining to the NAESI initiative. Review of this material was important to understanding the focus to be placed upon the search and assessment of potential datasets relating to wildlife habitat and biodiversity for agricultural areas. The review provided the Project Team with the scope and emphasis to be placed in terms of the types and characteristics of data being sought in support of NAESI.

The goal of the overall NAESI project is “to develop science based ecological performance standards for biodiversity components significantly affected by agriculture across Canada” (NAESI Biodiversity Modeling Workplan Document 2006)¹. Agriculture includes a wide range of activities taking place on the landbase with potential for placing various stressors on components of biodiversity, including a number that result in impacts upon habitat (conversion, fragmentation, reduction, quality) and some direct impacts upon wildlife populations in terms of mortality arising from harvest or other agriculture activities. Background materials indicate that the biodiversity theme will focus on the effects of agriculture on habitat quantity and quality including consideration of stressors that can primarily be characterized as: (1) land cover conversion affecting the amount, configuration and connectivity of land cover types; and, (2) agricultural practices that affect the quality of the land cover type when assessed as habitat for particular species.

The focus of the NAESI process is upon establishment of standards and use of information pertaining to settled agricultural landscapes, including a mosaic of land uses (urban, agricultural, natural areas, roads, utilities and other infrastructure). In such areas, land cover conversion (permanent or semi-permanent) is common and generally accepted as necessary to meet the needs

¹ NAESI Biodiversity Modeling Workplan Document. 2006. Environment Canada. 22 p.

of growing populations. The process of developing land cover standards that will conserve biodiversity is extremely complex in these landscapes, especially given the role of agricultural lands as habitat for some species. A pre-settlement or natural disturbance regime landscape can offer some guidance as a reference point in time, but can not serve as the basis for thresholds.

In the NAESI Workplan Document, a problem statement was set out to define a process to address the critical characteristics of land cover/land use pattern to conserve biodiversity at a level that will ensure the continued supply of ecological/ecosystem goods and services (broadly defined) and the conservation of ecosystem, species and genetic biodiversity typical for the region. This process is to include definition of landcover types converted/fragmented by agriculture, their use as coarse-filter indicators for biodiversity that is at risk in terms of levels required to sustain wildlife populations (indicator species), and future application to habitat-based standards for a region.

There are limited studies on establishing thresholds, including information provided in, *How Much Habitat is Enough: A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern* (2004)², that is based on studies that show that below 20-30% in natural cover, the composition of bird species typical for a region is negatively impacted. There are also examples of the use of habitat supply analysis (using a wide range of wildlife species as indicators for biodiversity) to assess performance of various scenarios of land use in settled landscapes based including relative performance and as compared to a pre-settlement scenario. Such assessments are indicated to be of value for allowing stakeholders to assess the effects of general policy

² *How Much Habitat is Enough: A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern*. 2004. Environment Canada Canadian Wildlife Service. Minister of Public Works and Government Services Canada. Downsview, Ontario. 81 p.

direction but do not attempt to develop standards or thresholds.

The overall NAESI initiative sets out to improve and refine existing standards such as those included in the document, *How Much Habitat is Enough: A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern* (2004), through:

- Improved definition of habitat patch criteria for ecosystem types within broad land cover types (e.g. forest, wetlands, riparian areas, grasslands, etc.) based on the needs of a broad range of species representing ecosystem structure, function and composition.
- Definition of amounts of each habitat type based on habitat required to support target population levels for indicator species.
- Integration of the dynamic nature of landscapes within the process for determining land cover standards.

The NAESI initiative has established biodiversity conservation goals to ensure national consistency including:

- Conserve regional ecosystem services
- regulating, provisioning, supporting processes that are dependent upon biota that inhabit wetlands, forests, grasslands, riparian areas;
- in a pattern that continues to be of direct benefit to agriculture;
- Conserve ecosystem diversity in terms of representation of full array of ecosystems in proportions indicative of pre-settlement or PNV (potential natural vegetation (PNV) landscape;

- Conserve unique landscape features;
- Conserve habitat quality of natural areas;
- Conserve species composition typical for region;
- Reverse negative trends in species populations;
- Conserve contribution of agricultural areas as habitat; and
- Conserve habitat for species at risk.

NAESI describes a threshold as a critical level of the indicator that causes an unacceptable loss of a biodiversity component with respect to the goals. Should information be lacking to set thresholds, then targets may need to be set based upon historical populations or trend analysis. Standards are to be the levels of land cover quantity and quality required to ensure the indicator remains above the threshold or meets the target. In the end NAESI intends to develop standards which will include a suite of quantitative and qualitative descriptors of the land cover pattern required to meet the biodiversity goals.

A range of methods has been reviewed to derive land cover standards, with the intent to utilize a method that will be driven by the goals and stressors:

- Use of published studies of landscape level land cover thresholds that correlate to loss of species guild, specific species, or simply species composition.
- Compare to pre-settlement or potential natural vegetation state combined with criteria for acceptable deviation similar to forest management planning scenario analysis of management regimes as compared to natural disturbance regime.

- Analyze impact on population level of a suite of selected species for which habitat quantity or quality is a limiting factor to determine the amount of habitat levels needed to support population levels.
- Trend analysis with goal of stabilizing or reversing negative trends based on the premise that systems are already stressed and any further loss is unacceptable (trends in natural land cover in general, specific land cover types (wetlands, forests, grasslands, riparian areas) or populations of species or species guilds).

The materials reviewed for assessing the background to this project provided the basis for the summary included above as well as assisting the Project Team in undertaking the scoping process described further with Section 2.1. The scoping process was key to ensuring that the team members were focused on the types of data being sought in the review.

2 METHODS

In order to meet the requirements of the National Agri-Environmental Standards Initiative (NAESI), Biodiversity Standards, Assessment of Information for Habitat Modelling in Agricultural Regions of Canada, the following methodology was utilized. At project start-up the Project Manager held discussions with the Project Authority and with the other members of the Project Team to finalize the original workplan which had been submitted with the proposal to undertake the project.

In addition to providing input to the finalization of the project workplan, the Project Authority also supplied the Project Team with several items for input and consideration in undertaking the project:

- National Land and Water Information System (NLWIS) database of additional datasets collected independently for the NLWIS initiative
- Additional background documentation on the overall NAESI project

2.1 Data Applications to Modelling

In undertaking this search and assessment of data in support of the NAESI program it is important that a context be set for the use for which the data being sought out will eventually be utilized. The identification, development and implementation of the NAESI goals, stressors, indicators, thresholds, and targets will include the need for a suite of data types with characteristics that will support wildlife habitat modelling in order to establish appropriate thresholds and targets for indicators; and that will be suitable for assessing biodiversity. As such, it is desirable to seek out data to allow identification of the critical characteristics of land cover/ land use pattern to conserve biodiversity at a level that will ensure the continued supply of ecological/ecosystem goods and services or ecological needs of wildlife species, and more generally, the conservation of ecosystems, species, and genetic biodiversity.

The types of habitat that can be expected to occur within and adjacent to agricultural zones provides a starting point in consideration of data types needed for modelling. In addition, as indicated in *How Much Habitat is Enough: A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern* (2004), the ecological needs of the wildlife species being considered for modelling is key to document and explore, as these ecological needs must then be reflected through the data within the modelling process. It is necessary to obtain data that provides a direct measure of these ecological needs and habitats, or that can be utilized as a proxy for ecological needs through features of the habitat that are important to wildlife. In this regard,

the features of land cover anticipated to occur in agriculture zones across Canada provide a focus on information needs in terms of the types of inventories and groupings of data for use by land use planners, administrators and for operational implementation and monitoring processes. Some of the general types of habitat related features that it is desired to obtain data on include:

- Cover – patches, corridors, connectivity, fragmentation,
- Food – distance, quality, quantity
- Water and aquatic needs – distance, quality, quantity
- Nesting, dens, reproduction requirements – suitable sites, some very specific data types (e.g. tree size for nests)
- Protection from predators – relates to cover and distance to cover

To supply information relating to such features requires the use of data from a variety of data coverages (spatial GIS type data) and other databases (tabular) that include:

- Agricultural lands
- Wetlands and associated plant communities and water characteristics
- Riparian areas
- Forest and associated plant communities and structure characteristics
- Grassland
- Soils (proxy)
- Permanent land use/cover changes
- Land uses – in relation to effects on production of ecological needs

- Protected areas – in relation to protection of areas supplying ecological needs

In searching out and documenting datasets, the future applicability of the data for modelling purposes provided the Project Team with a framework of data capabilities being sought including those as described in the table below:

Table 1: Data Features Required for Elements of Habitat Modelling

Dataset Features and Characteristics	Application to Wildlife Habitat Modelling
Data captured at time intervals (e.g. repeated or updated inventories)	Trend analysis Succession of land cover attributes
Natural (undisturbed by human intervention) landscape data	Establishment of potential natural vegetation state Identification of pre-settlement conditions Natural range of variability in land cover
Data currency and updating of dataset	Identify current conditions where recent data available Ability to reflect land use effects where data maintained in updated condition regularly
Geographical extent of dataset	Wider representation of attributes across province, ecoregion, Canada provides for wider model application Increased ability to apply same model across a wider range of jurisdictions Roll-up of results for reporting with increased consistency
Richness of attributes	Generalized land cover or land use data needed to allow wide ranging assessment Specific data on key attributes necessary to reflect critical wildlife habitat needs also required (such as tree size for nesting) More specific the data across a wide geographical range – the more useful for modelling
Key data on rare, threatened and endangered species	Specific location and related habitat community attributes for rare habitats key to assessing needs to prevent expiration or extinction of certain species
Direct attribute and Proxy data useful	Datasets that contain information on such features as soils, geology, etc. can often have use and application to modelling where they can be correlated to ecological needs of wildlife
Agriculture data	Looking for attributes to reflect: <ul style="list-style-type: none"> • Location and extent of agriculture activities • Practices being utilized • Practices being utilized pertaining in particular to non-agriculture land cover features • Agriculture land cover

Table 1: Data Features Required for Elements of Habitat Modelling

Dataset Features and Characteristics	Application to Wildlife Habitat Modelling
Wetland data	Looking for attributes to reflect: <ul style="list-style-type: none">• Percent of area in wetland habitat• Width of natural vegetation buffer adjacent to wetlands• Wetland type (bog, fen, marsh, swamp)• Wetland location (headwaters for groundwater discharge, flood plains, coastal wetlands)• Wetland size• Wetland shape
Riparian data	Looking for attributes to reflect: <ul style="list-style-type: none">• Percent of stream length naturally vegetated• Width of natural vegetation buffer adjacent to watercourse• Total suspended sediments• Percent of urbanizing watershed that is impervious (replacement of natural vegetation with impervious materials)• Fish community specific guidelines
Forest – Grassland data	Looking for attributes to reflect: <ul style="list-style-type: none">• Percent forest/grassland cover• Size of largest forest/grassland patch• Percentage of area in forest/grassland cover that is beyond the “forest edge” by 100 metres and by 200 metres• Forest/grassland patch shape• Proximity of forest/grassland patches• Fragmentation levels• Connectivity (width of corridors)• Forest quality of retained areas (species composition and age structure of forest reflective of full diversity of forest type for the area)

The criteria for guidelines described above provides an indication of the types of features on the landscape for which data will be required in order to support modelling of wildlife habitat requirements as a reflection of biodiversity for agricultural areas. Such data is being sought in

order to identify or calculate landscape metrics that correlate to wildlife ecological needs/ loss of biodiversity or ecosystem services, that can then be translated into wildlife population levels through population – habitat studies.

2.2 Scoping through Review of Background Materials

Commencing at project start-up the Geospatial and ERIN members of the Project Team undertook a review of background information on the NAESI process and held a teleconference discussion of the contents in order to ensure a uniform understanding of the key requirements of the project and the types and sources of data to be searched and assessed. Review of materials by the project team included those supplied by the Project Authority as well as others of related topics identified by the team. In addition, the Project Team reviewed the characteristics of data types that would be important in support of modelling processes applicable to the NAESI program, as summarized in the preceding section. This review enabled the Project Team to scope out the key requirements to immediately initiate a preliminary identification of potential data sources while the Microsoft (MS) Access database for capturing the project information (identified dataset metadata) was developed.

From review of the background information and the project scoping process it was found that all potential methods for derivation of subsequent land cover standards will essentially have the same requirements for data to allow for modelling, analysis and subsequent monitoring of agri-environmental standards. The continuing development and implementation of the NAESI goals, stressors, indicators, thresholds, and targets are expected to include the need for the following land and resource information data types:

- Land cover types (forest, grassland, agriculture land cover types) to enable analysis and

assessment of such elements as: patch characteristics, proximity, shape, configuration, amount, corridor characteristics, proximity to negative influence, minimum and maximum distances, amount of habitat (including carrying capacity), and habitat quality characteristics.

- Water cover types (lakes, rivers, streams) to enable analysis and assessment of such elements as: riparian habitats, aquatic habitats, proximity, amount, minimum and maximum distances, amount of habitat and habitat quality characteristics.
- Successional stages of cover types to enhance analysis and assessment of land cover elements particularly habitat quantity and quality.
- Identification of regionally rare ecosystem types to enable analysis and assessment of unique habitat needs.
- Agricultural activities and locations (extent, type, amount (increase/decrease in practices) to enable analysis and assessment of impact of agriculture on habitat quantity and quality.
- Landscaped features such as urban area identification, infrastructure (roads, buildings, etc.), utilities (hydro, pipelines, etc.) and other features on the land to enable analysis and assessment of potential impact on habitat such as: fragmentation, connectivity, corridors, limitations to quantity or quality of habitat.
- Landscape features (such as soils, terrain, elevation, etc.) to enable analysis and assessment of direct influence on habitat or for application as a proxy for indirect analysis (such as use of soil types associated to vegetation types).
- Unique high value wildlife habitat features providing information on location, extent and quality of critical wildlife use areas (for feeding, reproduction, cover, etc.).

- Wildlife population data, including in particular, data on species at risk, for use in correlation to habitat assessment to establish wildlife trends and response to habitat changes.
- Land cover and other data from the above categories that provides data from similar landscapes that are undisturbed in terms of settlement/land cover conversion to agriculture to enable comparison for development of thresholds and targets.
- Land cover and other data from above categories that provides data for the same geographic landscape over a period of time to enable trend analysis and assist in assessing the role of succession on wildlife habitat and biodiversity.

2.3 Develop ‘NAESI Database’

One of the first activities to be commenced was the development of the ‘NAESI Database’ for use by the Project Team to capture and document metadata identified through the data search and to permit subsequent assessment, review and reporting. For this purpose a Relational Database was developed with MS Access 2000. The Project Team built a fully customized NAESI Database for use by the Project Team in capturing and assessing identified datasets and as a deliverable for the project. The searchable database developed at this stage of the project acts as a metadata repository.

In conjunction with investigation into potential data sources for undertaking the review, the development of the NAESI Database was one of the first project components undertaken in order to provide the Project Team with the mechanism for cataloguing datasets resulting from the data search. Some additional enhancements to the database were implemented as the project proceeded in response to identified requirements for the assessment stage of the project and to

streamline the production of the Datasets Summaries provided in Sections 5 to 17 of this report.

The NAESI Database includes the following framework elements as described in the series of tables below (for the actual contents and layout the reader is directed to consult the NAESI Database submitted in conjunction with this Project Report). Input of values for some fields was dependent upon the completeness of information provided in the available metadata and/or information available from researched sources during the review for individual dataset records.

Table 2: General Metadata Attributes in NAESI Database

Element	Description
Citation and General Identification Information	
Abstract	A brief narrative summary of the data set
Purpose	A summary of the intentions for which the data set was developed
Business Theme	General category of the data resource
Business Driver	Indication of why the data was originally collected
Agency	Agency responsible for the data (federal, provincial, NGO, etc.)
Point of Contact	Contact information for contact, distributor, etc.
Website with additional information	URL provided for datasets for which an online access point to the data provided or for additional information regarding the dataset
Metadata	
Dates – Time Coverage	Beginning and ending dates for dataset collection and any applicable time coverage comments
Progress Description	Progress in terms of dataset completeness, or ongoing nature
Geographic Completeness	Completeness of dataset for geographic area included in the boundaries

Table 2: General Metadata Attributes in NAESI Database

Element	Description
Maintenance Update Frequency	Frequency of data update
Data Collection Frequency	Frequency of data collection (for monitoring processes)
Access Constraints	Restrictions and legal prerequisites to accessing the data set Includes noted requirements for licensing, Data Sharing Agreements, costs, freely available, etc.
Use Constraints	Restrictions, limitations and legal prerequisites for using the data set after access is granted
Metadata Currency & Review Dates	Currency and latest review dates of metadata
Privacy Indicator	Public data or for internal organization purposes
Geographic	
Nominal Scale	Source scale denominator
Grid Coordinate System	Geographic coordinate system name
Map Projection	Project coordinate system name
Horizontal Datum	Horizontal datum name
Altitude Datum	Altitude datum name
Horizontal Accuracy	Indication of horizontal accuracy as indicated or based upon nominal scale
Vertical Accuracy	Indication of vertical accuracy as indicated
Bounding Coordinates	
Bounding Coordinates	North, south east and west bounding coordinates to provide the spatial domain of the dataset
Formats	
Format Type	Overall format the dataset is held in

Table 2: General Metadata Attributes in NAESI Database

Element	Description
Digital Format	Digital format data held in or used for transfer (Shapefile, Coverage, AutoCAD, Microstation, Excel Spreadsheet, Access Database, etc.)
Digital Media	Type of digital source media dataset stored on or utilized for transfer (online, CD, etc.)
Non-digital Media	Type of non-digital source media stored on (paper, maps, etc.)
Keywords	
Keywords	Key words (theme, place, stratum, temporal, etc.) to assist in searches of the database
Relevance to NAESI	
Relevance to Wildlife/Biodiversity	Notes taken by Project Team on the relevance of the dataset for input to assessment of dataset
Requirement Level	Overall characterization of applicability of the dataset to the NAESI project (low, medium, high)
URL to Sample	Web or intranet location to sample data when available
Ecoregions	Indication of ecoregions covered by the data for location specific datasets (for jurisdiction wide datasets this field left blank)
Comments	Internal Project Team fields available for notes
GIS Properties	
Feature Data Type	Types of features described in the dataset (line, polygon, point)
Geographic Features	Types of geographic features described (land base, land cover, forest stands, agriculture openings, etc.) of entities described in the dataset
Attributes	Attributes of the features described in the dataset
Species	
Wildlife Species	Wildlife species, guilds or taxa that the dataset is anticipated to have application to in terms of habitat
Agencies	
Element	Description
Agency & Sub-agency	Address, web site, and jurisdiction status (federal, provincial, NGO, etc.) for agencies responsible for datasets

Table 2: General Metadata Attributes in NAESI Database

Element	Description
Contacts	
Contact Information	Name, agency and contact information as available (phone, address, email) for designated contact for the dataset
Report	
Report Ranking	Overall ranking of dataset in terms of applicability to the NAESI project (low, medium or high), utilized to prioritize datasets for production of detailed reports
Jurisdiction	Provincial jurisdiction
Report Theme	Overall theme and sub-themes of dataset
Relevance to Wildlife	Description of the relevance of the dataset to wildlife
Relevance to Biodiversity	Description of the relevance of the dataset to biodiversity
Recommendations	General recommendations/suggestions on applicability of the dataset for use in wildlife habitat modelling and use in biodiversity assessment

The NAESI MS Access Database has been produced as a deliverable under this project and an electronic copy of the dataset and associated input forms, search forms and custom reports has been delivered in association with this report.

2.4 Initial Data Sources Investigation

At the start-up of the project, in conjunction with the development of the NAESI MS Access Database, the Project Team initiated an investigation of potential sources for data that would be applicable to the project. This included:

- Web site search of the various provincial, federal, NGO, and other relevant agency websites that had been identified as potential producers/holders of applicable data
- Review and contact of persons known to the members of the Project Team who may have knowledge of data sources, or be able to provide direction to such sources
- Review of past and ongoing projects to consider potential sources of datasets

An excel spreadsheet was prepared to document potential sources to be investigated by members of the Project Team for documenting of datasets.

2.5 Dataset Search & Cataloguing

To most effectively undertake the dataset search, members of the Project Team were assigned provincial jurisdictions to utilize as a guideline in terms of where to focus their efforts. While the search was underway individual team members also maintained email contact and utilized the weekly teleconference call to provide suggestions to other members as leads were uncovered. Once the initial version of the NAESI MS Access Database was available the team members began the dataset search, and cataloguing of metadata and attribute information.

2.6 Note on Citation of Metadata throughout this Report and Associated Database

It is noted that in populating the NAESI Database for this project that members of the Project Team have often copied descriptive material directly from the metadata records from the various data warehouse sites. At times this information was modified or abbreviated in order to focus on the types of information being researched for the NAESI project, and at other times it was copied over directly.

2.7 Data Types

In undertaking the search for potential data sources and in cataloguing datasets for the NAESI project the Project Team undertook a search to cover off a broad spectrum of data types that may be useful to varying degrees and in different aspects of wildlife habitat as a measure of biodiversity as it pertains to agricultural regions across Canada. In all cases the focus was to search out data that was spatial (GIS) whenever possible. Data was sought out in particular for land and resource features that would be associated with agricultural regions. In addition, where historical data was available on land and resource features, this fact was captured in the cataloguing process, given the potential value for trend analysis over time. The table below provides an outline of the major types of data that were sought out in the search.

Table 3: Data Themes Investigated

Broad Data Themes	Data Types and Coverages
Agricultural Lands	Location and extent of agricultural lands
	Agriculture land use/land cover classification
	Detailed agricultural practices on land
Land Base	Topography
	Soils
	Terrain and elevation (DEM)
	Physiographic coverages
Water	Lakes, rivers and stream coverages
Wetlands	Wetland locations and extent
	Wetland classifications
	Detailed wetland vegetation data
	Disturbance data
	Associated land cover data
Grasslands	Grasslands locations and extent
	Grassland classifications
	Detailed associated vegetation data
	Disturbance data
Forests	Forest cover locations and extent

Table 3: Data Themes Investigated

Broad Data Themes	Data Types and Coverages
	Forest stand classifications (tree species, age, height, crown density, etc.)
	Forest ecological classification that encompasses understorey species
	Disturbance data
Riparian Zones	Watercourse location and extent
	Associated land cover information
	Associated detailed land cover data (understorey, species)
Land Use and Administration	Land use classification – location and extent
	Detailed uses and limitations potentially affecting habitat
	Protected areas
	Infrastructure and other features limiting to wildlife/habitat
Wildlife Species and Habitats	Wildlife species habitat studies relating to land cover and other attributes
	Rare, threatened and endangered species data – locations, extent, relationship to land cover, habitat communities
	Wildlife populations

2.7.1 Data sources and Locations

2.7.1.1 Internet Search

A principal source of data, as anticipated at the outset of the project was various data warehouse sites on the internet. Principal leading websites investigated and utilized in the dataset search are summarized in the table below. This listing provides the leading websites utilized in the searching and cataloguing process for NAESI applicable datasets. This is not an exhaustive listing as further additional websites were utilized in the search and cataloguing process that may not be captured in this listing.

Table 4: Primary On-Line Services for Retrieving Metadata

Website Name	Internet Address
Federal	
The Aboriginal Mapping Network	http://www.nativemaps.org/data.html#MSRM

Table 4: Primary On-Line Services for Retrieving Metadata

Website Name	Internet Address
Biodiversity Portrait of the St. Lawrence – Environment Canada	http://www.qc.ec.gc.ca/faune/biodiv/en/methods/data_access.html
Canadian Biodiversity Information Network	http://www.cbin.ec.gc.ca/
Canadian Soil Information System	http://sis.agr.gc.ca/cansis/
Canadian Sustainability Indicators Network	http://www.csin-rcid.ca/main_e.htm
GeoBase	http://www.geobase.ca/
GeoConnections	http://www.geoconnections.org/CGDI.cfm
GeoGratis	http://geogratias.cgdi.gc.ca/
Land Potential Database of Canada	http://sis.agr.gc.ca/cansis/nsdb/lpdb/index.html
National Biodiversity Information Initiative – Canada	http://www.eman-rese.ca/eman/reports/publications/nm98_abstracts/part27.htm
National Land and Water Information Service - Canada	http://www.agr.gc.ca/nlwis-snite/index_e.php
NatureServe - Canada	http://www.natureserve-canada.ca/
Photosat	http://www.photosat.ca
Provincial	
Land and Resource Data Warehouse (LRDW)	http://lrdw.ca/
Biogeoclimatic Ecosystem Classification	http://www.for.gov.bc.ca/hre/becweb/index.htm

Table 4: Primary On-Line Services for Retrieving Metadata

Website Name	Internet Address
Quebec Wildlife Service (CWS) Quebec Region Conservation Atlas of Woodlands in Agricultural Landscape	http://lavoieverte.qc.ec.gc.ca/faune/atlas/asp/form_atlas_boises_e.asp
Ressources Naturelles et Faune – Photocartothèque Québécoise	http://photocartotheque.mrnfp.gouv.qc.ca/pcq/classes/accueil
Interactive Mapping of the St. Lawrence – Environment Canada	http://www.qc.ec.gc.ca/geo/mil/mil001_e.html
GeoNOVA	http://www.gov.ns.ca/geonova/home/
Nova Scotia Natural Resources Available Downloads	http://www.gov.ns.ca/natr/forestry/gis/freebies.htm
Land Information Ontario	http://www.lio.gov.on.ca/
Conservation Ontario	http://conservation-ontario.on.ca/
Natural Heritage Information Centre	http://nhic.mnr.gov.on.ca/nhic_.cfm
Manitoba Land Initiative	http://web2.gov.mb.ca/mli/
Prince Edward Island GIS Data Layers	http://www.gov.pe.ca/gis/
BC Ministry of Environment Biodiversity Publications Catalogue	http://wlapwww.gov.bc.ca/wld/catalogue/index.html
Alberta Environment Library Services	http://www.gov.ab.ca/env/info/library/index.html#catalogue
Alberta NEOS Library Consortium	http://www.neoslibraries.ca/
Saskatchewan Research Council Library & Information Services	http://www.src.sk.ca/html/about_src/library/
Prairie Farm Rehabilitation Administration	http://www.agr.gc.ca/pfra/main_e.htm
University of Regina Library	http://www.uregina.ca/library/
Information Services Corporation of Saskatchewan Geomatics	http://www.isc.ca/default.aspx?DN=29,11,1,Documents
Saskatchewan Environment Geomatics Map Server	http://gisweb1.serm.gov.sk.ca/mapserver/mapserver.asp

Table 4: Primary On-Line Services for Retrieving Metadata

Website Name	Internet Address
Other Sources	
Canadian Atlas Online	http://www.canadiangeographic.ca/atlas/
ESRI Geography Network	http://www.geographynetwork.ca/
Global Forest Watch	http://www.globalforestwatch.org/english/index.htm
Global Master Change Directory	http://gcmd.nasa.gov/
McElhanney	http://www.mcelhanney.com/products/prod_bco_details.html

2.7.1.2 Contact Sources

Utilizing the documented contact sources identified during the earlier investigation at project commencement, including already known contacts of Project Team members, the Project Team undertook to canvass for potential datasets. This contact process included investigation of any available metadata, attribute descriptions and any suggestions for direction to other people who may be able to identify datasets relevant to the NAESI process.

In the course of reviewing metadata from internet sources, identified contacts were consulted where additional information was sought out pertaining to application of the dataset to agricultural regions, for further information on dataset attributes or for other questions relating to cataloguing and assessment of the datasets.

3 RESULTS AND ASSESSMENT OF DATA FINDINGS

3.1 Results

As described in the Methods section, the Project Team conducted a search of datasets utilizing the internet, contact sources and past and current project records. A communications log/listing of

contacts and organizations contacted throughout the project is provided in Appendix A – Project Communications Log.

A total of 935 datasets were searched out and listed in the NAESI Database by the Project Team (naesi_habitat.mdb). The distribution of this total by jurisdiction and by general data theme is provided in Table 5. The table describes all of the datasets available in the NAESI database, and groups them into general categories describing the Business Theme that they fit under. Many of the datasets can potentially fit under more than one Business Theme (e.g., Topographic data can provide topography, riparian, water and transportation features in a single dataset). Not all business themes were necessarily uncovered for each jurisdiction, or were not necessarily considered important enough to capture.

The datasets found provide information on a wide range of land and resource features that can have application to wildlife habitat modelling for describing biodiversity applications in agricultural areas. In the searching process, the Project Team sought out and catalogued datasets that were found to relate to the data needs characterized by the listing from the scoping process undertaken at project start-up (provided in Section 2.2). The NAESI Database in its entirety has been provided on CD/DVD ROM as an attachment to this report (naesi_habitat.mdb). Users can view the datasets that have been catalogued from across the various jurisdictions that have application to the agricultural regions of Canada. The attributes of the NAESI Database were described earlier in this report in association with the discussion of the development of the database. The completion of attribute fields for each record (dataset) is dependent upon the availability of information from the related metadata and/or information sources from which the information was captured.

3.2 Assessment

For the purposes of this report a ranking process was undertaken to review the 935 datasets catalogued in the NAESI Database. A subset of the highest ranked, most applicable datasets in terms of the overall goal of the project was created. Datasets that can meet the primary requirements of providing information to a habitat modelling exercise, or development of biodiversity standards had to meet several criteria. This critical review was conducted on the datasets in each jurisdiction so that there was coverage across the country. With this in mind the 935 datasets were ranked based upon the following criteria:

- Geographical nature – spatial versus non-spatial data – spatial data was preferred since it provides that ability to calculate landscape level statistics and conduct spatial analysis of connectivity and proximity
- Level of detail offered (larger scale versus smaller scale for spatial characteristics) – the larger scaled datasets offer more detail and are preferred
- Geographical coverage – the larger the area covered the better, smaller scope datasets have limited value for broad analysis, modelling or monitoring
- Relevance to wildlife habitat in terms of the ability of the attribute information to be utilized to describe the quantity, quality, capability, suitability or location of habitat or some component of habitat
- Availability in agricultural regions

The ranking process resulted in the selection of 187 highly ranked datasets out of the total of 935 datasets catalogued in the NAESI Database. A more detailed assessment was then conducted on each of these 187 ‘Report Datasets’, and each was professionally reviewed by the project team. In

most cases the project team did not have the benefit of having the actual dataset in-hand. These assessments are based on professional experience with the data, or similar data, and the information that was gleaned from metadata and contacts. For each Report Dataset, a summary description of the relevance of the dataset for use in wildlife habitat modelling, it's broader relevance to biodiversity and then any recommendations for it's potential use within the context of NAESI was completed. Each of these individual assessments is in sections 4 to 16 in the main body of this report. For simplicity, Sections 4 to 16 are categorized into national and provincial jurisdictions. For each 'Report Dataset, a fact sheet has been prepared for presentation in this report. Each dataset fact sheet contains the following information of which some is taken from the NAESI database (and is repeated there). Specific assessment information appears only here in the report.

- Title
- A map graphic of approximately the area the data covers. These graphics are approximate as many of the bounds of the datasets are based on geographic coordinates.
- Abstract, providing a brief overview summary of the dataset
- Agency, including the type (federal, provincial, NGO, etc.) and the name of the agency that provides the data.
- Access to the data, describing access and use constraints identified in the metadata
- Scope of the dataset, in terms of geography covered as compared to the overall geographic boundaries
- Website for more information on the Web as available

- Currency of the data as identified by data collection/data maintenance frequency
- Accuracy of the data in terms of geographic scale
- Link to the NAESI Database record number to provide the reader with additional detail
- Summary Observations and Recommendations – This was the opportunity of each team member to assess the data, metadata and use their knowledge to make recommendations specific to the dataset, any specific uses it can address and any other datasets that can be used in conjunction with.

The fact sheets that follow provide detailed descriptions for the highly ranked 187 datasets identified in this project. Additional information on the remaining datasets can be found in the associated NAESI Database. Table 6 below provides an overview by jurisdiction of the identified ‘Report Datasets’ and the jurisdiction that they fall within. Datasets that have a national or broader regional scope have been slotted into a Canada or Prairies or Maritimes jurisdiction.

3.3 Gap Analysis

Report Datasets were identified for all jurisdictions. In general, the larger jurisdictions tended to have more relevant data and information that was available for NAESI’s purposes. Each dataset was geographically located with an approximate ‘bounding box’ of latitude and longitude to show where that data sits relative to others in an ecoregion. Each ‘bounding box’ was converted to a raster grid and overlain in an additive overlay (using ERDAS Imagine) to create a ‘density’ map, approximating the numbers of datasets in each geographic area. High density scores therefore meant there were relatively more ‘Report Datasets’ available in a region.

Figure 1 shows the results of this analysis. In general, the results indicate that southern Ontario, southern Quebec and southern BC tend to have the highest density of 'Report Datasets' available. Manitoba and Newfoundland tend to have the lowest densities available. Figure 2 provides a view of a similar analysis. The dataset densities from

Figure 1 were intersected with ecoregions and an area-weighted score was created for each ecoregion. Those ecoregions that scored a higher weight will tend to have more datasets available for analysis work. The results appear similar to

Figure 1, except they are bounded by the ecoregion boundaries and provide a view of which ecoregions are nearer to being ready for analysis or modelling. Table 7 displays the results of this same analysis in a tabular form. The highest ranked ecoregions scored the highest weighted rating and are listed first. All ecoregions with an area < 100km² have been excluded from the table. The highest ranked ecoregions are the ones where data retrieval and analysis is likely to be more successful in the short term, since they have more information and more high priority datasets available.

Some general observations and caveats about the gap analysis:

- Highly populated ecoregions tend to have the highest density of priority data
- Ecoregions with marginal agriculture (northern areas) tend to have the lowest availability of data and appear to be the lowest priority.
- The south Okanagan, southern Ontario and southern Quebec tend to have the most datasets available.
- In the more populace ecoregions and heavily cultivated ecoregions, forestry datasets will

decrease in value. In these areas, where forestry is less prevalent, datasets describing forest vegetation (forest inventories) can either be older, or less accurate, or non-digital, or even non-existent. Forestry datasets tend to describe crown lands in some jurisdictions, so forest vegetation features on private land may be less accurate.

- Some imagery providers have been identified in the Report Datasets described in this report. Imagery is an excellent source of temporal information, but the trick is finding classified imagery that describes the land cover. Classified imagery is also less rich in attributes, and so has less utility for modelling.

Table 5: Overall Dataset count by jurisdiction and by business theme from all 935 NAESI datasets identified.

Province	Agricultural Lands	Aoi/Research	Biodiversity	Disturbance	Ecosystems	Environmental Monitoring	Forests	Grasslands	Imagery	Land Base	Land Cover	Land Use	Other	Planning	Rare And Endangered Species	Riparian Areas	Soils	Transportation	Vegetation	Water	Water Features	Wetlands	Wildlife Census	Wildlife Habitat
Alberta	3	1	1		3		1		5	4			24				2		2	32				1
BC	21	2	2	2	3	5	1	5	9	4	9	5	2		5	1	1		10	8	15	1	17	10 3
Canada	5		1			1	8		44	1	1	4	27	1			3	2	3	17			1	5
Manitoba	1						1		3	6	2	8					1		1		1			1
New Brunswick							1		1	2	1	1	2		1				1			1	5	3
Newfoundland	1						2			1	1	4												
Nova Scotia	1						3		1	3	2	6	2		1	1			1			1	5	2
Ontario	9	1	1	1	7	3	10		10	12	10	19	21				3	4	5	15	7	4	2	30
PEI							4		2	6	1											2		
Quebec	2				5				4	8	3	8			2		1				10	6	1	4
Saskatchewan	1		2				4		28	4	2	3	16		2	1	1		10	15		4	10	58
Total	44	4	7	3	18	9	35	5	107	51	32	58	94	1	11	3	12	6	33	87	33	19	41	207

Table 6: Count of 187 High Priority Report Datasets - These datasets have been reviewed as the most relevant to habitat modelling in each jurisdiction and are the primary one's recommended for retrieval. These datasets are described in detail in Sections 16 to 15.

Report Theme	Report Sub Theme	Report Sub Theme 2	Alberta	BC	Canada	Manitoba	Maritimes	New Brunswick	Newfoundland	Nova Scotia	Ontario	PEI	Quebec	Prairies	Saskatchewan
Biological	Aquatic	Population		1									1		
Biological	Species at Risk	Fauna		2											1
Biological	Species at Risk	Various	1	1	1	1	1	1		1			1		1
Biological	Terrestrial	Habitat	1	6							9				1
Biological	Terrestrial	Management/ Conservation	1		2						4				2
Biological	Terrestrial	Population			2										
Imagery	Airborne	Various	1	1							2		1		2
Imagery	Spaceborne	Multispectral			1						1				1
Imagery	Spaceborne	Various			1										
Land Base	Political/Administrative		1												4
Land Base	Soils		1		2						1	1			

Table 6: Count of 187 High Priority Report Datasets - These datasets have been reviewed as the most relevant to habitat modelling in each jurisdiction and are the primary one's recommended for retrieval. These datasets are described in detail in Sections 16 to 15.

Report Theme	Report Sub Theme	Report Sub Theme 2	Alberta	BC	Canada	Manitoba	Maritimes	New Brunswick	Newfoundland	Nova Scotia	Ontario	PEI	Quebec	Prairies	Saskatchewan
Land Base	Topography		3	1		1		2	1	1	3	1	1		
Land Base	Transportation		1		2						2				1
Land Base	Various		2	4	6						12		3		1
Land Cover	Aquatic	Waterbodies	1	3	1		1			1		1			
Land Cover	Aquatic	Watersheds	1	1		1						1		1	2
Land Cover	Terrestrial	Ecosystem		4	2					1			1		1
Land Cover	Terrestrial	Land Use	2	5	3	1			2	1		2	2		2
Land Cover	Terrestrial	Various	1	3			1				2				
Land Cover	Terrestrial	Vegetation	1	1	1	1		1	1	1		1	6		2
Monitoring	Water												1		

Figure 1: Approximate Density of high priority 'Report Datasets'. High ranked areas have more data available for conducting habitat modelling or creating biodiversity standards.

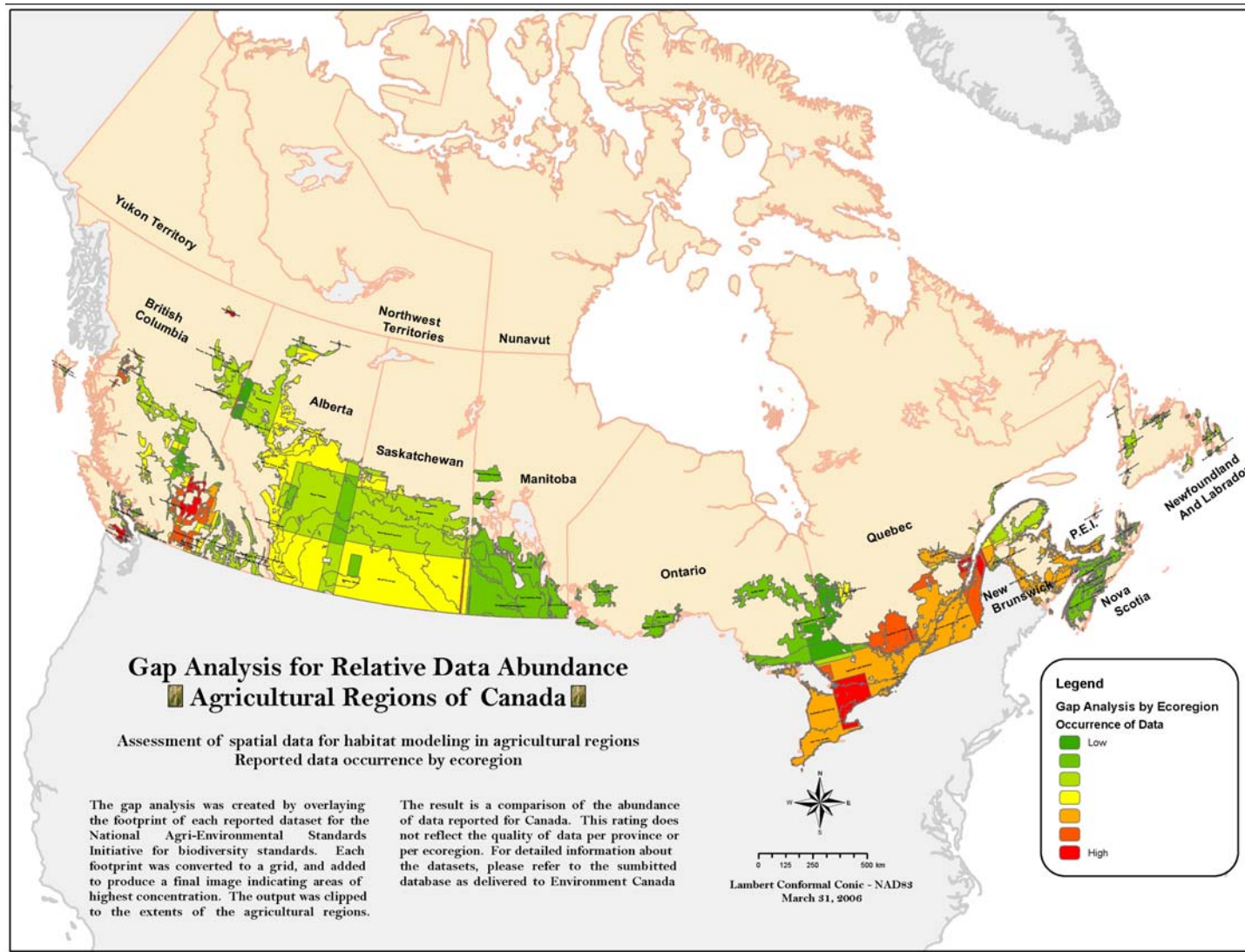


Figure 2 Ecoregions with an Area-Weighted Density of Report Datasets. High ranked ecoregions will have more data available currently for conducting habitat modelling or creating biodiversity standards.

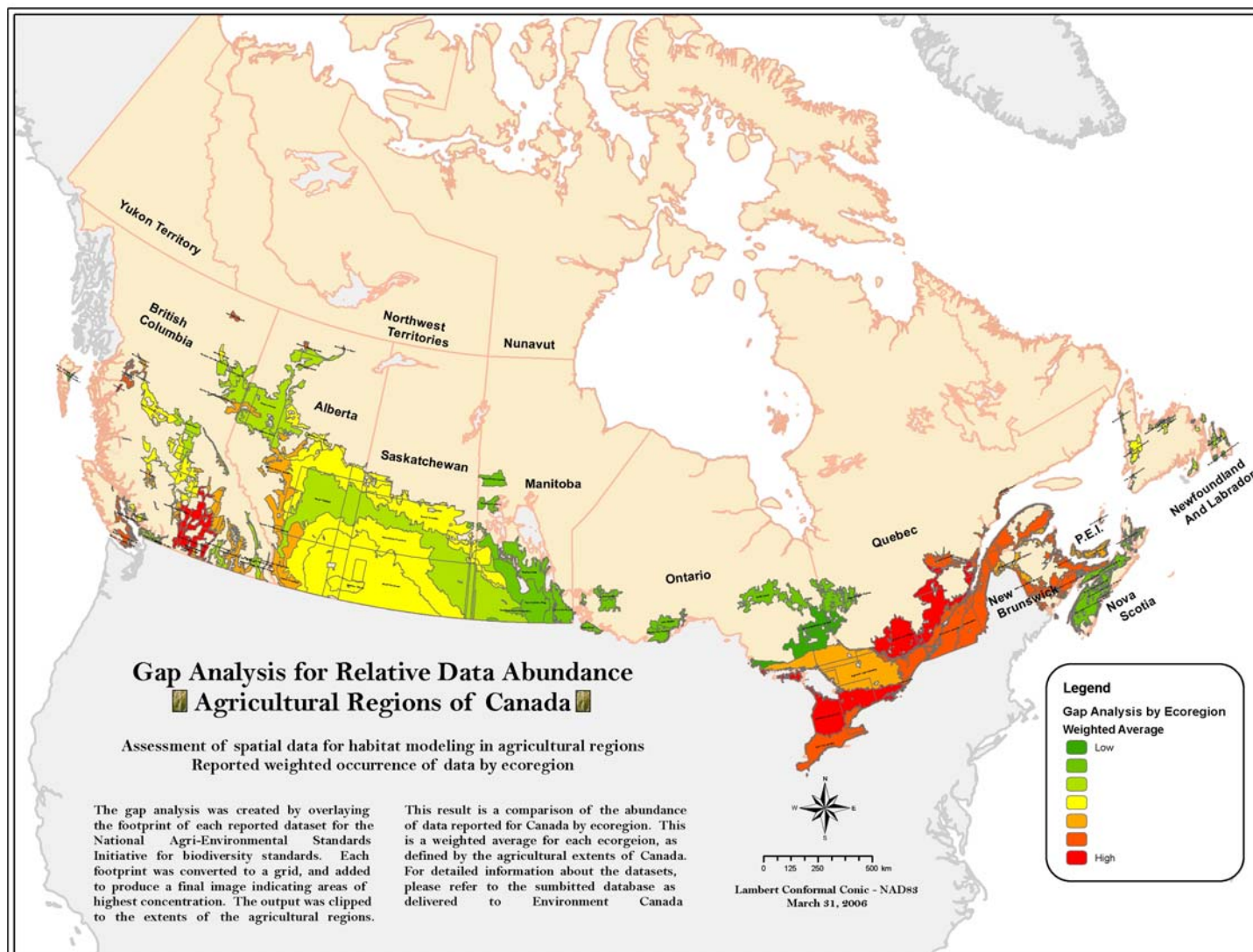


Table 7: Ranking of ecoregions most likely to have high quality datasets available for analysis. Any ecoregions < 100 km² have been excluded. Areas represent the area of the ecoregion inside the extent of agriculture. Ranked in decreasing order of priority.

ECOREGION	REGION NAME	km²
134	Manitoulin-Lake Simcoe	47,687
135	Lake Erie Lowland	24,817
99	Southern Laurentians	57,430
209	Thompson-Okanagan Plateau	24,306
132	St-Laurent Lowlands	42,730
121	Southern New Brunswick Uplands	7,914
120	Saint John River Valley	3,607
210	Okanogan Range	1,899
133	Frontenac Axis	919
117	Appalachians	51,079
191	Coastal Gap	389
122	Maritime Lowlands	17,628
101	Central Laurentians	13,062
194	Eastern Vancouver Island	5,204
130	Prince Edward Island	5,939
118	Northern New Brunswick Highlands	8,648
208	Interior Transition Ranges	2,430
98	Algonquin-Lake Nipissing	68,969
190	Nass Ranges	3,877
214	Northern Continental Divide	6,264
211	Okanogan Highland	1,152
158	Fescue Grassland	14,896
64	Hay River Lowland	1,594
205	Columbia Mountains and Highlands	22,054
204	Chilcotin Ranges	1,967
142	Wabasca Lowland	295
145	Western Alberta Upland	32,479
159	Mixed Grassland	131,978
187	Nass Basin	793
157	Moist Mixed Grassland	98,995
160	Cypress Upland	8,503
109	Southwestern Newfoundland	4,145

Table 7: Ranking of ecoregions most likely to have high quality datasets available for analysis. Any ecoregions < 100 km² have been excluded. Areas represent the area of the ecoregion inside the extent of agriculture. Ranked in decreasing order of priority.

ECOREGION	REGION NAME	km²
112	Central Newfoundland	2,406
139	Mid-Boreal Uplands	38,764
202	Fraser Plateau	32,574
192	Pacific Ranges	2,371
149	Boreal Transition	94,417
206	Western Continental Ranges	1,554
114	Maritime Barrens	4,583
124	Southwest Nova Scotia Uplands	12,745
127	South-central Nova Scotia Uplands	1,957
156	Aspen Parkland	173,610
123	Fundy Coast	3,107
126	Annapolis-Minas Lowlands	3,954
213	Southern Rocky Mountain Trench	4,993
212	Selkirk-Bitterroot Foothills	4,021
128	Nova Scotia Highlands	10,192
196	Lower Mainland	3,648
113	Northeastern Newfoundland	956
143	Western Boreal	8,346
66	Muskwa Plateau	1,259
92	Rainy River	2,695
203	Fraser Basin	10,317
107	Northern Penninsula	642
200	Central Canadian Rocky Mountains	215
138	Peace Lowland	54,814
93	Thunder Bay-Quetico	5,809
137	Clear Hills Upland	11,119
65	Northern Alberta Uplands	369
94	Lake Nipigon	6,368
163	Southwest Manitoba Uplands	2,169
91	Lake of the Woods	14,920
90	Lac Seul Upland	3,797
162	Lake Manitoba Plain	29,909

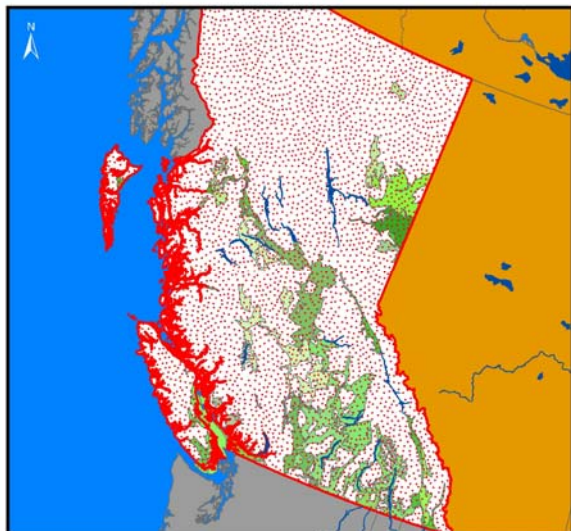
Table 7: Ranking of ecoregions most likely to have high quality datasets available for analysis. Any ecoregions < 100 km² have been excluded. Areas represent the area of the ecoregion inside the extent of agriculture. Ranked in decreasing order of priority.

ECOREGION	REGION NAME	km²
125	Atlantic Coast	1,823
155	Interlake Plain	28,453
148	Mid-Boreal Lowland	6,421
189	Queen Charlotte Lowland	604
96	Abitibi Plains	35,298
88	Churchill River Upland	5,800
97	Lac Temiscamingue Lowland	30,337
195	Georgia-Puget Basin	903
116	South Avalon-Burin Oceanic Barrens	798
131	Iles-de-la-Madeleine	118
197	Cascade Ranges	316

4 BRITISH COLUMBIA

4.1 Biological - Aquatic -Population

4.1.1 *Provincial Fish Ranges BC*



Abstract

This theme contains species ranges for fish found in British Columbia. The ranges are represented as polygons developed from the 3rd order watersheds from the 1:50,000 BC Watershed Atlas. There are 2 layers to this theme. There is a generalized view of the polygons that was developed for display purposes for web mapping tools. There is also the detailed watershed layer that is suitable for analysis in a GIS platform. The initial fish species codes for presence/absence in each watershed were derived from an GIS overlay of fish species occurrences within broadly defined fish regions for BC. This overlay of fish ranges describes the occurrences of fish species in 30 regions throughout the province. These broad species ranges were derived from McPhail and Carveth's "Key to Freshwater Fish of BC" and refined further based on the most current expert opinion

Agency

Provincial Government
Ministry of the Environment
British Columbia

Access to Data

- Free to public to use and download.
- Please see use limitations in the related feature type layers: Provincial Fish Ranges - Generalized and Provincial Fish Ranges - Watersheds

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=datacustodians&edit=true&showall=snowall&recordSet=ISO19115&recordUID=45151>

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 1140534302 for more detail on this dataset.

Summary Observations and Recommendations

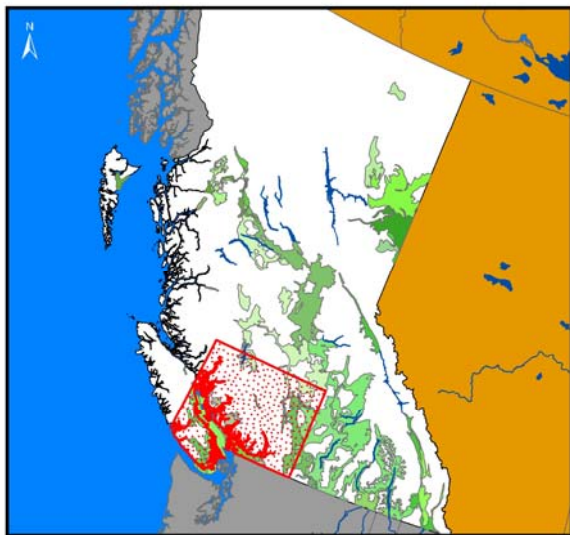
This overlay of fish ranges provides important habitat information to the species level for all ecoregions of BC. For areas deemed to be of particular concern, other fish habitat and population records exist within the database with greater detail for the Squamish, Peace, Lillooet, Caribou and Okanogan Shuswap forest districts of British Columbia. These individual databases, while more detailed, cover smaller specific geographic locations and extents.

Use of this dataset will allow delineation of fish ranges for the province of British Columbia, for

overlay with agricultural coverage data to identify areas of potential interaction and concern as well as isolated or rare populations. In doing so, this provides information to assist in development of suitable indicators and targets related to aquatic habitat and fish populations and for subsequent monitoring of biodiversity standards regarding pesticide contamination and other agricultural practices affecting water quality. This dataset may also serve as a benchmark for comparison to past and present datasets of the same nature. It is suggested that this would be a useful dataset for application to aquatic habitat standards in BC.

4.2 Biological - Species at Risk -Fauna

4.2.1 Grizzly Bear Wildlife Habitat - Various Districts - Lower Mainland



Abstract

Grizzly Bear Wildlife Habitat Area and Approved Management Areas for the Lower Mainland

LRMP area. Forest Districts include:

- Chilliwack
- Sunshine Coast

- Squamish

Agency

Provincial Government
Ministry of the Environment
British Columbia

Access to Data

- Freely viewed by the public. Not available for download.
- This data is used for visual representation for operational and planning purposes internally within government and is not the official version.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=38636&recordSet=ISO19115>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000

Link to Database

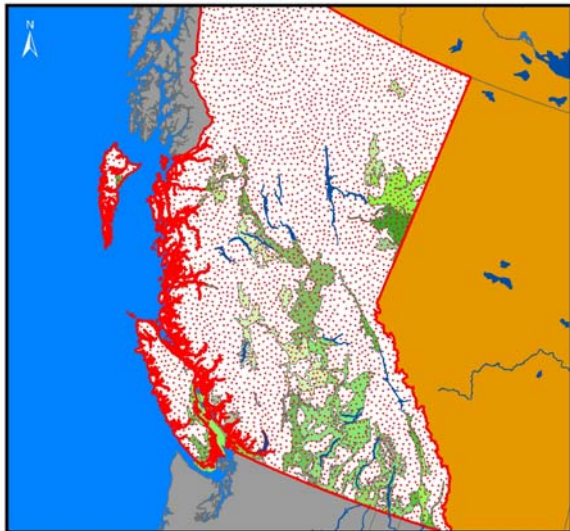
- Look in record 85395690 for more detail on this dataset.

Summary Observations and Recommendations

This identifies habitat for a key species of concern, however the geographic location and extent is specific to a portion of BC. As the development of roads, power lines, pipelines and other linear features and human activity can result in the geographic and genetic isolation of Grizzly Bears, the location of suitable Grizzly Bear habitat is critical to minimizing negative effects of anthropologic activities and maintaining biodiversity.

This dataset was created to provide information to support informed management decisions for land and natural resource planning including wildlife management, protection of biodiversity and/or BC's resource based industries and as such is valuable for the diversity project given proximity to some agricultural lands. Use of this database together with the Grizzly Bear Population Units (GBPU) BC database could be used for development and use of biodiversity indicators pertaining to grizzly bear habitat in relation to issues such as habitat conversion and fragmentation.

4.2.2 Grizzly Bear Population Units (GBPU) BC



Abstract

Boundaries identifying similar behavioral ecotypes and sub-populations of Grizzly bears.

Agency

Provincial Government
Ministry of Environment BC
British Columbia

Access to Data

- 2005 data can be viewed by the public. Earlier data can only be viewed by BCGOV users. Not freely viewable or downloadable for the general public.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=datacustodians&edit=true&showall=showall&recordSet=ISO19115&recordUID=42691>

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record -1256685221 for more detail on this dataset.

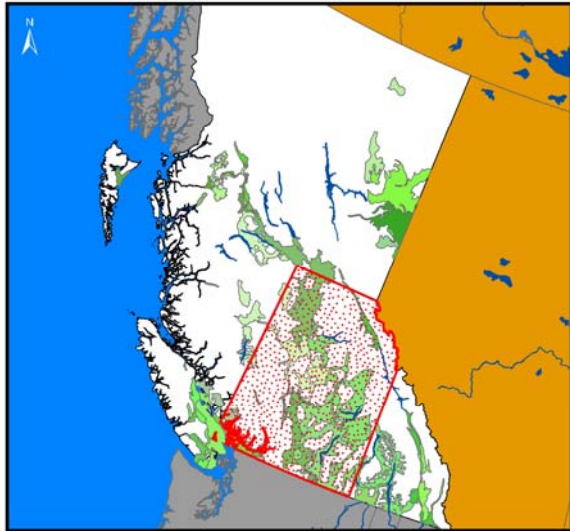
Summary Observations and Recommendations

This dataset provides population/habitat related information for the grizzly bear, a key species of concern for all ecoregions in BC. As Grizzly Bears are a blue listed species in British Columbia, they and their habitat requirements would be a candidate for consideration as an important aspect of maintaining biodiversity.

This database together with the Grizzly Bear Wildlife Habitat - Various Districts - Lower Mainland database could be used for development and use of biodiversity indicators pertaining to grizzly bear habitat in relation to issues such as habitat conversion and fragmentation.

4.3 Biological - Terrestrial -Habitat

4.3.1 *Mule Deer Winter Range – Shelter*



Abstract

Topographic ungulate winter range forage capability model version 1 for the following forest districts:

- Clearwater
- Kamloops
- Lillooet
- Merrit
- Penticton
- Salmon Arm
- Vernon

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement.
- Restricted. Some data may be sensitive. Some data may have copyright restrictions.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=37192&recordSet=ISO19115>

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record -947013688 for more detail on this dataset.

Summary Observations and Recommendations

NOTE: URL in citation is one of several forest districts.

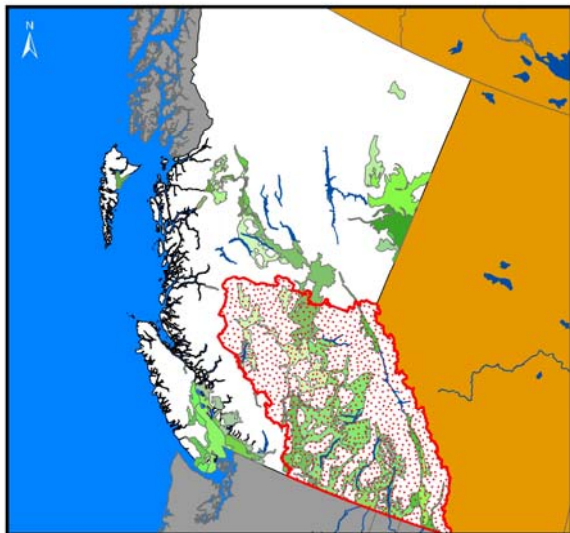
Modelling of mule deer winter range habitat use allows for determination of the extent of winter ranges for mule deer in a significant portion of BC forest districts. The modelling was performed by individual forest management areas, resulting in separate winter range themes for each of the forest districts listed in the abstract and are separate within the British Columbia LRDW.

The modeled Mule Deer Winter Range - Shelter theme is relevant to consideration in

development and use of NAESI biodiversity standards with respect to management of habitat remnants as mule deer may depend on agricultural woodlands for winter shelter and agricultural encroachment on woodlands may be detrimental to local populations of mule deer. Using this database, in association with agriculture extent, forest and other inventory datasets, it would be possible to locate areas where the management of agricultural woodlands would be particularly important to the quality, availability and continuity of mule deer habitat. It is suggested that this dataset could be applied in conjunction with the forage theme (see below). It may also be useful to check for extensions of this dataset to cover other types of mule deer habitat with adjacent agricultural activity, if any

4.4 Biological - Terrestrial -Habitat

4.4.1 *Bighorn Sheep Winter Range SIR*



Abstract

Sheep Winter Range of the Southern Interior Region of British Columbia.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement. Some data may be sensitive. Some data may have copyright restrictions.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=39464&recordSet=ISO19115>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

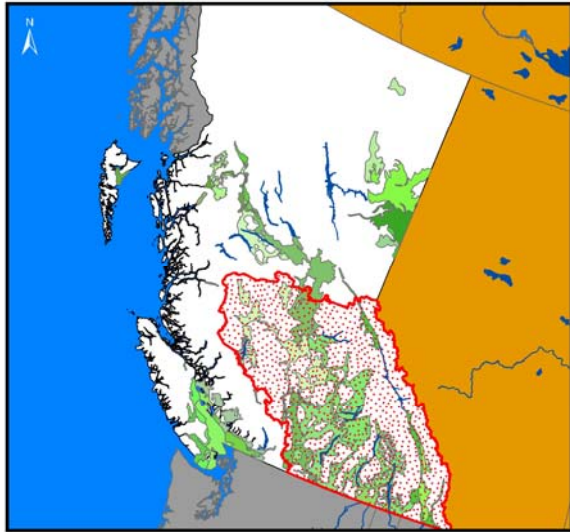
- Look in record -585963203 for more detail on this dataset.

Summary Observations and Recommendations

The Bighorn Sheep Winter Range SIR database delineates important sheep winter range in the Southern Interior Region of British Columbia. As bighorn sheep are considered a vulnerable or "At Risk" species, the conservation of their winter habitat could be anticipated to be a useful characteristic to consider in development of indicators and targets for protection of biodiversity in British Columbia. Cattle grazing is known to have had a serious impact on winter-spring ranges of bighorn sheep in British Columbia. Using this database in conjunction with agriculture extent and activities data it would be possible to delineate areas of interaction where biodiversity standards regarding grazing practices would be critical to the conservation of bighorn sheep

habitat.

4.4.2 Elk Winter Range Southern Interior Region



Abstract

Elk winter range capability model version 1 for the Southern Interior forest districts.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement. Restricted. Some data may be sensitive. Some data may have copyright restrictions.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=37160&recordSet=ISO19115>

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1771449657 for more detail on this dataset.

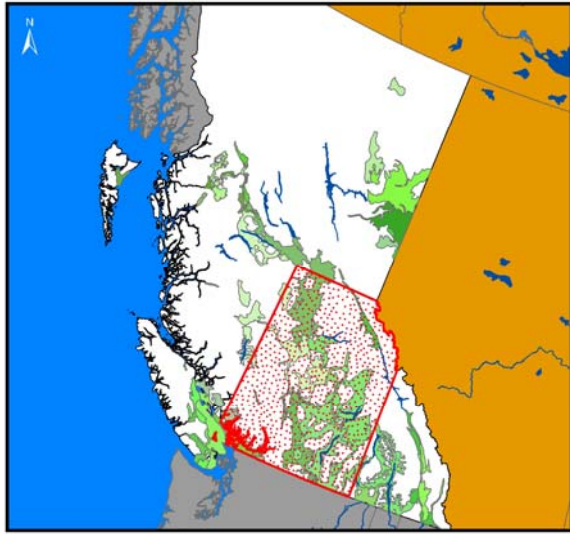
Summary Observations and Recommendations

Modelling of elk winter habitat is intended for determining the extent of winter ranges for elk in the Southern Interior forest districts of British Columbia. Other elk habitat/distribution records exist within the database as well, however they are not as relevant to the NAESI initiative as they cover limited geographic extents (limited to specific forest districts).

The model information is relevant to development and monitoring of biodiversity standards as it will assist in identifying areas of elk winter habitat which agricultural practices may impact. As the model defines the habitat suitability using data that is available throughout the province of BC, it would be possible to model positive and negative changes to elk winter habitat quality and distribution over time.

It is suggested that use of this database be considered for application of elk winter habitat to the biodiversity indicators and targets and that the program consider using other less widespread elk information to infer additional habitat

4.4.3 Mule Deer Winter Range – Forage



Abstract

Topographic ungulate winter range forage capability model version 1 for the following forest districts:

- Clearwater
- Kamloops
- Lillooet
- Merrit
- Penticton
- Salmon Arm
- Vernon

Agency

Provincial Government

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement. Restricted. Some data may be sensitive. Some data may have copyright restrictions.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=37162&recordSet=ISO19115>

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1684672752 for more detail on this dataset.

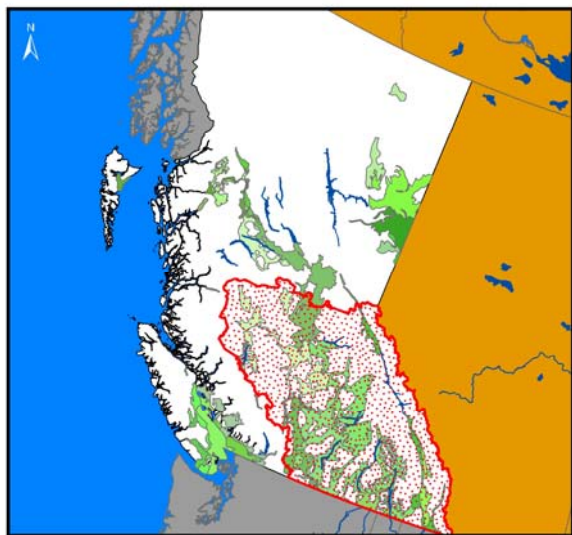
Summary Observations and Recommendations

The model is intended for determining extent of winter ranges for mule deer in a significant portion of BC forest districts. As the modelling was performed by individual forest management areas, separate winter range themes exist for each of the forest districts within the British Columbia LRDW.

The modeled Mule Deer Winter Range - Forage theme is particularly relevant to development of the NAESI biodiversity standards as mule deer can face competition from excessive cattle grazing on their winter and spring ranges. It is suggested that consideration be given to utilizing

this dataset in conjunction with the shelter theme and check for extensions of this dataset to cover other types of mule deer habitat with adjacent agricultural activity, if any.

4.4.4 *Sharp-Tailed Grouse Dancing Grounds SIR*



Abstract

Sharp-Tailed Grouse Dancing Grounds within the Southern Interior Region.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement. Some data may be sensitive. This data is mainly used for regional operations.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=39412&recordSet=ISO19115>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

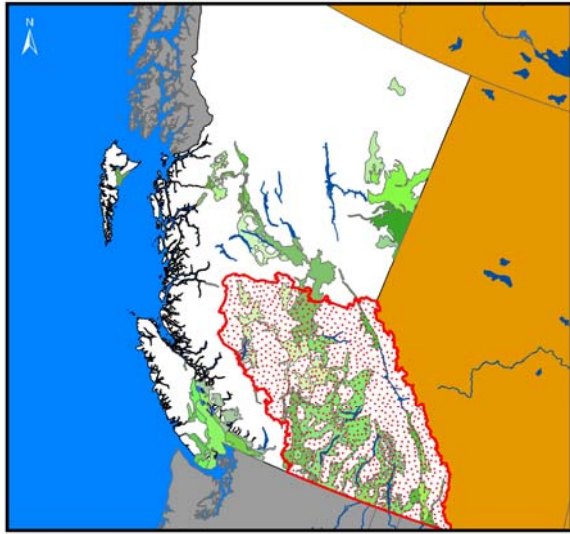
- Look in record 419723634 for more detail on this dataset.

Summary Observations and Recommendations

The Sharp-Tailed Grouse Dancing Grounds Souther Interior Region (SIR) database is important in the management of sharp-tailed grouse habitat. As males can use the same leks or dancing grounds for several consecutive years, it is useful to identify these locations for application to practice guidelines to minimize disturbance of the areas.

The Sharp-Tailed Grouse Dancing Grounds SIR database may be useful for application of this species to habitat standards. Agriculture can benefit sharp tails by increasing the winter food supply in the form of grain, however it may also alter their habitat by converting native grasslands or shrub habitats to cultivated land rendering it unusable for nesting, shelter or by destroying yearly dancing grounds. The dancing grounds dataset could be used in conjunction with agriculture extent to assist in development of best management practices and as a measurement tool for performance standards. It is suggested that in this event the program may wish to consider acquiring this dataset to allow for longterm monitoring of impacts on this species.

4.4.5 Moose Winter Range Capability Model SIR



Abstract

Moose winter range capability model version 1 for the southern interior region.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement. Restricted. Some data may be sensitive. Some data may have copyright restrictions.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=37158&recordSet=ISO19115>

Currency

- Data collection frequency: As Needed

- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1710651194 for more detail on this dataset.

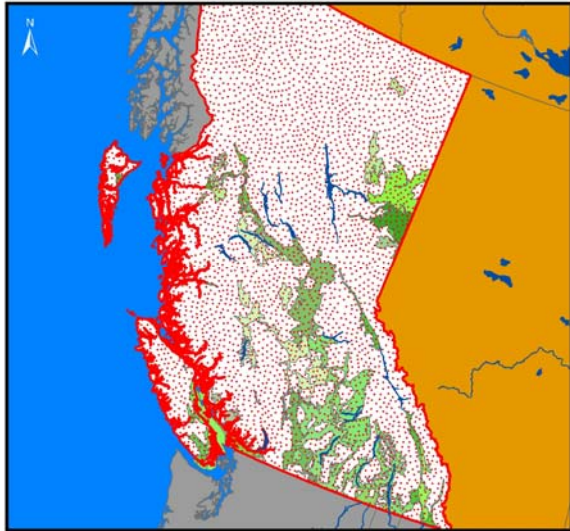
Summary Observations and Recommendations

The Moose Winter Range Capability Model is intended for determining the extent of winter ranges for northwestern moose in the southern interior region of British Columbia. (Similar moose winter habitat data exists for the Squamish forest district in the Coastal Forest Region within this database (see Moose Winter Ranges - Squamish Forest District). A moose habitat requirements spreadsheet accompanies this dataset.

The Moose Winter Range Capability Model is relevant to development of indicators and targets in potential assistance for identifying and monitoring critical moose winter habitat for the Southern Interior Forest Region of BC that fall within or are in close proximity to agricultural areas. It can be used to address such issues as habitat conversion, habitat fragmentation and management of remnant woodlands. It is suggested that consideration be given to application of this dataset in conjunction with the Squamish dataset.

4.5 Imagery - Airborne -Various

4.5.1 BC Air Photo Inventory



Abstract

The Air Photo Inventory contains Colour and B&W aerial photographs from 1960 to 2005 at various scales. Data is available through Integrated Land Management Bureau (ILMB). Geographic location, scale and product vary amongst flight operations from year to year. The listed URL is for the BC Air Photo Inventory Web Viewer.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Freely viewable however the data is not freely downloadable, (e.g., \$200 for each orthophoto 1:20,000 map sheet). Data is copyright protected and a licensing agreement limits use (http://ilmbwww.gov.bc.ca/bmgs/trim/trim/trim_overview/license.htm).

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://ilmbwww.gov.bc.ca/bmgs/airphoto/IMF/Index.htm>

Currency

- Data collection frequency: Varies
- Data maintenance frequency: Irregular

Accuracy

- Scale is variable.

Link to Database

- Look in record 1140119260 for more detail on this dataset.

Summary Observations and Recommendations

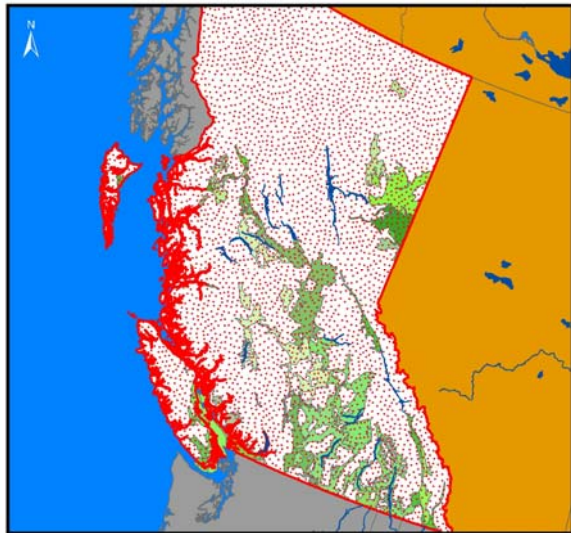
These photos serve as a historical record of vegetative cover and land use for the province. This photo archive can be utilized for interpretation and classification to assess present wildlife habitat and wildlife/agricultural interactions as well as habitat conversion, fragmentation, management of habitat remnants in the past.

Much information has already been interpreted or extracted from the British Columbia air photo operation. This archive has served as the foundation for most British Columbia Ministry datasets (also detailed in this metadata database) including but not limited to: Biogeoclimatic Ecosystem Classification, Vegetation Resource Inventory (VRI), Vegetation Cover BC, Sensitive Ecosystems Inventory, Terrestrial Ecosystem Mapping (TEM), Predictive Ecosystem Mapping (PEM) and Terrain Resource Information Management (TRIM). This archive remains valuable however, as it is possible to revisit areas of interest and interpret/extract information directly related to the NAESI biodiversity initiative which may not already exist in said Ministry databases. It is suggested that consideration can be given to acquisition and use of air photos as necessary for ground truthing, historical trending, or other location specific analyses to

supplement other datasets where necessary. In addition, use of photo mosaic type presentations may be useful to the program for presentation or training processes in relation to implementation of the NAESI standards and best management practices to illustrated examples of impacts and mitigation strategies..

4.6 Land Base - Topography -

4.6.1 DEM - Points – BC



Abstract

TRIM mapping consists of 7,027 map sheets covering the province of British Columbia at a scale of 1:20 000 (1997). An updating process is underway..

Agency

- Provincial Government
- LandData BC
- British Columbia

Access to Data

- in Freely viewable however the data is not freely downloadable, (e.g., \$400.00 for Basemap+DEM or \$200.00 for Basemap only or \$200.00 for DEM only). Data is

copyright protected and a licensing agreement limits use
(http://ilmbwww.gov.bc.ca/bmgs/trim/trim/trim_overview/license.htm)

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: (not stated)

Accuracy

- Scale is variable.

Link to Database

- Look in record -1988140304 for more detail on this dataset.

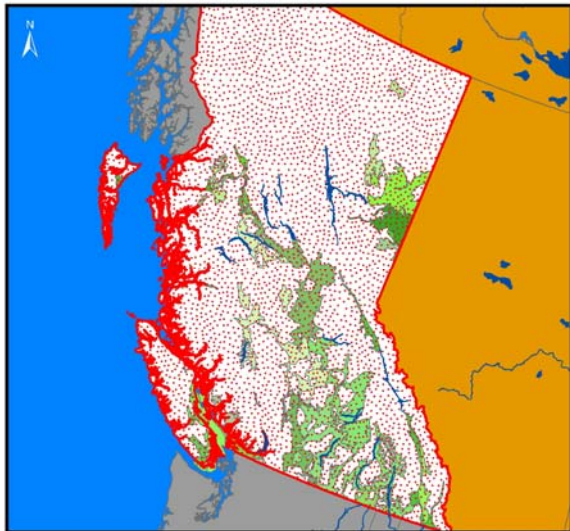
Summary Observations and Recommendations

A DEM model has wildlife relevance for species such as Elk, Mule Deer and Big horned Sheep where seasonal habitat is strongly related to elevation.

As such, the DEM - Points - BC elevation model can have important application to development and implementation of biodiversity standards in terms of delineating seasonal habitat corridors where issues such as fragmentation are relevant.

4.7 Land Base - Various

4.7.1 BC Watershed Boundaries



Abstract

Major watersheds of B.C. High level watershed boundaries

Agency

Provincial Government
Land and Water British Columbia
British Columbia

Access to Data

- Free to public for download.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<ftp://ftp.env.gov.bc.ca/dist/arcwhse/water>

Currency

- Data collection frequency:

- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:600,000

Link to Database

- Look in record -1755146348 for more detail on this dataset.

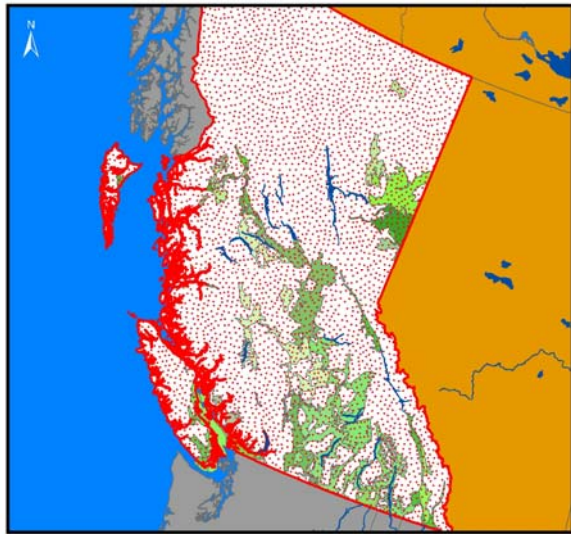
Summary Observations and Recommendations

Information contained within the database provides high level boundary information on watersheds of B.C.

The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting of land cover and other features pertaining to wildlife habitat and related indicators, thresholds and targets. Within a given watershed area the database, in conjunction with overlay analysis of agriculture coverage data, can assist in identifying agricultural areas that potentially contribute to contamination, siltation, sedimentation or modify the watercourse for a given area and what rivers, lakes and streams are potentially affected.

For additional watershed information, refer to the BC WATERSHED ATLAS 50K metadata in this database.

4.7.2 Digital Baseline Mapping at 1:250,000 (NTS)



Abstract

The feature types annotation, point, and line and polygon are used to represent coastlines, contours, landcover, landforms, rivers, man made and transportation features in individual layers.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Public - priced data. Spatial data may be accessed by the public if in raster format only (ie. Via IMF). All non-public data may be accessed by government staff. See British Columbia Specifications and Guidelines for Geomatics - Digital Baseline Mapping at 1:2,000,000.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=search&edit=true&showall=showall&recordSet=ISO19115&recordUID=3677>

Currency

- Data collection frequency: Irregular
- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record 1141835342 for more detail on this dataset.

Summary Observations and Recommendations

The feature types of this dataset are relevant to any species for which desirable habitat may be linked to the landcover classes, landforms, drainage and infrastructure features contained within the dataset. The river data is strictly positional and therefore limited to identifying rivers that potentially interact with agricultural areas.

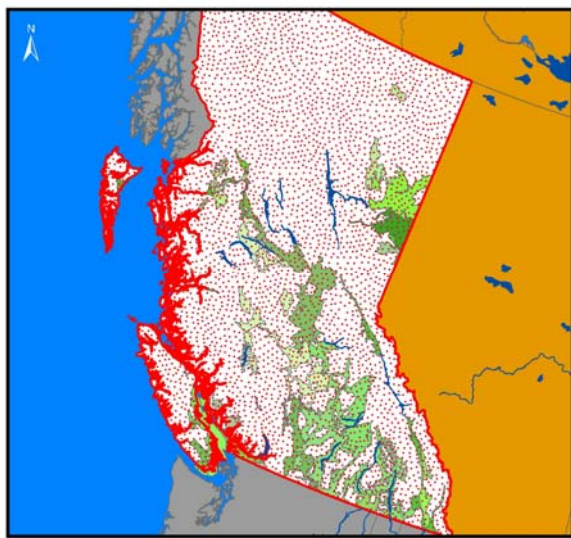
Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.). Transportation and utilities infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat, siltation and sedimentation).

The dataset may be useful in examination of broad scale issues at the landscape level utilizing the features in the coverage (all watercourses, roads, etc.) or to enable examination of specific rivers, lakes, road corridors, etc.

Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that

consider the existing human intervention on the landscape. It may also be useful to consider obtaining other Digital Baseline Mapping (listed in the database) for 1: 2,000,000 and 1: 6,000,000 for BC.

4.7.3 Terrain Resource Information Mgmt Program - (TRIM) for BC



Abstract

Topography, Planimetry, Elevations, and Toponymy (place names) for all of British Columbia. Produced by Geographic Data BC. Planimetric positional data represents a structuring of digitally scanned National Topographic Series map sheet layers. Elevation data was created through interpolation and extrapolation from the scanned contour layer. DATA SOURCE SIZE : 84 sheets GEO COVERAGE : Full coverage of province. Base information originates from digital scanning and vectorizing of federal 1:250,000 NTS lithographic layers of published map sheets. DEM was created through a process of interpolation/extrapolation from original contours and the manual introduction of elevation points from hardcopy. Water and wetland closed polygonal features were created at a later date.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Available online for order. Data is restricted by copyright and subject to sharing agreement. View only data is open to internal government staff.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=datacustodians&edit=true&showall=s&howall&recordSet=ISO19115&recordUID=32471>

Currency

- Data collection frequency: Irregular
- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1140183156 for more detail on this dataset.

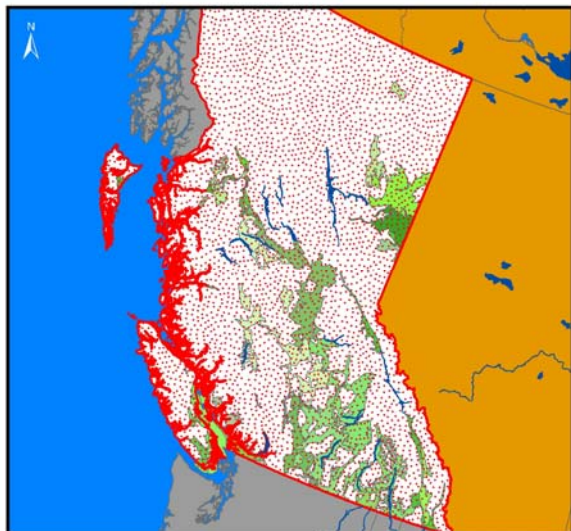
Summary Observations and Recommendations

The TRIM database is relevant to wildlife habitat management where elevation and topography are an asset to identifying or modelling a given habitat or population distribution..

For B.C. analysis and assessment, the TRIM database is crucial for hydrology modelling, making it possible to assess how agricultural areas interact with or impact watercourses, water chemistry and fish habitat. TRIM is also relevant to biodiversity in that it contains information regarding regional land use. Given the role that elevation and topography play in wildlife habitat and vegetation communities in B.C., the Terrain Resource Information Management (TRIM) database

should be considered for use in this process.

4.7.4 *Terrestrial Ecosystem Mapping BC*



Abstract

Ecosystem mapping is the stratification of a landscape into map units, according to a combination of ecological features, primarily climate, physiography, surficial material, bedrock geology, soil, and vegetation. Common scales of ecological mapping are 1:20 000 to 1:50 000, though larger scales such as 1:10 000 or 1:5000 may be used depending on project objectives. Terrestrial Ecosystem Mapping is a methodology which requires direct air photo interpretation of ecosystem attributes.

Agency

Provincial Government
Ministry of Environment BC
British Columbia

Access to Data

- Free to the public. May be subject to a data sharing agreement.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=4065&recordSet=ISO19115>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record -2060510676 for more detail on this dataset.

Summary Observations and Recommendations

Wildlife habitat related attributes include: ecological features, primarily climate, soil, and vegetation. Typically it is used at larger scales where more detailed information is required. TEM has been used by biologists in British Columbia to generate habitat ratings and apply them to ecosystem mapping. Application of an ecosystem mapping units classification provides for a common communication tool amongst resource managers when addressing wildlife habitat, ecosystem structures and biodiversity in terms of understanding the overall combination of attributes that define a given unit.

Terrestrial Ecosystem Mapping (TEM) is relevant to any species for which the contained attributes may apply in terms of assessment of habitat values (patch characteristics, corridors, habitat quantity and quality, distance to cover, etc.).

The ELC provides information regarding the physical and biological environment for land units areas that could be useful in monitoring, managing and modelling activities by enabling

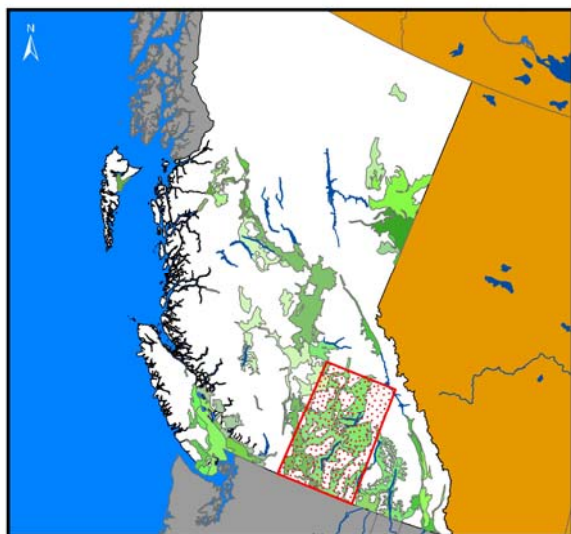
consideration of a broader mosaic of factors affecting wildlife habitat for the defined ecosystem units than would be available from an inventory focused on a single layer (trees, soils, etc.).

This dataset can assist the standards project in defining past and present habitat capability and suitability as well as potentially modeling future habitat capability and suitability based on ecological attributes with regards to various agricultural influences. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots), with defined ELC units may constitute particular wildlife habitat value.

It is suggested that consideration be given to utilization of the TEM together with Predictive Ecosystem Mapping (PEM).

4.8 Land Cover - Aquatic -Waterbodies

4.8.1 Lake Classification BC



Abstract

Lakes Classification for the Kamloops, Penticton, Salmon Arm and Vernon Forest Districts.

Lakes are classified in an attempt to protect fisheries, water quality, wildlife habitat, biodiversity, and recreation and visual quality. Lakes within the classification are stratified using these attributes and assigned a protection level.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement.
- Restricted. Some data may be sensitive. Some data may have copyright restrictions.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=37602&recordSet=ISO19115>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record -203065503 for more detail on this dataset.

Summary Observations and Recommendations

Lakes are assigned a protection priority indicator indicating which wildlife habitat areas of interior British Columbia are currently recognized and considered in the resource management process. As the classifications were created to meet management requirements, it is likely that

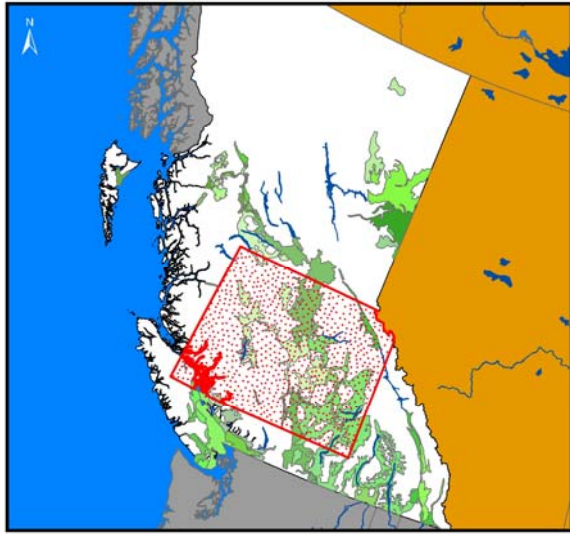
similar coverages exist for additional forest districts. This dataset indicates which lakes are currently recognized as being significant in maintaining biodiversity. The dataset may offer an efficient means of identifying lakes where wildlife is currently a concern and the associated management efforts. Updated or past versions of such a dataset could reveal trends in terms of areas' changes in water quality, habitat quality, biodiversity or recreation value in relation to agricultural activity..

Conservation of biodiversity requires adequate aquatic elements so mapping of existing features is necessary, and these also provide reference information for location and land uses. Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.).

The dataset may be useful in examination of broad scale issues at the landscape level utilizing the watercourse features in the coverage or to enable examination of specific lakes.

Incorporate as a base map theme into project mapping, other spatial information may be required to keep it updated.

4.8.2 *Stream Classifications BC*



Abstract

Stream Classification for the Kamloops, Clearwater and Cariboo Forest Districts. The individual metadata for each district is available within this database under the following titles:

- Stream Classifications Clearwater Forest District
- Stream Classification Double Line for the Cariboo Region
- Stream Classifications Kamloops Forest District

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement. Some data may be sensitive. Some data may have copyright restrictions.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=37614&recordSet=ISO19115>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1866064039 for more detail on this dataset.

Summary Observations and Recommendations

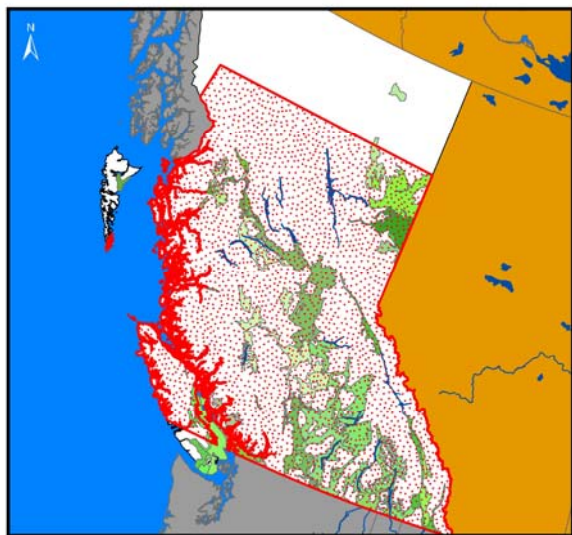
Stream classifications are partially based on the presence of fish and, as such, are useful in identification of fish habitat. Channel width and other landscape related information may be used to identify rare or unique stream conditions. The three stream classifications that make up this record together cover the majority of the agricultural areas of British Columbia's interior region.

Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.). The dataset may be useful in examination of broad scale issues at the landscape level utilizing the watercourse features in the coverage or to enable examination of specific streams.

Although the coverage is not seamless for the province, the stream classification is a valuable decision support tool for identifying important fish habitat and unique stream features in the central region. For a more holistic representation of fish habitat, it is recommended that this data

set be used together with fish habitat and distribution records referenced in the biological/aquatic section of this report.

4.8.3 Ducks Unlimited Canada BC Intermountain Wetland Database



Abstract

The Wetland Database is a searchable GIS database of wetland locations and attributes, covering the entire Intermountain region of BC. Information about the location, size, classification, vegetation, water chemistry and other characteristics of wetlands will be included in the database, along with a photograph of each wetland.

Agency

NGO

Ducks Unlimited Canada

British Columbia

Access to Data

- Non-project-specific information is to be made available to the general public through Community Mapping Network <http://www.shim.bc.ca/atlasses/atlas.html>.

- Access to other information is restricted. Data sharing agreement required. Knowledge gained through this project will be shared with other non-profit groups, local governments, and resource users such as forestry industry and individual landowners.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

www.ducks.ca

Currency

- Data collection frequency: Continually
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record 1142901737 for more detail on this dataset.

Summary Observations and Recommendations

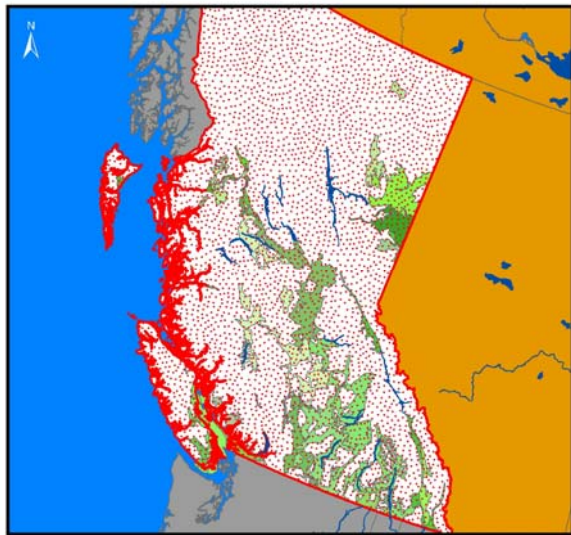
The Ducks Unlimited Canada BC Intermountain Wetland Database is an excellent snapshot of the present conditions of wetlands in British Columbia. As a detailed inventory, this database can also serve as a wetland biodiversity benchmark to compare future wetland inventories too. This is a detailed inventory of wetlands and their associated characteristics for the majority of the province of BC. It will enable identification of unique ecosystems important to biodiversity. Using this database, it is possible to analyze relationships between various wetland attributes and waterfowl abundance/diversity to determine which wetland characteristics are most important to wildlife, and to focus on important wetlands in danger of fragmentation, conversion or contamination and the management techniques that will result in the greatest benefit to wildlife.

This dataset is relevant to any species utilizing wetland habitats and for which the attribute data

contained in the dataset apply in terms of assessment of habitat values (quantity and quality of habitat). Wetland and adjacent riparian areas within agricultural zones may provide particularly important "islands" or areas of habitat for wildlife and as such this information may be of particular relevance within agricultural areas. With the role of wetlands as potential "islands" of habitat within agricultural areas, the information contained in such datasets could be of particular value in establishing best management practices on adjacent agriculture lands and measuring the effects in terms of impacts upon biodiversity.

It is suggested that the NAESI program consider obtaining access to the complete database and consider supporting updates for long term monitoring

4.8.4 BC WATERSHED ATLAS 50K



Abstract

The BC WATERSHED DICTIONARY consists of multiple datasets. The BC WATERSHED DICTIONARY 50K is one of these datasets and is derived from the BC WATERSHED ATLAS 50K which is the digital base map representation of the aquatic features depicted on NTS

1:50,000 scale Map Sheets. The feature types, annotation, point, line and polygon are used to represent stream centreline networks, streams, double-line rivers, lakes, wetlands, obstructions, coastlines, provincial boundaries, watershed boundaries of 3rd order and higher. The feature type route is used to represent each river or stream channel as a single line with definite start and stop end points. Each route is defined by a linear-measure which is used to map aquatic features.

Agency

Provincial Government
Ministry of Sustainable Resource Management
BC

Access to Data

- Free to the public, free to download.
- See the Caveat Emptor, page 9 of An Introduction to the British Columbia Watershed Atlas April 1996 Revision 2.1 located at:
<http://www.bcfisheries.gov.bc.ca/fishinv/basemaps-technotes.html>

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

[http://srmaps.gov.bc.ca/metastar/metadataDetail.do?from=datacustodians&edit=true&showall=s
howall&recordSet=ISO19115&recordUID=4434](http://srmaps.gov.bc.ca/metastar/metadataDetail.do?from=datacustodians&edit=true&showall=s
howall&recordSet=ISO19115&recordUID=4434)

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record -1365069014 for more detail on this dataset.

Summary Observations and Recommendations

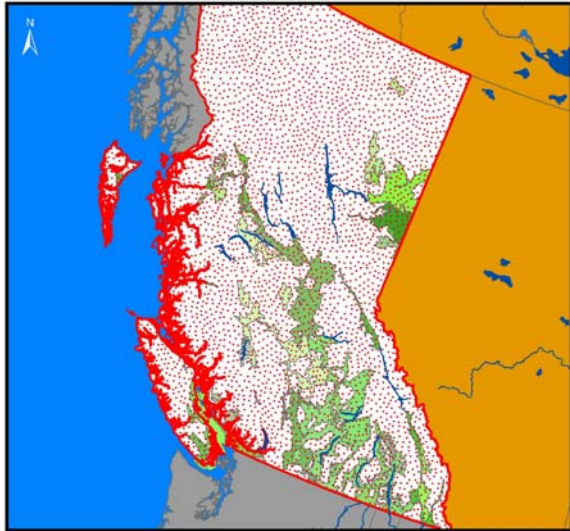
The BC 1:50,000 Watershed Atlas to wildlife permits the identification of watercourses, wetlands, coastlines and watershed boundaries, that in conjunction with agriculture data can be used to identify agricultural areas that may affect aquatic habitats throughout BC's ecoregions.

Similar to data provided by earlier datasets, this dataset is relevant to any species utilizing watercourse and wetland habitats and for which the attribute data contained in the dataset apply in terms of assessment of habitat values (quantity and quality of habitat). Watercourse, wetland and adjacent riparian areas within agricultural zones may provide particularly important "islands" or areas of habitat for wildlife and as such this information may be of particular relevance within agricultural areas. With the role of wetlands as potential "islands" of habitat within agricultural areas, the identification of these locations can allow use with other datasets containing inventory information to describe values in these riparian zones.

Biodiversity represented by aquatic habitat can be affected by agricultural contamination, siltation, sedimentation or watercourse modifications. Knowing which rivers, lakes and streams are potentially affected can assist in monitoring performance standards. The BC 1:50,000 Watershed Atlas is a valuable decision support tool that should be accessed for the project .

4.9 Land Cover - Terrestrial -Ecosystem

4.9.1 *Biogeoclimatic Ecosystem Classification BC*



Abstract

The Biogeoclimatic Ecosystem Classification (BEC) is a land classification system that groups together ecosystems with similar climate, soils and vegetation. This classification was developed in British Columbia and is widely used as a framework for resource management as well as for scientific research.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Free to Public

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.for.gov.bc.ca/hre/becweb/index.htm>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 2019761997 for more detail on this dataset.

Summary Observations and Recommendations

The Biogeoclimatic Ecosystem Classification (BEC) GIS database is used across the Province of British Columbia for several resource management purposes including wildlife management. This grouping of ecosystems can assist in habitat analyses. The BEC is currently being used by the MSRM as a tool to look beyond the Forest Region scale and help maintain biodiversity at the landscape level. Although the primary focus of the BEC is forested ecosystems, the BEC represents a tool for the management of rare ecosystems. As the BEC features a Bunchgrass classification, the ongoing BEC program can be used to monitor the growth or encroachment of this covertime.

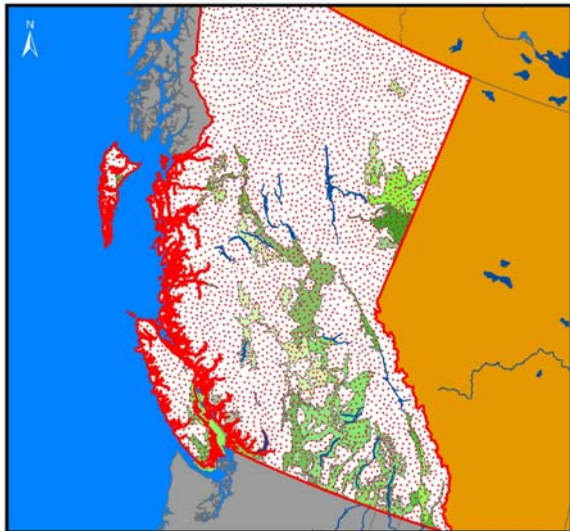
The BEC is relevant to any species for which the contained attributes may apply in terms of assessment of habitat values (patch characteristics, corridors, habitat quantity and quality, distance to cover, etc.). The BEC provides information regarding the climate, soils and vegetation forecosystems that could be useful in monitoring, managing and modelling activities by enabling consideration of a broader mosaic of factors affecting wildlife habitat for the defined ecosystem units than would be available from an inventory focused on a single layer (trees, soils,

etc.).

This dataset can assist the standards project in defining habitat capability and suitability as well as potentially modeling future habitat capability and suitability based on ecological attributes with regards to various agricultural influences. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots), with defined BEC units may constitute particular wildlife habitat value. It is suggested that consideration be given to utilization of the BEC for biodiversity standards project work for BC.

4.10 Land Cover - Terrestrial -Ecosystem

4.10.1 Sensitive Ecosystems Inventory BC



Abstract

Sensitive ecosystems inventory (SEI) identifies, classifies, maps and evaluates sensitive terrestrial ecosystems throughout a study area. Ecosystems mapped in SEI may include (but are not limited to) older forests, woodlands, coastal bluffs, herbaceous and sparsely vegetated ecosystems,

grasslands, riparian ecosystems and wetlands. Seasonally flooded agricultural fields may be included due to their value as over wintering habitat for waterfowl; older second growth forests because of the paucity of older forests in various regions and because they provide corridors between natural areas. For general information visit the Sensitive Ecosystems Inventory web site at: <http://srmwww.gov.bc.ca/sei/>

This is not a seamless provincial coverage. Projects are added to this dataset on an ongoing basis as new projects are completed. In some cases only project boundaries and corresponding project data are available.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Views available to public for full dataset. Environment Canada, Canadian Wildlife Service is involved in development of the some portions of the dataset. Joint projects with Environment Canada, Canadian Wildlife Service will require signing limited use agreement when downloading data. Data provision (for public or internal use) within an application (such as a web-based mapping service) by an agency or organization external to MSRM, may be subject to a data sharing agreement, and is subject to consultation with the Data Custodian and consistency with MSRM data presentation guidelines. Full view of attribute dataset may be accessed by the public.
- Copyrights apply.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=datacustodians&edit=true&showall=s howall&recordSet=ISO19115&recordUID=4293>

Currency

- Data collection frequency: Irregular

- Data maintenance frequency: As Needed

Accuracy

- Scale is variable.

Link to Database

- Look in record 1140535421 for more detail on this dataset.

Summary Observations and Recommendations

The Sensitive Ecosystems Inventory (SEI) can be utilized to identify sensitive habitat as areas are identified. The SEI would be useful for a preliminary assessment, identifying fragile ecosystems in close proximity agricultural areas. The SEI data would be an asset in identification of key sites where these have been identified within or adjacent to agricultural areas. There may also be opportunity to examine characteristics of habitats described in this dataset for correlation to other areas utilizing other available inventory datasets (forest, agriculture, wetland inventory data) in order to look into potential habitat value of other areas.

Development of the biodiversity standards should be informed by this information so that such ecosystems and associated habitat values, can be considered in development of indicators, thresholds and targets for the NAESI program.

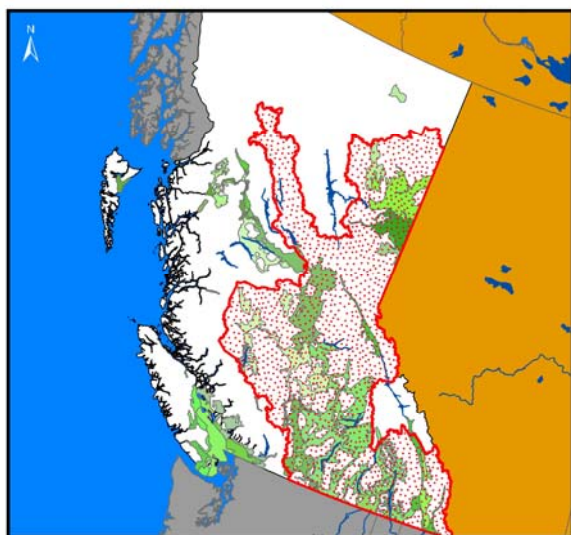
This dataset may be useful as a screening tool to search and investigate records for particularly key ecosystem and associated habitat values (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented in the dataset.

This dataset may also be useful for some sort of correlation analysis between habitat characteristics of these documented and mapped locations as compared to other areas utilizing additional inventory datasets for other landscaped features.

This information should be consulted to ensure standards address the habitat requirements of sensitive ecosystems and may be useful for presenting biodiversity standards and explaining their rationale to potential users.

4.11 Land Cover - Terrestrial -Ecosystem

4.11.1 Grasslands Conservation Council of British Columbia GIS data inventory



Abstract

Various GIS datasets created by the Grasslands Conservation Council of British Columbia. These include mapped extent by old forest district boundaries, as well as historical mapping. GIS Database covers various forest districts across BC.

The dataset provides information regarding existing grassland habitat, grassland habitat lost to agriculture, clearings and cultivated lands which are adjacent to grassland habitat, and historical ability to support native grassland habitat.

The index page on the LRDW website (URL provided below) has a complete list of coverages, the associated forest district/s as well as metadata specific to each theme.

[http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=search&edit=true&showall=showall
&recordSet=ISO19115&recordUID=45514](http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=search&edit=true&showall=showall&recordSet=ISO19115&recordUID=45514)

Agency

Provincial Government
Grasslands Conservation Council
British Columbia

Access to Data

- Restrictions include: not viewable to the public, copyright restrictions, data sharing agreement required, special access considerations for both commercial and government staff.
- All themes are subject to use restrictions. Varies amongst themes.

Scope of Dataset

- Coverage of geographic area not stated.

URL to More Information on the Web

[http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=search&edit=true&showall=showall
&recordSet=ISO19115&recordUID=45514](http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=search&edit=true&showall=showall&recordSet=ISO19115&recordUID=45514)

Currency

- Data collection frequency: Completed
- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1140189017 for more detail on this dataset.

Summary Observations and Recommendations

This compilation of data is relevant to wildlife species where grasslands constitute as quality habitat, and covers portions of the province not addressed by most other BC habitat datasets.

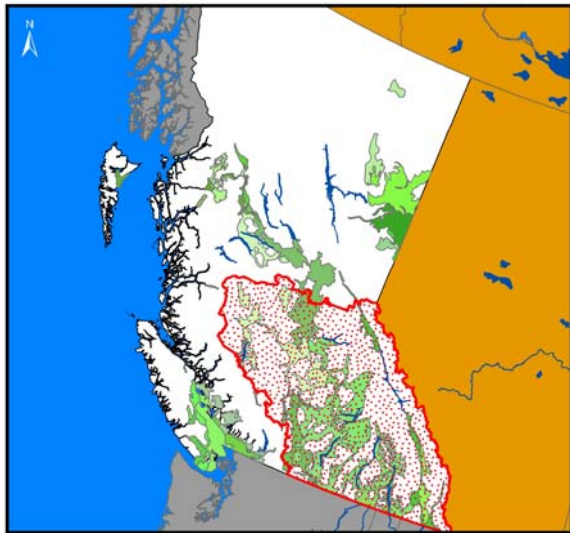
The Grasslands Conservation dataset was created with a focus on land use changes, wildlife habitat and natural ecosystems. The Grassland Conservation themes potentially serve as decision support tools for addressing such biodiversity concerns as: grassland habitat availability and quality, habitat conversion, reduction of habitat heterogeneity, and issues regarding potentially harmful effects of runoff from agricultural areas adjacent to grasslands.

The Grasslands Conservation Council GIS data inventory is relevant to any wildlife species for which the grasslands habitat and related habitat changes may apply in terms of assessment of habitat values (patch characteristics, corridors, habitat quantity and quality, etc.).

This dataset can assist the standards project in defining past and present habitat capability and suitability as well as potentially modeling future habitat capability and suitability based on grassland attributes with regards to various agricultural influences. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of grassland-agricultural transition and for areas within the agricultural region where grasslands may constitute particular wildlife habitat value. It is suggested that this would represent a key dataset to acquire for BC grasslands information.

4.12 Land Cover - Terrestrial -Land Use

4.12.1 Agriculture, Food and Fisheries District Boundaries SIR



Abstract

Agriculture, Food, and Fisheries Districts in the Southern Interior Region.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement.
- Restricted. Some data may be sensitive. Some data may have copyright restrictions.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=37070&recordSet=ISO19115>

Currency

- Data collection frequency: Irregular
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

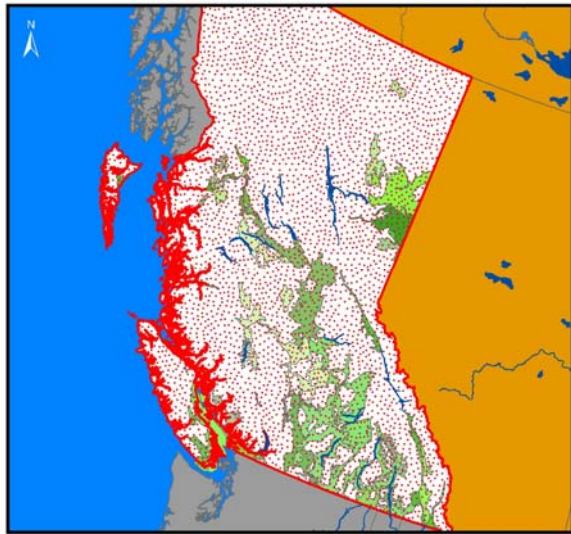
Link to Database

- Look in record -1612227413 for more detail on this dataset.

Summary Observations and Recommendations

Provides ancillary information pertaining to the land use characteristics of the interior, and how it may impact habitat concerns. Such administrative information may be required for project implementation to assist in communications and organization of processes to implement and monitor the standards. This dataset can be used to provide a general outline of boundaries for the areas described. It should be used with more detailed data of the region.

4.12.2 Baseline Thematic Mapping Present Land Use Mapping at 1:250000



Abstract

Present land use and generalized ground cover mapping derived primarily through the analytical interpretation of Landsat 5 imagery and aerial photography. MOF age class data, 1:250000 topographic base mapping and biogeoclimatic data were also used in the compilation of this dataset.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Freely available for distribution to Government and the general public. Planned for publication on iMapBC but not available at the time of writing. Planned for LRDW Distribution but not available at the time of writing. Currently available through Land Data BC for a fee.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=search&edit=true&showall=showall&recordSet=ISO19115&recordUID=37011>

Currency

- Data collection frequency: Irregular
- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:250,000

Link to Database

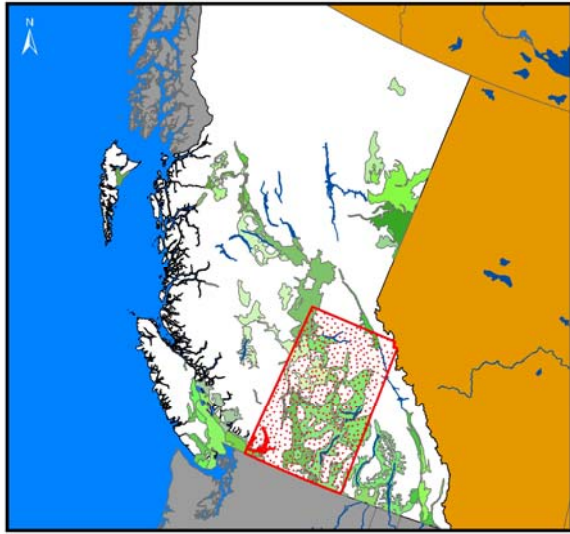
- Look in record 1141827240 for more detail on this dataset.

Summary Observations and Recommendations

Land Information specialists frequently use the Baseline Thematic Mapping (BTM) as a critical comprehensive baseline inventory of human activity and natural resources. Based on the metadata the temporal accuracy of the data is between the 1992 and 1997 but it might be updated from more recent satellite imagery. The BTM can be used to monitor land use activities and their interaction with land cover features that constitute wildlife habitat.

As a land use cover, the Baseline Thematic Mapping could be used to locate and possibly define areas of agriculture activity and other land use changes in proximity to agricultural areas. Such data as the BTM, and any future updates, may have application for vegetation cover and land use assessment/monitoring. The BTM is a mandatory input into the Land Resource Management Plans (LRMP) process, which should also be considered for biodiversity project information capture.

4.12.3 Range Pastures BC



Abstract

Pastures within the Merrit, Lillooet, and Kamloops Timber Supply Areas as well as the Clearwater Forest District. This record is a summary of 4 similar sub records. Full records for each are contained within the database under the following titles:

- Range Tenures and Pastures Kamloops TSA
- Range Pasture Units Merrit and Lillooet TSA
- Pasture Boundaries Clearwater Forest District

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement.

- Restricted. Some data may be sensitive. This data is mainly used for regional operations.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

- No URL linkage was available.

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record -1832202134 for more detail on this dataset.

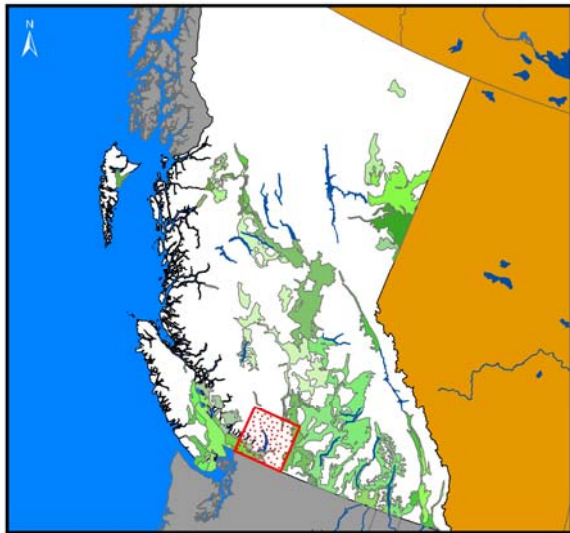
Summary Observations and Recommendations

This dataset is relevant to species with habitat adjacent or overlapping with, pasture and is a source of agricultural land use information. The information regarding the range pastures in this coverage are strictly to delineate their location. The utility of these datasets is moderate as they only cover agricultural areas in the southern/central interior of British Columbia. .

Range pastures are relevant to biodiversity where grazing may alter habitat and thus bird, invertebrate or plant diversity.

Similar land use information may be available for the entire province in other datasets within this database including: Vegetation Resource Inventory (VRI), Predictive Ecosystem Mapping (PEM), Terrestrial Ecosystem Mapping (TEM) or the Agricultural Land Reserve (ALR).

4.12.4 Land Use Classification Fraser Valley and Greater Vancouver Regional Districts



Abstract

Regional land use classification for the Fraser Valley District and Greater Vancouver Regional Districts.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Some data may be shared with specific business partners and require a data sharing agreement. Generally data is open to government staff with some exceptions.
- This data is used for visual representation for operational and planning purposes internally within government and is not the official version. Region 2. Some data may be sensitive.

Scope of Dataset

- Extent of geographic area not stated but is likely complete.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?recordUID=38748&recordSet=ISO19115>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record -546492181 for more detail on this dataset.

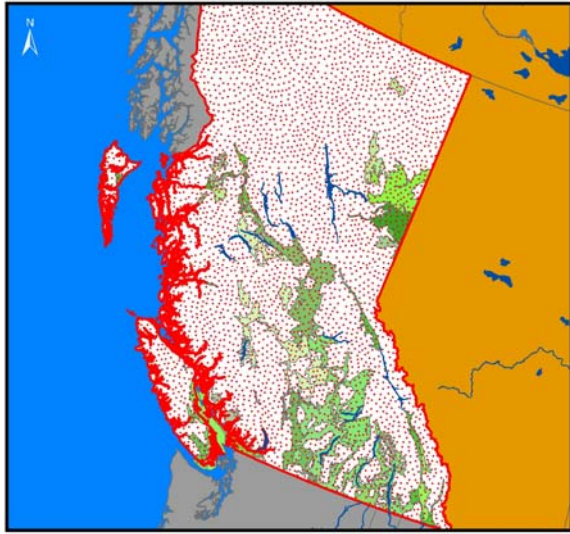
Summary Observations and Recommendations

The Land Use Classifications for the Fraser Valley and Greater Vancouver Regional Districts are relevant to wildlife as they may be used to delineate where wildlife habitat and agricultural activities coincide.

These land use classifications can be useful for application to the biodiversity standards as they were created to provide information to support informed management decisions for land and natural resource planning including wildlife management, protection of biodiversity and/or BC's resource based industries. The utility of the dataset is limited in that the coverage is for only a specific area (Fraser Valley District and Greater Vancouver Regional Districts) of British Columbia.

It may be useful to consider obtaining this land use cover to locate and possibly define areas of agriculture activity within this geographic area over time.

4.12.5 Agricultural Land Reserve BC



Abstract

The Agricultural Land Reserve (ALR) is a provincial zone in which agriculture is recognized as the priority use. Farming is encouraged and non-agricultural uses are controlled. The ALR covers approximately 4.7 million hectares.

Agency

Provincial Government
Agricultural Land Commission
British Columbia

Access to Data

- Free to download and use.
- Public, standard disclaimer.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=search&edit=true&showall=showall&recordSet=ISO19115&recordUID=3537>

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: Monthly

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 311336002 for more detail on this dataset.

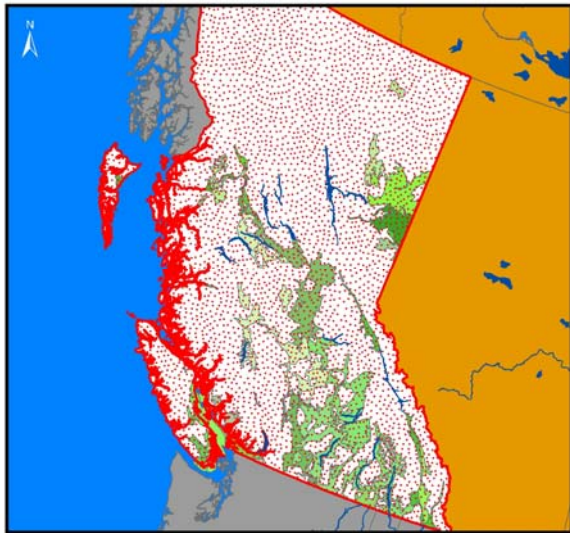
Summary Observations and Recommendations

The Agricultural Land Reserve (ALR) dataset provides for the delineation areas of intensifying agricultural use where wildlife habitat may become an issue.

This coverage indicates zoning for establishment of agriculture as a priority land use and as such can be useful in focusing upon areas where land use may generally be moving towards intensifying agricultural use and/or changes in practice. Such areas in turn can be anticipated to be areas where the NAESI program may wish to focus efforts for analysis and modelling of agriculture effects on habitat as these would represent areas in BC where the application of biodiversity standards will have the greatest impact. It is suggested that the ALR dataset offers an important decision support tool and as such is a priority dataset for acquisition.

4.13 Land Cover - Terrestrial -Various

4.13.1 *Vegetation Resources Inventory BC*



Abstract

The Vegetation Resources Inventory is a photo-based, two-phased vegetation inventory program consisting of:

- Phase I: Photo Interpretation
- Phase II: Ground Sampling

Database attributes include but are not limited to: tree cover (age, basal area, height, species composition, crown closure ect.), British Columbia Land Cover Classification scheme, bryoid cover, site index, ecosystem class, herb cover, historical site class, vegetation cover, management history, shrub cover, shrub species composition and shrub height.

Agency

- Provincial Government
- Ministry of Sustainable Resource Management
- British Columbia

Access to Data

- Not free to public. May have to purchase.
- Restricted. Data sharing agreement required.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.for.gov.bc.ca/hts/vri/index.html>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record -1121764060 for more detail on this dataset.

Summary Observations and Recommendations

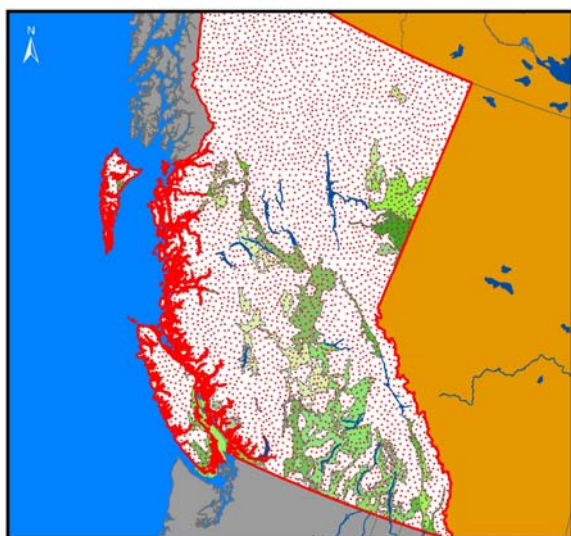
The Vegetation Resource Inventory (VRI) is a key dataset for describing and evaluating habitat. The VRI mainly focuses on forest cover attributes, but does include an ecosystem classification, and shrub cover information.

The VRI is relevant to any wildlife species for which the database attributes, primarily forest cover, may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). General location and extent information on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow some general assessments to be undertaken (proximity to water/forest types, riparian areas, etc.). The VRI provides a broadly-based and detailed dataset available to describe forested areas across the Province of BC. It provides information regarding tree cover for forested stands,

and generalized non-forested classification of other areas that could be useful in monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

The VRI data on forest vegetation communities would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute particular wildlife habitat values and associated biodiversity measures. In addition, data on location/extent and generalized classification of wetlands, non-forested areas and watercourses will also enable some limited assessment related to these features (proximity, identification of riparian areas, etc.). It is suggested that the VRI would be an essential key dataset for the NAESI program work on habitat biodiversity.

4.13.2 Vegetation Ground Inventory Samples BC



Abstract

The VGIS dataset is comprised of Vegetation Resource Inventory (VRI) and National Forest

Inventory (NFI) ground samples to support the Provincial vegetation inventory program and the National Forest Inventory (Change Monitoring Inventory) program.

This is Phase II data collected at the ground level (e.g., Transects to identify vegetation). Database attributes include but are not limited to: tree cover (age, basal area, height, species composition, crown closure ect.), British Columbia Land Cover Classification scheme, bryoid cover, site index, ecosystem class, herb cover, historical site class, vegetation cover, management history, shrub cover, shrub species composition and shrub height.

Agency

Provincial Government
Ministry of Sustainable Resource Management
British Columbia

Access to Data

- Not available to public, not viewable to public.
- Copyright and data sharing restrictions.

Scope of Dataset

- A small subset of the geographic area would be sampled.

URL to More Information on the Web

<http://srmapps.gov.bc.ca/metastar/metadataDetail.do?from=saved&edit=true&showall=showall&recordSet=ISO19115&recordUID=43311>

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Generally 1:20,000

Link to Database

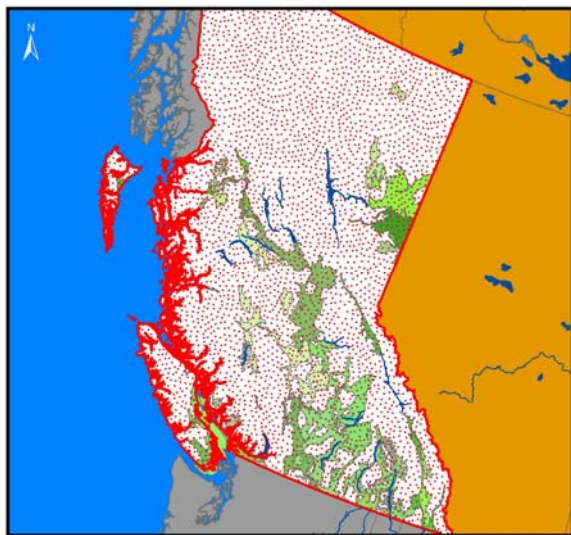
- Look in record 1274648334 for more detail on this dataset.

Summary Observations and Recommendations

The Vegetation Ground Inventory Samples data is a supporting dataset for the Vegetation Resource Inventory (VRI), which is the dataset record described above.

This ground samples dataset, is valuable in terms of potential for making available known ground sample data for statistical analysis as well as a variety of modelling and image classification applications, that is linked to the VRI. There are two similar, more specific datasets available (have individual records in this database) for the Okanogan TSA and the Okanogan Shuswap TSA which might warrant acquisition for more focussed regional analyses.

4.13.3 *Predictive Ecosystem Mapping (PEM)*



Abstract

Predictive Ecosystem Mapping (PEM) is a provincial dataset. It contains area layers (project boundaries and polygons) and sample site field points which include full, ground, and visual plots. Projects were mapped at a scale of 1:20,000 or 1:50,000. Digital products were captured in accordance with the PEM Technical Standards (2000). PEM is a modeled approach to

ecosystem mapping, whereby existing knowledge of ecosystem attributes and relationships are used to predict ecosystem representation in the landscape.

Agency

Provincial Government
Ministry of the Environment
British Columbia

Access to Data

- Free to view and download by the public. Data cannot be sold by third parties external to government. This data and information is owned by the Government of British Columbia and protected by copyright law. It may not be reproduced or redistributed other than for personal or internal organizational use without the prior written permission of the Province of British Columbia. Printing or other reproduction of maps or data by a reproduction company at the request of a client where the intended use is not sale or redistribution to a third party is permitted, though fees charged must be for the reproduction service only.

Scope of Dataset

- Extent of geographic area not stated.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 235590152 for more detail on this dataset.

Summary Observations and Recommendations

Predictive Ecosystem Mapping (PEM) attempts to map the presence and location of various

ecosystems classes at the landscape level. The distribution and abundance of these defined ecosystems are a component of biodiversity at the landscape level and as such may be useful for analysis, modelling and performance monitoring of wildlife habitat.

The PEM may be an asset in identification of predicted key sites (ecosystem types) where these have been predicted to occur within or adjacent to agricultural areas. Development of the biodiversity standards should be informed by this information so that such predicted ecosystems and associated habitat values, can be considered in development of indicators, thresholds and targets for the NAESI program.

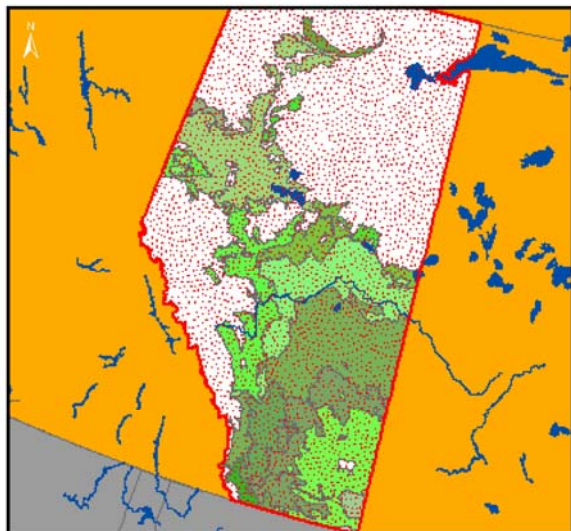
This dataset may be useful as a screening tool to search and investigate predicted ecosystem types for particularly key ecosystem and associated habitat values (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying important ecosystems in close proximity to agricultural areas where these have been documented in the dataset.

PEM could be utilized (together with TEM, described above) to define past and present habitat capability and suitability as well as potentially model future habitat capability and suitability with regards to various agricultural influences

5 ALBERTA

5.1 Biological - Species at Risk -Various

5.1.1 *Species and Elements of Conservation Concern for Alberta, Canada*



Abstract

The Alberta Natural Heritage Information Centre (ANHIC) systematically collects and disseminates information on the location of plants, animals and vegetation communities of conservation concern in Alberta in an Element Occurrence (EO) database.

The dataset includes location details for species and elements of conservation concern (ie. on a tracking list) in the following groups: amphibians, birds, fish, mammals, reptiles, some invertebrate groups, vascular plants, mosses, liverworts, hornworts, macro-lichens and vegetation communities. This information is compiled and maintained in a computerized database and associated ArcView shape files.

Agency

Provincial Government
Alberta Community Development

Edmonton, AB

Access to Data

- Sensitive location records may only be released at the discretion of the appropriate Alberta government biologist.
- NoneElement Occurrence Data - Please remember that the results of a data search by the Alberta Natural
- Heritage Information Centre are not intended as a final statement on the presence, absence, or condition of elements within a given area, or as a substitute for on-site surveys which may be required for environmental assessments.

Scope of Dataset

- Up to 100% of geographic area – in small areas.

URL to More Information on the Web

<http://www.cd.gov.ab.ca/preserving/parks/anhic/>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 258196346 for more detail on this dataset.

Summary Observations and Recommendations

The Alberta Natural Heritage Information Centre (ANHIC)'s database can be used to provide species level information for all ecosystems, which can support broader scale habitat assessments. This information focuses however on particular species of concern and element occurrences recorded in the database may or may not be representative of actual populations and ranges.

The occurrence and location details for species and elements of conservation concern in this dataset could be an asset in identification of key sites where these have been identified. This

dataset is relevant to wildlife and wildlife habitat in providing information on rare and unique species and habitats occurrence which may be useful in conjunction with other datasets (forest and wetland inventories) in analysis and assessment of unique habitat needs.

Species of concern information relates to one of the underlying reasons for attempting to preserve biodiversity, and information about of this type compliments habitat assessment for better informed biodiversity standards development and implementation.

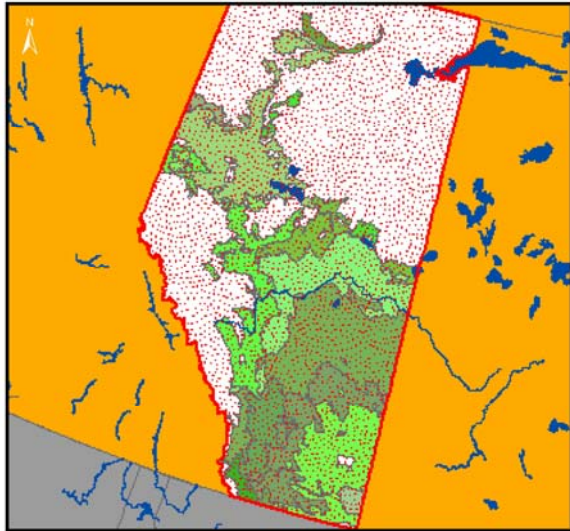
The location data could be utilized to identify geographic locations of potential key elements of biodiversity (wildlife sitings, plant/vegetation communities) of specific interest or concern with respect to biodiversity.

The Alberta ANHIC dataset may be useful as a screening tool to search and investigate records for particularly key wildlife specie occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented by the ANHIC, and for potential use in assessment of unique habitat needs.

Species of concern information should be consulted to ensure standards address their habitat requirements, and presented in communicating biodiversity standards to potential users.

5.2 Biological - Terrestrial -Habitat

5.2.1 *Ecological Site Information (ESIS)*



Abstract

The Alberta Government has gathered ecological site data over a significant time period to support its mandate towards managing renewable resource activities in the Province. Data accessibility has, however, been a concern as the information was stored in various formats by different agencies with resource management responsibilities. In 1993, the Alberta and Canadian governments joined efforts to standardize the storage of this data in a single electronic database known as the Ecological Site Information System (ESIS). The main objective of developing this system was to facilitate the input, storage, retrieval and analysis of ecological site data. The database stores over 15,000 point records from various sources including permanent sample plots, stand dynamics studies and ecological land classification projects and includes data collected as early as 1975.

The site data in ESIS is extracted and formatted into 11 different ASCII reports. These reports

are not available individually. The reports are:

- Location Data
- Mensuration Assessment/Site Species Data
- Site Assessments Data
- Site Exposures Data
- Site Regeneration's Data
- Site Species Data
- Site Successional Statuses Data
- Site Stand Establishment Factors Data
- Site/Parent Material Data
- Soils/Site Soil Horizon Data
- Vegetation Data

Agency

Provincial Government
Alberta Sustainable Resource Development
Edmonton, AB

Access to Data

- Fee of \$100.00 GST Applies. Redistribution of Resource Information Management Branch information in whole or in part, whether alone or as part of a value added product, is not permitted without the prior written consent of the Resource Data on behalf of the Minister of Alberta Sustainable Resource Development, Government of Alberta. In view of the dated nature of the data, it is the responsibility of the user of the data: (1) to confirm with Resource Data whether later versions are available before making use of the data; and (2) if the Minister permits the user to provide the data to other users, to advise users of the age and status of the data.

- All digital data product purchases are subject to the conditions outlined in the Resource Information Management Branch "License Agreement for Digital Data" (18KB PDF).

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www3.gov.ab.ca/srd/land>

Currency

- Data collection frequency:
- Data maintenance frequency: Continually

Accuracy

- Scale not available.

Link to Database

- Look in record 1143392249 for more detail on this dataset.

Summary Observations and Recommendations

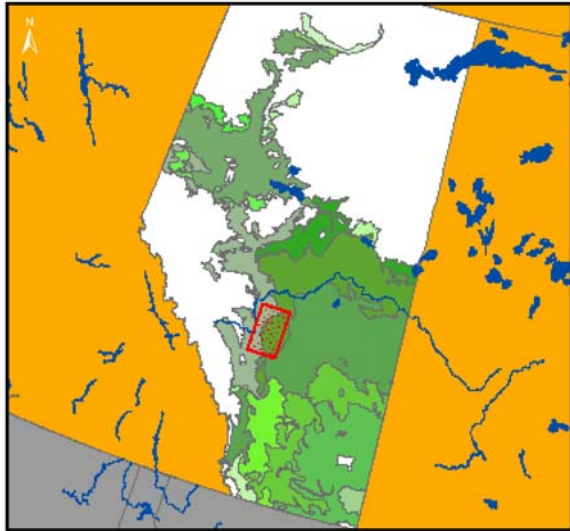
These datasets, particularly where they deal with continuous sample plots, may provide additional vegetation and species information of sufficient detail to assist in evaluating habitat in some agricultural or forest fringe locations in AB.

Standards development and implementation may benefit from including information provided by these datasets which may give insight into historical and current conditions.

Review these datasets to assess if they contain information that is more detailed or covers a longer time period than that available from other spatial data.

5.3 Biological - Terrestrial -Management/Conservation

5.3.1 Wildlife Corridors in the Southern Canmore Region



Abstract

For much of the last decade, the design and viability of wildlife corridors in the Bow Valley have been topics of much discussion and concern for local and regional non-profit organizations, scientists, conservation-minded individuals and government agencies. Much of that concern has been focused on the Southern Canmore Region. This report evaluates existing and proposed corridors in the South Canmore area for functionality in a multi-species, urban context.

The Southern Canmore Region is a strip of predominantly forested land 10 km long and approximately 1.5 km wide. It stretches from the Wind Valley Natural Area to Canmore Nordic Centre Provincial Park, along the south side of the Bow Valley. It is bounded on the south by steep mountain slopes and on the north by the TransCanada Highway. It is part of one of the most important wildlife movement corridors in the region.

Although approximately 90 per cent of the region is currently undeveloped, it will experience

considerable pressure in the next 15 years as proposed developments come on stream. The build-out population (residential and overnight visitors) in the Southern Canmore Region is projected to be approximately 16,500 people, which will be reached, according to Canmore's Municipal Development Plan (1998) and the Three Sisters Resorts Master Plan (1999), in about 15 years. Growing numbers of day visitors would add to this total, resulting in approximately 20,000 people in the Southern Canmore Region on a daily basis. This is analogous to adding a "Banff-and-a-half" to an area with significant ecological value.

Agency

- Private
- Jacob Herrero Environmental Consulting

Access to Data

- No access or use limitations are identified.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.stratalink.com/corridors/default.htm>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 170397231 for more detail on this dataset.

Summary Observations and Recommendations

Wildlife corridors are extremely important for many species, particularly within mountainous

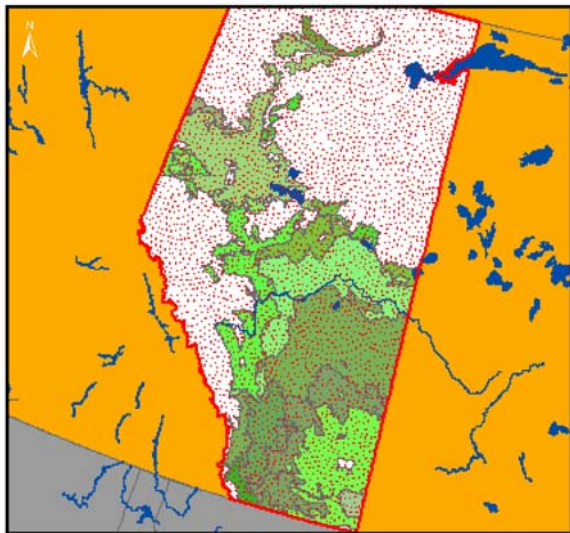
environments; this report uses an award winning framework for evaluating the functionality of wildlife corridors. Consideration of corridors or barriers to safe movement is an aspect of habitat evaluation.

Wildlife corridors may be relevant for some species in ecozones subject to agricultural land uses; biodiversity standards development should consider this aspect.

Review report for applicability to agricultural biodiversity standards and habitat evaluation.

5.4 Imagery - Airborne -Various

5.4.1 *Alberta Orthophotography*



Abstract

The Orthocartography coverage for the province of Alberta. Counties were completed on a county by county basis, this is a synopsis of what has been completed to date.

Agency

Provincial Government

Access to Data

- No access or use limitations were identified.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

- No URL linkage was available.

Link to Database

- Look in record 635602643 for more detail on this dataset.

Summary Observations and Recommendations

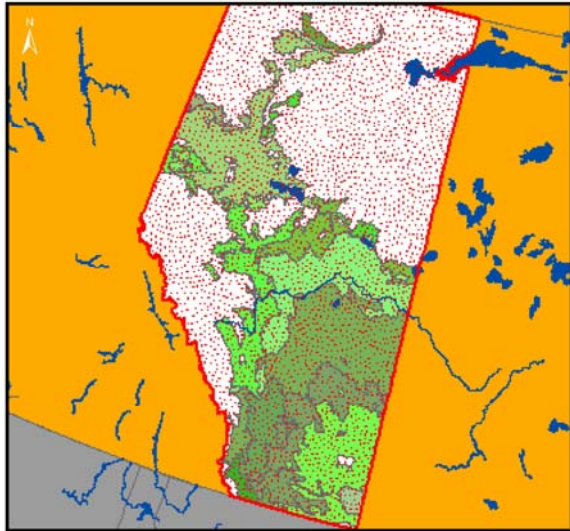
Orthorectified air photos reputedly cover all counties in the agricultural portion of AB however their vintage is not known (incomplete entry from NLWIS). (Alberta Public Lands has air photos - 1947 to present - but no ortho listings.). These maps may be valuable to show land use and vegetation historically or for supplementing satellite imagery.

Standards development may need to take into account past experience in various locales and will need to differentiate between different vegetation and land uses.

Use to provide current or historical vegetation cover and land use information, perhaps in conjunction with satellite imagery, particularly for private lands where detailed datasets may not have been developed.

5.5 Land Base - Political/Administrative -

5.5.1 Protected Areas in Alberta, Canada



Abstract

This dataset contains a complete listing of all lands currently under the administration of Alberta Community Development Parks and Protected Areas. These lands are administered under the Provincial Parks Act, the Wilderness Areas, Ecological Reserves and Natural Areas Act, and the Willmore Wilderness Park Act. In addition to formally designated protected areas, this dataset includes crown reservations for protected area purposes. In the context of this data set, a crown reservation is a registered interest in land(s) by Parks and Protected Areas Division, to which certain conditions to industrial activity may apply. There is also limited data on National Parks in Alberta, that are administered by Parks Canada.

Agency

Provincial Government

Alberta Community Development

Edmonton, AB

Access to Data

- No access limitations were identified. Data are not expected to be used on a for-profit basis. Use of the data for
- commercial or for-profit applications are permitted only via written permission from the contact organization. Proper acknowledgment of the ANHIC is expected. Data are provided on an "as is" basis. No responsibility by ANHIC or by the caretakers of the original data is accepted for uses or misuses. There is no guarantee of the accuracy, reliability, or completeness of the data or information.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.cd.gov.ab.ca/preserving/parks/index.asp>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not identified.

Link to Database

- Look in record 1377730269 for more detail on this dataset.

Summary Observations and Recommendations

Boundaries and some associated information is provided by this dataset for a variety of protected areas throughout the Alberta landscapes. Other datasets provide habitat information and analysis exclusively for protected lands. Status of these lands is useful for determining the adequacy of habitat in Alberta's various ecozones.

This coverage could be relevant to wildlife species habitat through overlay application with other coverages that indicate habitat values (forest, grassland, wetland inventories) and agriculture

locations. This would enable display and analysis of levels of habitat protection afforded by these areas, dependent upon levels of protection that are provided in the protected areas/reserves. Protected areas are an essential piece of land use/administrative information for understanding opportunities and constraints for habitat conservation or enhancement.

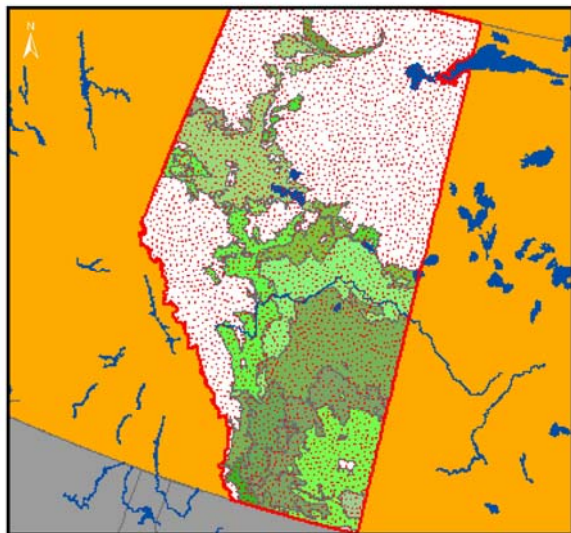
Overlay of this information with datasets indicating agriculture areas would be useful for describing and assessing levels of protected habitat that could be considered in achieving biodiversity standards, where these areas are in proximity to agricultural areas. Use of habitat information shown to be contained within such protected areas in proximity to agricultural areas, dependent upon levels of protection, would contribute towards meeting biodiversity (habitat) standards in terms of providing for habitat requirements such as connectivity, required patches, amount of habitat available, and possibly key habitat requirements for food, cover or reproduction if identified within the boundaries.

This boundary coverage dataset can have use in combination with other datasets that provide detailed descriptive information on attributes that pertain to wildlife habitat and agriculture lands within that areas included inside such boundaries. It may also be useful to undertake analysis of land cover attributes from other datasets to assess any protected undisturbed areas of similar landscapes to agricultural areas to enable comparison for development of thresholds and targets for biodiversity indicators. In addition, where protected areas are in proximity to agricultural areas, definition of habitat values within such protected zones may assist in meeting overall threshold levels or targets.

Obtain on a regular basis to ensure up to date boundaries and definitions of protected areas.

5.6 Land Base - Soils

5.6.1 *AGRASID Version 3.0 Polygon Attribute Table*



Abstract

Updates the 1:100,000 digital soils database called AGRASID version 1.0. With the reduction of the number of AGRASID Version 3.0 soil landscape polygons, there now exists a one to one relationship between the soil landscape polygons and the soil landscape attribute information. As a result the soil landscape attributes are no longer stored in a separate file as was the case in AGRASID Version 1.0. The soil landscape attribute information is now stored in AG30 polygon attribute table. For this reason there is no longer a separate soil landscape table present in AGRASID Version 3.0.

AG30 is the polygon attribute file (PAT) accompanying AGRASID Version 3.0. It is a modified version of the original AGRASID.PAT (Version 1.0). The principal difference of Version 3.0 from Version 1.0 is the removal of the township grid from the graphic layer. The implication of this modification is that the number of polygons described in the database files are reduced from

approximately 65,000 to 28,000. This means that the derivation of value-added products from AGRASID is expedited. Other modifications include the correction of some identified errors in the database. Also the boundaries and descriptions of some Land System boundaries have been modified.

The user may also notice that the outside boundaries of AGRASID Version 3.0 do not exactly match the forty-ninth and sixtieth parallels of latitude and the one hundred and tenth, and one hundred and twentieth meridians of longitude. The reason is that AGRASID was originally compiled on the Alberta township grid system, as found in the province's 1:20,000 scale base map. This means that AGRASID Version 3.0 will not necessarily follow the federal or provincial boundaries of the province.

Agency

Provincial Government
Alberta Agriculture, Food, and Rural Development
Alberta

Access to Data

- Available for download at the Ropin' the Web site at the Alberta Soil Information Centre page
- Acknowledge source with appropriate citation.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sag3255?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sag3255?opendocument)

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1141762243 for more detail on this dataset.

Summary Observations and Recommendations

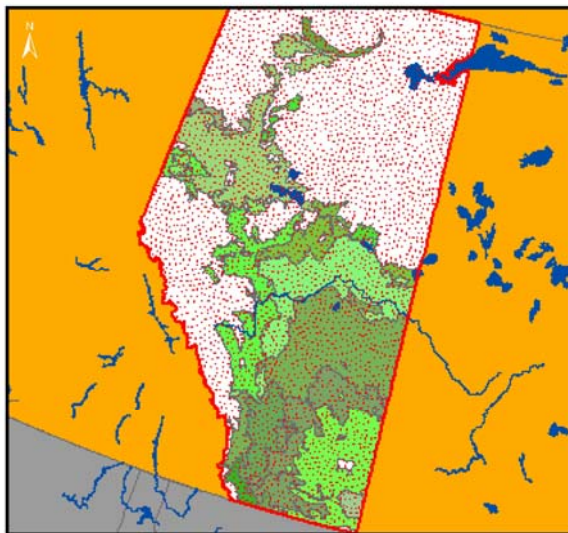
This soils database provides information that is less detailed (fewer polygons) but probably of sufficient detail for habitat evaluation purposes. It covers all ecoregions but does not provide species information.

Soils are a contributing factor for evaluating habitat potential which may govern the application of biodiversity standards.

Consider analyzing the intersection of soil attributes with other spatial information to obtain additional insights into current and future habitat potential.

5.7 Land Base - Topography -

5.7.1 *Contours – Alberta*



Abstract

The elevation contours for Alberta from the Altalis 1:20k base maps.

Agency

Provincial Government

Altalis

Alberta

Access to Data

- See altalis 1:20k comprehensive.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.altalis.com/>

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1955413695 for more detail on this dataset.

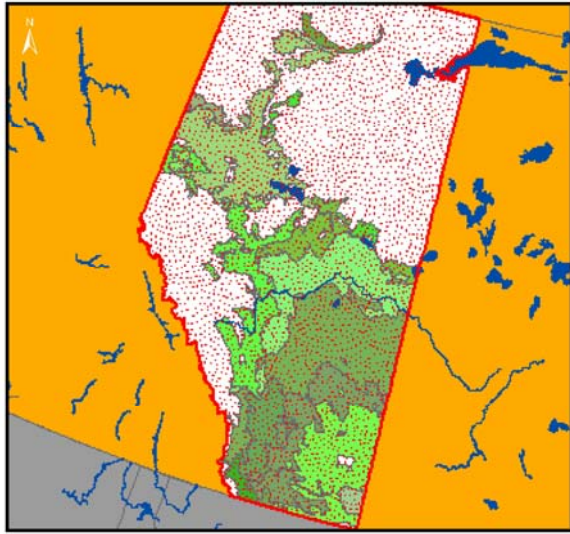
Summary Observations and Recommendations

This dataset covers all landscapes but does not describe ecosystems to the level of species.

Elevation and slope may be important in assessing habitat. Biodiversity standards may take into account elevation and slope for land use practices.

Incorporate this base map for presentation and analysis where appropriate.

5.7.2 DEM – Alberta



Abstract

The Digital Elevation Model (DEM) is frequently used to create digital representation of a land's relief. The AltaLIS

1:20,000 DEM, captured at 100m intervals, contains the x, y, and z coordinates in an ASCII Digital Mapping Data Format (DMDF).

Agency

Provincial Government

Altalis

Alberta

Access to Data

- Fee of \$50.00 for each DEM digital file.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.altalis.com/>

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1806314481 for more detail on this dataset.

Summary Observations and Recommendations

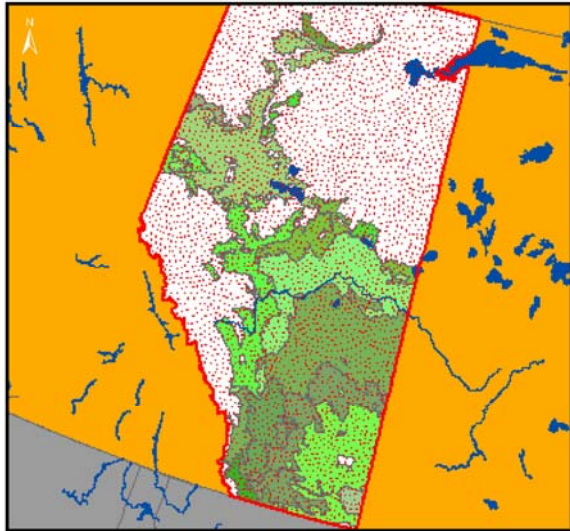
Elevation information may be a defining characteristic of certain habitats and species communities. It provides complete coverage of the province.

Standards may need to take into account elevation, because it can affect agricultural practices since it influences growing season, crops, native vegetation, wildlife, etc.

Use this base map as an aid in defining and assessing habitat and land use and creating appropriate biodiversity standards. It must be combined with other kinds of spatial data such as landcover.

5.8 Land Base - Transportation -

5.8.1 Road Network - Alberta 1:20,000 (2)



Abstract

The Road Network for Alberta from the Altalis 1:20k base maps.

Agency

Provincial Government

Altalis

Alberta

Access to Data

- See altalis 1:20k comprehensive

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.altalis.com/>

Currency

- Data collection frequency:

- Data maintenance frequency:

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 56404320 for more detail on this dataset.

Summary Observations and Recommendations

This information can be relevant for any wildlife species for which required habitat values can be linked to these infrastructure features. Transportation infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

The features of the Transportation dataset includes attributes that are relevant to biodiversity standards as the information contained allows for mapping and subsequent analysis of infrastructure that would relate to biodiversity measures. In combination with other coverages containing landcover and land use data, the transportation coverage will assist in defining the quantity and quality of habitat (patch size, fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

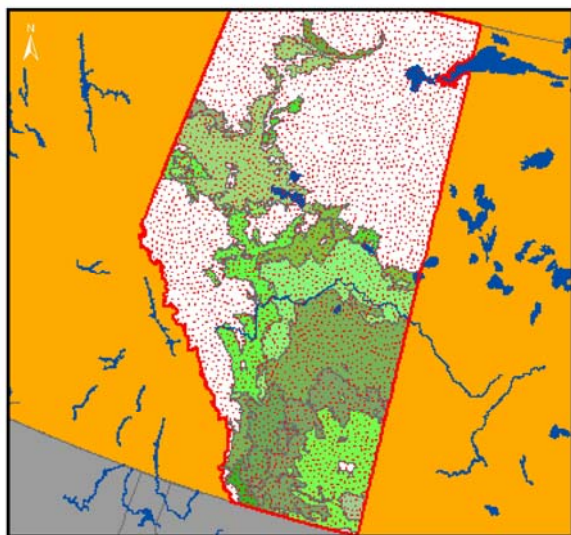
Use as a reference for locating sites, and may be incorporated into maps to provide transportation dimension.

The transportation map coverage can provide base coverage for infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As such these coverages could be useful for monitoring of existing habitat and biodiversity values, habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable

identification of areas where these features intersect with farming areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

5.9 Land Base - Various

5.9.1 *Alberta Ecodistricts (1995)*



Abstract

The Ecodistricts of Alberta 1995 dataset contains two provincial level ecological spatial digital datasets that were created in 1995 as a package consisting of terrestrial ecodistricts (ecodistricts) and fluvial ecodistricts (ecorivers). These two spatial datasets represent the broad ecological zones within the province of Alberta. The Ecodistricts of Alberta 1995 GIS dataset was created in 2003 from existing digital maps. The Ecodistricts 1995 GIS datasets have been standardized to RIB Report #657 and to the Base Features Geo-administrative boundary for the province with a 200 metre overedge added to allow for clean clipping. There is no accuracy assessment available

for these maps at this time. The datasets were produced in order to provide the biophysical characteristics of ecodistricts in a GIS-ready electronic format. The polygon attributes are generally grouped into five broad categories: polygon identification and code information; biophysical characteristics such as parent materials, soils and vegetation cover; wetland characteristics; water body characteristics; and river drainage basins. The source information for the original database used to produce the Ecodistricts of Alberta 1995 maps was derived from ecological classification maps, surficial geology maps, landform maps, soil survey maps and vegetation inventory maps. In addition, some use of aerial photography was made. The terrestrial ecodistrict polygon boundaries are based on 1:1,000,000 scale landscape units developed as part of a national effort by Environment Canada, Agriculture and Agri-Food Canada, and agencies in each province to develop a standard ecological reference base for Canada. Polygon attribute data are summarized for ecodistricts but can be aggregated by natural subregions or natural regions. There is a report, tiffs and geo-referenced tiffs associated with this digital dataset.

Agency

Provincial Government
Alberta Sustainable Resource Development
Edmonton, AB

Access to Data

Available for a fee. Redistribution of Resource Information Management Branch information in whole or in part, whether alone or as part of a value added product, is not permitted without the prior written consent of the Resource Data on behalf of the Minister of Alberta Sustainable Resource Development, Government of Alberta. In view of the dated nature of the data, it is the responsibility of the user of the data: (1) to confirm with Resource Data whether later versions are

available before making use of the data; and (2) if the Minister permits the user to provide the data to other users, to advise users of the age and status of the data.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://www3.gov.ab.ca/srd/land/g_data-catalogue_features_eco.html

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:1,000,000

Link to Database

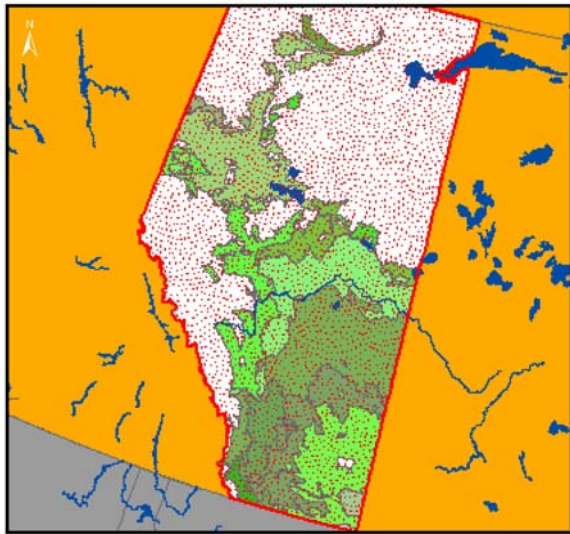
- Look in record 69330290 for more detail on this dataset.

Summary Observations and Recommendations

These data are being used as input into a number of sustainable resource initiatives, including (but not restricted to) forest fire prediction, integrated resource planning, wildlife habitat mapping and forest management. In particular, these digital databases are used to address annual allowable cuts, biodiversity concerns and land use.

The Ecodistricts of Alberta 1995 dataset contains two provincial level ecological spatial digital datasets that were created in 1995 as a package consisting of terrestrial ecodistricts (ecodistricts) and fluvial ecodistricts (ecorivers). These two spatial datasets represent the broad ecological zones within the province of Alberta.

5.9.2 *Environmentally Significant Areas*



Abstract

Environmentally Significant Areas of Alberta Vol 1-3, is a provincial overview of ESAs in Alberta, as of March 1997. The report is a review and synthesis of ESA work completed in the period 1983 – 1996. Included are sites that have been identified as being of “Provincial”, or higher, significance level (i.e. International, National or Provincial). The report and associated GIS data set covers almost the entire province, although portions of the Rocky Mountain Natural Region are not included. ESA Inventory of the Rocky Mountain Natural Region was completed in January 1998 and covers the Rocky Mountain Natural Region, excluding Jasper National Park.

Criteria may be summarized as follows: rare or significant ecological/physiological/ hydrological/ geological feature/ area; undisturbed land supporting species intolerant of humans; excellent representative of an ecoregion; important linking function; and, historic research/aesthetic appeal, etc.

Agency

Provincial Government
Sustainable Resource Management
Alberta

Access to Data

- Fee of \$100 +gst.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.cd.gov.ab.ca/preserving/parks/anhic/esa.asp>

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale not provided.

Link to Database

- Look in record 275101558 for more detail on this dataset.

Summary Observations and Recommendations

Environmentally important areas have been determined throughout the province's agricultural and most other ecoregions on the basis, in many cases, of habitat value and representation of biodiversity in terms of species. The accompanying report and database provide a variety of related information and analysis.

The Alberta ESA's data would be an asset in identification of key sites where these have been identified within or adjacent to agricultural areas. There may also be opportunity to examine characteristics of habitats described in this dataset for correlation to other areas utilizing other

available inventory datasets (forest, agriculture, wetland inventory data) in order to look into potential habitat value of other areas.

Knowledge of the locations of areas where agriculture needs to be sensitive, or discontinued, is essential for determining the nature and spatial application of biodiversity standards.

Identification of key types of habitat may be possible using such a dataset in assessment of areas in proximity to agricultural areas. Such identification may be important in terms of meeting particular important aspects of biodiversity (habitat) standards.

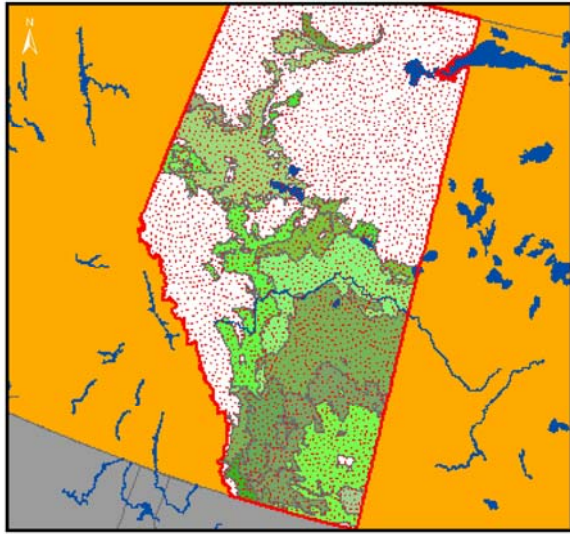
Make use of these datasets and map layers for decision-making related to Alberta.

This dataset may be useful as a screening tool to search and investigate records for particularly key wildlife specie occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented in the dataset.

This dataset may also be useful for some sort of correlation analysis between habitat characteristics of these documented and mapped locations as compared to other areas utilizing additional inventory datasets for other landscaped features.

This information should be consulted to ensure standards address the habitat requirements of species at risk. It should be considered for presenting biodiversity standards and explaining their rationale to potential users.

5.9.3 *Agriculture Land Resources Atlas of Alberta*



Abstract

The Agricultural Land Resource Atlas of Alberta is a collection of agricultural resource maps developed following completion of the Environmental Scan for Agriculture in Alberta by the Alberta Environmental Scan Technical Team in 2003. The maps in the Atlas were prepared for the environmental scan process or were added to the collection because of their potential value to Alberta's agricultural community. The maps were recognized for their value to people involved in developing environmental farm plans who could use resource and environmental information on a broad scale. Maps are of:

- MDs and counties
- township grid
- annual precipitation
- frost free days
- solar radiation
- areal extent of wetlands
- soil groups

- soil texture groupings
- salinity
- solonetzic soils
- organic matter
- organic soils
- water erosion risk
- wind erosion risk
- auifer vulnerability
- fertilizer expense
- chemnical expense
- manure production
- cultivation intensity
- number of species at risk
- surface water quality risk
- groundwater risk
- soil erosion risk
- air quality risk
- biodiversity risk (based on upland / wetland habitat and waterway densities and species at risk)

Agency

Provincial Government
 Alberta Agriculture, Food and Rural Development
 Edmonton, AB

Access to Data

- No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise without permission from Alberta Agriculture, Food and Rural Development.

Scope of Dataset

- 100% of geographic area.

Currency

- Data collection frequency: As Needed

- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:3,000,000

Link to Database

- Look in record 1375203069 for more detail on this dataset.

Summary Observations and Recommendations

The wide variety of maps in this set include summary data on soils, climate, erosion and water quality risks, agriculture inputs, ecosystem attributes such as wetlands and species at risk, and a derived rating for "biodiversity risk" which may be useful for habitat evaluation. It covers landscape and land use aspects for AB but is not species specific.

Information on land uses and associated risks will be relevant to wildlife habitat in terms of potential effects that the stated uses may have on habitat values of the agricultural lands themselves and potentially upon the surrounding forests/wetlands and other areas and thus on potential modelling of habitat values.

Biodiversity standards may need to take into account some of the environmental factors that influence agricultural practices which were presented in these large scale map products for farmers.

The land use information provided in this dataset, in conjunction with other datasets describing other attributes that can define wildlife habitat suitability and capability such as the Alberta Vegetation Inventory and the Native Prairie Vegetation Inventory, this dataset could provide the basis for analysis of attributes at the interaction of agricultural areas with forested and grassland habitats.

Information on land uses will be relevant to biodiversity in terms of potential effects of the stated uses on biodiversity values of the agricultural lands themselves as well as potentially upon surrounding forests/grasslands and other areas and thus on potential overall biodiversity for the general area.

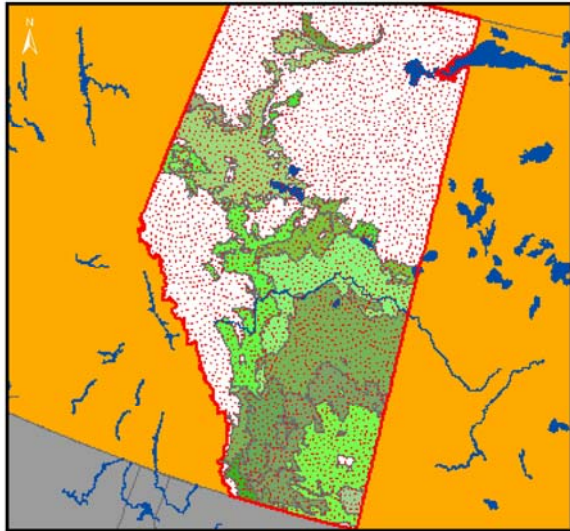
The EC Agricultural Biodiversity Standards Initiative may want to incorporate some of the themes depicted in this map set for decision-making, and should review this dataset collection as a possible model for communicating and explaining biodiversity standards and providing supporting information to land managers and private farmers in each of the ecoregions (e.g. selected themes from the AB product and additional information relating to biodiversity and agricultural practices).

The Agriculture Land Resources Atlas would be useful for overlay analysis with other GIS datasets in order to identify the extent of agriculture land use in Alberta. This coverage will be useful to identify the outline boundary and thus the zone of transition between agriculture land use and forests, grasslands, urban use and other land cover/land uses. This coverage is important for application with other coverages in defining the agriculture lands and thus the area being directly considered for assessment of biodiversity standards. The data will also provide insight to the level and type of agricultural activity on the landscape for wildlife species for which these activities have relevance to their use of the area.

Land use information may be useful to assist in considering the types/magnitude of uses that may need to be considered in developing best management practices for agricultural areas. It may be possible to undertake analysis of the transition zones surround these areas to assess potential impacts of such practices to guide development of Best Management Practices.

5.10 Land Cover - Aquatic -Waterbodies

5.10.1 Lakes - Alberta 1:20,000



Abstract

The Lakes for Alberta from the Altalis 1:20k base maps, for which themes may be obtained individually. The 1:20,000 Base Features is a seamless GIS spatial database product to which other natural resource and land management information can be related. The Base Feature Project began in 1996 to merge, connect, update, restructure, revise, and attribute several topographic themes covering Alberta, using various resources such as 20K & 50K Historic Base, AVI, and IRS Satellite Imagery. Updating projects are ongoing with funding from data sales and the Government of Alberta.

Agency

Provincial Government
Altalis
Alberta

Access to Data

- See altalis 1:20k comprehensive

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.altalis.com/>

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1281870734 for more detail on this dataset.

Summary Observations and Recommendations

Waterbodies are an important aspect of habitat for many species and as such are relevant for assessment; this theme covers all landscapes and ecoregions in AB. As a base map, it does not include species information however other sources can be consulted. Currency may be an issue in landscapes where wetlands draining is occurring.

Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.).

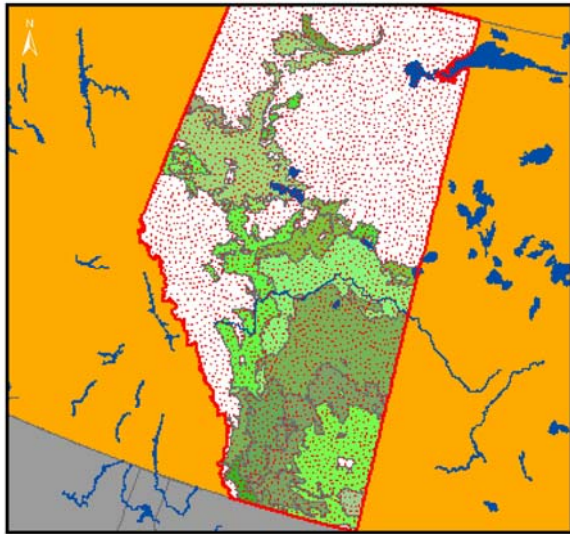
Conservation of biodiversity requires adequate aquatic elements so mapping of existing features is necessary, and these also provide reference information for location and land uses.

The dataset may be useful in examination of broad scale issues at the landscape level utilizing the watercourse features in the coverage or to enable examination of specific lakes.

Incorporate as a base map theme into project mapping, other spatial information may be required to keep it updated.

May be useful for delineation and examination of riparian areas adjacent to watercourses in conjunction with other datasets containing information relevant to habitat values.

5.10.2 Stream Network - AB - 1:20,000



Abstract

The Stream Network for Alberta from the Altalis 1:20k base maps.

Agency

Provincial Government
Altalis
Alberta

Access to Data

- See altalis 1:20k comprehensive.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.altalis.com/>

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 364931155 for more detail on this dataset.

Summary Observations and Recommendations

Stream network information is important for habitat assessment and to understand relationships between water bodies that may be affected by adjacent land use. This dataset maps location and direction of flow for all ecosystems in the province, but may be limited by scale and rapidly outdated by natural and human forces. As a base map, it does not include species information however other sources can be consulted.

Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.).

Streams are features that should be referenced by biodiversity standards because of their importance as habitat components and since they may also be impacted by agricultural practices, their location and direction of flow may be useful.

The dataset may be useful in examination of broad scale issues at the landscape level utilizing the

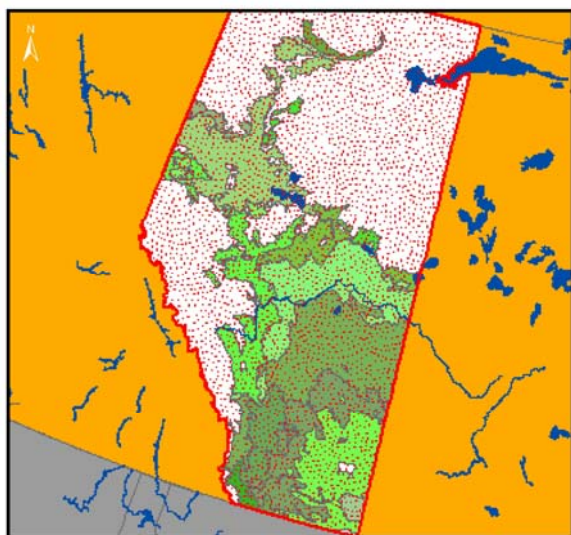
watercourse features in the coverage or to enable examination of specific streams.

Incorporate as a base theme at a minimum; additional information on their characteristics (eg water quality) may be desirable as well.

May be useful for delineation and examination of riparian areas adjacent to watercourses in conjunction with other datasets containing information relevant to habitat values.

5.11 Land Cover - Terrestrial -Land Use

5.11.1 Alberta Vegetation Inventory



Abstract

The Alberta Vegetation Inventory (AVI) is a photo-based digital inventory developed to identify the type, extent and conditions of vegetation, where it exists and what changes are occurring. AVI occurs on land managed by the Crown, land managed under a Forest Management Agreement (FMA) and others including Métis Settlements, First Nations and Federal Parks.

Agency

Provincial Government

Access to Data

- Available for a fee.
- Redistribution of Resource Information Management Branch information in whole or in part, whether alone or as part of a value added product, is not permitted without the prior written consent of the Resource Data on behalf of the Minister of Alberta Sustainable Resource Development, Government of Alberta. In view of the dated nature of the data, it is the responsibility of the user of the data: (1) to confirm with Resource Data whether later versions are available before making use of the data; and (2) if the Minister permits the user to provide the data to other users, to advise users of the age and status of the data.

Scope of Dataset

- 60% of geographic area. There is very little AVI coverage in the grasslands of Alberta.

URL to More Information on the Web

http://www3.gov.ab.ca/srd/land/g_data-catalogue_avi.html

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1407029252 for more detail on this dataset.

Summary Observations and Recommendations

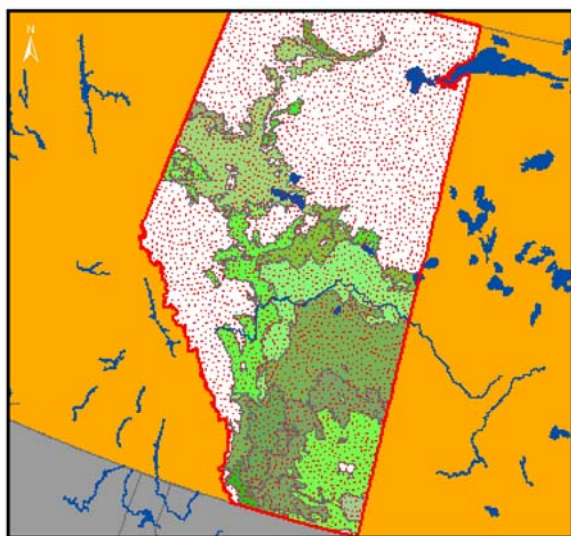
The AVI is relevant to any wildlife species for which the database attributes, primarily forest cover, may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). General location and extent information on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow some general assessments to be undertaken (proximity to water/forest types, riparian

areas, etc.).

AVI provides information regarding tree cover for forested stands, and generalized non-forested classification of other areas that could be useful in monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

The AVI provides detailed information to assist in the decision-making process for forest management planning, forest protection, wildlife habitat classification and integrated resource management activities. AVI standards were developed to ensure data consistency.

5.11.2 Alberta Land Inventory (ALI) / Canada Land Inventory (CLI) Landform



Abstract

These landform maps provided base maps from which the ALI capability maps were generated under this program. Note that capability maps followed the Canada Land Inventory methodology and are fully compatible with the earlier series. The CLI and ALI Landform maps were mapped onto the same base mylar maps and describe the same landscape features. The structure of the map symbols is slightly different for the two series. There is additional free-

form text on the CLI Landform maps to describe the direction of glacial movement and presence of specific geomorphic features such as eskers but the information is essentially the same for the two series. In some cases, a single base map may have both the initial CLI Landform mapping on part of the map sheet and subsequent ALI Landform mapping on the remainder of the same sheet. The Canada Land Inventory, being a national comprehensive survey of the capability and use of land, was designed to provide a basis for planning the use of resources and land, and to encourage use of this information in land development planning at municipal, provincial and federal levels of government. This inventory, and the subsequent Alberta Land Inventory, included assessments of capability for forestry, agriculture, recreation, wildlife, waterfowl, and sport fish, and of present land use, in each province. Not all assessments for capability for each theme were performed on every map sheet, as some areas were clearly not suitable for certain uses.

Agency

Provincial Government
Government of Alberta

Access to Data

- Public acquisition of digital data products is subject to the conditions outlined in the Resource Data Branch "License Agreement for Digital Data". FTP (File Transfer Protocol) is available, with the exception of data exceeding reasonable size limits or when corporate restrictions have been implemented in which the data will be delivered on CD-R or DVD-R. Data will not be delivered via email mechanisms. The client may be required to provide an FTP TCP/IP address, user name, and password. Data may also be delivered via the department external FTP site utilizing WinZip password encrypted self-extracting executable files. The Data Distribution Unit presently utilizes WS_FTP Pro
- Version 6.04. It should be noted that the Alberta Land Inventory / Canada Land Inventory Landform mapping projects are broad reconnaissance type inventories and are designed for planning rather than management. These maps will not provide the detailed information required for intensive management of individual parcels of land, nor for land use planning in small watersheds, local government units, or

- other small areas. Redistribution of RDB information in whole or in part, whether alone or as part of a value added product, is not permitted without the prior written consent of the Resource Data Branch on behalf of the Minister of Alberta Sustainable Resource Development, Government of Alberta. In view of the dated nature of the data, it is the responsibility of the user of the data: (1) to confirm with Resource Data Branch whether later versions are available before making use of the data; and (2) if the Minister permits the user to provide the data to other users, to advise users of the age and status of the data. The user agrees that the information and each part thereof, any formatting or presentation thereof, any storage media on which it is provided, and any communication of any kind, incidental or in relation thereto, is provided to the user by the Minister and the Crown without warranty or representation as to any matter including but not limited to whether the information and storage media is correct, accurate or free from error, defect, danger, or hazard, and whether it is otherwise useful or suitable for any use the user may make of it. The Crown in right of Alberta, the Minister and her employees and agents, shall not be liable for any claims, costs, losses, or damages, including any special, indirect, incidental or consequential loss or damage, which the user may incur
- or experience as a result of the use or possession of the information or associated storage media.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://gcmd.gsfc.nasa.gov/KeywordSearch/RedirectAction.do?target=http%3A%2F%2Fwww3.gov.ab.ca%2Fsrdb%2Fland%2Fg_1.html

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 1617469157 for more detail on this dataset.

Summary Observations and Recommendations

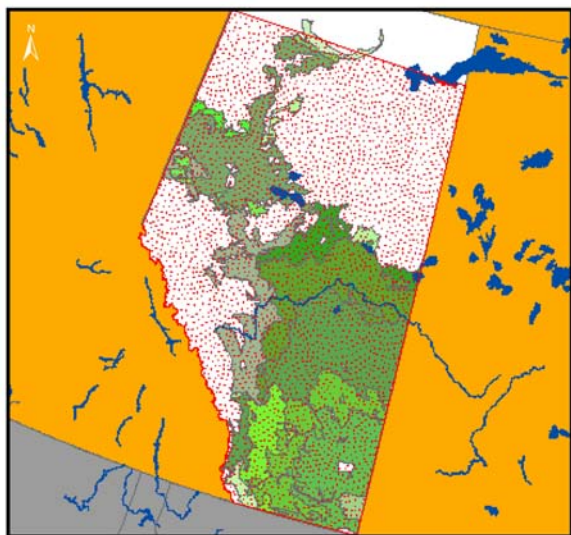
The Canada Land Inventory included assessments of capability for forestry, agriculture, recreation, wildlife, waterfowl, and sport fish, and of present land use, in each province - the province of Alberta prepared landform maps, necessary to complete the capability analysis, for

the northern part of the province not done by the CLI in the mid seventies. The landform map delineates relatively homogeneous areas based on physical characteristics with a description allowing for capability assessment at a large scale. As such, they can provide broad but dated habitat and broad level species information.

The landform mapping and capability analyses for AB and the rest of Canada allow for planning assessments in support of the biodiversity project, but are not at a fine enough scale to facilitate land management. Their age may also be helpful in understanding changes since the seventies.

This northern AB dataset should be used in conjunction with the CLI series information.

5.11.3 PFRA Land Practices Groups



Abstract

Land Practices Group defines areas of agric land use (ie proportion of land in cultivation and proportion of land in pasture), derived from AG Census 1996 and Soil Landscapes of Canada info. This is in support of PFRA's Prairie Agricultural Landscapes (PAL) project. <http://www.agr.gc.ca/pfra/pub/palmap.pdf> for on-line map display.

Agency

Federal Government
Environment Canada
Canada

Access to Data

- No access or use limitations were noted.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.agr.gc.ca/pfra/pub/palmap.pdf>

Accuracy

- Scale not provided.

Link to Database

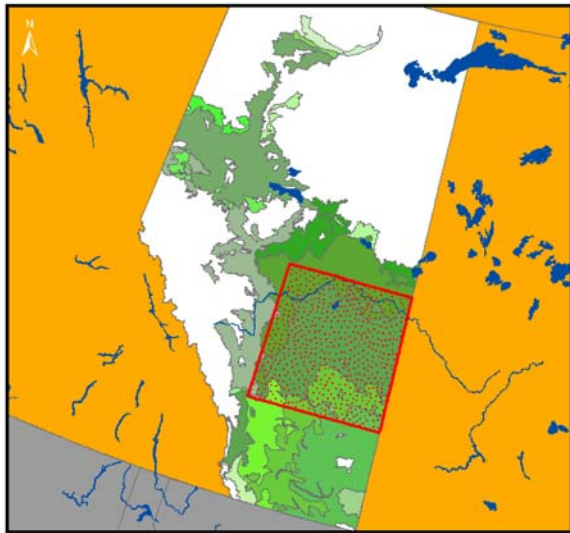
- Look in record 1925242041 for more detail on this dataset.

Summary Observations and Recommendations

This provides an important characterization of agricultural practice (eg types of crops are indicated in addition to summer fallowing etc) by area.

5.12 Land Cover - Terrestrial -Various

5.12.1 Central Parkland Native Vegetation Inventory - Version 1.2



Abstract

A vegetation / landuse database for the Aspen Parkland Natural Region (Central) to be utilized by all agencies involved in land management. Project objectives included; to classify native vegetation cover classes within the Parkland Natural Region from aerial photography (1:30,000), update the double line hydrography layer within the Parkland Natural region from a combination of aerial photography (area > 0.5 Ha.) and IRS imagery (area > 0.04 Ha), classify deciduous and coniferous from Landsat TM 7 imagery, obtain municipality and ownership information, and create a complete GIS database from the above mentioned objectives. There are six (6) dataset sources used in developing this native vegetation inventory:

Interpreted native 'GRASSLAND' or 'FOREST' areas. Interpreted from aerial photos, 1:30 000, 1998 +/- 1 year. The focus for this dataset was within the Central Parkland Natural Region only, whereas the other data sets expanded out to include the remaining area of associated counties and municipalities. Positional accuracy - +/- 10 m, no specified acceptance accuracy.

Updated access hydrography (capture of basins). Interpreted from air photos, 1:30 000, with detail to the hectare level. Basins 0.5 ha – 1.0 ha. Smaller basins were not indicated; open water at time of IRS image compensates somewhat for this. (Refer to next paragraph.) Positional accuracy - +/- 10 m, acceptance accuracy of 95%.

Small open water hydrography. Classified from IRS (Indian Remote Sensing) satellite imagery, 5m resolution, allowing detail to be read to the 0.04 hectare level (400 sq. meters). The IRS imagery was generally obtained from 1999 unless otherwise specified in the accompanying spreadsheet. Shadows from spruce on slopes and other treed edges were apparent in air photos; therefore removal edits using the aerial photography was required. Positional accuracy - +/- 10 m, classification accuracy of 95%.

Classified treed areas into deciduous/coniferous categories. Classified from Landsat TM (Thematic Mapper) imagery, using bands 3,4, and 5 with 25m resolution. Minimum poly size 2500 m² or 0.25 ha. Positional accuracy - +/- 125 m, classification accuracy of 80%.

Land ownership to the quarter section level. Data taken from the ATS (Alberta Township System) grid and LSAS (Land Status Automated System), current to June 2001. This data was then dissolved by 'OWN_CLASS'. Base Features Geoadministrative Boundary from RIMB was also used for Indian Reservation boundaries. Military Reserve quarter sections were entered into the data from digital data sources of lesser resolution. Assumed to be 100% accurate as of June 2001.

Counties and Municipal Districts, which were obtained from RIMB Geoadministrative Boundary data prior to development of Base Features level accuracy, so +/- 125m positional accuracy.

Agency

Provincial Government

Alberta Sustainable Resource Development

Access to Data

- Fee of \$50.00 plus GST.
- Redistribution of Resource Information Management Branch information in whole or in part, whether alone or as part of a value added product, is not permitted without the prior written consent of the Resource Data on behalf of the Minister of Alberta Sustainable Resource Development, Government of Alberta. In view of the dated nature of the data, it is the responsibility of the user of the data: (1) to confirm with Resource Data whether later versions are available before making use of the data; and (2) if the Minister permits the user to provide the data to other users, to advise users of the age and status of the data. All digital data product purchases are subject to the conditions outlined in the Resource Information Management Branch "License Agreement for Digital Data" (18KB PDF).

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www3.gov.ab.ca/srd/land>

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale of 1:30,000

Link to Database

- Look in record 1143331224 for more detail on this dataset.

Summary Observations and Recommendations

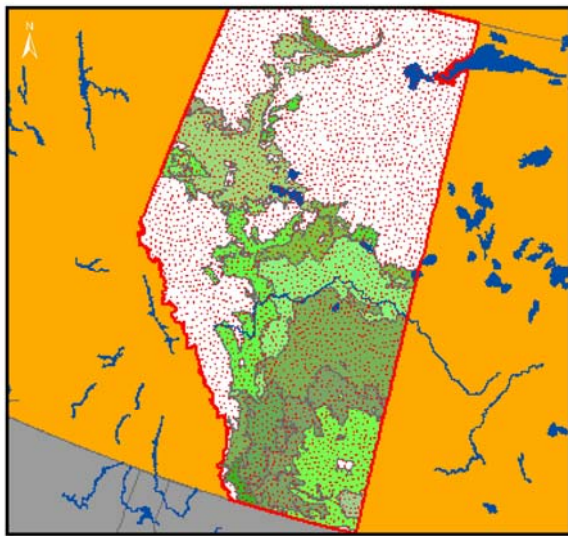
This dataset provides vegetation classification for both private and public lands, making it highly relevant to habitat evaluation at the landscape/ecosystem level within an ecoregion containing both agricultural/forest fringe areas.

Because the dataset contains land use and ownership in addition to vegetation cover, and is relatively recent (later 1997-2001 coverages), it is highly suited for assessing applicability of biodiversity standards for both managed and privately held lands.

Jurisdictions or EC should be encouraged to create combination datasets like this one, and to keep updating them. In combination with datasets identifying important ecological sites (see AB's Ecological Site Information dataset), other species information and more detailed land use (ie agricultural details), this should provide much of the key data necessary for decision-making.

5.13 Land Cover - Terrestrial -Vegetation

5.13.1 Native Prairie Vegetation Inventory



Abstract

Originally, the entire non-forested portion of the Public Lands Southern Region was inventoried and was completed in 1995. During 1997-98, additional area covering the Grassland Natural Region had been produced. At that time, many small isolated omissions were discovered within the entire area inventoried to date. The omissions were updated by photo-interpretation at the

Resource Information Unit in Lethbridge. In 1999, a separate extraction from the coverage as it existed then, was distributed on CD-ROM, and named the Grasslands Natural Region, Native Prairie Vegetation Inventory. This version of the database included grazing related Land Use Dispositions, downloaded from LSAS (the Land Status Automated System). Inventory within the Foothills and Montane Natural Regions (outside of Waterton Lakes National Park and within the Prairie Corporate Region), were produced in 2001. An update to Crown Lands for the entire area and Tax Recovery Lands in the Special Areas from the Municipal Affairs office in Hanna was also performed in 2001. Finally, areas not covered within the Counties of Mountain View and Rocky View were produced in 2003.

Native Prairie Vegetation is generally referred to anything not disturbed by man. The Prairie Conservation Action Plan native prairie definition has been adapted for this project: “An area of unbroken grassland or parkland dominated by non-introduced species, and an area of previously broken grassland that has reverted back to native vegetation (30 to 60 years)”. Six (6) native cover types were utilized: Shrub , Graminoid (Native grass species), Lake, Riparian, Treed, and Wetland.

The Native Prairie Vegetation Inventory was compiled from tabular databases (dbase, paradox, etc.), which were produced through several 1: 30,000 scale aerial photo-interpretation contracts. The aerial photography used in the first two contract areas (indicated in green and orange on browse graphic), was flown in 1991-1993. The third and fourth contract areas (brown and blues on browse graphic) used photography from 1998. The database accuracy is considered to be 80%.

Agency

Provincial Government
Alberta Sustainable Resource Development
Edmonton, AB

Access to Data

- Fee of \$50.00 plus GST.
- Redistribution of Resource Information Management Branch information in whole or in part, whether alone or as part of a value added product, is not permitted without the prior written consent of the Resource Data on behalf of the Minister of Alberta Sustainable Resource Development, Government of Alberta. In view of the dated nature of the data, it is the responsibility of the user of the data: (1) to confirm with Resource Data whether later versions are available before making use of the data; and (2) if the Minister permits the user to provide the data to other users, to advise users of the age and status of the data.

Scope of Dataset

- 80% of geographic area.

URL to More Information on the Web

http://www3.gov.ab.ca/srd/land/g_data-catalogue_nativeprairie.html

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:30,000

Link to Database

- Look in record 2123411872 for more detail on this dataset.

Summary Observations and Recommendations

This native prairie inventory provides information important for evaluating habitat and biodiversity for mainly Crown Lands within the southern agricultural areas.

This dataset contains information on the type and amount of native prairie on Crown Land in AB,

circa 1991-93 (air photos) / 2000-01 (field checks) and as such has high value for evaluating existing habitat in southern ecoregions for agriculture.

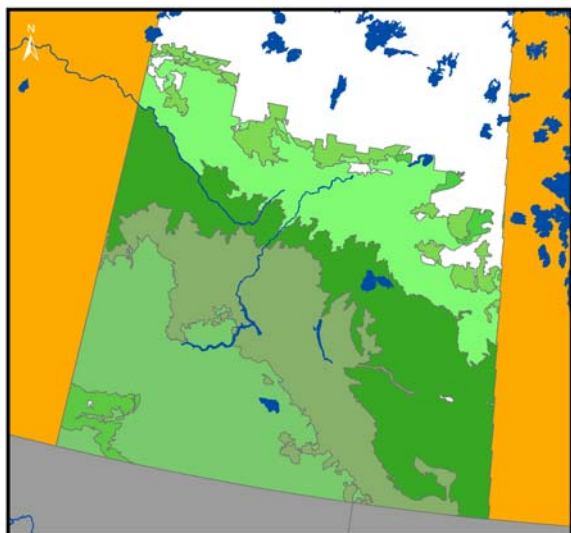
Standards development can make use of this information from representative areas to understand potential for impacting native grasslands conservation.

Incorporate this dataset into initial assessment and decision-making processes; it should be updated periodically to allow for monitoring.

6 SASKATCHEWAN

6.1 Biological - Species at Risk -Fauna

6.1.1 Wildlife - Species at Risk



Abstract

Species at risk are mapped against the Ecoregions of Saskatchewan providing a list of species within the ecoregion. Rare or endangered species are mapped at the Rural Municipality level.

Agency

Provincial Government
Saskatchewan Environment and Resource Management
Prince Albert, SK

Access to Data

- Free

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.se.gov.sk.ca/ecosystem/speciesatrisk/>

Currency

- Data collection frequency:
- Data maintenance frequency: maintained on continual basis

Accuracy

- Scale not provided.

Link to Database

- Look in record 564337483 for more detail on this dataset.

Summary Observations and Recommendations

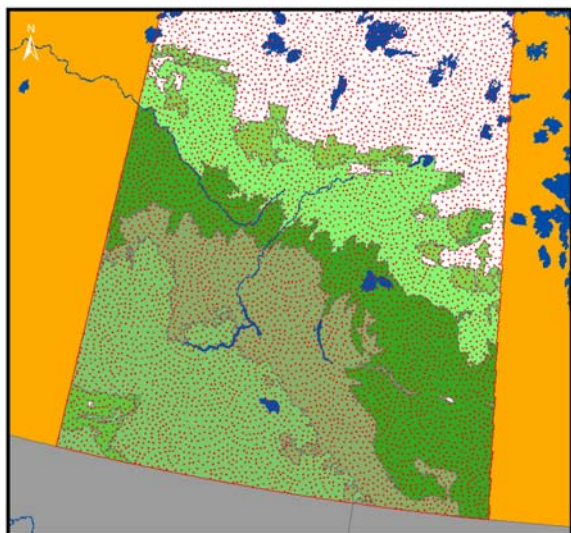
Saskatchewan's listing of species at risk in the province is tabulated with coding indicating relevant ecoregion(s) for these wildlife species. Related information can be obtained from the Saskatchewan Conservation Data Centre (CDC). This dataset provides an overview of wildlife species for whom habitat is an issue in Saskatchewan.

Development of the biodiversity standards should be informed by this information so that such species, and their associated habitat requirements, can be considered in development of indicators, thresholds and targets for the NAESI program. This dataset provides a tool to incorporate such considerations to enable agricultural impacts on such species to be mitigated.

Review this dataset during the project analysis phase and perhaps incorporate in to a map coverage that can be easily presented in mapping products to educate potential users of the standards. Such species at risk information should be considered as supporting information for presenting biodiversity standards and explaining their rationale to potential users.

6.2 Biological - Species at Risk -Various

6.2.1 SK Conservation Data Centre (CDC) Element Occurrence Database



Abstract

The Saskatchewan Conservation Data Centre (CDC) collects data on rare and imperiled species and plant communities in Saskatchewan. The CDC collects information on the Elements of biodiversity (plants, animals, and communities) within Saskatchewan and tracks the taxonomy and status of each Element at the global, and subnational levels.

It is noted that the CDC also has begun to include vegetation community on data submission forms in order to develop a fine scale vegetation classification for the province. Consultants typically submit information for private and public sector clients to the CDC. Element records include: taxonomic information about accepted nomenclature and classification at the global, and subnational levels; status information regarding each Element's relative rarity or endangerment at the global, and subnational levels; and distribution to the level of state or province. Element ranking records in the EODB include information on the Element's subnational rank (i.e., it's relative rarity or endangerment in the jurisdiction), the criteria used to determine that rank, and

the subnational inventory, protection and stewardship needs for that Element. For each Element, the influence of at least 6 basic factors is considered when assigning an SRANK. For the Element's subnational range these include: the estimated number of Element Occurrences (EOs); the estimated abundance; the estimated size of the range; the trend in the Element's distribution; the estimated number of adequately protected EOs; and the degree to which the Element is threatened in the jurisdiction. This information is developed and maintained using established Natural Heritage Methodology developed by NatureServe and The Nature Conservancy (TNC). The Element Occurrence (EO) records that form the core of the Saskatchewan EODB include: information on the location, status, characteristics, numbers, condition, and distribution of elements of biological diversity using established Natural Heritage Methodology developed by NatureServe and The Nature Conservancy (TNC). An Element Occurrence (EO) is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. For species Elements, the EO often corresponds with the local population, but when appropriate may be a portion of a population or a group of nearby populations (e.g., metapopulation). For community Elements, the EO may represent a stand or patch of a natural community, or a cluster of stands or patches of a natural community. Because they are defined on the basis of biological information, EOs may cross jurisdictional boundaries. An Element Occurrence record is a data management tool that has both spatial and tabular components including a mappable feature and its supporting database. EOs are typically represented by bounded, mapped areas of land and/or water or, at small scales, the centroid point of this area. EO records are most commonly created for current or historically known occurrences of natural communities or native species of conservation interest.

They may also be created, in some cases, for extirpated occurrences. The EODB data are collected and maintained by the Natural Heritage Programs and Conservation Data Centres using a standardized methodology to provide accurate and current biodiversity and conservation information to public and private agencies and individuals.

Agency

Provincial Government
Saskatchewan Conservation Data Center
Regina, SK

Access to Data

- SKCDC information is only for the intended use of the individual or organization who requested it. The use of this information is intended solely for use within the scope of the current request and is not to be re-used or sold without written permission from the Saskatchewan Conservation Data Centre.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://gisweb1.serm.gov.sk.ca/wildlifelogin/form.asp>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 745454226 for more detail on this dataset.

Summary Observations and Recommendations

The Saskatchewan Conservation Data Centre (SKCDC) collects data on rare and imperiled species and plant communities in Saskatchewan. Their data can be used to provide species level

information for all ecosystems, which can support broader scale habitat assessments. This information focuses however on particular species of concern and element occurrences recorded in the database may or may not be representative of actual populations and ranges.

The occurrence and location details for species and elements of conservation concern in this dataset could be an asset in identification of key sites where these have been identified. This dataset is relevant to wildlife and wildlife habitat in providing information on rare and unique species and habitats occurrence which may be useful in conjunction with other datasets (forest and wetland inventories) in analysis and assessment of unique habitat needs.

Rare species information relates to one of the underlying reasons for attempting to preserve biodiversity, and information of this type compliments habitat assessment for better informed biodiversity standards development and implementation.

The location data could be utilized to identify geographic locations of potential key elements of biodiversity (wildlife sitings, plant/vegetation communities) of specific interest or concern with respect to biodiversity.

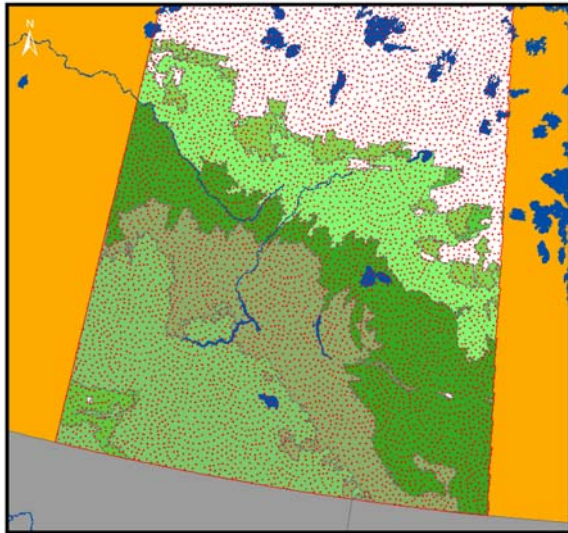
The Saskatchewan CDC dataset may be useful as a screening tool to search and investigate records for particularly key wildlife species occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented by the CDC, and for potential use in assessment of unique habitat needs.

CDC information should be consulted to ensure standards address the habitat requirements of

species at risk. It should be considered for presenting biodiversity standards and explaining their rationale to potential users.

6.3 Biological - Terrestrial -Management/Conservation

6.3.1 Grassland Bird Conservation Areas – Saskatchewan



Abstract

This is a 'filtered file' in the EC internal GIS library (screen capture). The data is a first attempt at modelling grassland bird conservation areas (GBCAs) since little work has been done to identify areas for grassland nesting passerines or shorebirds that are not game species. It is based on the habitat needs of the Greater Prairie Chicken (Partners in Flight Plan for the Northern Tall Grass Prairie). The model uses quantitative field data and land cover information to identify priority habitat.

Agency

Federal Government
Environment Canada
Canada

Access to Data

- Potential access and use limitations to the data are unknown.

Scope of Dataset

- 100% of geographic area.

Accuracy

- Scale not provided.

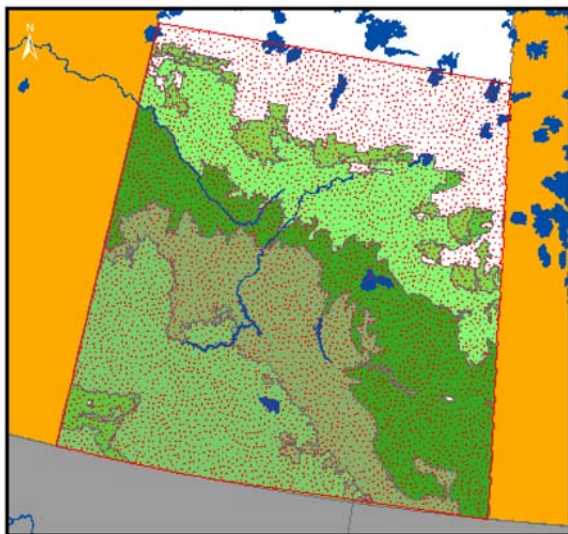
Link to Database

- Look in record 655118186 for more detail on this dataset.

Summary Observations and Recommendations

This dataset provides habitat information for non-game bird species in SK - format is not clear from screen capture (all meta data not shown).

6.3.2 Northern Extent of Native Grass Data Set



Abstract

PFRA/ Ducks Unlimited Canada Land Cover Project provided a more detailed classification of WGTTP Landcover imagery set "Saskatchewan South Digital Landcover (SDLC)" including a 26 landcover classes.

Agency

Federal Government
Environment Canada
Canada

Access to Data

- No access or use limitations were noted.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale not provided.

Link to Database

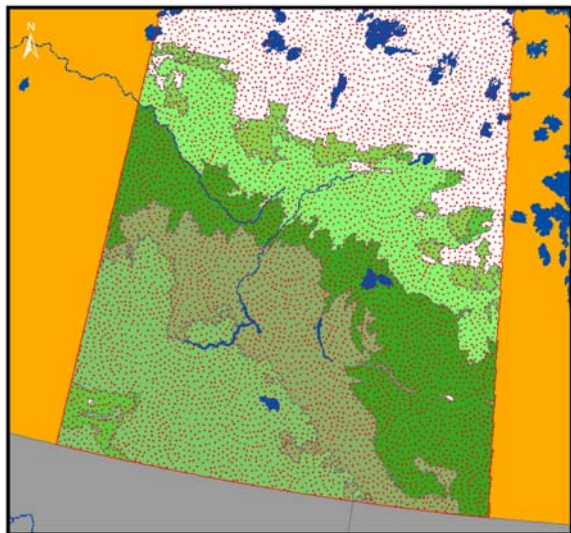
- Look in record 760154997 for more detail on this dataset.

Summary Observations and Recommendations

Provides an indication of areas of suitable habitat for species indigenous to this grassland type.

6.4 Imagery - Spaceborne -Multispectral

6.4.1 Northern Digital Land Cover Classification (NDLC) for Saskatchewan



Abstract

The NDLC will be based on a combination of Landsat 5 Thematic Mapper (TM) and Landsat 7 Enhanced Thematic Mapper (ETM+) data representing circa 2000 conditions. The NDLC is being produced through a collaboration of federal, provincial, and territorial governments, agencies and industry. Sask Research Council is creating the dataset, which will be distributed to government agencies. The land cover products are expected to be completed by early 2006.

Land classes include (see NAESI Database for further detail):

- 0 = Background
- 1 = Agriculture: Cropland and agricultural clearing areas
- 2 = Not Assigned: Empty Class
- 3 = Pasture Upland Herbaceous Graminoid
- 4 = Not Assigned: Empty Class
- 5 = Not Assigned: Empty Class
- 6 = Hardwood Open Canopy

- 7 = Hardwood Closed Canopy
- 8 = Jack Pine Closed Canopy
- 9 = Jack Pine Open Canopy
- 10 = Spruce Closed Canopy
- 11 = Spruce Open Canopy
- 12 = Mixed Hardwoods/Softwoods, Softwood/Hardwood Open and Closed Canopy
- 13 = Treed Rock: Forest vegetation less than 10%.
- 14 = Recent Burn
- 15 = Revegetating/Regenerating Burn
- 16 = Cutovers
- 17 = Water: These areas include lakes, rivers, streams, and reservoirs.
- 18 = Marsh
- 19 = Herbaceous Fen
- 20 = Mud Sand Saline
- 21 = Shrub Fen
- 22 = Treed Bog
- 23 = Open Bog
- 24 = Not Assigned: Empty Class
- 25 = Settlements/Roads
- 26 = Barren Land
- 27 = Mixed Softwoods Open and Closed
- 28 = Cloud/Shadow/Haze: An area of cloud, shadow, haze.
- 29 = Unclassified

Agency

Provincial Government
Saskatchewan Research Council
Saskatoon, SK

Access to Data

- By using this product, the recipient or user agrees to the terms specified in the user agreement (see NDLC_user_agreement.txt), Currently Under Review

- The classification is not without error. There are aspects of satellite classification that introduce uncertainty i.e. spatial resolution and spectral mixing into the results. Please note that The NDLC is not yet a validated product and levels of confidence have not been established, use at own risk.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale not available.

Link to Database

- Look in record 1142975270 for more detail on this dataset.

Summary Observations and Recommendations

The NDLC covers the northern forested part of the province as well as much of the aspen parkland/forest fringes. It will be based on a combination of Landsat 5 Thematic Mapper (TM) and Landsat 7 Enhanced Thematic Mapper (ETM+) data representing circa 2000 conditions. The data will be distributed to government agencies; land cover products are expected to be completed by early 2006. The imagery will be used to assign one of 26 land cover classifications and thus provide valuable information for habitat assessment. It provide no species related information.

It is a priority of the Saskatchewan and Canadian government to assess and monitor the health and sustainability of Canada's Forest. The North Digital Land Cover Classification (NDLC) will provide Saskatchewan's contribution to Canada's Earth Observation for Sustainable Development of Forests (EOSD) initiative, helping Canada fulfill it's obligation to the Kyoto Protocol. The

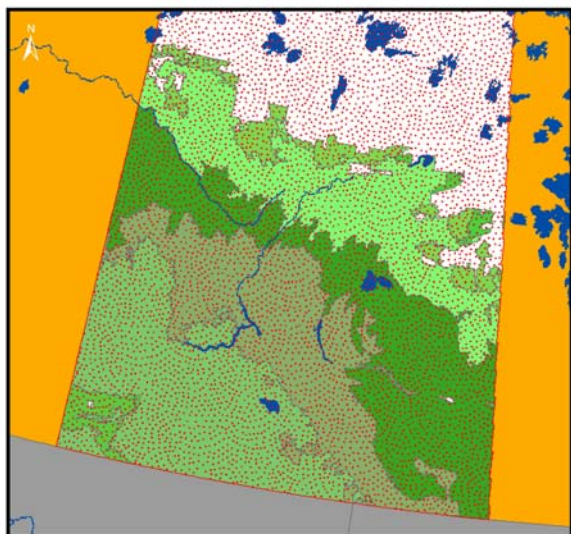
NDLC supports the mission and directives of the Saskatchewan provincial government by providing an essential dataset which will enable researchers, natural resource managers and government to assess the health and sustainability of our forests, perform research in the area of climate change, manage natural resources and create policy.

Biodiversity standards should take into account agricultural areas bounded by forest, and good habitat assessment tools like the SDLC and NDLC will make establishing baselines and measuring change over time easier.

Consider incorporating the NDLC where it overlaps agricultural areas covered by the 1995 SDLC to provide a temporal analysis of woodland and wetland loss/gain. Note that validation and accuracy of the dataset will not be ready at the same time as distribution of the dataset is begun.

6.5 Land Base - Political/Administrative -

6.5.1 *Saskatchewan Designated Areas Digital Data*



Abstract

The Saskatchewan Designated Areas Data project was created to map land currently described in

text (usually in gazette form) and to provide access to this geospatial data through systems that comply with national standards. The described "designated lands" include the various National and Provincial Park lands (i.e. Historic Parks, Park Reserves, Recreation Sites); environmentally sensitive lands (i.e. Wildlife Habitat Protection Act Lands, Fish and Wildlife Development Fund Lands, Game Preserves); and some privately owned lands (i.e. Conservation Easements, Ducks Unlimited Lands, Saskatchewan Wildlife Federation Lands). A complete data set will be available in March 2005. The project is administrated by Saskatchewan Environment (SE).

Searchable on-line map as well as zip files of all data sets and a large Access database of all designated areas. Metadata is accessed for each dataset by highlighting the layer; not all of these datasets are accessed from the searchable map, e.g. representative areas network (RAN) lands, however digital map data can be downloaded from the site nevertheless. The RAN also have text reports which can be accessed from: <http://www.se.gov.sk.ca/ecosystem/sran/> which may provide additional information.

Agency

Provincial Government
Saskatchewan Environment
Regina, SK

Access to Data

- Freely available. Use of information to derive additional products may be subject to license fees; some data may not be distributed. Metadata files exist for each dataset and come with the data download.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://gisweb1.serm.gov.sk.ca/DesignatedAreasProject/DA_distribution/data_distribution.asp

Currency

- Data collection frequency: Continually
- Data maintenance frequency: As Needed

Accuracy

- Scale not available.

Link to Database

- Look in record 1141331817 for more detail on this dataset.

Summary Observations and Recommendations

The database depicts representative habitat within the Saskatchewan landscape that has some form of protection and land use management criteria and enforcement. Several other datasets provide detailed habitat information for these areas. Status of these lands can indicate the likelihood of habitat enhancements or decreases for determining the adequacy of habitat in Saskatchewan's various ecozones.

This coverage could be relevant to wildlife species habitat through overlay application with other coverages that indicate habitat values (forest, grassland, wetland inventories) and agriculture locations. This would enable display and analysis of levels of habitat protection afforded by these areas, dependent upon levels of protection that are provided in the protected areas/reserves.

Protected areas are an essential piece of land use/administrative information for understanding opportunities and constraints for habitat conservation or enhancement.

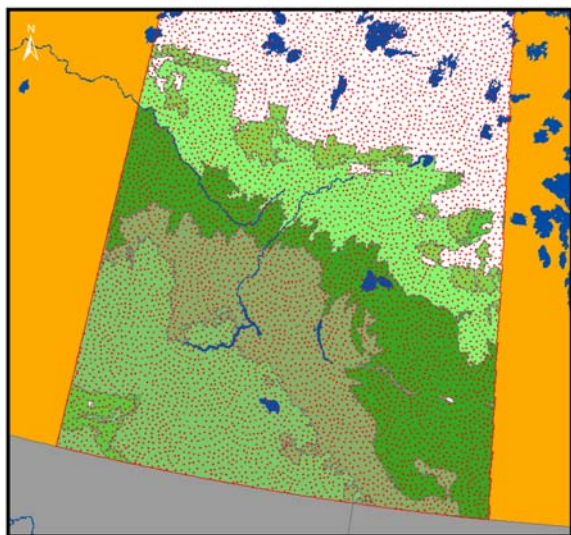
Overlay of this information with datasets indicating agriculture areas would be useful for describing and assessing levels of protected habitat that could be considered in achieving biodiversity standards, where these areas are in proximity to agricultural areas. Use of habitat information shown to be contained within such protected areas in proximity to agricultural areas,

dependent upon levels of protection, would contribute towards meeting biodiversity (habitat) standards in terms of providing for habitat requirements such as connectivity, required patches, amount of habitat available, and possibly key habitat requirements for food, cover or reproduction if identified within the boundaries.

This boundary coverage dataset can have use in combination with other datasets that provide detailed descriptive information on attributes that pertain to wildlife habitat and agriculture lands within that areas included inside such boundaries. It may also be useful to undertake analysis of land cover attributes from other datasets to assess any protected undisturbed areas of similar landscapes to agricultural areas to enable comparison for development of thresholds and targets for biodiversity indicators. In addition, where protected areas are in proximity to agricultural areas, definition of habitat values within such protected zones may assist in meeting overall threshold levels or targets.

Obtain updates on a regular basis to ensure current boundaries and definitions of protected areas are used for planning.

6.5.2 *SaskGIS Township Fabric Map (TFM) Dataset*



Abstract

This dataset shows the township system as it was laid out in the original township survey and includes all the components of the township system. The Township Fabric Map is the set of provincial standard SaskGIS digital data sets which depict the Dominion Land survey system in Saskatchewan. The Township Fabric Data Set includes:

- Surveyed boundary lines for the township consisting of road allowance limits, blind lines, quarter lines, and river lot lines.
- Section numbers positioned at or near the centre of each section.
- The township, range and meridian of the townships.
- Indian reserves, river lots and anomalies which cause the township to deviate from the original design, along with their names and numbers.
- Surveyed dimensions where available.
- All water bodies which define parts of the township fabric down to the quarter section level of detail; water body names.
- Legal subdivisions (LSDs).
- UTM coordinates for all points.
- Unique point identifiers.
- Permanent Provincial Identifiers for each Polygon down to the LSD level of detail.

3650 Townships in south half of Saskatchewan + northern theoretical township (spatial boundary given includes all of SK)

Agency

Provincial Government
Information Services Corporation of Saskatchewan
Saskatchewan

Access to Data

- Purchase Price: Provincial Coverage: \$1,000.00; Per Township: \$25.00
- Maintenance Price: 20% of Purchase Price
- Access constraints: The data set is licensed for use with no restrictions on who may obtain a license.
- Use constraints: The standard license for this data prohibits redistribution of the data in whole or in part. A resale license is available. There are some restrictions (designed to preserve the integrity of the data) on the presentation of the information as maps on a web site and on the distribution of products derived from this data.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.isc.ca/Default.aspx?DN=986,981,979,11,1,Documents>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- Scale of 1:20,000

Link to Database

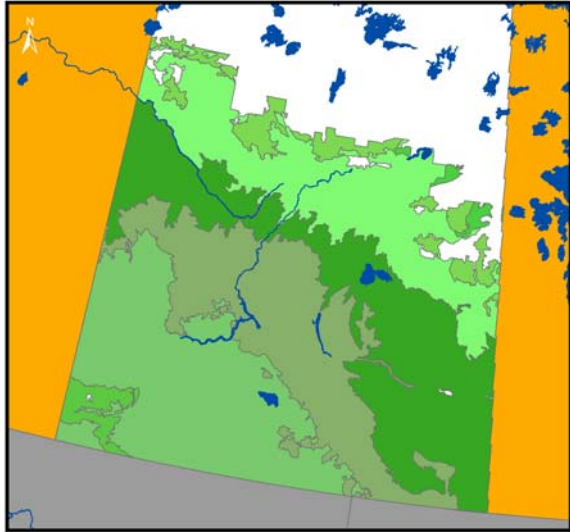
- Look in record 2017760606 for more detail on this dataset.

Summary Observations and Recommendations

Not directly relevant to habitat but useful for describing locations and for land use and settlement

patterns especially.

6.5.3 *Saskatchewan Environment Land Use Planning*



Abstract

Land use planning documents may be downloaded; these contain maps indicating land use planning areas and provide other information. Most utilize existing coverages (e.g., forest inventory, wetlands, vegetation) but a few, and in particular, the Great Sand Hills study involved acquisition of additional habitat related data. The Sask Environment land use planning web page refers to forest, forest fringe, and a few southern land use planning projects. Those including agricultural lands included (as of Mar 06): Nisbet Provincial Forest, Fort a la Corne, Great Sand Hills, Buffalo Pound.

Agency

Provincial Government
Saskatchewan Environment
Regina, SK

Access to Data

- No access or use limitations are identified.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency: Irregular
- Data maintenance frequency: As Needed

Accuracy

- Scale not available.

Link to Database

- Look in record 1142373318 for more detail on this dataset.

Summary Observations and Recommendations

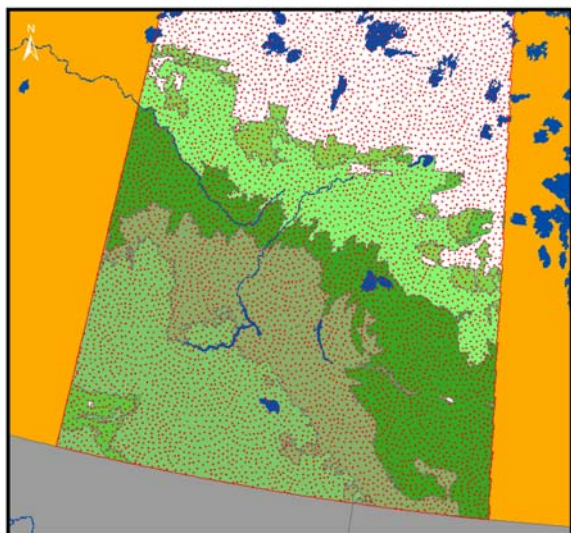
A variety of land use planning processes have been undertaken, typically in areas with some forest cover. These may provide additional information with regard to land use practices, conflicts and resolutions on Crown lands managed by Sask. Environment that can inform habitat assessment.

Standards development decision-making may be improved by learning from land use planning processes involving agriculture.

These reports can be easily accessed by internet for rapid review.

6.6 Land Base - Transportation -

6.6.1 Saskatchewan Upgraded Road Network (SURN) – Enhanced



Abstract

Full province coverage of roadways, road obstacles, railways, bridges and ferry crossings.

Attribution includes number of lanes, turn restrictions, etc.

Agency

Provincial Government

Information Services Corporation of Saskatchewan

Saskatchewan

Access to Data

- Fees of: \$3000 purchase and \$1,000/year maintenance. The data set is licensed for use with out any restrictions on who may obtain a license. The standard license for this data prohibits redistribution of the data in whole or in part. The data set is licensed for use with out any restrictions on who may obtain a license.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.isc.ca/default.aspx?DN=1214,981,979,11,1,Documents>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Annually

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1174273830 for more detail on this dataset.

Summary Observations and Recommendations

This information can be relevant for any wildlife species for which required habitat values can be linked to these infrastructure features. Transportation infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

The features of the Transportation dataset includes attributes that are relevant to biodiversity standards as the information contained allows for mapping and subsequent analysis of infrastructure that would relate to biodiversity measures. In combination with other coverages containing landcover and land use data, the transportation coverage will assist in defining the quantity and quality of habitat (patch size, fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

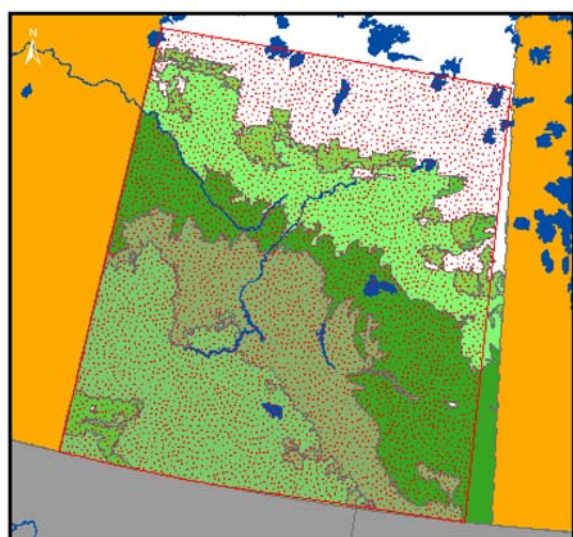
Use as a reference for locating sites, and may be incorporated into maps to provide transportation dimension.

The transportation map coverage can provide base coverage for infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As such these coverages could be useful for monitoring of existing habitat and biodiversity values,

habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

6.7 Land Base - Various -

6.7.1 *SaskGIS Cadastral Dataset – Rural*



Abstract

This dataset is comprised of the rural areas of Saskatchewan (i.e., the areas outside of urban municipalities). The dataset depicts the subdivision of land in the Province of Saskatchewan by means of legal plans of subdivision, including original township surveys and metes and bounds descriptions shown on title documents. All current survey parcels, lots, quarter sections, roadways etc. are shown. The data set covers the entire province and is kept current on a

continuous basis. The data is topologically structured and suitable for use in GIS and CAD systems.

Agency

Provincial Government
Information Services Corporation of Saskatchewan
Saskatchewan

Access to Data

Urban Municipalities are individually priced based on their assessed value and population statistics. Please see the Urban Municipality – Cadastral Dataset appendix for the exact prices for each individual municipality.

- 1. Complete Province \$115,000
- 2. Per Urban Municipality (average costs) for the municipality classifications listed below are as follows:
 - X-Large city – \$15,000.00
 - Resort Village - \$125.00
 - Large city - \$7,500.00
 - Northern Town - \$1,250.00
 - Medium city - \$5,000.00
 - Northern Village - \$250.00
 - Small city - \$3,000.00
 - Northern Settlement - \$50.00
 - Town - \$500.00
 - Northern Hamlet - \$50.00
 - Village - \$75.00
 - Organized Hamlet - \$50.00
- 3. Per Quarter Section (up to total cost of Urban Municipality): \$75.00 per quarter section
 - Please see the SaskGIS Cadastral - Urban Municipalities spreadsheet - attached below - for exact purchase prices per urban centre.

- Maintenance Price
- Complete Province - \$25,000.00
- Per Urban Centre - 20% of Purchase Price (please see the SaskGIS Cadastral - Urban Municipalities spreadsheet - attached below - for exact purchase prices per urban centre).
- Per Quarter Section - 20% of Purchase Price.
- The data set is licensed for use with no restrictions on who may obtain a license. The standard license for this data prohibits redistribution of the data in whole or in part. A resale license is available. There are some restrictions (designed to preserve the integrity of the data) on the presentation of the information as maps on a web site and on the distribution of products derived from this data.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.isc.ca/Default.aspx?DN=983,1214,981,979,11,1,Documents>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 612869036 for more detail on this dataset.

Summary Observations and Recommendations

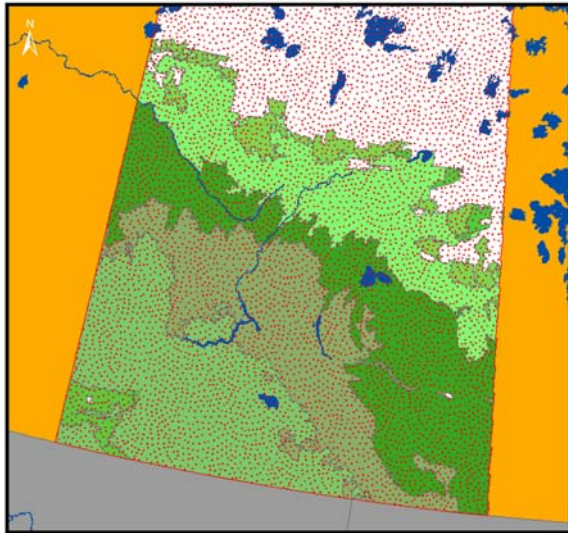
The rural cadastral dataset indicates property boundaries and legal land descriptions and so is not directly relevant to evaluating habitat or species. It may be useful in some areas where determining ownership/zoning can indicate conservation opportunities.

This base map coverage may be indicate the potential for land management/habitat protection strategies using biodiversity standards.

Consider obtaining where land ownership issues are important factors in implementing biodiversity strategies.

6.8 Land Cover - Aquatic -Waterbodies

6.8.1 *Saskatchewan Stream Network*



Abstract

These are digital files (Access database and shape files) with arcs indicating sink to source for the province's streams, attributes, and a point data set of sink locations, based on 1:50,000 topo maps and Landsat TM data from 1999 to 2002. User must use various files to construct their digital stream network.

Agency

Provincial Government
Saskatchewan Environment
Regina, SK

Access to Data

- No access or use limitations were noted.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://gisweb1.serm.gov.sk.ca/mapserver>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1222461007 for more detail on this dataset.

Summary Observations and Recommendations

Stream network information is important for habitat assessment and to understand relationships between water bodies that may be affected by adjacent land use. This dataset maps location and direction of flow for all ecosystems in the province, but may be limited by scale and rapidly outdated by natural and human forces. As a base map, it does not include species information however other sources can be consulted.

Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.).

Streams are features that should be referenced by biodiversity standards because of their importance as habitat components and since they may also be impacted by agricultural practices, their location and direction of flow may be useful.

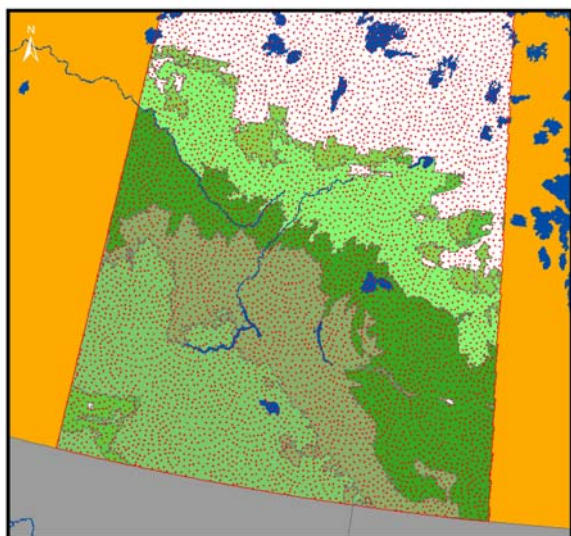
The dataset may be useful in examination of broad scale issues at the landscape level utilizing the watercourse features in the coverage or to enable examination of specific streams.

Incorporate as a base theme at a minimum; additional information on their characteristics (eg water quality) may be suitable as well.

May be useful for delineation and examination of riparian areas adjacent to watercourses in conjunction with other datasets containing information relevant to habitat values.

6.9 Land Cover - Aquatic -Watersheds

6.9.1 SK Drainage Basins



Abstract

The province has 29 watersheds that fall within 10 major drainage basins, available for viewing at the Saskatchewan Watershed Authority website: <http://www.swa.ca/Maps/Default.asp>

Digital shp files should also be available.

Agency

Provincial Government
Saskatchewan Watershed Authority
Saskatchewan

Access to Data

- Freely available.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.swa.ca/Maps/Default.asp>

Currency

- Data collection frequency:
- Data maintenance frequency: none

Accuracy

- Scale not provided.

Link to Database

- Look in record 690070186 for more detail on this dataset.

Summary Observations and Recommendations

The Saskatchewan Watershed Authority (SWA) organizes its activities, planning and evaluation processes according to the provinces watersheds; knowledge of drainage areas can assist in understanding ecoregion characteristics and habitat classifications.

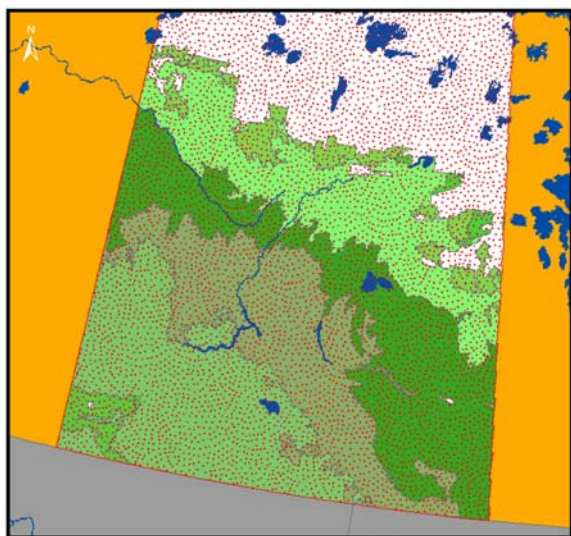
The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting of land cover and other features pertaining to wildlife habitat.

This coverage provides another way to segregate habitat and agricultural types and link up with associated information held by the SWA (see State of the Watershed Reporting Framework, SWA, 2006).

Retain as a base map and consider using the state of the watershed reporting monitoring measurements for evaluation purposes.

6.10 Land Cover - Terrestrial -Ecosystem

6.10.1 Saskatchewan Terrestrial Wildlife Habitat



Abstract

The Wildlife Habitat designation is based on the work of the Terrestrial Wildlife Habitat Inventory, a project started in 1975 and completed in the early 1980s by the Wildlife Branch, SE. The inventory was based on a series of topographic maps (1:250,000 scale) and corresponding technical reports which examined soil, climate, water resources, native vegetation, and other wildlife characteristics for each map sheet. (See entries for individual paper reports elsewhere in the NAESI Database). Metadata appears to indicate that all this information has been digitized.

The "wildlife" concerns of this inventory are primarily with mammals and birds having predominantly terrestrial habitat requirements. Naturally, the multitude of species belonging to these groups of animals could not all be given individual consideration. Those species noted on the critical wildlife habitat map are relatively important for socio-economic reasons. Rareness within Saskatchewan and specificity of habitat were also criteria use in focusing on certain species.

Agency

Provincial Government
Saskatchewan Environment
Regina, SK

Access to Data

- No access or use limitations were identified.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record 535293360 for more detail on this dataset.

Summary Observations and Recommendations

These reports are dated (approx 20 years old) but provide large scale (1:250,000 map sheets)

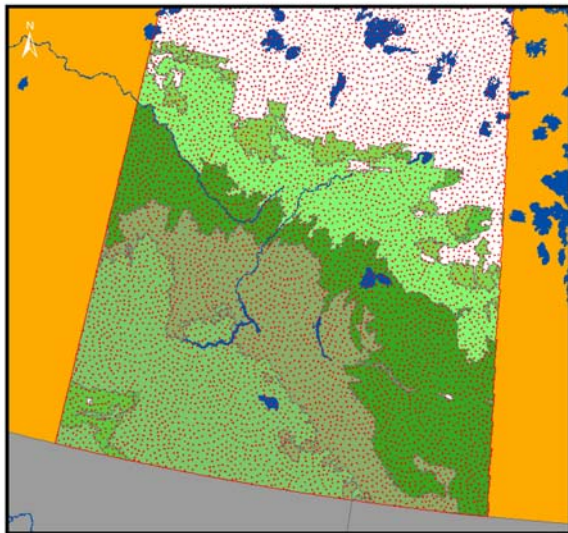
assessments of landforms, vegetation communities, and habitat importance for game species in particular. This information may be useful in seeing trends over time in most SK ecoregions with agricultural activity.

This may be a useful dataset for understanding land use impacts over time.

Obtain digitized maps to provide historic, broad scale habitat/ecosystem information.

6.11 Land Cover - Terrestrial -Land Use

6.11.1 Crown Land Inventory



Abstract

A list of descriptions of crown lands within Saskatchewan which contain, or did at one time contained, native habitat. Field work identified land as cultivated, native, seeded native, etc. This data set was collected using pendragon forms on a PDA for Fish & wildlife Branch - old contact for questions about the dataset was cited as the Representative Areas Network Coordinator.

Agency

Provincial Government
Saskatchewan Environment
Regina, SK

Access to Data

- Access to this data is restricted. Not for public release or use.

Scope of Dataset

- 50% of geographic area.

URL to More Information on the Web

#<http://gisweb1.serm.gov.sk.ca/mapserver/mapserver.asp#>

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale not provided.

Link to Database

- Look in record 1488660292 for more detail on this dataset.

Summary Observations and Recommendations

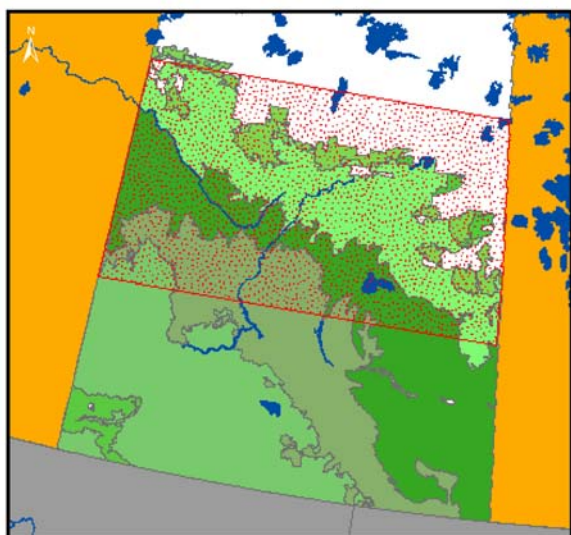
A list of descriptions of crown lands within Saskatchewan which contain, or did at one time contained, native habitat. Field work identified land as cultivated, native, seeded native, etc. This data set was collected using pendragon forms on a PDA for Fish & wildlife Branch - old contact for questions about the dataset was cited as the Representative Areas Network Coordinator. The database represents small areas throughout the provincial landscape and ecosystem. The database provide representation for the majority of the ecoregions within Saskatchewan. The database is relevant to land use, habitat species and may indicate specific animal species habitat.

Crownlands possess some land use management and protection components. The database can be used to determine representative areas for land use, protection and biodiversity preservation.

The database needs to be completed. This database can be incorporated into a more detailed terrestrial habitat map database.

6.12 Land Cover - Terrestrial -Vegetation

6.12.1 *Status of Native Prairie Habitat in the Boreal Transition Ecoregion, Saskatchewan (Canadian Plains Research Center, University of Regina, Regina, Saskatchewan; Gauthier, D.A. and L. Patino; 2004)*



Abstract

Depicts the distribution and status of native prairie habitat, as well as other land cover types, relative to existing conservation areas according to ecological regions for the Boreal Transition Ecoregion of SK.

Tabular and geographic information is derived through spatial operations run through AML in ArcInfo UNIX and ArcGIS. The data source for this analysis are the SDLC (South SK Digital Land Cover 1995) housed at ISC (Information Services Corporation of Saskatchewan) and

conservation areas (housed at Sask Environment). The AML creates temporary files for each landscape area that can be recreated on request.

Agency

Education
Canadian Plains Research Centre
Regina, SK

Access to Data

- Data access will incur cost for staff time for rerunning script to pull data. Use of information subject to license agreements; some data may not be distributed.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.cprc.uregina.ca/>

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale not provided.

Link to Database

- Look in record 1143056082 for more detail on this dataset.

Summary Observations and Recommendations

This dataset displays and evaluates biodiversity (as represented by native prairie) vis a vis protected areas in the forest fringe..

This provides key information for determining how and where various conservation measures should be applied or have been applied.

Use as a key biodiversity theme.

6.12.2 *Status of Native Prairie Habitat, Prairie Ecozone, Saskatchewan (Contract Report 8.65A.1R-01/02, Wildlife Habitat Canada, Ottawa, Ontario; Canadian Plains Research Center, University of Regina; Gauthier, D.A., L. Patino and K. McGovern; 2002)*

Abstract

Depicts the distribution and status of native prairie habitat, as well as other land cover types, relative to existing conservation areas according to ecological regions for the Prairie Ecozone of SK.

Tabular and geographic information is derived through spatial operations run through AML in ArcInfo UNIX and ArcGIS. The data source for this analysis is the SDLC (South SK Digital Land Cover 1995) housed at ISC (Information Services Corporation of Saskatchewan) and conservation areas (housed at Sask Environment). The AML creates temporary files for each landscape area that can be recreated on request.

Agency

Education
Canadian Plains Research Centre
Regina, SK

Access to Data

- Access to data will incur cost for staff time for rerunning script to pull data. Use of information to derive additional products may be subject to license fees; some data may not be distributed.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale not available.

Link to Database

- Look in record 1347092203 for more detail on this dataset.

Summary Observations and Recommendations

This dataset displays and evaluates biodiversity (as represented by native prairie) vis a vis protected areas in the prairie ecozone of SK. As noted in the purpose section of this entry, it evaluates existing protected areas relative to their value in meeting goals of biodiversity preservation and maintenance of ecological integrity of native grassland habitats and identifies native grassland habitat that is suitable for meeting integrity and biodiversity goals, that can act as benchmark areas for ecosystem suitability assessments.

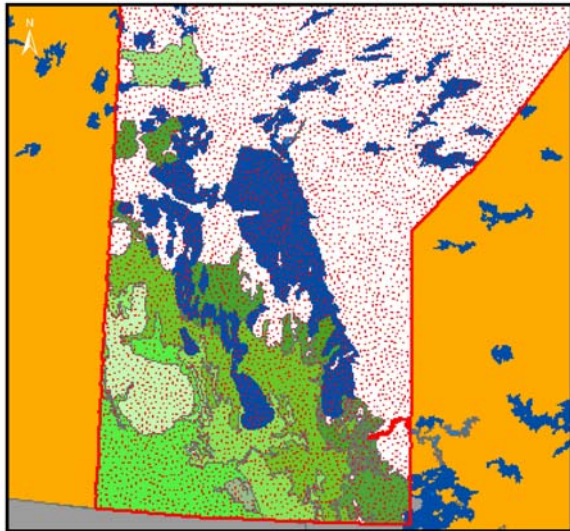
The study also identified areas in terms of their potential for testing ecological restoration principles and methodologies for enhancement of biodiversity in protected area systems. This dataset could help identify areas which might be used as pilots/demonstration areas of best management practices or other biodiversity standards.

Use as a vegetation coverage and examine analyses to support standards implementation decision-making.

7 MANITOBA

7.1 Biological - Species at Risk -Various

7.1.1 *Species & Plant Community Database for Manitoba*



Abstract

The Manitoba Conservation Data Centre (CDC) systematically collects and disseminates information on the rare and endangered plant and animal communities of Manitoba. The dataset includes location details for species and elements of conservation concern in groups: amphibians, birds, fish, mammals, reptiles, some invertebrate groups, vascular plants and vegetation communities. The dataset is intended to be utilized for conservation planning/monitoring, site planning/monitoring, land use referrals and land management purposes to assist in conservation of the natural biodiversity of Manitoba.

Agency

Data Centre
Manitoba Conservation
Winnipeg, MB

Access to Data

- Contact distributor for access. Indicated as no fee for access, however, any necessary data manipulation or analysis will incur fees from CDC.
- Records for sites deemed to be ecologically sensitive may only be released at the discretion of the section chief. Although the Manitoba Conservation Data Centre maintains high standards of data quality control, it makes no warranty as to the fitness of the information for any purpose, or that the information is necessarily accurate or complete.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://web2.gov.mb.ca/conservation/cdc/>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1401257420 for more detail on this dataset.

Summary Observations and Recommendations

The Manitoba CDC collects data on rare and imperiled species and plant communities in Manitoba. Their data can be used to provide species level information for all ecosystems, which can support broader scale habitat assessments. This information focuses however on particular species of concern and element occurrences recorded in the database may or may not be representative of actual populations and ranges.

The occurrence and location details for species and elements of conservation concern in this dataset could be an asset in identification of key sites where these have been identified. This

dataset is relevant to wildlife and wildlife habitat in providing information on rare and unique species and habitats occurrence which may be useful in conjunction with other datasets (forest and wetland inventories) in analysis and assessment of unique habitat needs.

Development of the biodiversity standards should be informed by this information so that such species, and their associated habitat requirements, can be considered in development of indicators, thresholds and targets for the NAESI program. This dataset provides a tool to incorporate such considerations to enable agricultural impacts on such species to be mitigated.

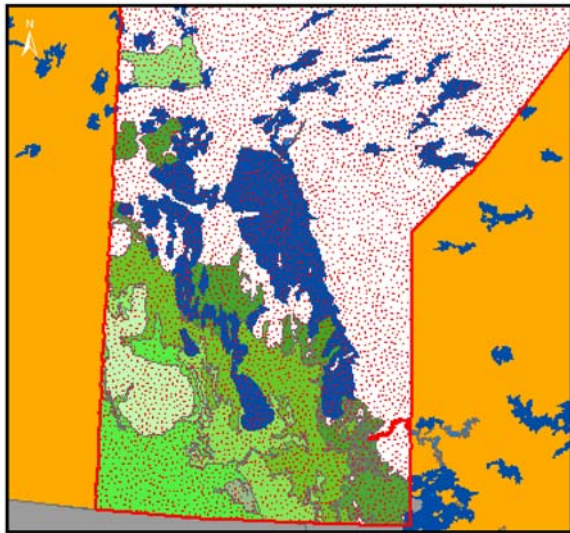
The location data could be utilized to identify geographic locations of potential key elements of biodiversity (wildlife sightings, plant/vegetation communities) of specific interest or concern with respect to biodiversity.

The Manitoba CDC dataset may be useful as a screening tool to search and investigate records for particularly key wildlife species occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented by the CDC, and for potential use in assessment of unique habitat needs.

CDC information should be consulted to ensure standards address the habitat requirements of species at risk. It should be considered for presenting biodiversity standards and explaining their rationale to potential users.

7.2 Land Base - Topography -

7.2.1 *Topographic Maps (1:20,000) for Manitoba*



Abstract

The 1:20,000 scale Topographic Base Map series is a collection of digital maps showing lakes, rivers, streams, marshes, contours and elevations of surrounding land. Additional features such as classified roads, railway lines, towns, villages and buildings are also shown. This data was collected photogrammetrically from 1:30,000 aerial photography from 1988.

Agency

Provincial Government
Manitoba Conservation Land Information Centre
Winnipeg, MB

Access to Data

- No access constraints were identified in the metadata.
- The data represent the results of data collection / processing for a specific activity and indicates the general existing conditions. As such, it is only valid for its intended use, content, time, and accuracy specifications. The user is responsible for the results of any application of the data for other than its intended purpose.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://web2.gov.mb.ca/mli>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000

Link to Database

- Look in record 1251730794 for more detail on this dataset.

Summary Observations and Recommendations

The Manitoba Topographic Base Map series provides landscape topographic features that includes lakes, rivers, streams, marshes, contours and elevations of surrounding land. In addition, infrastructure features such as classified roads, railway lines, towns, villages and buildings are also shown. As such, this information can be relevant for any wildlife species for which required habitat values can be linked to these landcover classes, landforms or infrastructure features. Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.). Transportation and utilities infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

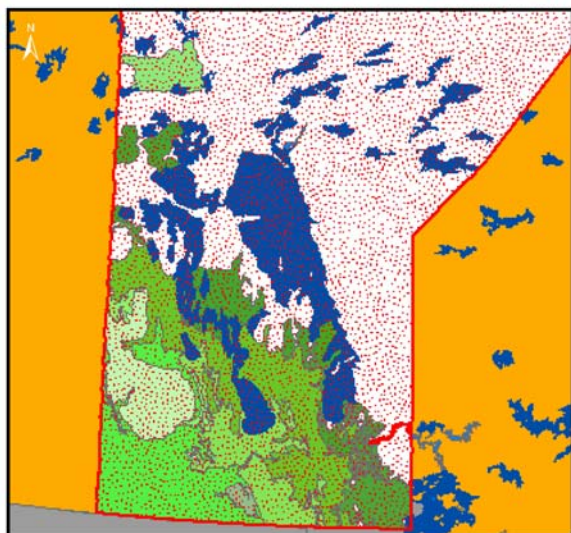
The features of the Topographic Base Map series includes attributes that are relevant to

biodiversity standards as the information contained allows for mapping and subsequent analysis of landcover classes, watercourses or infrastructure that would relate to biodiversity measures. The dataset may be useful in examination of broad scale issues at the landscape level utilizing the features in the coverage (all watercourses, roads, etc.) or to enable examination of specific rivers, lakes, road corridors, etc. In combination with other coverages containing landcover and land use data, the topographic coverage will assist in defining the quantity and quality of habitat (patch size, fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

The topographic base map coverage can provide base coverage for landcover and infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As such these coverages could be useful for monitoring of existing habitat and biodiversity values, habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

7.3 Land Cover - Aquatic -Watersheds

7.3.1 *Manitoba Gross and Effective Watersheds*



Abstract

Manitoba Gross and Effective Watersheds contain hydrometric gauging stations (as points) and their effective and gross drainage area boundaries (as lines). Each hydrometric gauging station point includes 25 pieces of information: its number, name, two location fields, type (stream, lake, shoreline, etc), seven levels of small- to medium-scale watershed identification, regional location, naming authority, six associated area values, a unique identifier to differentiate stations with the same name, a "selection" identifier, and a comment field to record new information or changes. Attributes have been appended for specific Manitoba data. In developing polygons of incremental areas of gross drainage, several stations may share the same polygon. For calculation purposes, only one station links the flow network downstream. That "selected" station is declared primary (`SELECT = 1` or (`SELECT = 0` and `STN_TYPE = 101, 102` for MB)). The lines (effective and gross watershed boundaries) contain a code which differentiates between gross (`BND_TYPE = 3, 5, 6, 7` and `101, 102, 103` for MB) and effective (`=2`) boundaries.

This database is the authoritative source for the gross and effective drainage areas in the Prairie Provinces. It is composed of more than a dozen derivative output products that are available over the internet at http://www.agr.gc.ca/pfra/gis/gwshed_e.htm.

Agency

Provincial Government
Manitoba Conservation
Winnipeg, MB

Access to Data

- No access or use constraints identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://web2.gov.mb.ca/mli/water_resources/gross_watershed_index.html

Currency

- Data collection frequency:
- Data maintenance frequency: Continually

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record 2042699132 for more detail on this dataset.

Summary Observations and Recommendations

Manitoba Gross and Effective Watersheds provides effective and gross drainage area boundaries based upon hydrometric gauging stations information. This information is a subset of the PFRA watersheds data with some attributes appended for specific Manitoba data. The principal relevance for this information is seen as its potential for use as a geographic framework should

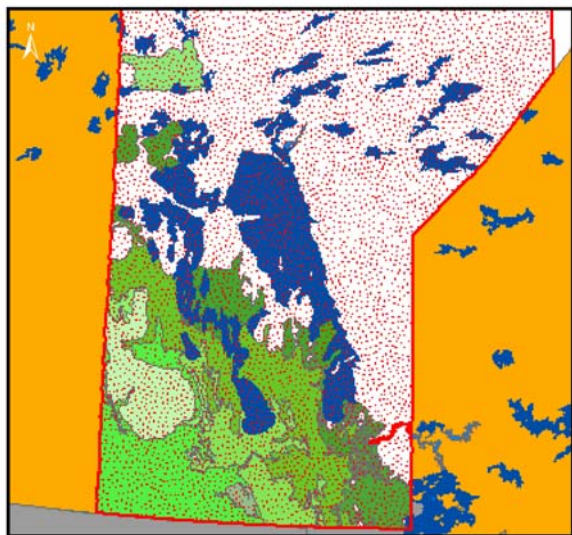
the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting of land cover and other features pertaining to wildlife habitat.

The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting of features relating to potential indicators, thresholds and targets.

The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting.

7.4 Land Cover - Terrestrial -Land Use

7.4.1 *Protected Area Boundaries in Manitoba*



Abstract

The Manitoba Protected Area digital boundary layer was updated August 26, 2004. The boundaries of this layer were delineated using best available base maps. Manitoba's network of

projected areas can include Crown lands such as provincial parks, wildlife management areas, national parks, provincial forests, ecological reserves, and private lands.

Agency

Provincial Government
Manitoba Conservation Parks and Natural Areas
Winnipeg, MB

Access to Data

- No access constraints were identified in the metadata.
- This boundary is not to be used as a legal definition. Please obtain a surveyed plan from the Manitoba Conservation Surveys and Mapping Branch.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://web2.gov.mb.ca/mli/adminbnd/index.html>

Currency

- Data collection frequency:
- Data maintenance frequency: Continually

Accuracy

- Scale of 1:1,000,000

Link to Database

- Look in record 1139599865 for more detail on this dataset.

Summary Observations and Recommendations

The database depicts representative habitat within the Manitoba landscape that has some form of protection and land use management criteria and enforcement. Several other datasets provide detailed habitat information for these areas. Status of these lands can indicate the likelihood of habitat enhancements or decreases for determining the adequacy of habitat in Manitoba's various

ecozones.

The Protected Areas Boundaries can include Crown lands such as provincial parks, wildlife management areas, national parks, provincial forests, ecological reserves, and private lands in Manitoba. This coverage could be relevant to wildlife species habitat through overlay application with other coverages that indicate habitat values (forest, grassland, wetland inventories) and agriculture locations. This would enable display and analysis of levels of habitat protection afforded by these areas, dependent upon levels of protection that are provided in the protected areas/reserves. Protected areas are an essential piece of land use/administrative information for understanding opportunities and constraints for habitat conservation or enhancement.

Overlay of this information with datasets indicating agriculture areas would be useful for describing and assessing levels of protected habitat that could be considered in achieving biodiversity standards, where these areas are in proximity to agricultural areas. Use of habitat information shown to be contained within such protected areas in proximity to agricultural areas, dependent upon levels of protection, would contribute towards meeting biodiversity (habitat) standards in terms of providing for habitat requirements such as connectivity, required patches, amount of habitat available, and possibly key habitat requirements for food, cover or reproduction if identified within the boundaries.

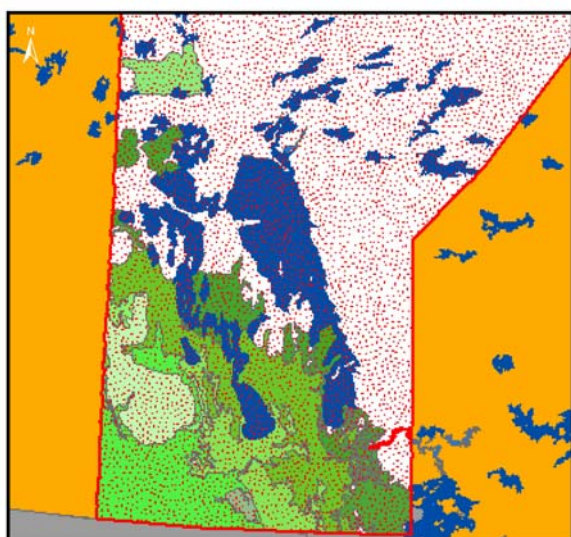
This boundary coverage dataset can have use in combination with other datasets that provide detailed descriptive information on attributes that pertain to wildlife habitat and agriculture lands within that areas included inside such boundaries. It may also be useful to undertake analysis of land cover attributes from other datasets to assess any protected undisturbed areas of similar landscapes to agricultural areas to enable comparison for development of thresholds and targets

for biodiversity indicators. In addition, where protected areas are in proximity to agricultural areas, definition of habitat values within such protected zones may assist in meeting overall threshold levels or targets.

Obtain on a regular basis to ensure up to date boundaries and definitions of protected areas.

7.5 Land Cover - Terrestrial -Vegetation

7.5.1 *Forest Resource Inventory of Manitoba*



Abstract

The Manitoba Forest Resource Inventory is a photo-based forest/land cover inventory that also incorporates ground sampling for ground truthing of characteristics being interpreted from the photos. This inventory is conducted for blocks of area across the forested zone on a revolving basis. The Forest Resource Inventory dataset includes a number of coverages including: (1) land classification as forest stands, roads, lakes, rivers, townsites, transmission lines, etc...; (2) land status being Provincial Forest, Wildlife Management Area, Forest Management Licence etc...; (3) land ownership being Crown, Municipal, Patented, Indian Reservation, etc...; and (4)

Management Unit: Forest Management Unit Boundaries. The coverage identified as the Union Coverage is the result of all layer polygon coverages being unioned.

The Forest Resource Inventory is primarily intended to provide area calculation of vegetative forest land by status, ownership and Forest Management Unit used in conjunction with volume calculations to determine Annual Allowable cuts.

Agency

Provincial Government
Manitoba Conservation
Winnipeg, MB

Access to Data

- No access constraints were identified. No duplication is permitted.
- Not for Legal use.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://web2.gov.mb.ca/mli/forestry/index.html>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: Continually

Accuracy

- Scale of 1:15,840

Link to Database

- Look in record 537410356 for more detail on this dataset.

Summary Observations and Recommendations

Provides forest cover (forest stand) information for the forested zone, (also wetland types, major

watercourses, non-forested types) including agricultural areas and private land, of Manitoba. Dataset attributes include: forest subtype (tree species composition groups - cover types), cutting class (maturity code), crown closure class (stand canopy density), species composition, etc. Year of origin (stand age) is being included for more recently inventoried areas. The inventory is updated for depletions (forest fire, harvesting, etc.) and for silvicultural activities (certified areas of forest renewal) on an ongoing basis.

The Forest Resources Inventory is relevant to any wildlife species for which the database attributes, primarily forest cover, may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). General location and extent information on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow some general assessments to be undertaken (proximity to water/forest types, riparian areas, etc.).

Initiated in 1990, with work proceeding through much of the 1990's, the Manitoba Forestry Wildlife Management Project, which included representatives of forest industry, Manitoba Conservation, Wildlife Habitat Canada, Manitoba Habitat Heritage Corporation and the Canadian Forest Service, worked cooperatively with the objective of developing a habitat-based decision support system to quantify wildlife habitat values to assist in forest management planning. Work included development of habitat suitability index models for application to Manitoba for certain species based upon modelling of attributes of the Forest Resource Inventory.

The Forest Resource Inventory provides the most broadly-based and detailed dataset available to describe forested areas across the forested zone of Manitoba, including the forested areas (Crown and private lands) within the agricultural region of the province. It provides information

regarding tree cover for forested stands, and generalized non-forested classification of other areas that could be useful in monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

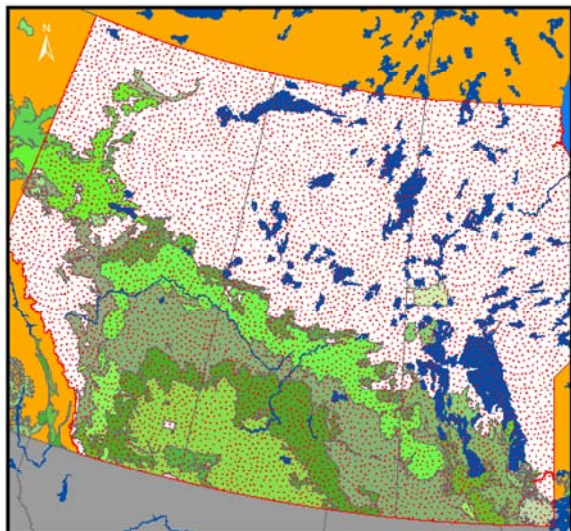
The Manitoba Forest Resource Inventory focuses on forest (tree) cover attributes. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute, and can be related to particular wildlife habitat values and associated biodiversity measures. In addition, data on location/extent and generalized classification of wetlands, non-forested areas and watercourses will also enable some limited assessment related to these features (proximity, identification of riparian areas, etc.).

It is noted that the Forest Resource Inventory database for the agricultural region is not maintained as up to date as in forested regions in terms of updating for depletions or renewal activities.

8 PRARIES

8.1 Land Cover - Aquatic -Watersheds

8.1.1 *PFRA Sub-basins of the PFRA Watershed Project*



Abstract

For the PFRA Watershed Project a number of individual sub-datasets are identified at the website indicated below. The sub-basins dataset metadata was utilized to fill out this database record - the abstract for this sub-dataset follows with the overall PFRA Watershed Project abstract provided following that:

The PFRA Sub-basin delineation of the PFRA Watersheds Project is based upon the Environment Canada gauging stations. There are 47 sub-basins. These are small-scale (roughly 1:250K) watersheds covering the Canadian Prairies.

PFRA WATERSHED PROJECT Current Version (5) - 2005.02.14 The Watershed Project is a long-term Prairie Farm Rehabilitation Administration (PFRA) undertaking that has entailed the creation and maintenance of a drainage area database (based on hydrometric gauging stations) for

the Canadian Prairies. This database has evolved considerably since its inception in the early 1970s. Currently, it consists of hydrometric gauging stations and watershed boundaries, tabulated gross and effective drainage areas, and digital products generated for use in hydrological mapping and analysis. The spatial extent of the database covers all of Alberta, Saskatchewan and Manitoba, and portions of adjacent jurisdictions (British Columbia, the Northwest Territories, Nunavut, Ontario, and the United States) into which Prairie watersheds extend. The majority of gauging stations in this database are federal stations established by Water Survey of Canada (Environment Canada). This database also includes a relatively small number of provincial, American and "fictitious" gauging stations. The locations of these gauging stations were determined from Dominion Land Survey descriptions or from published latitude/longitude coordinates. The GIS database is the authoritative source for the gross and effective drainage areas in the Prairie Provinces. It is composed of more than a dozen derivative output products that are available over the internet at the identified URL .

Agency

Federal Government
Agriculture & Agri-Food Canada
Regina, SK

Access to Data

- See Data Release Agreement at http://www.agr.ca/pfra/gis/gisregel_e.htm

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://www.agr.gc.ca/pfra/gis/gwshed_e.htm

Currency

- Data collection frequency:
- Data maintenance frequency: Continually

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 1852326036 for more detail on this dataset.

Summary Observations and Recommendations

The PFRA Sub-basin delineation of the PFRA Watersheds Project provides the gross and effective drainage area boundaries for the Prairie Provinces based upon the Environment Canada gauging stations. There are 47 sub-basins representing small-scale (roughly 1:250K) watersheds covering the Canadian Prairies. The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting of land cover and other features pertaining to wildlife habitat.

The watersheds layer contains boundaries of PFRA sub-basin watersheds. The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting of features relating to potential indicators, thresholds and targets.

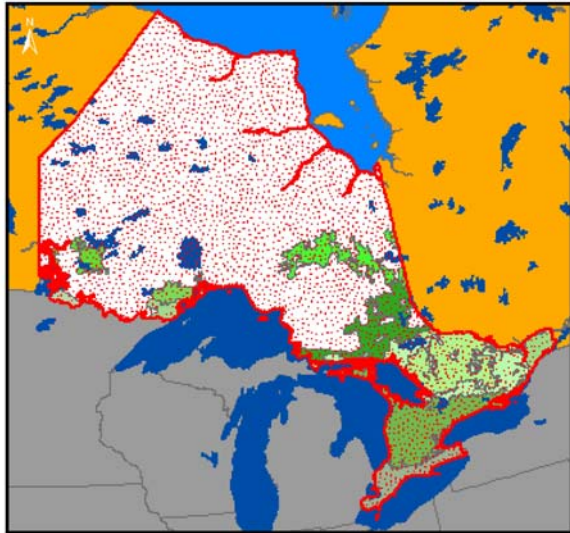
The watersheds layer contains boundaries of PFRA sub-basin watersheds. The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting.

This dataset may have particular value for this purpose given that it covers the prairie provinces and portions of B.C. and Ontario into which the PFRA watersheds extend. So thus provides a watersheds coverage for potential application of a potential watershed framework for a major agricultural zone of Canada.

9 ONTARIO

9.1 Biological - Terrestrial -Habitat

9.1.1 *Bald Eagle Feeding Area*



Abstract

Bald Eagle Feeding Area is a Data Type of the Data Class - Feeding Area, Wildlife, collected by the Natural Resources Values Information system (NRVIS).

Bald Eagle Feeding Areas are almost always places these birds frequent on a regular basis to catch fish. They are usually shallow bays of lakes or rivers, or creeks, where fish spawn. Some feeding areas may not be fish spawning sites, but may just be shallow water areas with large fish populations.

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- Bald Eagle Feeding Area information is considered sensitive, and as such may have restrictions placed on access.
- Not for Legal Purposes.
- Data for this information holding varies by OMNR District in terms of relevance, completeness, accuracy, vintage.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=381&AgencyID=1&Theme=WILDLIFE>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

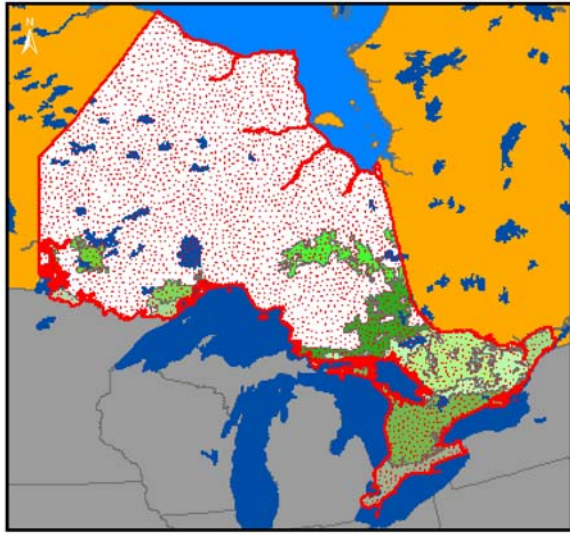
- Look in record 2135473713 for more detail on this dataset.

Summary Observations and Recommendations

Provides relevant information about a protected species' habitat. Please note that this dataset comes from a much broader record indicating wildlife feeding areas, as described on the LIO website.

This dataset should be used where analysis and presentation of critical habitat requirements / locations is required for the project. Where these features are identified in proximity to agricultural areas, their identification and consideration in establishment of indicators and targets and subsequent consideration for best management practices can assist in maintaining biodiversity.

9.1.2 *Aquatic Feeding Area*



Abstract

An Aquatic Feeding Area is a polygon feature that identifies a species-specific area that contains aquatic vegetation on which the species feeds.

Different Aquatic Feeding Area types collected by the Natural Resources Values Information System (NRVIS) include:

- Deer Aquatic Feed Area
- Moose Aquatic Feeding Area

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- Depending on any sensitivity or security issues associated with this information holding, all, some or none of the information may be available for viewing or distribution. All data

requests are channeled through the Ministry of Natural Resources' Information Access Services.

- Data for this information holding varies by OMNR District in terms of completeness, accuracy, vintage and sensitivity..

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=2147&AgencyID=1&Theme=WILDLIFE>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale varies amongst data sources.

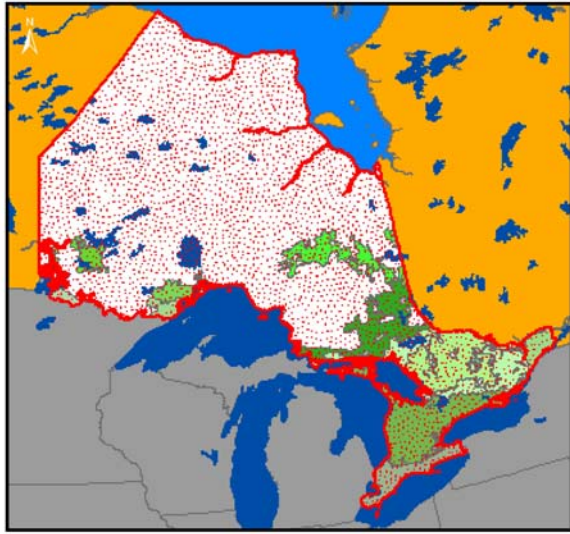
Link to Database

- Look in record 1955839214 for more detail on this dataset.

Summary Observations and Recommendations

These coverages describe critical feeding habitat for ungulates in Ontario. This dataset identifies the location of critical habitats and can assist with analysis of connectivity requirements to permit ungulate movement. It covers 1997 on, so can also provide an indication of the extent of critical habitats over time.

9.1.3 *Calving Fawning Site – NRVIS*



Abstract

A Calving Fawning Site is a polygon feature that identifies an area to which a particular species habitually migrates to give birth.

Different Calving Fawning Site types collected by the Natural Resources Values Information System (NRVIS) include:

- Caribou Calving Site
- Deer Fawning Site
- Elk Calving Site
- Moose Calving Site

Agency

Ontario Ministry of Natural Resources
Ontario

Access to Data

- Some of the Calving Fawning Site information may be considered sensitive, and as such may have restrictions placed on access. This Information holding is not to be used for Legal Purposes.
- Data for this information holding varies by OMNR District in terms of completeness, accuracy, vintage and sensitivity.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=2145&AgencyID=1&Theme=WILDLI FE>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 821620106 for more detail on this dataset.

Summary Observations and Recommendations

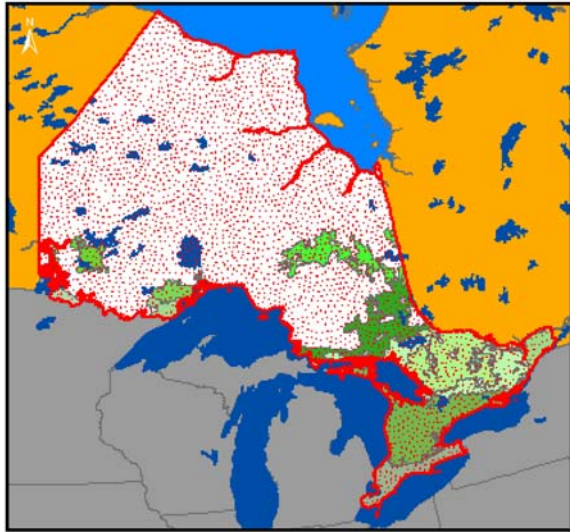
This information compliments other ungulate habitat datasets. Calving sites may provide good information on species preference concerning habitat for potential application in overlay analysis with land/resource feature geographic datasets.

These locations may indicate management of remnants of habitat, proximity to grazing areas and overall habitat quality which could be useful for standards initiative decision-making.

Overlay analysis of this coverage and the identified calving locations with other datasets (forest/grassland and other inventory) may be useful to identify important habitat locations. Overlay with agricultural areas will assist in determination of key areas contributing to habitat

needs. Acquire this data for use with other habitat datasets.

9.1.4 Nesting Site – NRVIS



Abstract

A Nesting Site is a point feature that identifies the location of one or more nests that belong to a particular species.

- ARCTIC TERN
- BALD EAGLE
- BLACK TERN
- COMMON BARN OWL
- COMMON LOON
- COOPERS HAWK
- DUCKS
- EAGLES
- EASTERN BLUEBIRD
- GEESE
- GOLDEN EAGLE
- GREAT BLUE HERON

- GREAT GRAY OWL
- GREAT GREY OWL
- GULLS
- HAWKS
- HERONS
- LOGGERHEAD SHRIKE
- MERLIN
- OSPREY
- OWLS
- PEREGRINE FALCON
- PILEATED WOODPECKER
- PIPING PLOVER
- RAPTORS
- RED ALDER
- RED NECKED GREBE
- RED SHOULDERED HAWK
- RED TAILED HAWK
- RED-HEADED WOODPECKER
- RING BILLED GULL
- SANDHILL CRANE
- SNOW GOOSE
- TERNS
- TRUMPETER SWAN
- TUNDRA SWAN
- TURTLES

Agency

Ontario Ministry of Natural Resources
Ontario

Access to Data

- Some of the Nesting Site information may be considered sensitive, and as such may have restrictions placed on access. This Information holding is not to be used for Legal Purposes.
- Data for this information holding varies by OMNR District in terms of completeness, accuracy, vintage and sensitivity.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=2151&AgencyID=1&Theme=WILDLI FE>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1591640508 for more detail on this dataset.

Summary Observations and Recommendations

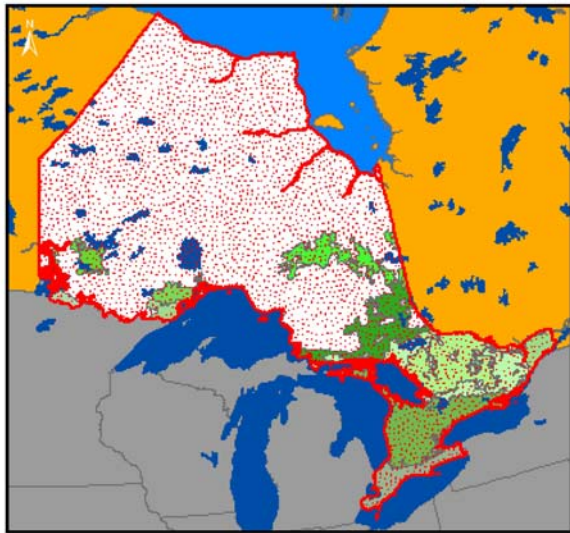
This data set is a valuable source of information as it identifies known nesting habitat for birds throughout Ontario, and is updated on a regular basis by the Ontario government.

The nesting locations data provides critical habitat location data that can be used in overlay analysis with agriculture locations to identify critical habitat needs for consideration in development of indicators and targets..

Acquire this information for use with landcover datasets.

9.2 Biological - Terrestrial -Management/Conservation

9.2.1 Staging Area – NRVIS



Abstract

A Wildlife Staging Area is a polygon feature that identifies an area where a wildlife species rests during migration.

Different Staging Area types collected by the Natural Resources Values Information System (NRVIS) include:

- Deer Staging Area
- Hawk/Owl Staging Area
- Monarch Butterfly Staging Area
- Polar Bear Staging/Concentration Area
- Waterfowl Staging Area

Agency

Ontario Ministry of Natural Resources
Ontario,

Access to Data

- Staging Area information is considered highly sensitive, and as such has restrictions placed on access and is not available for public distribution. This Information holding is not to be used for Legal Purposes.
- Data for this information holding varies by OMNR District in terms of completeness, accuracy, vintage and sensitivity.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

[http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=2130&AgencyID=1&Theme=WILDLI
FE](http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=2130&AgencyID=1&Theme=WILDLI
FE)

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1803096417 for more detail on this dataset.

Summary Observations and Recommendations

This is an important habitat dataset as it provides staging locations for a variety of different species and may indicate population movements.

More complete habitat information should support better analyses for biodiversity

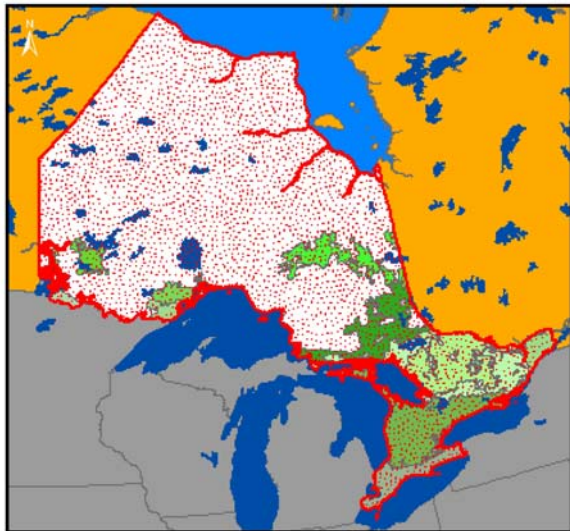
This dataset provides information on critical staging habitat for conservation of migrating birds and other animals. Overlay with agricultural areas would provide indication of key areas to be

considered in establishment of indicators, thresholds and targets as they relate to critical habitat.

Acquire this dataset for use with other habitat information.

9.3 Biological - Terrestrial -Management/Conservation

9.3.1 Ontario NHIC Element Occurrence Database (EODB)



Abstract

The Ontario Natural Heritage Information Centre (NHIC) collects data on rare and imperiled species and plant communities in Ontario. The NHIC collects information on the Elements of biodiversity (plants, animals, and communities) within Ontario and tracks the taxonomy and status of each Element at the global, national and subnational levels.

An Element Occurrence (EO) is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. For species Elements, the EO often corresponds with the local population, but when appropriate may be a portion of a population or a group of nearby populations (e.g., metapopulation). For community Elements, the EO may represent a stand or patch of a natural community, or a cluster of stands or patches of a natural community. EOs are typically represented by bounded, mapped areas of land and/or water or, at small scales, the centroid point

of this area..

Agency

Provincial Government

Ontario Natural Heritage Information Centre

Peterborough, Ontario

Access to Data

- Heritage information is only for the intended use of the individual or organization who requested it. This database and accompanying files may not be distributed in any way without the consent of the Ontario NHIC. Use of the data is subject to the terms of a license agreement developed between Ontario NHIC and the information requestor. The Heritage Data is licensed only to the agency or individual who subscribed to it. Providing Heritage's digital database data to a non-subscribing individual or agency is prohibited. Per Appendix A of the Data Use Agreement at <http://www.mnr.gov.on.ca/MNR/nhic/data/AGR052002.pdf>

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geodiscover.cgdi.ca/gdp/search?action=fullMetadata&entryType=productCollection&entryId=11606&entryLang=en&portal=gdp>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- Scale not provided.

Link to Database

- Look in record 225704774 for more detail on this dataset.

Summary Observations and Recommendations

This is THE database which all Ontario conservation authorities use for their GIS data sources,

and to which they report any new changes. There are many datasets within this record that can be accessed.

The NHIC collects data on rare and imperiled species and plant communities in Ontario. Their data can be used to provide species level information for all ecosystems, which can support broader scale habitat assessments. This information focuses however on particular species of concern and element occurrences recorded in the database may or may not be representative of actual populations and ranges.

The occurrence and location details for species and elements of conservation concern in this dataset could be an asset in identification of key sites where these have been identified. This dataset is relevant to wildlife and wildlife habitat in providing information on rare and unique species and habitats occurrence which may be useful in conjunction with other datasets (forest and wetland inventories) in analysis and assessment of unique habitat needs.

Development of the biodiversity standards should be informed by this information so that such species, and their associated habitat requirements, can be considered in development of indicators, thresholds and targets for the NAESI program. This dataset provides a tool to incorporate such considerations to enable agricultural impacts on such species to be mitigated.

The location data could be utilized to identify geographic locations of potential key elements of biodiversity (wildlife sightings, plant/vegetation communities) of specific interest or concern with respect to biodiversity.

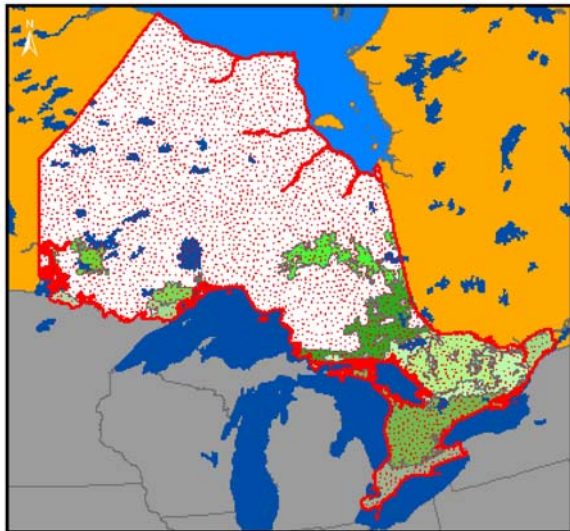
The NHIC dataset may be useful as a screening tool to search and investigate records for particularly key wildlife species occurrences and/or for identified occurrences of key wildlife habitat

(plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented by the NHIC, and for potential use in assessment of unique habitat needs.

This is ideal data to monitor any recorded wildlife habitat per watershed authority, in comparison with agriculture values.

NHIC information should be consulted to ensure standards address the habitat requirements of species at risk. It should be considered for presenting biodiversity standards and explaining their rationale to potential users.

9.3.2 *Peat Production Area*



Abstract

A Peat Production Area is a polygon feature that identifies an area designated as suitable for the extraction of peat. The boundary is determined by a Peat Extraction License or a survey of potential license.

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- Not for Legal Purposes. Refer to identical field within OMNR District's version of this record for specific use constraints details.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=278&AgencyID=1&Theme=LAND_MANAGEMENT

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1668922866 for more detail on this dataset.

Summary Observations and Recommendations

Provides background information that may be useful for determining implications upon wildlife habitat in terms of this potential land use in conjunction with agriculture activities in the same area.

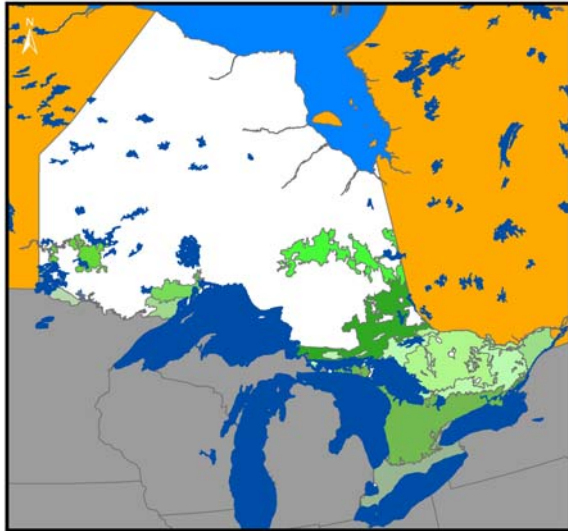
This additional information provides insights into habitat extent and land use, which may be relevant for adjacent agricultural lands' biodiversity potential.

Use in conjunction with other datasets to understand potential land use implications for wildlife

habitat in agricultural areas where peat production is contemplated.

9.4 Imagery - Airborne -Various

9.4.1 *Air Photos Ontario*



Abstract

Various Ortho products have been produced over time for various projects:

Colour Infrared (CIR) air photos are taken using "near infrared" film and cover most areas in southern Ontario. The images are available as 9"x9" prints or on CD-ROM.

Black and White (B&W) Air Photos are taken using black and white film and cover most of Ontario. These images are available as 9"x 9" prints. The photos are printed at an approximate scale of 1 to 10,000.

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- Variable, depending upon municipality.
- CIR: Print: \$12.00 Each, Digital: \$13.00 Each
- B&W: Print: \$8.50 each
- There are no refunds or returns for air photos. B&W contact print orders take from four to six weeks to complete. Quick prints take about three weeks less time than contact prints.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://themnrstore.mnr.gov.on.ca/english/product_subcat.asp?tid=0&cat=77

Currency

- Data collection frequency: Annually
- Data maintenance frequency: Annually

Accuracy

- Scale varies among sources.

Link to Database

- Look in record 944414911 for more detail on this dataset.

Summary Observations and Recommendations

Provides good background info on wildlife habitat although vintage will vary by location, but may be useful to give an indication if things have changed over time for particular areas of interest and for validating other information.

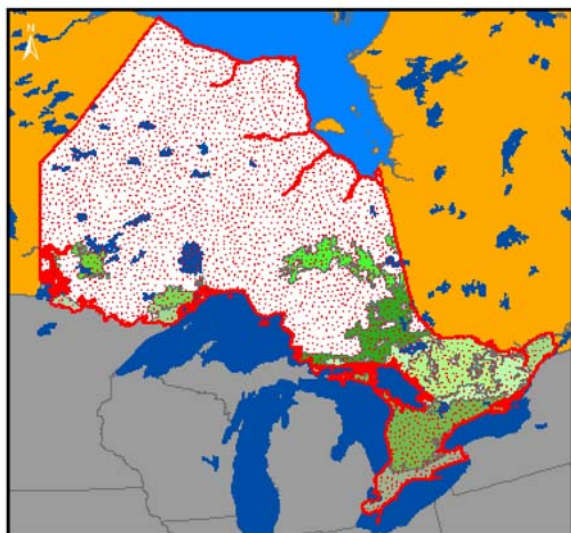
Historical changes may inform decision-making during standards development.

Use of photo products can be considered where additional detail is sought for specific areas and features that have not already been delineated and interpreted into spatial datasets. Photo products may also be useful as tools in producing presentation materials on examples of habitat

value features on the landscape for development and presentation of best management practices.

9.5 Imagery - Spaceborne -Multispectral

9.5.1 MODIS - 44 products to choose from



Abstract

250 - 1000 m Low Resolution Imaging Spectroradiometer. It's primary uses are for Landcover and climatic information.

Agency

Federal Government

NASA

CA

Access to Data

- Free

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- Scale varies.

Link to Database

- Look in record 932435198 for more detail on this dataset.

Summary Observations and Recommendations

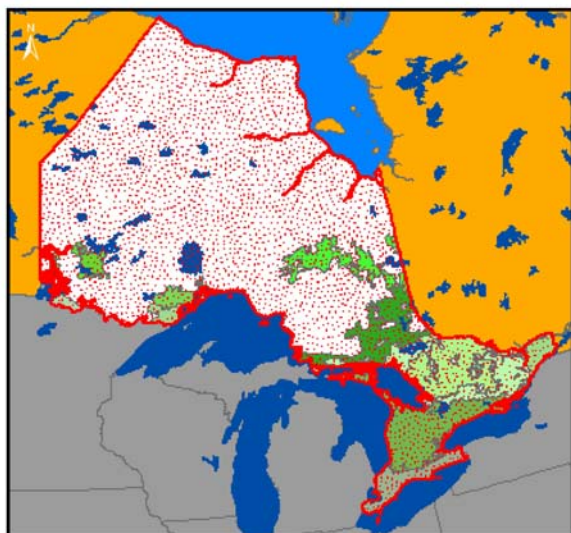
These products can provide a very general idea of how habitat may change over time. This is a very general data source more applicable for the entire country, rather than local scale analyses.

Where large scale information is desirable, this information may be more appropriate than other imagery datasets..

Use as general image support for large changes in the environment, but not for more local scales since the resolution is too coarse.

9.6 Land Base - Soils -

9.6.1 *Soils: Provincial compilations-ON*



Abstract

These are stitched together soil maps for southern Ontario from a variety of original scales but fit to 1:50K base.

The best data available is published in the soil survey report Reliability studies were not conducted. Soils were sampled

on representative landscapes and modal profiles chosen for

field description, sampling and analyses. This dataset indicates the representative soils that occur within a soil polygon. Although physical and chemical data is provided about each of these identified soil types, this data should not be assumed to be site specific.

Agency

Provincial Government

Agriculture and Agri-food Canada

Ontario

Access to Data

- This information is provided free of charge to the public. There are no express or implied warranties whatsoever by Her Majesty relating to either the accuracy or completeness
- of this information. The information may be copied and reused provided it is accurately reproduced and the source is credited. Persons using this information waive any and all claims against Her Majesty relating to this information and agree to indemnify and save harmless Her Majesty and all her representatives and information providers against any and all claims resulting from or arising out of any use to which this information may be put.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://sis.agr.gc.ca/cansis/nsdb/detailed/on/zipfiles.html>

- Also look at the below website for other soils information per locality in Ontario and other provinces.
- http://sis.agr.gc.ca/pls/meta/soil_survey_geographic.display?soilkeys=ON&p_lang=en

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1: 50,000
- The attribute files included in this distribution are missing
- some data. The attribute files that were originally prepared
- for this product were compiled according to guidelines and
- standards which have since changed. The user is forewarned that inconsistencies in the data, within and/or between map products are present.
- This dataset may contain errors and omissions that may have been corrected in subsequent releases.

Link to Database

- Look in record 10337463 for more detail on this dataset.

Summary Observations and Recommendations

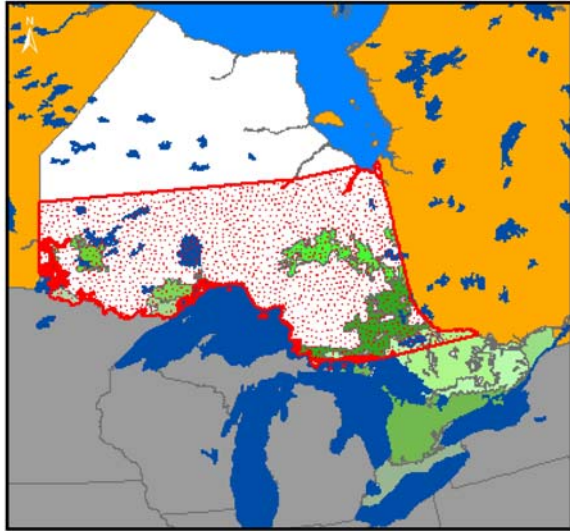
The Ontario Soil Compilations provides coverage of Southern Ontario describing soils features. This information can be relevant to wildlife species for situations where the soil conditions can be related to aspects of wildlife habitat that more directly impact the wildlife species itself. In particular, soils will have a direct bearing on vegetation cover and on crop types and farm practices in agricultural regions, which in turn will have more direct effect on wildlife habitat.

The Soil Compilations attributes are relevant to biodiversity standards in that soil features are a major contributor to such coverages as ecological land classifications, including the ecological framework for Canada. Soils information is a key driver of other elements of the environment and the manner in which the environment can be impacted by farm management practices (erosion, siltation, loss of nutrients, etc.), as such, knowledge of their type and location may be relevant for predicting the outcome of standards initiatives.

Where links can be developed between other elements of wildlife habitat (vegetation, water quality, etc.) and soils features, there can be potential for monitoring and modelling analysis to be conducted utilizing soil information, in concert with other elements of the environment. IT is suggested that soils coverages will provide support to modelling of habitat and agricultural status and potential.

9.7 Land Base - Topography

9.7.1 *Digital Northern Ontario Engineering Geology Terrain Study (NOEGTS) (MRD160)*



Abstract

The NOEGTS (Northern Ontario Engineering Geology Terrain Study) data set is a digital version of the 103 original cartographic NOEGTS maps. An engineering geology terrain study is an evaluation of near-surface geological conditions for the purpose of determining the engineering significance of the terrain. In this context, terrain refers to the physical aspect and characteristics of an area or landscape under observation. The main investigative techniques used to gather the information for such a study are air photo interpretation combined with literature searches and limited field work. A total of 370 000 km² of northern Ontario was mapped between 1977 and 1980.

With conversion to a digital format additional geological interpretation was completed on many of the maps to improve the data set. In addition, standard legends and symbology were designed so as to provide an improved cartographic product. Base layer information includes lakes,

townships, a shaded relief image and roads.

Agency

Provincial Government

MNDM

Ontario

Access to Data

- This data set should always be used in conjunction with water polygons. A lakes layer is included with the data set. This constraint is required since the NOEGTS layer does not contain water polygons, a water layer must always be overlaid to insure that inappropriate estimates of area and inappropriate interpretations are not made.
- Usage constraints: Copyright
- The MNDM grants to the Licensee a non-transferable, non-exclusive, limited-use Licence for the EIP. The Licensee may use and make copies of the EIP for its professional or non-commercial end-use only.
- Restrictions on Use
- Except as provided for in this Licence, no part of the EIP may be redistributed, sub-licensed, rented or leased, copied, published, disseminated or used, in any form or by any means other than for the Licensee's own professional or non-commercial end-use without the MNDM's prior written permission. Upon MNDM written permission, the distribution of any Value-Added-Product (VAP) for sale, lease, loan or gift derived in whole or in part, in any format or media from MNDM EIP, shall first require the producer of the VAP to ensure that the recipient of the VAP has obtained a EIP End User Licence Agreement and a copy of the original EIP from which the VAP was derived. (See additional information in database entry.)

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=696&AgencyID=2&Theme=FOREST_MANAGEMENT

Currency

- Data collection frequency: Irregular
- Data maintenance frequency: Irregular

Accuracy

- Scale not provided.

Link to Database

- Look in record 1895973157 for more detail on this dataset.

Summary Observations and Recommendations

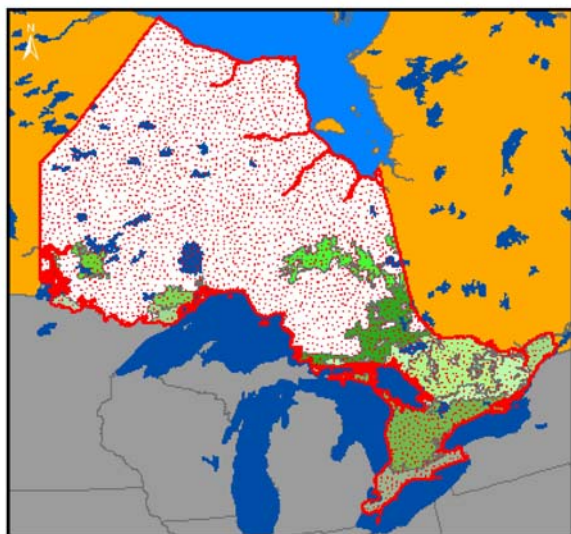
This dataset provides information on landforms and landscapes for all ON ecoregions. In terms of wildlife management, this data can help to assess the variability of the terrain and determine habitat suitability based on known movement patterns of wildlife.

Biodiversity assessments may need to take into account topographical information..

The objective of this product is to collect and disseminate geoscience information for Ontario, but its use should be considered for assessing wildlife and biodiversity requirements where the data can be correlated to characteristics that pertain to habitat requirements or to agricultural uses and activities on the land..

9.8 Land Base - Transportation

9.8.1 Ontario Road Network (ORN)



Abstract

The ORN is a geospatial database of Ontario's road network. It contains road geometry and tabular attributes which describe the characteristics of a road, e.g. its street name or road number, its address information, road classification, speed limit, etc. The ORN project is the combined efforts of three levels of government (Federal, Provincial and Municipal) working to create a common and shared infrastructure, a 'data infrastructure' related to roads and their descriptive attributes across the whole of the province. The ORN is available in two distinct formats - a Linear Reference System (LRS) and as Segmented Data.

A LRS localizes features (points and segments) by a measurement along a linear segment.

Segmented Data is data divided into or made up of distinct segments. Each segment has attributes associated with it. The Segmented Data is a subset of the ORN LRS. This product has been developed to meet the current needs of provincial and local emergency services. The segmented data contains street name, alternate street names, address range, road class, direction of traffic flow, and municipality.

For more detailed information regarding the ORN please visit the LIO web site.

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- Far northern communities which are isolated from the rest of the Ontario's road network currently do not form part of the ORN, i.e. those communities not connected to Ontario's road network by winter roads or ferries. In Ontario, 50 - 51 degrees north latitude is an approximate line defining the current northern extent of the ORN.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=2567&AgencyID=1&Theme=ROADS>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- Scale is variable.

Link to Database

- Look in record 1376877354 for more detail on this dataset.

Summary Observations and Recommendations

This information can be relevant for any wildlife species for which required habitat values can be linked to these infrastructure features. Transportation infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

The features of the Transportation dataset includes attributes that are relevant to biodiversity standards as the information contained allows for mapping and subsequent analysis of infrastructure that would relate to biodiversity measures. In combination with other coverages containing landcover and land use data, the transportation coverage will assist in defining the quantity and quality of habitat (patch size, fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

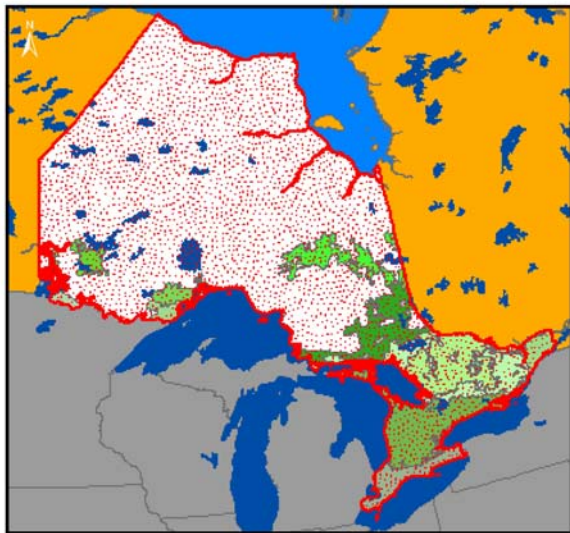
The transportation map coverage can provide base coverage for infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As

such these coverages could be useful for monitoring of existing habitat and biodiversity values, habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

This coverage is also excellent for use in describing transportation within Ontario and as a locational base reference map. Small scale may not be important unless looking at specific areas.

9.9 Land Base - Various -

9.9.1 *Assessment Parcel - Digital Assessment Parcel Fabric (DAPF)*



Abstract

The DAPF is a layer within the Ontario Parcel data base.

Assessment parcels are areas defined by a boundary and an assessment roll number (ARN), for property assessment purposes, as determined by Municipal Property Assessment Corporation (MPAC). The DAPF consists of the digital assessment boundaries and associated ARN.

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- To access the data from the LIO warehouse, the client must first be eligible, sign an Ontario Parcel licensing agreement (MNR List User Licence agreement/ Municipal Licence agreement) and be a member of the Ontario Geospatial Data Exchange (OGDE). The data should not be used for legal purposes. The digital assessment data was digitized from assessment materials on an 'as is basis.'

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=2589&AgencyID=1&Theme=LAND_MANAGEMENT

Currency

- Data collection frequency: Weekly
- Data maintenance frequency: Weekly

Accuracy

- Scale not provided.

Link to Database

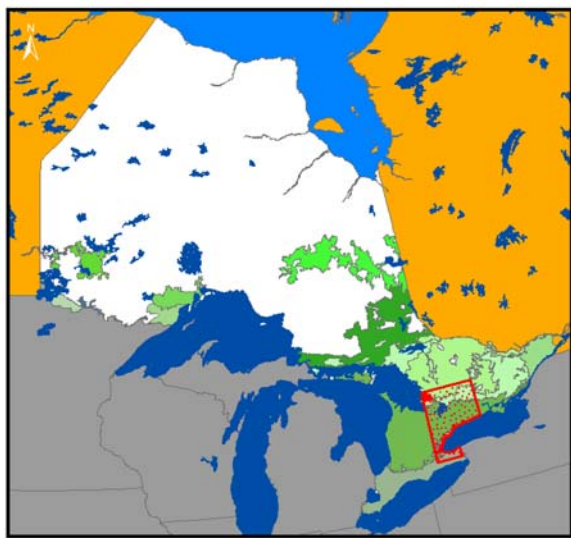
- Look in record 1279707872 for more detail on this dataset.

Summary Observations and Recommendations

Parcel information may indicate how current or future land use will impact habitat, and contribute to fragmentation/reduction of existing habitat for both flora and fauna.

This information may assist biodiversity standards development by indicating land use issues. Consider reviewing this information in conjunction with other landuse as well as vegetation, habita, rare species datasets.

9.9.2 *Oak Ridges Moraine Project, Canada*



Abstract

A regional scale project completing geological and hydrogeological work of the Greater Toronto and Oak Ridges Moraine area in southern Ontario. The approximately 11,000 km sq field area is Canada's most populated region and is currently dealing with a host of groundwater, land use and planning issues requiring a well developed geoscience knowledge base. The principal objective of the study is to create a regional three dimensional geological and hydrostratigraphic model of the area using a basin analysis methodology. Work has focused on the collection of new field data (sedimentological, geophysical, hydrologic, geochemistry, hydrochemistry, remote sensing) and the integration of archival datasets to permit both conceptual and data driven modelling of the Quaternary strata. A concerted effort has been made to compile the data in a relational and GIS

database. Conceptual models have been developed for the stratigraphic architecture and depositional environments within individual stratigraphic units. Numeric models include DEMs of the land surface, bedrock surface and individual stratigraphic surfaces. Geostatistical modelling has also been completed of regional aquitards and selected piezometric surfaces.

Project deliverables include a range of digital products released on CD-ROM and on the project web site, paper maps, GSC papers (Current Research), peer reviewed articles and conference presentations. This project is a collaborative study with the Ontario government ministries of Northern Mines and Development, Natural Resources, Environment and Municipal Planning. Additional collaborators include the regional municipalities of Peel, York, and Durham, university researchers and private industry.

Agency

Federal Government
Natural Resources Canada
Canada

Access to Data

- Crown copyright

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geodiscover.cgdi.ca/gdp/search?action=fullMetadata&entryType=productCollection&entryId=10080&entryLang=en&portal=gdp>

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: Irregular

Accuracy

- Scale not provided.

Link to Database

- Look in record 1207803328 for more detail on this dataset.

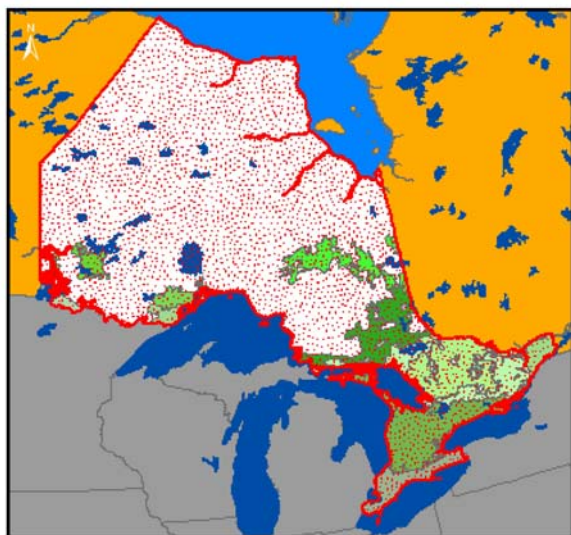
Summary Observations and Recommendations

Products from this regional project may provide information related to habitat – such as surface water features and land use plans. It may have value in showing how water movement impacts habitat in the heavily populated regions around the GTA.

Certain portions of the data may be of value in assessing biodiversity potential and sustainability.

A great deal of information is included with this dataset, and its review should be considered to see what value it has for biodiversity analyses..

9.9.3 *Ontario Base Maps (OBM)*



Abstract

Series of black-and-white topographical maps which cover most of Ontario. Maps provide a high

level of detail and accuracy, and are the basic input tile for the Ontario Digital Topographic Data Base. The maps are done in two scales: 1:10 000 for southern Ontario, and 1:20 000 for northern Ontario.

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- Available for internal use, copyright protected. For non-internal use, contact Information Access Services to request a license agreement.

Scope of Dataset

- 80% of geographic area.

URL to More Information on the Web

http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=893&AgencyID=1&Theme=LAND_MANAGEMENT

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- Scale not provided.

Link to Database

- Look in record 160453436 for more detail on this dataset.

Summary Observations and Recommendations

The OBM series provides landscape topographic features (lakes, rivers, streams, marshes). In addition, infrastructure features such as classified roads, railway lines, towns, and villages are also shown. As such, this information can be relevant for any wildlife species for which required habitat values can be linked to these landcover classes, landforms or infrastructure features.

Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.). Transportation and utilities infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

Provides an excellent backdrop to wildlife data for the province of Ontario. Accuracy consistent throughout province. Updated relatively frequently.

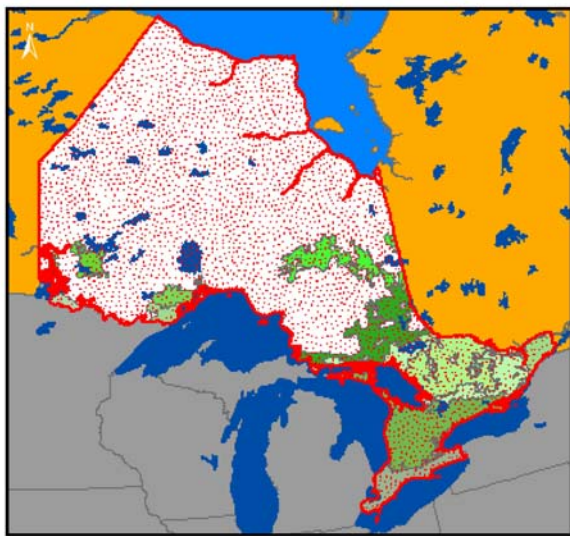
The features of the OBM series includes attributes that are relevant to biodiversity standards as the information contained allows for mapping and subsequent analysis of landcover classes, watercourses or infrastructure that would relate to biodiversity measures. The dataset may be useful in examination of broad scale issues at the landscape level utilizing the features in the coverage (all watercourses, roads, etc.) or to enable examination of specific rivers, lakes, road corridors, etc. In combination with other coverages containing landcover and land use data, the topographic coverage will assist in defining the quantity and quality of habitat (patch size, fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

The OBM map coverage can provide base coverage for landcover and infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As such these coverages could be useful for monitoring of existing habitat and biodiversity values, habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming areas/watercourses to enable

assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

Excellent for use as a reference tool for this project

9.9.4 Ownership Parcel - Digital Ownership Parcel Fabric (DOPF)



Abstract

The DOPF is a layer within the Ontario Parcel data base.

Ownership parcels are areas of land for which there is registered title of ownership by an individual or organization. The geometry of the Ownership Parcel is either the POLARIS (Province of Ontario Land Registry Information System) or BIM (Basic Index Mapping) standard, depending on the area of the province. The POLARIS and BIM parcels, built and now maintained by Teranet Enterprises Inc., exist in specific urban areas, mostly in southern Ontario. The ownership parcels contain property identification numbers (PIN). The ownership parcel will

be made available where it existed at the time the Ontario Parcel agreement was signed, largely in southern and eastern Ontario. MNR can only make the Ownership Parcel available to Ontario ministries and eligible MNR List Users. This excludes municipalities.

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- MNR and MNR List Users can access the data from the LIO warehouse. List Users must sign the MNR List User Licence agreement and be a member of the Ontario Geospatial Data Exchange (OGDE). MNR is licensed through the Ontario Parcel Master agreement. Not to be used for legal purposes. The data is available in urban areas, mostly in southern and eastern Ontario.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=2588&AgencyID=1&Theme=LAND_MANAGEMENT

Currency

- Data collection frequency: Weekly
- Data maintenance frequency: Weekly

Accuracy

- Scale not provided.

Link to Database

- Look in record 40082171 for more detail on this dataset.

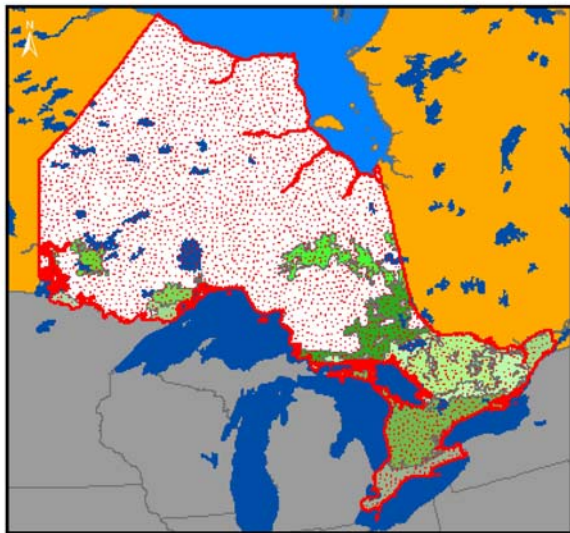
Summary Observations and Recommendations

Ownership parcels will indicate urban areas which may affect wildlife corridors both in and outside city limits.

Parcel information may give an indication of land lost to wildlife habitat, thus impacting on biodiversity within a given site. Ownership parcels good to indicate relatively current land use within the province, as well as indicate the proper authority to contact for more information about a particular parcel.

Consider obtaining this information if other more easily obtained layers do not provide sufficient indications of urban areas and land use.

9.9.5 Forest Cover (Forest Resources Inventory Unit) (FRI) Ontario



Abstract

Forest Cover is a seamless layer in North American Datum 1983 (NAD 83), Projected in Geographic Latitude and Longitude (LL) Decimal Degrees (DD).

Some acronyms that may be used in the data set or information holding include FRI, TMP, FIM, NAD, LL, DD, NRVIS, SNIF, IMAS, TMP, FIM, NAD, LL, DD, NRVIS, SNIF, IMAU

Many non-crown lands are loaded into the Land Information Warehouse (LIO) to date (see

database listing for details).;

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- Public (third party) requests for access to information about Crown forest will normally be handled by the MNR in accordance with the directions set out in the Forest Information Manual. The Minister may determine the conditions by which access to information is provided, may prescribe fees for providing information products, and may determine how revenue received from the sale of information products shall be distributed. As per Forest Information Manual item 1.6 page 21. The public will normally be provided access to all information and information products prescribed by FIM, unless otherwise determined by the Minister in consideration of sensitive information about resource features and values, or FIPPA.
- The Minister may also determine how information or information products prescribed by the Forest Information Manual may be used by third parties. The Minister may enter into agreement or arrangements with third parties and specify the conditions by which third parties may use the information provided to them.

Scope of Dataset

- 100% of geographic area. In southern Ontario (south of Algonquin Park and where most agriculture resides), the majority of the dataset is non-digital and resides on maps and mylars at the OMNR in Peterborough. These are available for copies.

URL to More Information on the Web

[http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=4686&AgencyID=1&Theme=FOREST
MANAGEMENT](http://lioapp.lrc.gov.on.ca/edwin/EDWINCGI.exe?IHID=4686&AgencyID=1&Theme=FOREST_MANAGEMENT)

Currency

Data collection frequency: 10-20 years – less frequent in Southern Ontario – southern Ontario – 1978 is only data collection.

- Data maintenance frequency: Annually in active zones.

Accuracy

- Scale not provided.

Link to Database

- Look in record 1143043150 for more detail on this dataset.

Summary Observations and Recommendations

This dataset reputedly covers all ecoregions in ON. The FRI is relevant to any wildlife species for which the database attributes, primarily forest cover, may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). General location and extent information on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow some general assessments to be undertaken (proximity to water/forest types, riparian areas, etc.).

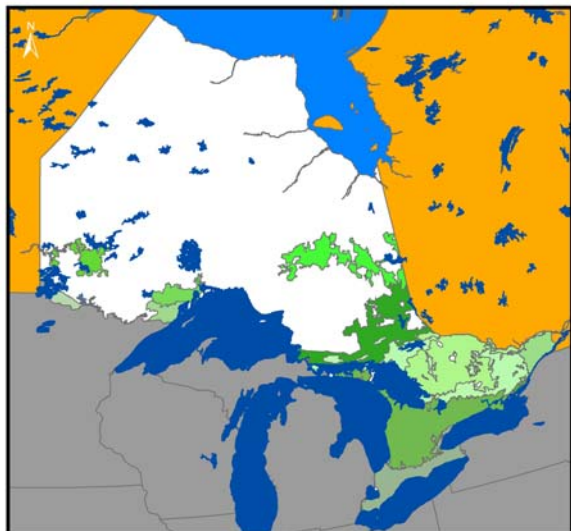
Forest cover and harvested areas provide habitat important to species which use other agricultural lands so should be included in habitat identification and assessment.

The FRI provides the most broadly-based and detailed dataset available to describe forested areas across the forested zone of Ontario. It provides information regarding tree cover for forested stands, and generalized non-forested classification of other areas that could be useful in monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

The FRI focuses on forest (tree) cover attributes. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute, and can be related to particular wildlife habitat values and associated biodiversity measures. In addition, data on location/extent and generalized classification of wetlands, non-forested areas and watercourses will also enable some limited assessment related to these features

(proximity, identification of riparian areas, etc.).

9.9.6 Ontario Provincial Parks



Abstract

An area of public lands set aside under the Provincial Parks Act to provide a variety of outdoor recreation opportunities, and to protect provincially significant natural, cultural, and recreational environments. Ontario provincial parks are categorized.

Agency

Provincial Government
OMNR
Ontario

Access to Data

- Fee to obtain access for 3 years is \$100.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency:

Accuracy

- Scale not provided.

Link to Database

- Look in record 209261636 for more detail on this dataset.

Summary Observations and Recommendations

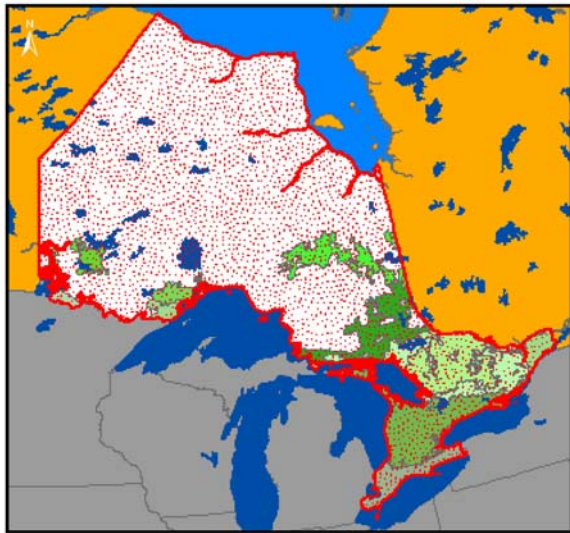
This dataset shows a type of protected area throughout the ecoregions, helpful for understanding habitat quality and quantity and areas subject to land management.

Protected areas are an essential piece of land use /administrative information for understanding habitat conservation and enhancement opportunities; there may be studies associated with the dataset that might prove helpful.

Obtain this key base map information and other protected areas datasets.

9.10 Land Cover - Terrestrial -Various

9.10.1 Ontario Land Cover



Abstract

The Ontario Land Cover data base was produced by the Ontario Ministry of Natural Resources from satellite remote sensing image data. The land cover mapping classification was derived from digital, multispectral LANDSAT Thematic Mapper image data recorded on a range of dates between 1986 and 1997, the majority in the early 1990s. The forest cutovers and burns were updated from 1996 Thematic Mapper coverage for the Great Lakes forest region and most of the Boreal forest region of Ontario.

The National-Scale Ontario Land Cover data base is readily available but is a generalization of the above data to a national scale, both in terms of the spatial resolution and the number of classes. The original data, containing 28 land cover classes with a minimum area of 0.6 hectare and a pixel size of 25 metres, is distributed by the Ontario Ministry of Natural Resources. The National-Scale Ontario Land Cover data base available through GeoGratis contains 15 land cover classes, a feature minimum area of 50 hectares, and a pixel size of 100 metres. These data are

distributed on the basis of 1:250,000-scale map sheets of the National Topographic Series.

The land cover classes consist of vegetation types (such as forest, wetlands, and agricultural crops or pasture) and categories of non-vegetated surface (such as water bodies, bedrock outcrops, or settlements). (See database entry for more detail.)

Agency

Provincial Government
Ontario Ministry of Natural Resources
Ontario

Access to Data

- Licensing information for National Ontario LCL are located at http://geogratis.cgdi.gc.ca/geogratis/e_license.html

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Scale is variable.

Link to Database

- Look in record 1777378769 for more detail on this dataset.

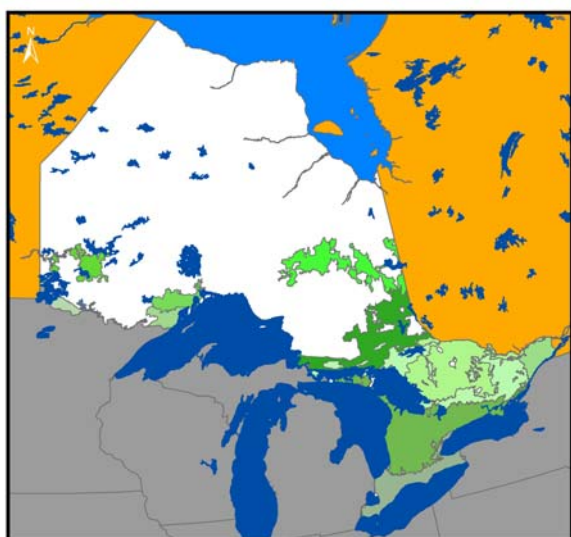
Summary Observations and Recommendations

The land cover classes provide key habitat and agricultural land use information for all landforms and ecoregions.

The biodiversity standards require an understanding of the type, location and quantity of habitat, which can be determined from this type of dataset.

This data should be used to describe the features of the land, how they may impact wildlife populations, and for monitoring biodiversity.

9.10.2 Eastern Ontario Forest Resource Inventory with Southern Ontario Silvicultural Forest Types



Abstract

This dataset is a combination of 1978 FRI for SD&G, Ottawa, P&R, and L&G and 1991 EFRI for Lanark. The two years have been merged and ages matched. The MNR added the seven forest types identified in the book titled, "A Silvicultural Guide to Managing Southern Ontario Forests". A dataset from the Cornwall area (1991 EFRI) has also had the forest types added.

Agency

Cooperative Eastern Ontario Model Forest
Ontario

Access to Data

- No access or use constraints were identified.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency: (not stated)
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 906055591 for more detail on this dataset.

Summary Observations and Recommendations

Forest Planning layers are usually quite detailed in their assessment of what lies on the ground, and how that could relate to wildlife habitat modelling. This information does not cover all ecoregions but appears to be updated as with other forest inventory datasets.

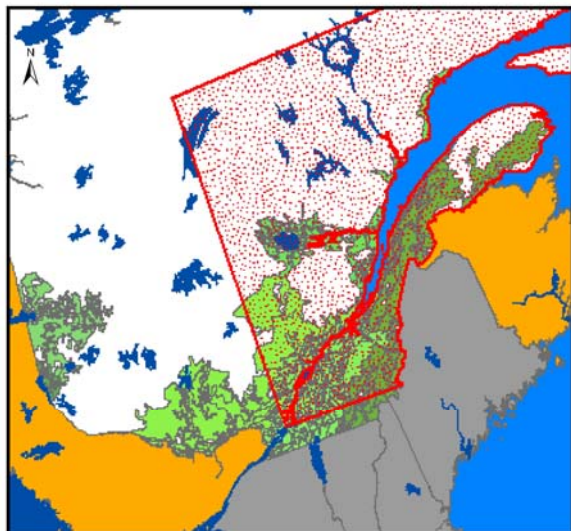
This detailed forest cover information may also be informative for biodiversity standards for agri-forestry operations.

This dataset's value in comparison to other forest inventory information for ON should be assessed.

10 QUEBEC

10.1 Biological - Aquatic -Population

10.1.1 *The Distribution of Species Database*



Abstract

Geographic locations of observed plants, amphibians, reptiles, bird species, fresh water fish species and salt water fish species along the St. Lawrence River.

Agency

Federal Government
Environment Canada
Quebec

Access to Data

- Freely available to public.
- Public. Copyright. Non-commercial.
- Scope of Dataset
- 100% of geographic area.

URL to More Information on the Web

http://www.qc.ec.gc.ca/faune/biodiv/en/recherche/especes/recherche_especies.html

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1142887941 for more detail on this dataset.

Summary Observations and Recommendations

This dataset provides observed locations of plants, amphibians, reptiles, bird species, freshwater species and salt water fish species along the St. Lawrence River and as such, allows for the mapping of species distribution/habitat ranges for the majority of wildlife along the St. Lawrence. The Distribution of Species Database is relevant to biodiversity as the database may be used to identify species most likely to be affected by agricultural activities along the St. Lawrence, as well as the ecological communities and habitat conditions that they depend on.

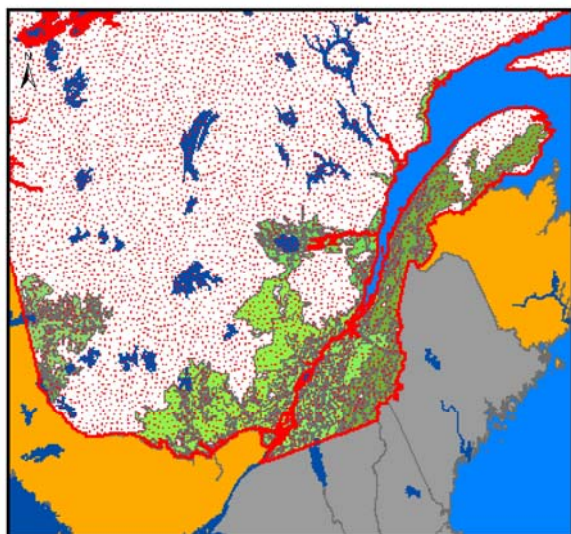
The Distribution of Species Database would be an asset in identification of observed locations where these plant and wildlife species have been identified within or adjacent to agricultural areas. There may also be opportunity to correlate observed locations from this data to other available inventory datasets (forest, agriculture, wetland inventory data) in order to look into potential habitat value of these areas corresponding to observed specie distribution.

This dataset may be useful as a screening tool to search and investigate records for particularly key wildlife specie occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key ecosystems in close proximity to agricultural areas where these have been documented in the dataset. Development of the biodiversity standards should be informed by this

information so that such species, and their associated habitat requirements, can be considered in development of indicators, thresholds and targets for the NAESI program.

10.2 Biological - Species at Risk -Various

10.2.1 Banque de données sur les espèces menacées ou vulnérables du Québec



Abstract

The Center of data on the natural inheritance of Quebec collects, manages and distributes data on rare, threatened or vulnerable species and communities, or those of interest, as well as protected entities in Quebec. The data relates to the biology and the ecology of these species, their distribution, their priority ranking and conservation status.

Agency

Provincial Government

Ministère de l'Environnement du Québec

Québec,

Access to Data

- Records for sites deemed to be ecologically sensitive may only be released at the discretion of the manager. Freely available, please contact Distributor. No use constraints identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

Currency

- Data collection frequency: Daily
- Data maintenance frequency: Daily

Accuracy

- Scale is variable.
- Attribute Accuracy Report: Quatre niveaux de précision pour la cartographie des occurrences sont utilisés: dans un rayon de 100 m ou moins, dans un rayon de 1,5 km, dans un rayon de 8 km ou trop imprécis pour être cartographié. Les coordonnées latitude et longitude fournies doivent donc être interprétées conjointement avec le degré de précision de l'occurrence.
- Completeness Report: Le Centre de données sur le patrimoine naturel du Québec (CDPNQ) est un outil servant à colliger, analyser et diffuser l'information sur les espèces menacées. Les données provenant de différentes sources (spécimens d'herbiers et de musées, littérature scientifique, inventaires récents, etc.) sont intégrées graduellement et ce, depuis 1988. Une partie des données existantes n'est toujours pas incorporée au centre si bien que l'information fournie peut s'avérer incomplète. Une revue des données à être incorporées au centre et des recherches sur le terrain s'avèrent essentielles pour obtenir un portrait général des espèces menacées du territoire à l'étude. De plus, la banque de données ne fait pas de distinction entre les portions de territoires reconnues comme étant dépourvues de telles espèces et celles non inventoriées. Pour ces raisons, l'avis du CDPNQ concernant la présence, l'absence ou l'état des espèces menacées d'un territoire particulier n'est jamais définitif et ne doit pas être considéré comme un substitut aux inventaires de terrain requis dans le cadre des évaluations environnementales.

Link to Database

Look in record -1002551531 for more detail on this dataset.

Summary Observations and Recommendations

This dataset contains data on rare, threatened and vulnerable species and plant communities in

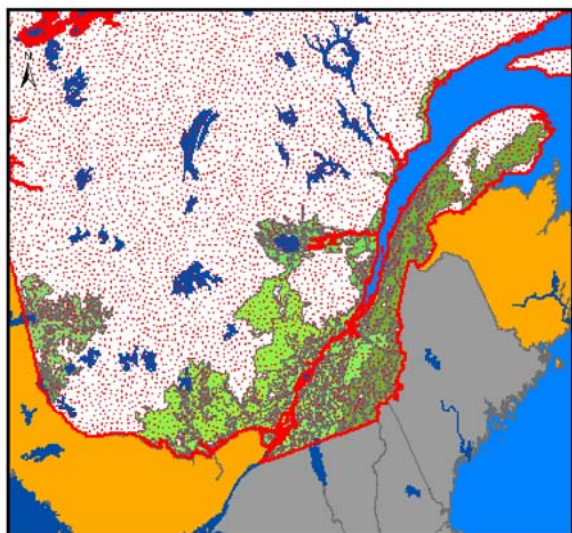
Quebec. The data can be used to provide species level information for documented ecosystems, which can support broader scale habitat assessments. The occurrence and location details for species and elements of conservation concern in this dataset could be an asset in identification of key sites where these have been identified.

This dataset is relevant to wildlife and wildlife habitat in providing information on rare and unique species and habitats occurrence which may be useful in conjunction with other datasets (forest and wetland inventories) in analysis and assessment of unique habitat needs. Development of the biodiversity standards should be informed by this information so that such species, and their associated habitat requirements, can be considered in development of indicators, thresholds and targets for the NAESI program. The may be useful as a screening tool to search and investigate records for particularly key wildlife specie occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented, and for potential use in assessment of unique habitat needs.

This information should be consulted to ensure standards address the habitat requirements of species at risk. It should be considered for presenting biodiversity standards and explaining their rationale to potential users. This dataset provides a tool to incorporate such considerations to enable agricultural impacts on such species to be mitigated

10.3 Imagery - Airborne -Various

10.3.1 Air Photographs and Orthophotos Quebec



Abstract

Since 2002, photographs are stored on film with infra-red emulsion color into negative. This type of emulsion makes it possible to reproduce of the photographs in infra-red color and black and white. The most recent stereotype of Quebec was performed using Black and white at 1/40 000

The Photocartotheque Quebecoise contains:

- Black and white on scale 1/40 000
- Black and white on scale 1/15 000
- Infra-red color on scale 1/15 000
- Others (various scales and emulsions)
- Photo mosaics are available in any of the above formats.
- 1/5000 is available for more urban areas

Agency

Provincial Government
Photocartotheque quebecoise
Quebec

Access to Data

- Scope of Dataset
- 100% of geographic area.

URL to More Information on the Web

<http://photocartotheque.mrnfp.gouv.qc.ca>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale is variable.

Link to Database

- Look in record -1468392162 for more detail on this dataset.

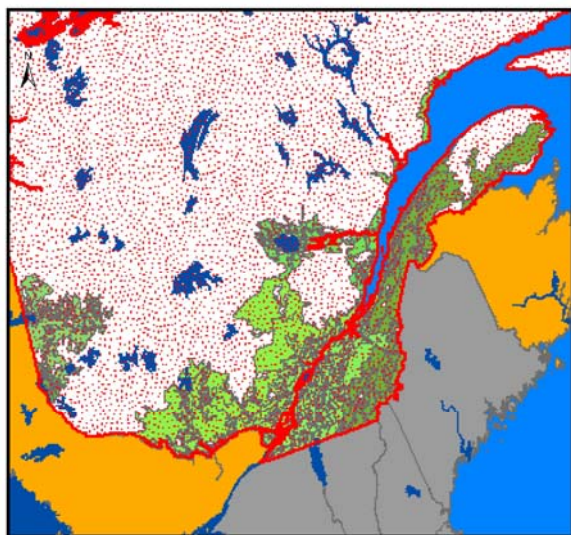
Summary Observations and Recommendations

The entire province has been captured 6 times over since 1952 providing an excellent historical record of land cover and land use. This information could be utilized for follow-up photo interpretation and classification analysis to identify agricultural development and practices and how they have interacted with various habitats over time as well as to assess regional ecosystem services, establish present and historical ecosystem compositions, identify unique landscape features and identify areas where agricultural activities may provide habitat or encroach on important natural ecosystems. This photo archive can be interpreted and classified to assess present wildlife habitat and wildlife/agricultural interactions as well as habitat conversion, fragmentation, management of habitat remnants in the past.

This archive could be utilized as a valuable support tool for the NAESI project, to provide historical information and to supplement other imagery for the province of Quebec. Aerial photography may also have a use as a communication tool in development of presentations and for transfer of information to land owners to illustrate the land cover and land uses on the landscape and potential impacts in a visual presentation.

10.4 Land Base - Topography -

10.4.1 QC Dem



Abstract

Digital elevation model. Base de données topographiques du Québec (BDTQ) - 2,700 individual map sheets. All of Quebec south of 52 N.

Agency

Provincial Government
Photocartothèque québécoise
Quebec

Access to Data

- Fees for access to this data are indicated as \$79/sheet, \$73,462 for complete database, plus shipping.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://photocartotheque.mrnfp.gouv.qc.ca>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- Scale not provided.

Link to Database

- Look in record -399574152 for more detail on this dataset.

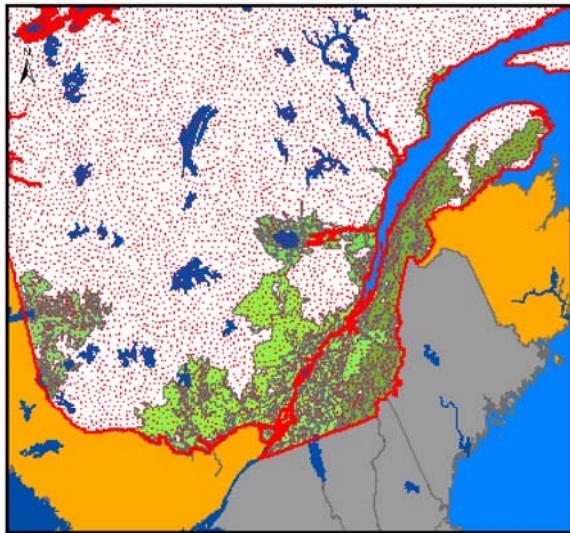
Summary Observations and Recommendations

A DEM model has relevance for species habitat for those species and elements of their habitat that is related to elevation.

The QC DEM elevation model could, for example, be applicable to biodiversity standards in terms of delineating seasonal habitat corridors where issues such as fragmentation are relevant and may be used as a base for hydrological modelling.

10.5 Land Base - Various -

10.5.1 QC Groundwater maps



Abstract

Groundwater maps. Once the maps are scanned they will be placed on the Dept. of Natural Resources (Quebec) who are expected to charge fees for the information.

Agency

Provincial Government
Environnement Quebec
Quebec

Access to Data

- Scan 10 Aquifer Studies Maps& Report for fees of \$2,000.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

Currency

- Data collection frequency: Irregular
- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 1212897325 for more detail on this dataset.

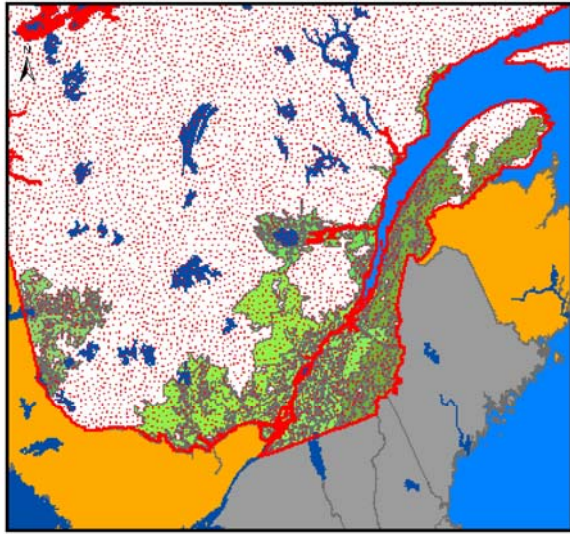
Summary Observations and Recommendations

The Groundwater maps for Quebec may help to delineate ground water courses sensitive to contamination and the associated freshwater habitats potentially affected by agricultural practices. The maps are scanned, however they may need to be digitized before they can be used for hydrological modelling.

The groundwater maps of Quebec provide data that may provide opportunity to address NAESI themes dealing with pesticide contamination, nutrient contamination, water pathogens, endocrine disruption etc.

Dependent upon the need for such data as it pertains to the overall goals of the project, an option would be to consider purchasing map scans to proceed with additional work, or defer use of this data until it is in tabular, georeferenced form. Alternatively, surface water themes may be adequate for most wildlife habitat indicators.

10.5.2 Base Data For Regional Planning 1:100,000



Abstract

The data base for regional planning (BDAT) is the official cartographic base of the government of Quebec on a 1/100 000 scale.

This data base contains a geographical selection of information adapted to representations and analyses on a regional scale.

Planimetry Data Includes:

- hydrography (lakes, river, shelves, etc.)
- transportation routes and road and railway or airport infrastructure (roads, bridges, airports, etc.)
- indicated surfaces (golf courses, benches of loan, etc.)
- buildings (surface of more than 12 500m²);
- equipment (quays, lines of electric transport of power, reserves of surface, etc.)

- vegetation (timbered mediums, wet mediums, etc.)
- geomorphology (eskers, setbacks, etc.)
- toponyms and annotations.
- 20 meter topographic contours

Complete coverage south of 49deg. For detailed coverage information follow URL..

Agency

Provincial Government
Photocartothèque québécoise
Quebec

Access to Data

- Data sharing agreement likely necessary (cost associated with product). Copyright applies.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://photocartotheque.mrnfp.gouv.qc.ca>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:100,000

Link to Database

- Look in record 1601203485 for more detail on this dataset.

Summary Observations and Recommendations

Base Data For Regional Planning is a key base map that directly or indirectly provides

information for habitat analyses.

Base Data For Regional Planning is relevant to biodiversity standards in that it can be used in conjunction with other datasets to map unique vegetation communities and wildlife habitat as a function of vegetation, elevation, topography and infrastructure.

The Base Data for Regional Planning provides landscape topographic features that includes lakes, rivers, streams, contours and elevations of surrounding land. In addition, infrastructure features such as classified roads, railway lines, towns, villages and buildings are also shown. As such, this information can be relevant for any wildlife species for which required habitat values can be linked to these landcover classes, landforms or infrastructure features.

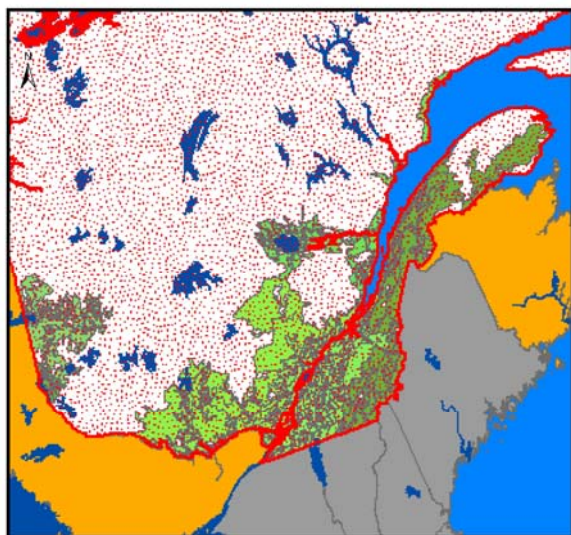
Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location/extent) and inventory coverages containing information on habitat values (forest/grassland and wetland inventories, rare species occurrence, protected areas, etc.). It may also be useful for modelling hydrology to assess pesticide contamination, nutrient contamination, aquatic temperature alteration and irrigation issues.

Transportation and utilities infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat). The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies.

The dataset may be useful in examination of broad scale issues at the landscape level utilizing the

features in the coverage (all watercourses, roads, etc.) or to enable examination of specific rivers, lakes, road corridors, etc. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

10.5.3 Base Topographic and Administrative Data 1:250,000



Abstract

The topographic and administrative data base (BDTA) is the official cartographic base of the government of Quebec on the scale 1/250 000. This data base contains a geographical selection of information adapted to the representations and the territorial analyses on a MRC or area scale.

This cartographic data base gathers the principal components of the following sets of themes:

- Hydrography and hydronymy
- Higher, local, forest road network and resource access
- Transport, air, railway and maritime infrastructures

- Major Infrastructures and hydroelectric locations
- Inhabited places, contours for urban surfaces and toponomy
- Limits, toponames and codes for administrative areas, metropolitan communities, regional municipalities and administration
- Quebec boundaries

Agency

Provincial Government
Photocartothèque québécoise
Quebec

Access to Data

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://photocartotheque.mrnfp.gouv.qc.ca>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record 1142528320 for more detail on this dataset.

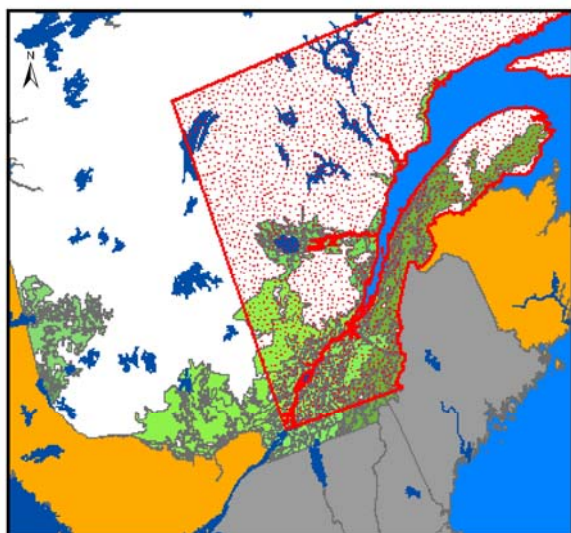
Summary Observations and Recommendations

The relevance of this dataset is similar to that of the preceding listing (Base Data for Regional Planning 1:100,000)..

In addition, this dataset may contain further detail on road networks that may be supplemental to that provided in the base data set, (forest road network and resource access), however it is not know how much of this information would pertain to agricultural areas.

10.6 Land Cover - Terrestrial -Ecosystem

10.6.1 The Protection of the Biodiversity of the St. Lawrence



Abstract

Themes related to the protection of biodiversity along the St. Lawrence river include:

- Overall index of the potential of a site based on richness, rarity and conservation status of freshwater fishes in the St. Lawrence
- Overall index of the potential of a site based on richness, rarity and conservation status of saltwater fishes in the St. Lawrence
- Priority squares identified on the basis of six selection criteria, to do with total species richness and priority species richness.
- Sites of ecological interest.

- Identification and protection status of sites of interest within squares of 10 km x 10 km (some retained, others not) along the St. Lawrence.
- Sites of interest..

Agency

Federal Government
Environment Canada
Quebec

Access to Data

- Free to public.
- Public. Copyright.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.qc.ec.gc.ca/faune/biodiv/>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record -1208479519 for more detail on this dataset.

Summary Observations and Recommendations

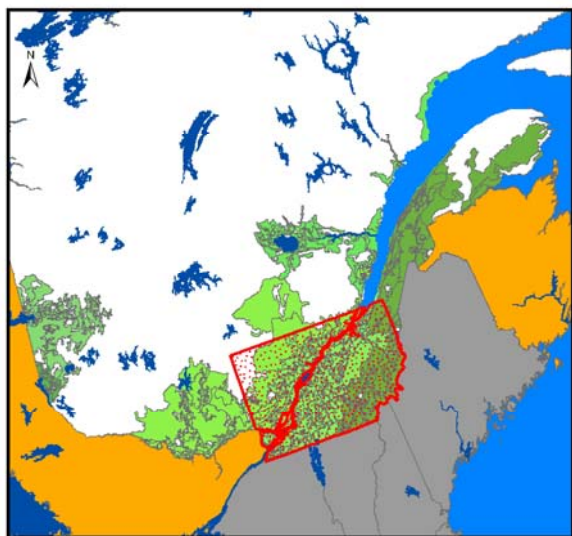
As described in the abstract, this dataset contains themes describing richness of biodiversity and sites of ecological interest, along the St. Lawrence River. Despite its regional coverage focussed upon the St. Lawrence, this dataset may contain specifically important data on fish species of interest, ecological richness and sites of interest along the river.

Should the biodiversity standards include use of fish and aquatic habitats, this dataset would have value for identification of key sites and species richness that should be considered in identifying concerns along the watercourse in proximity to agriculture activities.

As such, this dataset may also have value for use in conjunction with other coverages on land and resource features (inventory datasets) whereby overall analysis could be done to identify these sites of interest and then examine additional datasets for characteristics pertaining to wildlife habitat values.

10.7 Land Cover - Terrestrial -Land Use

10.7.1 The Anthropogenic Modifications Database - Loss of Wetlands



Abstract

Shoreline areas are influenced by a number of human disturbances such as urban drainage, deforestation, bank stabilization, harbor infrastructure, retaining walls etc. This database characterizes the banks of the St. Lawrence, with data going back to 1945.

This section of the Anthropogenic Modifications Database contains the following thematic layers:

- Loss of wetlands by terrestrial physiographic units (10 km of coastline), optimal scale 1/250,000
- Most modified wetlands (filled in and/or drained in) in terrestrial physiographic units (10 km of coastline), optimal scale 1/50,000
- Use of the St. Lawrence in spring by dabbling ducks (10 km of coastline), optimal scale 1/250,000

Agency

Federal Government
Environment Canada
Quebec,

Access to Data

- Free to public.
- Public. Copyright.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://www.qc.ec.gc.ca/faune/biodiv/fr/anthropique/pertes_mil_hum.html

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record -1711161123 for more detail on this dataset.

Summary Observations and Recommendations

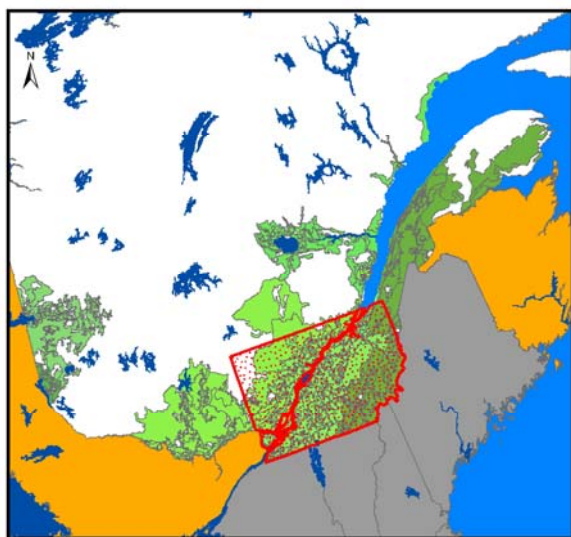
The Anthropogenic Modifications Database characterizes the banks of the St. Lawrence in terms

of anthropogenic influences on wetlands offering potential to quantify wetland habitat lost to agriculture and other human activity. Using this database it is also possible to locate areas where habitat encroachment is most prominent. It also provides dabbling duck specific data.

The Loss of Wetlands section of the Anthropogenic Modifications Database provides information regarding wetland biodiversity since 1945 as well as the influential land use activities along the St. Lawrence River, including agricultural practices.

It is suggested that periodic use of updates of this database may be useful to document linkages between wetland biodiversity along the St. Lawrence River, land use activities and agricultural practices over time.

10.7.2 The Anthropogenic Modifications Database - The Disappearance of Natural Shorelines



Abstract

This database characterizes the banks of the St. Lawrence, making it possible to locate sectors that are the most problematic. This section of the Anthropogenic Modifications Database

contains the following thematic layers:

- Proportion of modified shoreline (anthropogenic) by riverside municipalities, optimal scale 1/250 000
- Proportion of modified shoreline (anthropogenic) by terrestrial physiographic units (10 km of coastline), optimal scale 1/250,000
- Proportion of cultivated land by squares, optimal scale 1/250,000
- Proportion of urbanized area by squares, optimal scale 1/250,000
- Proportion of roads, borrow pits and bare ground by squares, optimal scale 1/250,000
- Proportion of remnant woodlands by squares, optimal scale 1/250,000
- Proportion of agricultural and urban habitats by terrestrial physiographic units (10 km of coastline), optimal scale 1/250,000

Agency

Federal Government
Environment Canada
Quebec

Access to Data

- Free to public.
- Public. Copyright.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://www.qc.ec.gc.ca/faune/biodiv/fr/menu_anthropi.htm

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record 1142957217 for more detail on this dataset.

Summary Observations and Recommendations

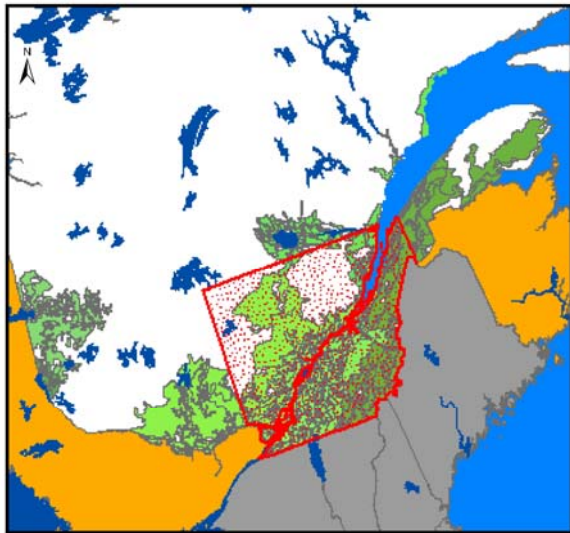
The Anthropogenic Modifications Database characterizes the banks of the St. Lawrence in terms of anthropogenic influences making it possible to quantify habitat loss and locate areas where habitat encroachment may become an issue. The database also contains information regarding agricultural habitats.

Application of the Anthropogenic Modifications Database, offers the potential to identify areas along the St. Lawrence river under the most pressure from agricultural and other various human activities. With reference to the NAESI project, this database has potential for analyzing issues such as habitat conversion, habitat fragmentation, management of remnant woodlands, tillage effecting habitat quality, pesticide contamination, nutrient contamination, etc.

It is suggested that this dataset could be utilized in conjunction with the wetlands dataset to provide useful riparian information and agricultural land use for this stretch of the St. Lawrence.

10.8 Land Cover - Terrestrial -Vegetation

10.8.1 1990 - 2002 - Mapping of St. Lawrence River Wetlands by Remote Sensing



Abstract

This project consisted of producing a detailed map of the distribution of the wetland plants along the St. Lawrence River. Particular focus was placed on distinguishing among the different plant groupings in marshes, swamps and wet meadows. General land-use classes along a one-kilometre-wide strip of shore were also mapped.

This fact sheet has been prepared for one of four similar records in this database. Each wetland record from the St. Lawrence Monitoring Program covers a temporal extent of approximately one year providing a seamless record of wetland vegetative cover for over a period of 12 years. Please see references provided under the summary section directing the reader to NAESI Database records for the remaining dataset entries.

Agency

Federal Government
Environment Canada

Quebec

Access to Data

- A completed data-access request form is required for authorization to download the data.
- Consult the technical report that accompanies the map limitations.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://www.qc.ec.gc.ca/geo/mil/mil001_e.html

Currency

- Data collection frequency: Approx every 5 years
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1: 10,000

Link to Database

- Look in record 1320826204 for more detail on this dataset.

Summary Observations and Recommendations

Provides wetlands information for the St. Lawrence River, using remote sensing to distinguish amongst plant groupings for different wetlands, particularly focusing on marshes, swamps and wet meadows. General land use classes along a 1 kilometre strip of the shore were also mapped. The dataset addresses temporal changes in wetland vegetation as well data on the extents of wetland habitat types along the St. Lawrence and as such is relevant to any wildlife species for which the wetland classification may apply in terms of assessment of habitat values (quantity and quality of habitat). Wetland and adjacent riparian areas within agricultural zones may provide particularly important "islands" or areas of habitat for wildlife and as such this information may be of particular relevance within agricultural areas.

Though limited in geographic coverage to the St. Lawrence River area, it would be anticipated that this would be an effective coverage for application to monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of thresholds and targets for indicators. With the role of wetlands as potential "islands" of habitat within agricultural areas, the information contained in such datasets could be of particular value in establishing best management practices on adjacent agriculture lands and measuring the effects in terms of impacts upon biodiversity.

The land use information included in the dataset may also have considerable value for identification of land uses and activities that may have relevance and impact upon wildlife habitat and biodiversity. This mapping initiative represents a useful decision support tool with regards to changes in habitat and biodiversity in the St. Lawrence Valley and could be utilized to compliment the other St. Lawrence shoreline map information.

10.8.2 Conservation Atlas of Woodlands in the Agricultural Landscape



Abstract

Agricultural woodland mapping. The woodland polygons come from the classification of 1993 and 1994 Landsat-TM5 satellite images on which the boundaries of regional county municipalities (MRCs) and the delineation of potential farmland in Quebec have been superimposed. The MRC boundaries come from a 1:250,000 scale file of administrative boundaries known as the fichier des limites administratives (FILA – 1996 update) from the Quebec Ministry of Natural Resources (MRN).

Agency

Federal Government
Environment Canada
Quebec

Access to Data

- No access or use constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://lavoieverte.qc.ec.gc.ca/faune/atlas/html/problematique_e.html

Currency

- Data collection frequency: Irregular
- Data maintenance frequency: Irregular

Accuracy

- Scale is variable.

Link to Database

- Look in record 1463407107 for more detail on this dataset.

Summary Observations and Recommendations

Fragmentation and changes to natural landscapes (Report on Habitats and Land Use in Southern

Québec) were found to be the main causes of the extinction or decreased frequency of several hundred animal and plant species. Woodlands are the last bastions of biodiversity conservation in agricultural landscapes, providing shelter for a number of dwindling animal and plant species, some of which are rare or endangered (see Threatened Bird Species in Québec). The fact that they are somewhat isolated in an open environment and are constantly subject to numerous development pressures makes the forested areas in this region even more important. This dataset provides information outlining the polygon boundaries for agricultural woodlands found in the region along the St. Lawrence River.

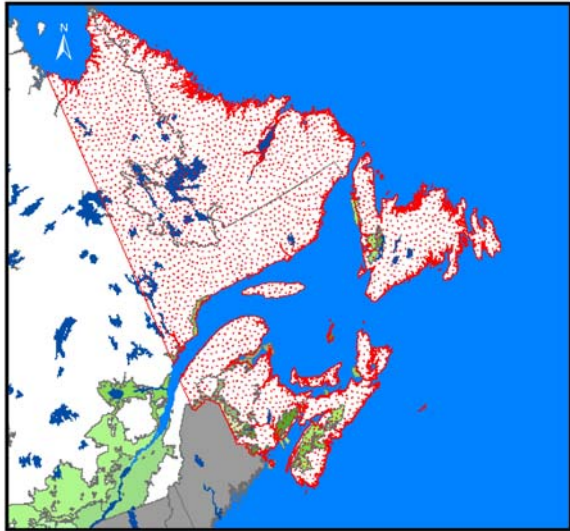
The boundary information contained in this dataset could be utilized in GIS overlay analysis with other datasets such as forest inventory or other inventory data (rare species data etc.) that could then provide data on associated tree cover, plant vegetation cover, etc. that would be contained within these agricultural woodlands. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute particular wildlife habitat value and associated biodiversity measures.

In other jurisdictions where identification of agriculture – woodland transition is not currently available, use of this remote sensing process to produce such a coverage could be useful for the NAESI program for overlay with other datasets. In addition, use of remote sensing for this type of purpose could be a good monitoring tool for long-term implementation of the biodiversity standards.

11 MARITIMES

11.1 Biological - Species at Risk -Various

11.1.1 *Atlantic Canada CDC Georeferenced Rare Species Data - Rare Anadromous Fish, Rare Marine Birds, Rare Marine Mammals*



Abstract

The Atlantic Canada Conservation Data Centre (CDC) collects data on rare species and natural communities in New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland, and Labrador and in adjacent marine waters. To determine which species are rare, the CDC develops sub-national (i.e. provincial) rarity ranks, or S-ranks, for each jurisdiction. These ranks are established with provincial and regional scientists, using available data and expert knowledge. This dataset represents occurrence records for rare species of:

- 1) marine birds
- 2) anadromous fish, and
- 3) rare marine mammals for coasts and rivers in these five terrestrial jurisdictions plus the Bay of

Fundy.

The CDC gathered rare marine species occurrence information from a wide variety of sources, including the Canadian Wildlife Service, Department of Fisheries and Oceans, the University of New Brunswick and the North Atlantic Right Whale Consortium, georeferenced the data and compiled it into the CDC database format.

Agency

Data Centre
Atlantic Canada CDC
Sackville, NB

Access to Data

- Consult contact for access. No access constraints described in the metadata and indicated as no fee for access, although any necessary data manipulation or analysis will incur fees from the CDC, and, records for sites deemed to be ecologically sensitive may only be released at the discretion of the manager.
- No use constraints described in the metadata. The information contained within the ACCDC data system is constantly growing as new occurrences are discovered and updated, however biological and environmental data is inherently time limited.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.accdc.com/>

Currency

- Data collection frequency: Ongoing
- Data maintenance frequency: Annually

Accuracy

- Scale of 1:10,000

Link to Database

- Look in record 2038377913 for more detail on this dataset.

Summary Observations and Recommendations

The Atlantic Canada CDC collects data on rare and imperiled species and plant communities in Saskatchewan. Their data can be used to provide species level information for all ecosystems, which can support broader scale habitat assessments. This information focuses however on particular species of concern and element occurrences recorded in the database may or may not be representative of actual populations and ranges.

The dataset includes occurrence and location details for species and elements of conservation concern, and as such, the CDC data could be an asset in identification of key sites where these have been identified. This dataset is relevant to wildlife and wildlife habitat in providing information on rare and unique species and habitats occurrence which may be useful in conjunction with other datasets (forest and wetland inventories) in analysis and assessment of unique habitat needs.

Development of the biodiversity standards should be informed by this information so that such species, and their associated habitat requirements, can be considered in development of indicators, thresholds and targets for the NAESI program. This dataset provides a tool to incorporate such considerations to enable agricultural impacts on such species to be mitigated.

The location data could be utilized to identify geographic locations of potential key elements of biodiversity (wildlife sitings, plant/vegetation communities) of specific interest or concern with respect to biodiversity.

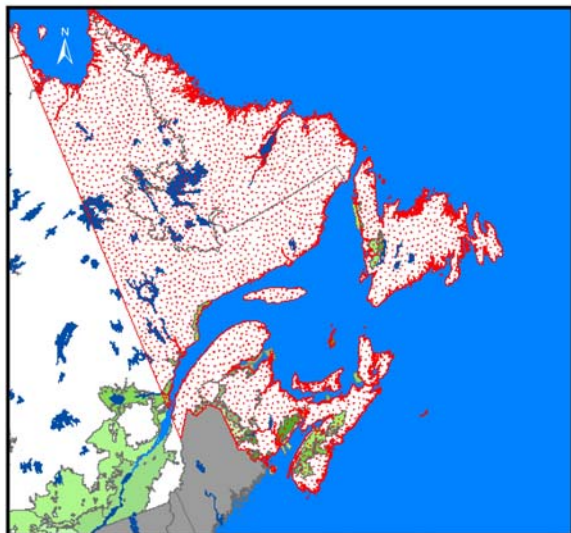
The Atlantic Canada CDC dataset may be useful as a screening tool to search and investigate records for particularly key wildlife specie occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of

assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented by the CDC, and for potential use in assessment of unique habitat needs.

CDC information should be consulted to ensure standards address the habitat requirements of species at risk. It should be considered for presenting biodiversity standards and explaining their rationale to potential users.

11.2 Land Cover - Aquatic -Waterbodies

11.2.1 Maritime Wetlands Inventory (Note - excludes Newfoundland)



Abstract

The Maritime Wetlands Inventory, consists of information on freshwater wetlands and coastal habitats. Only wetlands greater than 0.25 hectare are identified. The inventory includes location, watershed identification, area; pH, conductivity (for field checked wetlands); type and class of vegetation, dominant vegetation, interspersed and evaluation score (Golet for freshwater wetlands).

Agency

Federal Government
Environment Canada
Sackville, NB

Access to Data

- Access to the Maritime Wetlands Inventory is constrained in that the data is available only hard copy maps and associated tabular data. Printed hard-copy provincial atlases: \$500 for NB, \$300 for NS and \$75 for PEI
- No use constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 2050032815 for more detail on this dataset.

Summary Observations and Recommendations

The Maritimes Wetlands Inventory includes the following parameters mapped (on paper maps) and presented as associated tabular data, (wetland locations are provided as UTM coordinates for centre points of all wetlands in the database):

Freshwater: wetland classes (water depth & permance, vegetation types), size classes, site type (topography & hydrologic location), vegetation cover type, vegetation interspersion, surrounding habitat - including notation of agricultural lands, Golet evaluation score, area, water chemistry.

Coastal: habitat class (tidal influence, level of disturbance, size).

The Maritimes Wetlands Inventory is relevant to any species utilizing freshwater wetland or coastal habitats and for which the attribute data contained in the dataset apply in terms of assessment of habitat values (quantity and quality of habitat). Wetland, coastal and adjacent riparian areas within agricultural zones may provide particularly important "islands" or areas of habitat for wildlife and as such this information may be of particular relevance within agricultural areas.

The Maritime Wetlands Inventory contains information regarding wetland and coastal habitat communities to provide a foundation for monitoring, managing and modelling activities (agriculture, other) in adjacent areas that may have an effect on biodiversity in terms of thresholds and targets for indicators. With the role of wetlands as potential "islands" of habitat within agricultural areas, the information contained in such datasets could be of particular value in establishing best management practices on adjacent agriculture lands and measuring the effects in terms of impacts upon biodiversity.

The database contains considerable data gathered and interpreted on these wetlands and the surrounding habitat (land) types that is compiled in a series of atlases available by contacting the identified contact person. The Maritime Wetlands Inventory provides a detailed tabular dataset (with UTM coordinates of wetland centre-point locations) for use with associated hard-copy maps (atlas) that could be utilized as input for mapping and associated attributes of wetlands and coastal habitat areas across the Maritime provinces. The dataset includes notation of surrounding habitat (land cover/use) including notation of agricultural lands, and as such, may offer opportunity to identify those wetlands adjacent to agricultural lands through searching of the dataset allowing for a focused analysis of these sites.

Note that although titled the Maritime Wetlands Inventory, coverage includes only Nova Scotia, New Brunswick and Prince Edward Island. Newfoundland is not included in this dataset. Although this dataset is not available as a GIS coverage, it may still provide some useful data on wetlands for areas in the Maritimes for which no other wetlands data is available. In such cases, this dataset could be of value in modelling and monitoring of wildlife habitat for areas that include riparian areas and significant wetlands within agricultural regions. The Golet classification system utilized uses vegetation and the depth and permanence of water to classify wetlands and as such any wildlife species or elements of biodiversity that can be correlated to these factors may have particular relevance to analysis using this dataset.

11.3 Land Cover - Terrestrial -Various

11.3.1 Maritime Strategic (1987) Land Use Study Database (SLUD)

Abstract

Maritime Strategic (1987) Land Use Data Base (SLUD) is an update to the Canada Land Inventory "Present Land Use", that reflects land use/land cover conditions in the Maritime Provinces in 1987, and land use/land cover changes since the original CLI land use mapping twenty years earlier. SLUD utilizes the same land use/land cover classes as that of the Canada Land Inventory with six additional classes to separate reservoirs, clear-cuts, dumps and sewage lagoons, transitional lands, wildlife conservation areas and institutional lands. The original data, recovered from the Canada Geographic Information System archives, was organized as an update to the CLI land use. These raw data have been processed with the later; the result is similar to the CLI land use but instead represents land use conditions in 1987 rather in the era of the CLI. The processed results are available in either latitude/longitude coordinates (without shoreline) or UTM (with integrated shoreline) and can be compared with the CLI land use, to study land

use/land cover changes during the update period.1) To provide a more up-to-date coverage of land use/land cover of the Maritime Provinces, as the Canada Land Inventory once provided.

Agency

Federal Government
NRC Canada Centre for Remote Sensing
Ottawa, ON

Access to Data

- No access constraints were identified in the metadata.
- No use constraints were identified in the metadata. Licensing information located at
- http://geogratis.cgdi.gc.ca/e_license.htmlCrown copyright

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://gcmd.nasa.gov/KeywordSearch/RedirectAction.do?target=http%3A%2F%2Fgeogratis.cgdi.gc.ca%2Fdownload%2FMaritime_SLUD%2F

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250000

Link to Database

- Look in record -943917484 for more detail on this dataset.

Summary Observations and Recommendations

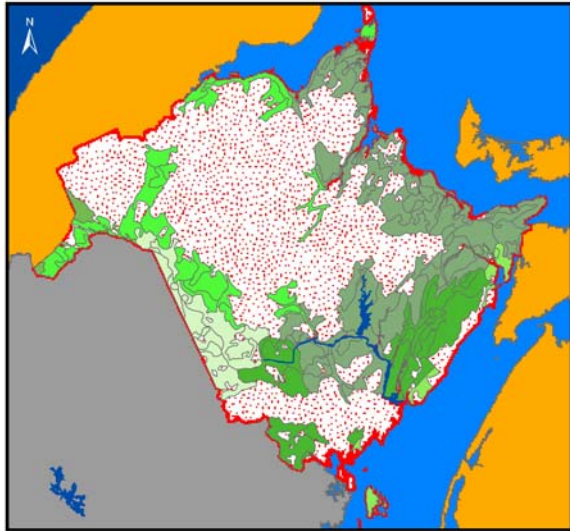
LUD utilizes the same land use/land cover classes as that of the Canada Land Inventory with six additional classes to separate reservoirs, clear-cuts, dumps and sewage lagoons, transitional lands, wildlife conservation areas and institutional lands.

LUD utilizes the same land use/land cover classes as that of the Canada Land Inventory with six additional classes to separate reservoirs, clear-cuts, dumps and sewage lagoons, transitional lands, wildlife conservation areas and institutional lands.

12 NEW BRUNSWICK

12.1 Biological - Species at Risk -Various

12.1.1 *Environmentally Significant Areas in New Brunswick*



Abstract

The Environmentally Significant Areas in New Brunswick dataset consists of a tabular inventory of environmentally significant areas in New Brunswick used to identify unique, sensitive or otherwise ecologically significant areas. The inventory includes location, Northing/Easting, references, area type and notes.

Though not identified in the metadata on the GeoConnections site, a search on the web reveals a site for The Nature Trust of New Brunswick which indicates that this dataset was later mapped by DNRE to provide for a visual spatial view of this data. Some further reference to this is available at:

<http://www.naturetrust.nb.ca/ecologically-significant-areas.php>.

Agency

Provincial Government
New Brunswick Dept. of Environment & Local Government
Fredericton, NB

Access to Data

- Contact distributor for access information and fees. Data access is subject to some restrictions. No use constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale not provided.

Link to Database

- Look in record 1790423963 for more detail on this dataset.

Summary Observations and Recommendations

The New Brunswick Environmentally Significant Areas Database describes data on significant species and habitats of ecological significance and conservation concern in New Brunswick. This information focuses however on particular species and habitats of concern and element occurrences recorded in the database may or may not be representative of actual populations and ranges.

The dataset includes occurrence and location details for significant species and habitats of ecological significance and conservation concern. As such, the New Brunswick Environmentally Significant Areas Database would be an asset in identification of key sites where these have been identified within or adjacent to agricultural areas. There may also be opportunity to examine

characteristics of habitats described in this dataset for correlation to other areas utilizing other available inventory datasets (forest, grassland or wetland inventory or similar data) in order to look into potential habitat value of other areas.

Information on The Nature Trust of New Brunswick web site indicates that the aim of the project was to bring together information on sites having a rich diversity of species or of sites with special features, e.g. rare plants or animals. As such, this dataset may have important data that could contribute in an examination of key wildlife habitat sites in areas where significant sites are located in proximity to agricultural areas.

Development of the biodiversity standards should be informed by this information so that such species, and their associated habitat requirements, can be considered in development of indicators, thresholds and targets for the NAESI program. This dataset provides a tool to incorporate such considerations to enable agricultural impacts on such species to be mitigated.

The location data could be utilized to identify geographic locations of potential key elements of biodiversity (species and habitat occurrences, rare plants or animals) of specific interest or concern with respect to biodiversity. Identification of key types of habitat may be possible using such a dataset in assessment of areas in proximity to agricultural areas. Such identification may be important in terms of meeting particular important aspects of biodiversity (habitat) standards.

The New Brunswick Environmentally Significant Areas Database may be useful as a screening tool to search and investigate records for particularly key wildlife specie occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented in the dataset. There may also

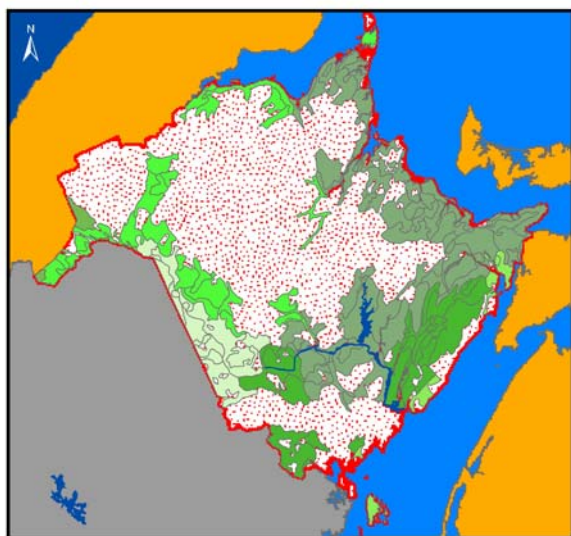
be an opportunity to examine information for identified rare locations from this dataset in other datasets (forest and wetland inventories for example) in order to attempt to search for other similar sites, particularly in proximity to agricultural areas in the event that this may provide insight to additional areas of key habitat.

As indicated, The Nature Trust of New Brunswick web site indicates that this information was subsequently mapped by DNRE (presumably subsequent to the metadata last posted to the GeoConnections web site). This may increase the value of this data if it is now available in GIS format.

This information should be consulted to ensure standards address the habitat requirements of species at risk. It should be considered for presenting biodiversity standards and explaining their rationale to potential users.

12.2 Land Base - Topography -

12.2.1 Topographic Database for New Brunswick



Abstract

This database has been created to provide a multipurpose base of the province of New Brunswick. Complete digital coverage of New Brunswick is now available. Sampling procedures consist of blanket coverage with aerial photos.

Agency

Provincial Government
New Brunswick Dept. Service New Brunswick
Fredericton, NB

Access to Data

- Data is not available for download online, consult with identified distributor for information on data requests and fees information. Fees identified on GeoConnections website as: \$25.00 per file for first ten files. \$10.00 per file for each additional file. No use constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gnb.ca/snb/e/6000/6100e.htm>

Currency

- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:10,000

Link to Database

- Look in record 492214106 for more detail on this dataset.

Summary Observations and Recommendations

The New Brunswick Topographic Base Map series provides landscape topographic features that includes watercourses, contours and elevations of surrounding land. In addition, infrastructure features such as classified transportation (roads, railway lines) and utilities are also shown. As

such, this information can be relevant for any wildlife species for which required habitat can be linked to these landcover classes, landforms or infrastructure features contained in the dataset. Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture coverages (location and extent) and inventory coverages containing information on habitat values (forest and wetland inventories, rare species occurrence, protected areas, etc.). Transportation and utilities infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

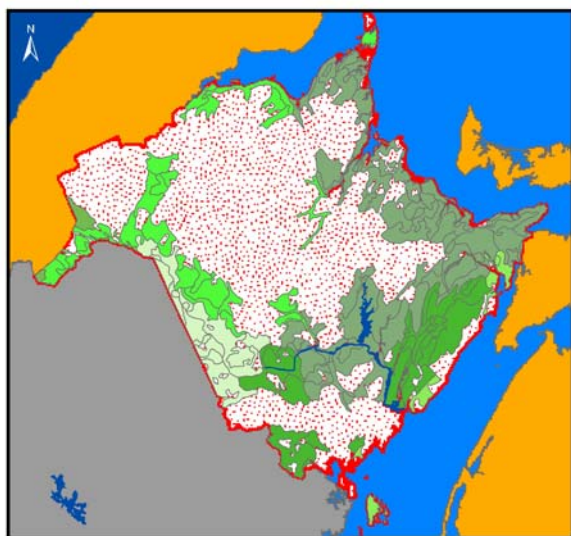
The features of the Topographic Base Map series includes attributes that are relevant to biodiversity standards as the information contained allows for mapping and subsequent analysis of landcover classes, watercourses or infrastructure that would relate to biodiversity measures. The dataset may be useful in examination of broad scale issues at the landscape level utilizing the features in the coverage (all watercourses, roads, etc.) or to enable examination of specific rivers, lakes, road corridors, etc. In combination with other coverages containing landcover and land use data, the topographic coverage will assist in defining the quantity and quality of habitat (patch size, fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

The topographic base map coverage can provide base coverage for landcover and infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As such these coverages could be useful for monitoring of existing habitat and biodiversity values, habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming

areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

12.3 Land Base - Topography -

12.3.1 Peatland Database for New Brunswick



Abstract

The data types and parameters measured are: surface cover vegetation, stratigraphy, peat thickness, topography, geochemistry, humification and drainage. The scales are 1:10,000, 1:250,000 and 1:500,000. The data is currently on PC in dBase format with hard-copy maps, reports and aerial photos. It is also available in 1:250,000 scale data digitized in CARIS. Other scales will be digitized over the next few years. The inventory is complete with 817 individual peatlands and 623 variables recorded for each peatland. Sampling procedures were conducted through 20 000 on-site coring surveys and aerial photo interpretation.

Agency

Provincial Government
New Brunswick Dept. of Natural Resources
Bathurst, NB

Access to Data

- Data is not available for download online, consult with identified contact for information on data requests and any associated fees. Indicated that fees are dependent upon the size of the request. No use constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gnb.ca/0078/>

Currency

- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record 1693624621 for more detail on this dataset.

Summary Observations and Recommendations

Provides land base/land cover information for peatlands across the province of New Brunswick. Database attributes include: Topographic features, drainage, water content, surface vegetation community class and soil classification, geochemistry. The Peatland Inventory is relevant to any wildlife species for which the peatland database attributes may apply in terms of assessment of habitat values, particularly surface vegetation.

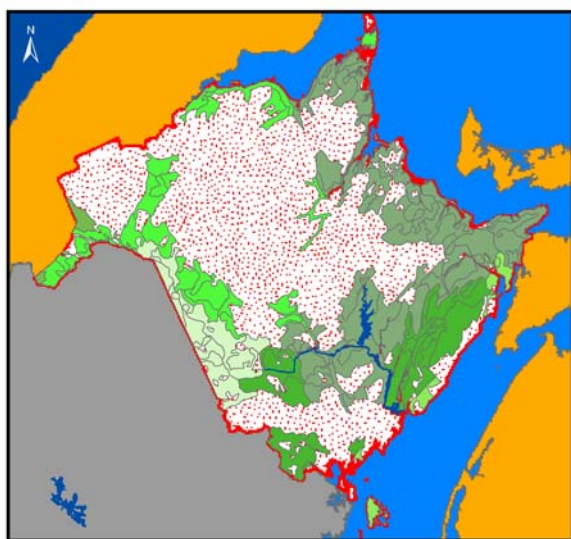
The New Brunswick Peatland Inventory provides a detailed dataset on peatlands attributes available to describe peatlands across the province of New Brunswick. It would be anticipated that this would be an useful coverage for application to monitoring, managing and modelling

activities that have an effect on aspects of biodiversity related to the surface vegetation, drainage and other characteristics of these peatlands.

The New Brunswick Peatlands Inventory provides a detailed dataset on peatlands for the province. Information on surface vegetation and other peatland characteristics such as drainage is provided. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of peatland - agricultural transition and for areas within the agricultural region where individual peatlands may constitute particular wildlife habitat value. The dataset may also offer opportunity to examine attributes such as surface vegetation and soils, drainage, etc. for any features that may act as a proxy in identifying key wildlife or biodiversity measures.

12.4 Land Cover - Terrestrial -Vegetation

12.4.1 Forest Inventory for New Brunswick



Abstract

The purpose of this database is to provide data on the biological species and age class of forests in the province of New Brunswick to support forest management planning in the province.

Over 1900 maps with an average of 500 polygons per map are currently in the database.

Sampling procedures are photo interpretation and ground surveys.

Agency

Provincial Government

New Brunswick Dept. of Natural Resources

Fredericton, NB

Access to Data

- Data is not available for download online, consult with identified distributor for information on data requests and any associated fees. No use constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

Currency

- Data maintenance frequency: Annually

Accuracy

- Scale 1:10,000 to 1:20,000

Link to Database

- Look in record 1140789091 for more detail on this dataset.

Summary Observations and Recommendations

Provides forest (forest stand) and other land cover information (also wetland types, major watercourses, non-forested types) for the entire province of New Brunswick, including agricultural areas. Includes vegetated (treed and non-treed) and non-vegetated (non-vegetated lands and water) areas. Database attributes include: Land cover (vegetated, non-vegetated, land, water), Species composition, Height, Crown Closure, Age, wetlands, crop/pasture lands, silviculture treatments. The Forest Inventory is relevant to any wildlife species for which the

database attributes may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). General location and extent information on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow some general assessments to be undertaken (proximity to water/forest types, riparian areas, etc.).

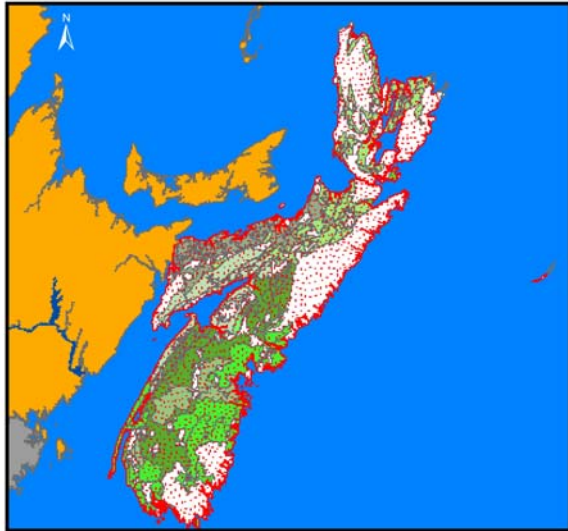
The New Brunswick Forest Inventory provides a broadly-based and detailed dataset available to describe forested areas across the province of New Brunswick, including the forested areas within the agricultural region of the province. It provides information regarding tree cover for forested stands, and generalized non-forested classification of other areas that could be useful in monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

The New Brunswick Forest Inventory includes information of tree cover and also describes agricultural lands in terms of pasture/croplands. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute particular wildlife habitat value and associated biodiversity measures. In addition, data on location/extent and generalized classification of wetlands, non-forested areas and watercourses will also enable some limited assessment related to these features (proximity, identification of riparian areas, etc.).

13 NOVA SCOTIA

13.1 Biological - Species at Risk -Various

13.1.1 *.Significant Species and Habitats Database for Nova Scotia*



Abstract

The Significant Species and Habitats map and databases provide a mechanism for recording both location and species of an occurrence. It consists of 2 primary tables:

1. sites.dbf
2. eoccs.dbf (elements occurrences, where element indicates the species)

The database also contains 6 look-up tables and a few code lists for data entry consistency. Alias names of the database include: "Sighab" and "Wildlife Layer". The sites include those known to DNR staff and sites that have been supplied by knowledgeable naturalists, museums, universities, the N.S. Museum of Natural History, the Atlantic Canada CDC and other government departments.

Significant habitats include:

1. Sites where species of conservation concern can be found and/or
2. Sites where unusually large concentrations of wildlife occur and/or
3. Habitats that are rare in the province.

Agency

Provincial Government
Nova Scotia Dept. of Natural Resources
Kentville, NS

Access to Data

- Required to enter into a license agreement for access to the data, as per Nova Scotia government policy - Digital Geographic Data Use License. Freely distributed between provincial departments. ArcView shapefile available free online, or via distributor. Access to database given based on individual case consideration only to regional biologists, land owners, and/or qualified researchers.
- Free online viewing. ArcView shapefiles available free online. Contact distributor for database fee information. As per license agreement, use and distribution policy document is available at: <http://www.gov.ns.ca/natr/wildlife/doc/sighabs.wpd>.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gov.ns.ca/natr/wildlife/Thp/disclaim.htm>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:10,000

Link to Database

- Look in record 133932903 for more detail on this dataset.

Summary Observations and Recommendations

The Nova Scotia Significant Species and Habitats Database describes occurrence and location details for significant species and habitats of conservation concern. This information focuses however on particular species and habitats of concern and element occurrences recorded in the database may or may not be representative of actual populations and ranges.

Attribute data includes information on status ranking, sensitivity of the site, breeding evidence, etc. The database includes records of the following:

- (1) Species at risk designated under COSEWIC or the Nova Scotia Endangered Species Act
- (2) Species of other conservation concern (e.g. common loon), generally with a provincial status indication
- (3) Specialized habitats that could be jeopardized by human activities such that habitat supply could become the limiting factor for the population (bat hibernacula, moose calving or wintering areas, deer wintering areas, migratory bird habitat, nest sites of Northern Goshawk, Bald Eagle, Osprey), freshwater habitats - rivers with runs of Gaspereaux, Atlantic Salmon, Striped bass), and islands of nesting sites such as Leache's Petrel, Common Eider)
- (4) Sites of high biodiversity associated with a particular habitat (Amherst Marsh) or its fragile character (dunes, bat caves), salt marsh, ecological sites
- (5) sites of local natural history e.g. eagle perch trees.

The Nova Scotia Significant Species and Habitats data would be an asset in identification of key

sites where these have been identified within or adjacent to agricultural areas. There may also be opportunity to examine characteristics of habitats described in this dataset for correlation to other areas utilizing other available inventory datasets (forest, agriculture, wetland inventory data) in order to look into potential habitat value of other areas.

Development of the biodiversity standards should be informed by this information so that such species, and their associated habitat requirements, can be considered in development of indicators, thresholds and targets for the NAESI program. This dataset provides a tool to incorporate such considerations to enable agricultural impacts on such species to be mitigated.

The location data could be utilized to identify geographic locations of potential key elements of biodiversity (species and habitat occurrences, designated COSEWIC or Nova Scotia Endangered Species Act, provincially rare) of specific interest or concern with respect to biodiversity. Identification of key types of habitat may be possible using such a dataset in assessment of areas in proximity to agricultural areas. Such identification may be important in terms of meeting particular important aspects of biodiversity (habitat) standards.

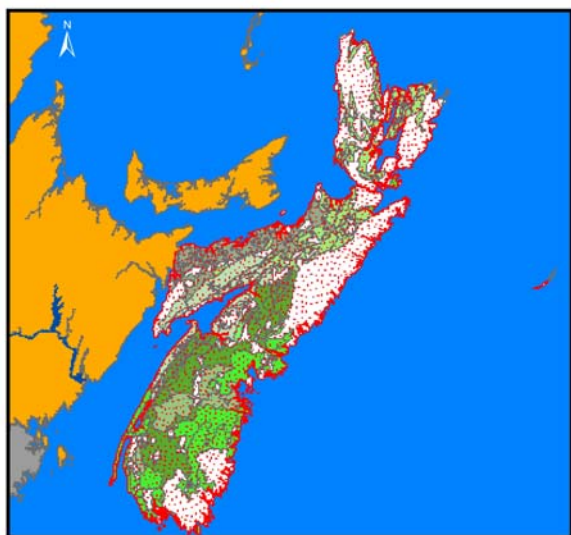
This dataset may be useful as a screening tool to search and investigate records for particularly key wildlife species occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities. As such, the identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented in the dataset.

This dataset may also be useful for some sort of correlation analysis between habitat characteristics of these documented and mapped locations as compared to other areas utilizing additional inventory datasets for other landscaped features.

This information should be consulted to ensure standards address the habitat requirements of species at risk. It should be considered for presenting biodiversity standards and explaining their rationale to potential users.

13.2 Land Base - Topography -

13.2.1 Digital 1:10,000 Topographic Series Maps for Nova Scotia



Abstract

The Digital 1:10,000 Topographic Series covers the entire province using CSRS (Canadian Spatial Reference System) datum and a 6° UTM projection in Zone 20. This scale provides a great level of detail and permits multi-purpose use. Buildings, designated areas, waterways, roads and railways, utilities, land cover, and more are included. Base information can be used in conjunction with other digital data sets to serve virtually any topographic need.

Information is accessed through detailed feature codes or groupings of features (for example, buildings are feature code BL, utilities like gas and electricity are feature code UT) which can be selected as needed. For instance, you can choose to show only roads (including railroads) and

buildings, or land cover and waterways. This flexibility gives the user total control of the information stored in the digital file.

Data was collected in ATS77 Zones 4 & 5 and in October 2004 it was converted to NAD83 CSRS UTM Zone 20. Future updates will be done with this projection.

Agency

Provincial Government
Nova Scotia Dept. of Service & Municipal Relations
Amherst, NS

Access to Data

- The Topographic Database is not free or available to the public online. Consult with the designated contact person for access details and costs. Required to enter into a license agreement for access to the data. Please consult the website - <http://www.gov.ns.ca/snsmr/land/fees/fees-digital.asp>
- As per license agreement and use of the data to identify and/or solicit individuals or organizations for purposes not related to property transactions or the management of resources located on the property(s), is strictly prohibited.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:10,000

Link to Database

- Look in record 2145478638 for more detail on this dataset.

Summary Observations and Recommendations

The Nova Scotia Topographic Base Map series provides landscape topographic features that includes watercourses, land cover, and designated areas. In addition, infrastructure features such as classified transportation (roads, railway lines), utilities and buildings are also shown. As such, this information can be relevant for any wildlife species for which required habitat can be linked to these landcover classes, landforms or infrastructure features contained in the dataset. Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture definition layers and inventory coverages containing information on habitat values (forest and wetland inventories, rare species occurrence, protected areas, etc.). Transportation and utilities infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

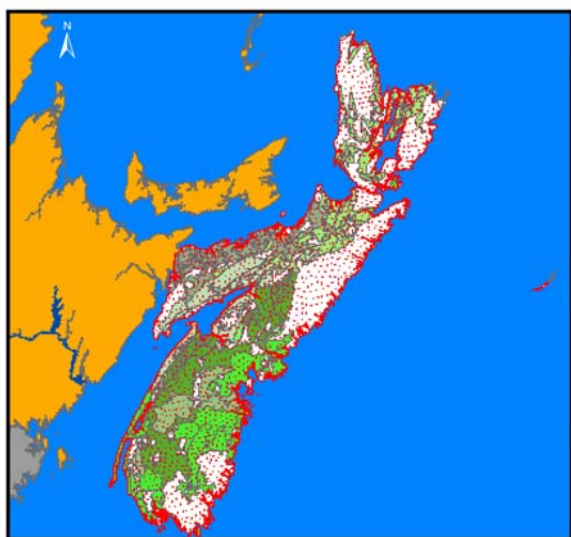
The features of the Topographic Base Map series includes attributes that are relevant to biodiversity standards as the information contained allows for mapping and subsequent analysis of landcover classes, watercourses or infrastructure that would relate to biodiversity measures. The dataset may be useful in examination of broad scale issues at the landscape level utilizing the features in the coverage (all watercourses, roads, etc.) or to enable examination of specific rivers, lakes, road corridors, etc. In combination with other coverages containing landcover and land use data, the topographic coverage will assist in defining the quantity and quality of habitat (patch size, fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

The topographic base map coverage can provide base coverage for landcover and infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As such these coverages could be useful for monitoring of existing habitat and

biodiversity values, habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

13.3 Land Cover - Aquatic -Waterbodies

13.3.1 Nova Scotia Wetlands and Coastal Habitats Inventory



Abstract

Wetlands and coastal habitats are recognized as important ecosystems for the ecological, economic, and social values they provide. This product was developed to delineate and classify wetlands (fresh - and saltwater) and coastal habitats to support policy and legislation, land use planning and impact assessment, environmental monitoring and reporting, and scientific research.

Digital NSTDB 1:10,000, MTM projection, ATS77 datum from Nova Scotia Geomatics and is fully integrated with the digital 1:10,000 forest cover and cross linked with the significant habitats thematic layer and species database of the Department of Natural Resources; 1:10,000 colour aerial photography.

Classification and digitizing of wetlands and coastal habitats completed for all counties (as of December 31, 2000): Annapolis, Antigonish, Cape Breton, Colchester, Cumberland, Digby, Guysborough, Halifax, Hants, Inverness, Kings, Lunenburg, Queens, Pictou, Richmond, Shelburne, Victoria, Yarmouth.

Agency

Provincial Government
Nova Scotia Dept. of Natural Resources
Kentville, NS

Access to Data

- Data is not available for download online, consult with identified contact for information on data requests and any associated fees. Users are required to enter into a license agreement for access to the data as per Nova Scotia government policy - Digital Geographic Data Use License; freely distributed between provincial departments.
- \$20 per digital mapsheet; hardcopy are custom outputs charged at \$100.00 per hour with delivery subject to program scheduling. If you have any further questions please contact the distributor..

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data maintenance frequency: Continually

Accuracy

- Scale of 1:10,000

Link to Database

- Look in record 1140210217 for more detail on this dataset.

Summary Observations and Recommendations

The Wetlands and Coastal Habitats Inventory includes mapping of the following parameters: all dominant wetlands and coastal habitat features greater than 0.5 hectares including bogs, fens, deep and shallow marshes, seasonally flooded flats, meadows, shrub and wooded swamps, lakeshore wetlands, salt marsh, saline ponds, dunes, beaches, cliffs, and, estuarine and marine flats. Attributes of the dataset include: wetland type (open water, deep marsh, shallow marsh, seasonally flooded flats, meadows, shrub swamp, wooded swamp, lakeshore wetland, bog and fen), presence of sub-wetland types within larger wetlands, coastal types (salt marsh, saline ponds, dune, beach, cliff face, estuarine flat, marine flats, island, impoundment), freshwater vegetation (percentage cover, distribution class, interspersed class) , coastal (dominant vegetation type class, substrate type, tidal activity, exposure, accessibility and disturbance type).

The Wetlands and Coastal Habitats Inventory is relevant to any species utilizing freshwater wetland or coastal habitats and for which the attribute data contained in the dataset apply in terms of assessment of habitat values (quantity and quality of habitat). Wetland, coastal and adjacent riparian areas within agricultural zones may provide particularly important "islands" or areas of habitat for wildlife and as such this information may be of particular relevance within agricultural areas.

The Wetlands and Coastal Habitats Inventory contains sufficiently detailed information regarding wetland and coastal habitat communities to provide a foundation for monitoring, managing and

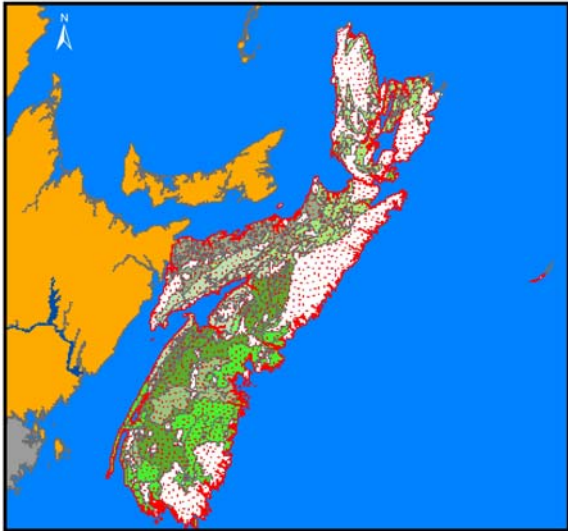
modelling activities (agriculture, other) in adjacent areas that may have an effect on biodiversity in terms of thresholds and targets for indicators. With the role of wetlands as potential "islands" of habitat within agricultural areas, the information contained in such datasets could be of particular value in establishing best management practices on adjacent agriculture lands and measuring the effects in terms of impacts upon biodiversity.

The original Wetlands and Coastal Habitats dataset has been integrated into the 1:10,000 Forest Resource Database and is cross-linked to the Significant Species and Habitats Database for the province.

The Wetlands and Coastal Habitats Inventory provides a detailed dataset for mapping and associated attributes of wetlands and coastal habitat areas across the province. Information on vegetation on wetland areas is provided. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of wetland - agricultural transition and for areas within the agricultural region where individual wetlands may constitute particular wildlife habitat value. The land use information included in the dataset may also have considerable value for identification of land uses and activities that may have relevance and impact upon wildlife habitat and biodiversity.

13.4 Land Cover - Terrestrial -Ecosystem

13.4.1 *Ecological Land Classification (ELC) Map and Database for Nova Scotia*



Abstract

The N.S. Department of Natural Resources has prepared the Ecological Land Classification (ELC) to assist in the planning and management of sustainable forests. In this framework of mapped ecosystems the ELC provides an understanding of ecosystem form and function and the dependent biodiversity by linking the physical and biological environment of each system. Ecosystems on the landscape represent the effects of the interactions of climate, landform, water and soils and thus the distribution of biodiversity. The lines between polygons are noted to depict zones of transition between the two mapped ELC units.

The ELC is currently available down to the ecosection level (1:50,000 scale). The ecosite coverage at 1:10,000 scale is currently under development as per the website <http://www.gov.ns.ca/natr/forestry/ecosystem/elcpg1.htm>

Agency

Provincial Government
Nova Scotia Dept. of Natural Resources
Truro, NS

Access to Data

- Access to the dataset is via a request to and approval from Division management (Catalog Number: DNR 2001-01). Consult the designated contact. Data is available free of charge for validated requests. Use as per license agreement. The data remains the property of the Department of Natural Resources; requires approval for redistribution. Some attributes are not available for distribution.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gov.ns.ca/natr/forestry/ecosystem/elcpg1.htm>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 1533060988 for more detail on this dataset.

Summary Observations and Recommendations

Ecological Land Classification (ELC) provides information on the physical and the biological environment for forest areas of the province. The classification incorporates elements of climate, landforms/topography, soils and vegetation. Database attributes include: climate, surficial and bedrock geology, soils, landforms, topography and vegetation. It is the combinations of these mapped features that defines the various ELC units.

The ELC is relevant to any wildlife species for which the database attributes may apply in terms of assessment of habitat values (patch characteristics, corridors, habitat quantity and quality, distance to cover, etc.).

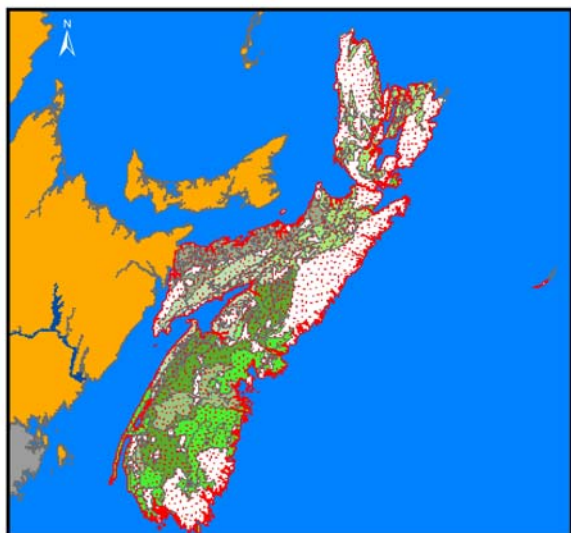
The ELC provides a stratification of the landscape into map units based upon defined combinations of the ecological features of climate, geology, landforms/topography, soils and vegetation. Application of an ELC provides for a common communication tool amongst resource managers when addressing wildlife habitat, ecosystem structures and biodiversity in terms of understanding the overall combination of attributes that define a given ELC unit.

The ELC provides information regarding the physical and biological environment for land units areas that could be useful in monitoring, managing and modelling activities by enabling consideration of a broader mosaic of factors affecting wildlife habitat for the defined ELC Units than would be available from an inventory focused on a single layer (trees, soils, etc.).

The ELC could be utilized to define habitat capability and suitability based upon ecological attributes. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots), with defined ELC units may constitute particular wildlife habitat value.

13.5 Land Cover - Terrestrial -Land Use

13.5.1 *Agricultural Land Identification Project for Nova Scotia*



Abstract

The Nova Scotia Agriculture Services Branch completed an inventory of farm land throughout the province of Nova Scotia, as of 1997. The database contains agricultural land use data, classified by Long-term, Rotational, Inactive and Support classes.

Agency

Provincial Government
Nova Scotia Dept. of Agriculture & Fisheries
Truro, NS

Access to Data

- To obtain data, which is available free of charge, must contact distributor: Michael Langman, N.S. Dept. of Agriculture and Fisheries, Agriculture Services Branch, Nova Scotia Agricultural College, 20 Tower Road, P.O. Box 550
- Truro, NS. B2N 5E3
- +01-902-893-6557
- langmann@gov.ns.ca
- No use constraints were identified.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:10,000

Link to Database

- Look in record 1927320002 for more detail on this dataset.

Summary Observations and Recommendations

This dataset provides the agricultural land use data, classified by Long-term, Rotational, Inactive and Support classes, for agricultural lands in Nova Scotia. This data would have application to all wildlife species that range in and around the agriculture zone, and for species impacted by agricultural activities.

Information on land uses will be relevant to wildlife habitat in terms of potential effects that the stated uses may have on habitat values of the agricultural lands themselves and potentially upon the surrounding forests/wetlands and other areas and thus on potential modelling of habitat values.

This dataset has application to the biodiversity standards in that it provides for identification of agricultural areas, and thus the agricultural outline of such areas, for which the biodiversity standards are to be developed (as of 1997 when the dataset was developed). In conjunction with datasets describing other attributes that can define wildlife habitat suitability and capability such as the Forest Resource Database, the ELC, and the Wetlands and Coastal Habitats Inventory, this

dataset could provide the basis for analysis of attributes at the interaction of agricultural areas with forested and wetland habitats.

Information on land uses will be relevant to biodiversity in terms of potential effects of the stated uses on biodiversity values of the agricultural lands themselves as well as potentially upon surrounding forests/wetlands and other areas and thus on potential overall biodiversity for the general area.

The Agricultural Land Identification Project for Nova Scotia provides the most recently available data to outline agricultural areas in the province and to classify those areas in terms of class of activity. This data would be important to outline the boundary of interaction between these agricultural areas and the surrounding forest/wetland/urban areas. This coverage is important for application with other coverages in defining the agriculture lands and thus the area being directly considered for assessment of biodiversity standards. The data will also provide insight to the level and type of agricultural activity on the landscape for wildlife species for which these activities have relevance to their use of the area.

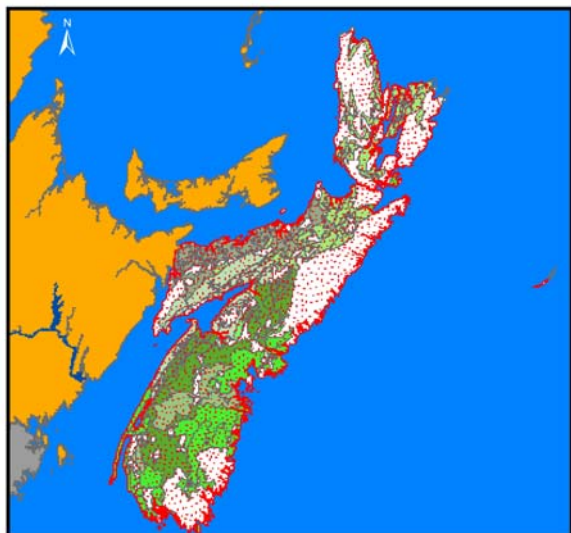
Land use information may be useful to assist in considering the types/magnitude of uses that may need to be considered in developing best management practices for agricultural areas. It may be possible to undertake analysis of the transition zones surround these areas to assess potential impacts of such practices to guide development of best management practices.

The NAEIS program may want to incorporate some of the themes depicted in this map set for decision-making, and should review this dataset collection as a possible model for communicating and explaining biodiversity standards and providing supporting information to land managers and private farmers across Newfoundland (e.g. selected themes from the database

and additional information relating to biodiversity and agricultural practices).

13.6 Land Cover - Terrestrial -Vegetation

13.6.1 Forest Resources Database of Nova Scotia



Abstract

The Forest Resources Database contains forest stand descriptions, Crown ownership information, and an ecological land classification. Interpreted aerial photography is the primary source for forestry data with roughly one-tenth of the province captured annually. Satellite imagery is used to identify harvesting activity between aerial photo re-interpretation cycles. Ancillary data on forest management activities (e.g. shelterwood cuts, thinnings, etc.) is also collected using GPS technology and is integrated into the database. The Forest Resources Database is based geographically upon the Digital 1:10,000 Topographic Series (from the Nova Scotia Geomatics Centre) resulting in more than 1550 map sheets covering the Province.

The Forest Resources Database is used for assessing forest resources in the Province and serves as the forest inventory input to the Division's strategic wood supply analysis. Other uses include

resource and environmental assessment, wildlife habitat analysis, forest protection planning, and forest management monitoring.

Agency

Provincial Government

Nova Scotia Dept. of Natural Resources

Truro, NS

Access to Data

- Forest Resources Database is not free or available to the public in its entirety. Consult with the designated contact person for access details and costs (GeoConnections Site indicates Fee of \$50 per 1:10,000 Mapsheet). Required to enter into a license agreement for access to the data. Nova Scotia Freedom of Information and Protection of Privacy (FOIPOP) application process may apply. However, some of the forest inventory data is available as "freebies" on the internet at: <http://www.gov.ns.ca/natr/forestry/gis/freebies.htm>.
- As per license agreement. The data remains the property of the Department of Natural Resources and requires approval for redistribution. Some attributes are not available for distribution.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.geoconnections.org/CGDI.cfm/fuseaction/data.details/id/10758/gcs.cfm>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:10,000

Link to Database

- Look in record 1140099518 for more detail on this dataset.

Summary Observations and Recommendations

Provides forest cover (forest stands) information, (also freshwater wetland and coastal habitat types, major watercourses, non-forested types), for all lands in the Province of Nova Scotia, including agricultural areas. Database attributes include: tree species composition, height, crown closure, site (also second story attributes as appropriate), along with calculated attribute values for age and forest stand maturity class. The inventory is updated for depletions (forest fire, harvesting, etc.) and for silvicultural activities (shelterwood cuts, thinnings, etc.) on an ongoing basis.

The Forest Resources Inventory is relevant to any wildlife species for which the database attributes, primarily forest cover, may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). General location and extent information on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow some general assessments to be undertaken (proximity to water/forest types, riparian areas, etc.).

The Forest Resource Database provides a most broadly-based and detailed dataset available to describe forested areas across the Province of Nova Scotia, including the forested areas within the agricultural areas of the province. It provides information regarding tree cover for forested stands, and generalized non-forested classification of other areas that could be useful in monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

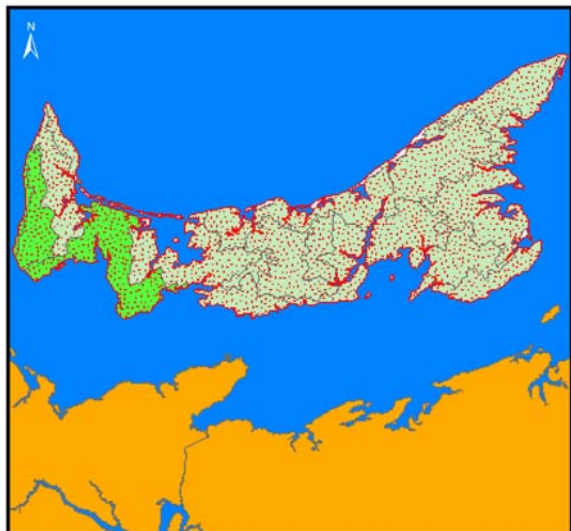
As noted in the abstract, uses of the Forest Resources Database in Nova Scotia includes resource and environmental assessment and wildlife habitat analysis.

The Forest Resources Database focuses on forest (tree) cover attributes. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute particular wildlife habitat values and associated biodiversity measures. In addition, data on location/extent and generalized classification of wetlands, non-forested areas and watercourses will also enable some limited assessment related to these features (proximity, identification of riparian areas, etc.).

14 PRINCE EDWARD ISLAND

14.1 Land Base - Soils -

14.1.1 Soil Survey of PEI



Abstract

Provides a digital geographic inventory of the soils of PEI.

Agency

Provincial Government

Prince Edward Island Dept. of Environment, Energy & Forestry

Charlottetown, PE

Access to Data

- Data is not available for download online, consult with identified contact for information on data requests and any associated fees. A sample map (pdf page size) is available for viewing at the website illustrating the map product.
- See Online PEI Digital Data License Agreement

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gov.pe.ca/gis/index.php3?number=77555&lang=E>

Currency

- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:12,400

Link to Database

- Look in record 1140008077 for more detail on this dataset.

Summary Observations and Recommendations

The PEI Soil Survey provides a provincial wide coverage dataset describing soils features. This information can be relevant to wildlife species for situations where the soil conditions can be related to aspects of wildlife habitat that more directly impact the wildlife species itself. In particular, soils will have a direct bearing on vegetation cover and on crop types and farm practices in agricultural regions, which in turn will have more direct effect on wildlife habitat.

The attributes of the dataset includes: Soil Type, Soil Phase, Land Slope, Surface Texture as a coded identification number. The information provided is identified to correspond to the Canadian Soil Information System (CanSIS):

- Soil name under the Canadian Soil Information System
- Soil code modifiers are used with the Soil Code to define a named soil with more detailed information
- Percentage of area covered by the dominant soil type
- Secondary soil type
- Percentage of area covered by the dominant soil type

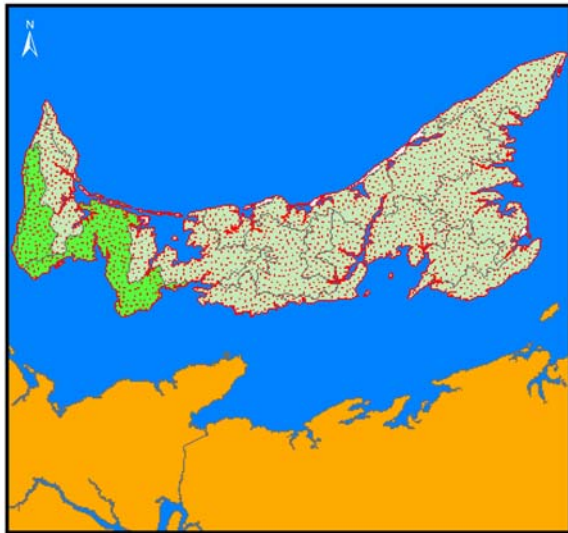
- Average % slope of the dominant soil in the polygon
- Occurrence of stones at the surface of the soil
- Date of modification
- Size in hectares
- Polygon perimeter length in metres
- Degree of limitation imposed by the soil in its use for mechanized agriculture
- Drainage group indicating a generalized classification of soil drainage based on a combination of soil types, soil texture and phases
- Explanation of soil drainage classes
- Modified CanSIS code for soil drainage class

The PEI Soil Survey attributes are relevant to biodiversity standards in that soil features are a major contributor to such coverages as ecological land classifications, including the ecological framework for Canada. Soils information is a key driver of other elements of the environment and the manner in which the environment can be impacted by farm management practices (erosion, siltation, loss of nutrients, etc.).

Where links can be developed between other elements of wildlife habitat (vegetation, water quality, etc.) and soils features, there can be potential for monitoring and modelling analysis to be conducted utilizing soil information, in concert with other elements of the environment.

14.2 Land Base - Topography -

14.2.1 LRIS 1985 Basemap at 1:10,000 for PEI



Abstract

This mapping was produced from aerial photography, in the middle to late 1980's. It includes features such as buildings, roads, railways, utilities, waterways, land cover, etc. Provides digital base mapping for PEI.

Agency

Provincial Government
Prince Edward Island Dept. of Provincial Treasury
Charlottetown, PE

Access to Data

- See Online PEI Digital Data Agreement.
- No use constraints were identified in the metadata.
- Scope of Dataset
- 100% of geographic area.
- URL to More Information on the Web
- <http://www.gov.pe.ca/gis/index.php3?number=77581&lang=E>

Currency

- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:10,000

Link to Database

- Look in record 498966416 for more detail on this dataset.

Summary Observations and Recommendations

The PEI Basemap coverage provides landscape topographic features that includes landcover including watercourses. In addition, infrastructure features such as classified roads, railway lines, towns, villages and buildings are also shown. As such, this information can be relevant for any wildlife species for which required habitat can be linked to these landcover classes, landforms or infrastructure features contained in the dataset. Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture definition layers and inventory coverages containing information on habitat values (forest and wetland inventories, rare species occurrence, protected areas, etc.). Transportation and utilities infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

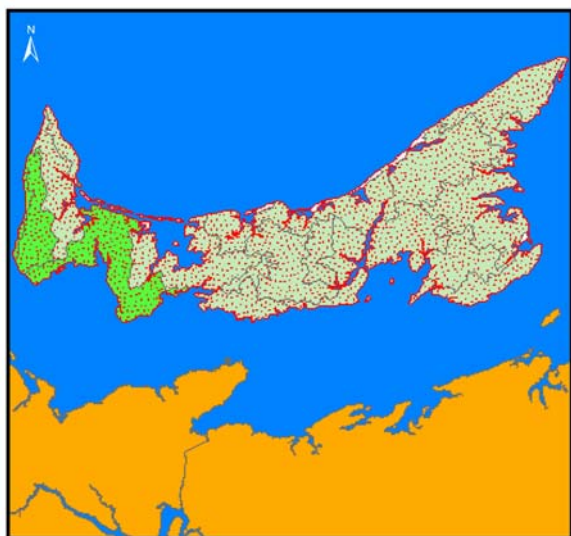
The features of the PEI Basemap includes attributes that are relevant to biodiversity standards as the information contained allows for mapping and subsequent analysis of landcover classes, watercourses or infrastructure that would relate to biodiversity measures. The dataset may be useful in examination of broad scale issues at the landscape level utilizing the features in the coverage (all watercourses, roads, etc.) or to enable examination of specific rivers, lakes, road corridors, etc. In combination with other coverages containing landcover and land use data, the topographic coverage will assist in defining the quantity and quality of habitat (patch size,

fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

The base map coverage can provide base coverage for landcover and infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As such these coverages could be useful for monitoring of existing habitat and biodiversity values, habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

14.3 Land Cover - Aquatic -Waterbodies

14.3.1 Wetland Inventory of PEI (2000)



Abstract

Digital outline and associated attribute data for PEI freshwater wetlands taken from 1: 17 500 CIR aerial photography during the 2000 Corporate Land use Inventory. The wetlands have been rated using the Golet Wetland Classification System.

It is of special note that in addition to this most recent 2000 version of the wetland inventory that has been highlighted in this report, PEI also has the digital version of the 1990 version of the wetland inventory providing some historical inventory data for this time period. This dataset and the corresponding record in the NAESI database follow:

1990 Wetland Inventory of PEI (NAESI database record 249584310).

Agency

Provincial Government
Prince Edward Island Dept. of Environment, Energy & Forestry
Charlottetown, PE

Access to Data

- Data is not available for download online, consult with identified contact for information on data requests and any associated fees. A sample map (pdf page size) is available for viewing at the website illustrating the map product.
- See Online PEI Digital Data License Agreement.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gov.pe.ca/gis/index.php3?number=77555&lang=E>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:17,500

Link to Database

- Look in record 1140015354 for more detail on this dataset.

Summary Observations and Recommendations

Provides wetlands information for the entire province of PEI, including agricultural regions.

Database attributes include: Dominant and secondary Land Uses, Dominant and secondary Land Cover Types, Land cover composition, Wetland Cover Type, Degree of Vegetation Interspersion, Type of Impoundment in Wetlands, Number of Visibly Active and Inactive Beaver Dams in a Wetland, Number of Vegetation SubClasses in a Wetland, Dominant and Sub-dominant class richness, Polygon Size, site type, surrounding cover, juxtaposition, Golet Score, and hydrological classification.

The Wetland Inventory is relevant to any wildlife species for which the wetland database attributes may apply in terms of assessment of habitat values (quantity and quality of habitat). Wetland and adjacent riparian areas within agricultural zones may provide particularly important "islands" or areas of habitat for wildlife and as such this information may be of particular relevance within agricultural areas.

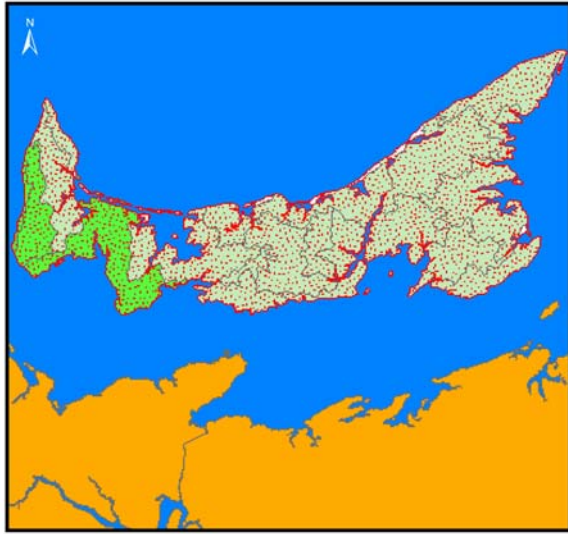
The PEI Wetland Inventory provides a detailed dataset on wetlands attributes available to describe wetland areas across the province of PEI. This dataset was developed in association with the development of the PEI Corporate Resource Inventory and contains additional detailed data on the wetlands polygons not contained within the more integrated Corporate Resource Inventory dataset. It would be anticipated that this would be an effective coverage for application to monitoring, managing and modelling activities that have an effect on these aspects of

biodiversity in terms of thresholds and targets for indicators. With the role of wetlands as potential "islands" of habitat within agricultural areas, the information contained in such datasets could be of particular value in establishing best management practices on adjacent agriculture lands and measuring the effects in terms of impacts upon biodiversity.

The PEI Wetland Inventory provides a detailed dataset on wetlands attributes for PEI. Information on vegetation on wetland areas is provided. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of wetland - agricultural transition and for areas within the agricultural region where individual wetlands may constitute particular wildlife habitat value. The land use information included in the dataset may also have considerable value for identification of land uses and activities that may have relevance and impact upon wildlife habitat and biodiversity.

The availability of historical wetland inventory data in digital form for PEI from 1990, may have particular value in terms of modelling of change in habitat values associated with wetland attributes over time.

14.3.2 PEI Watershed Boundaries



Abstract

This coverage provides a digital outline of PEI watershed boundaries to enable analysis in conjunction with other geographic datasets.

Agency

Provincial Government
Prince Edward Island Dept. of Environment, Energy & Forestry
Charlottetown, PE

Access to Data

- See Online PEI Digital Data Agreement
- Scope of Dataset
- 100% of geographic area.
- URL to More Information on the Web
- <http://www.gov.pe.ca/gis/index.php3?number=77555&lang=E>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:17,500

Link to Database

- Look in record 1139942905 for more detail on this dataset.

Summary Observations and Recommendations

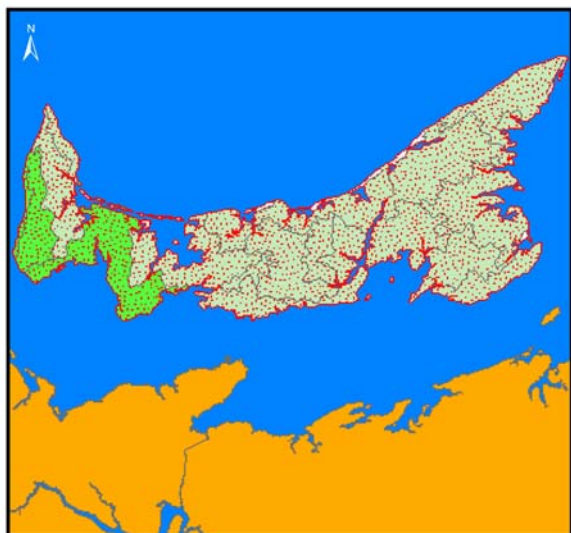
The PEI Watersheds coverage provides the watershed name, boundary and area. This coverage enables analysis in conjunction with other geographic datasets. The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting of land cover and other features pertaining to wildlife habitat.

The watersheds layer contains boundaries of major PEI watersheds. The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting of features relating to potential indicators, thresholds and targets.

The watersheds layer contains boundaries of major PEI watersheds. The principal relevance for this information is seen as its potential for use as a geographic framework should the user wish to use watersheds as the boundary framework for analysis, assessment, monitoring and/or reporting.

14.4 Land Cover - Terrestrial -Land Use

14.4.1 *Agricultural Outline of PEI 1997*



Abstract

Provides the boundary outline of all agricultural areas interpreted from 1997 CIR 1:24,000 aerial photography, thereby illustrating the extent of agricultural cover in PEI as of 1997.

Agency

Provincial Government
Prince Edward Island Dept. of Environment, Energy & Forestry
Charlottetown, PE

Access to Data

- Subject to agreement to abide by PEI Digital Data Agreement available online at the indicated URL.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gov.pe.ca/gis/index.php3?number=77555&lang=E>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:24,000

Link to Database

- Look in record 1139935026 for more detail on this dataset.

Summary Observations and Recommendations

The agriculture outline provides the boundary and extent of agriculture land use for the province as of 1997. This dataset will be useful for overlay with any other GIS dataset on land cover/land use for describing the implications of agriculture land use on wildlife habitat values .

The agriculture outline provides the boundary and extent of agriculture land use for the province as of 1997. This dataset will be useful for overlay with any other GIS dataset on land base/land cover attributes for describing the implications of agriculture land use on biodiversity values. In conjunction with datasets describing other attributes that can define wildlife habitat suitability and capability such as the Forest Inventory, the Corporate Resource Inventory, and the Wetlands Inventory, this dataset could provide the basis for analysis of attributes at the interaction of agricultural areas with forested and wetland habitats.

Information on land uses will be relevant to biodiversity in terms of potential effects of the stated uses on biodiversity values of the agricultural lands themselves as well as potentially upon surrounding forests/wetlands and other areas and thus on potential overall biodiversity for the general area.

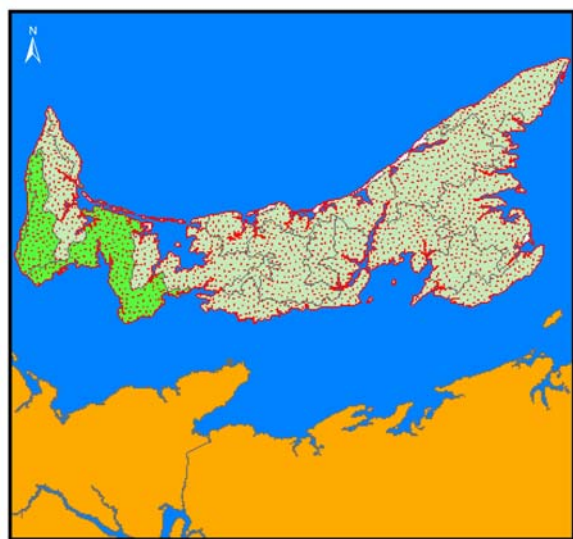
The agriculture outline would be useful for overlay analysis with other GIS datasets in order to

identify the extent of agriculture land use as of 1997 in PEI. This coverage will be useful to identify the outline boundary and thus the zone of transition between agriculture land use and forests, wetlands, urban use and other land cover/land uses. This coverage is important for application with other coverages in defining the agriculture lands and thus the area being directly considered for assessment of biodiversity standards.

The NAEIS program should review this dataset collection as a possible model for communicating and explaining biodiversity standards and providing supporting information to land managers and private farmers across PEI (e.g. use of boundary data with additional information relating to biodiversity and agricultural practices).

14.5 Land Cover - Terrestrial -Land Use

14.5.1 Corporate Resource Inventory of PEI (2000)



Abstract

The PEI Corporate Land Use Inventory provides a comprehensive geographic coverage of land use integrated with land cover attributes.

Agency

Provincial Government
Prince Edward Island Dept. of Environment, Energy & Forestry
Charlottetown, PE

Access to Data

- Data is not available for download online, consult with identified contact for information on data requests and any associated fees. A sample map (pdf page size) is available for viewing at the website illustrating the map product. See Online PEI Digital Data License Agreement.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gov.pe.ca/gis/index.php3?number=77555&lang=E>

Currency

- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:12,400

Link to Database

- Look in record 1685004045 for more detail on this dataset.

Summary Observations and Recommendations

Provides land cover and land use information for the entire province of PEI, including agricultural regions, within an integrated dataset. Includes forest stands, wetland types, watercourses, non-forested areas and agricultural lands. Database attributes include: Dominant and subcategory Land Uses, Dominant and subcategory Land Cover Types, Land cover composition, Average Tree Height, Percentage Density of Tree Crowns in Polygon, Site Type for forested polygons, Interpreted Historical Dominant and secondary Land Uses, Defoliation level for forest stands, Indication of Change in Polygon Boundary Since the 1990 Inventory, Wetland

Cover Type, Degree of Vegetation Interspersion in Wetland Polygons, Type of Impoundment in Wetlands, Number of Visibly Active and Inactive Beaver Dams in a Wetland, Indication of use of GPS for polygon capture, Indication of Ground Verification as applicable, Number of Vegetation SubClasses in a Wetland, Generalized Forest Cover Type, Inventory Year, Polygon Size in Hectares.

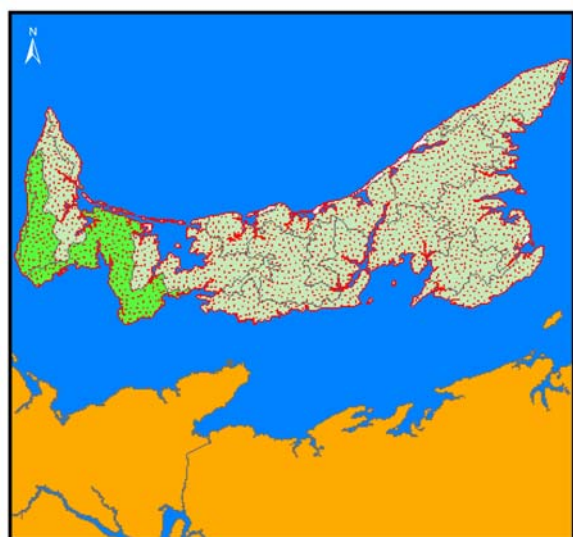
The Corporate Resource Inventory is relevant to any wildlife species for which the database attributes may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). Additional detail on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow assessments to be undertaken with respect to these features (proximity to water/forest types, riparian areas, etc.). Indication of land uses may allow for assessment of the potential impacts of these uses on habitat quality as well as its use by wildlife (should other constraints such as noise disturbance related to uses be identified). This dataset should be particularly useful given the integration of land cover and land use attributes in a single dataset.

The PEI Corporate Inventory provides a broadly-based and detailed dataset available to describe forested, non-forested, wetland and agricultural areas across the province of PEI. It provides an integrated dataset that brings together and provides synopsis of data from the forest inventory, wetland inventory, basemapping and agricultural information. This is an integrated dataset that has been assembled to provide PEI resources staff with a useful tool for planning, management and monitoring. It would be anticipated that this would be an effective coverage for application to monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

The PEI Corporate Inventory includes information that is brought together from several other sources and brings things up to date as of 2000 including summaries from forest and wetland inventories and agriculture land uses. Information on tree cover and on vegetation on wetland areas is provided. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest and wetland - agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute particular wildlife habitat value. The land use information may also have considerable value for identification of land uses and activities that may have relevance and impact upon wildlife habitat and biodiversity and associated biodiversity measures.

14.6 Land Cover - Terrestrial -Vegetation

14.6.1 Forest Inventory of PEI (1990)



Abstract

Digital outline of forest stands derived from 1990 colour infrared aerial photography. Detailed information on forest species. General land cover identification of non-forest landtypes. The 1990 version of the forest inventory was developed in association with the production of the 1990

State of the Forest Report of PEI.

It is of special note that in addition to this most recent 1990 version of the forest inventory that has been highlighted in this report, PEI also has digital versions of historical forest inventory data for three additional dates. These datasets and the corresponding records in the NAESI database follow:

- 1935 Forest Inventory of PEI (NAESI database record 1140032916)
- 1958 Forest Inventory of PEI (NAESI database record 1020359429)
- 1980 Forest Inventory of PEI (NAESI database record 1140035583).

Agency

Provincial Government

Prince Edward Island Dept. of Environment, Energy & Forestry

Charlottetown, PE

Access to Data

- Data is not available for download online, consult with identified contact for information on data requests and any associated fees. A sample map (pdf page size) is available for viewing at the website illustrating the map product.
- See Online PEI Digital Data License Agreement.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.gov.pe.ca/gis/index.php3?number=77555&lang=E>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:17,500

Link to Database

- Look in record 527654917 for more detail on this dataset.

Summary Observations and Recommendations

Provides forest cover (forest stand) information, (also wetland types, major watercourses, non-forested types), for the entire province of PEI, including agricultural regions. Database attributes include: General Land Type, Area, Plant Community group as defined by D.G. Sobey, Land cover or dominant species code, Species composition, Height, Crown Closure, Origin or history of the polygon, Defoliation of treed polygons in 25% classes.

The Forest Inventory is relevant to any wildlife species for which the database attributes, primarily forest cover, but also plant community types, may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). General location and extent information on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow some general assessments to be undertaken (proximity to water/forest types, riparian areas, etc.).

The PEI Forest Inventory provides a broadly-based and detailed dataset available to describe forested areas across the province of PEI, including the forested areas within the agricultural region of the province. It provides information regarding tree cover for forested stands, and generalized non-forested classification of other areas that could be useful in monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

The PEI Forest Inventory includes information of tree cover and also includes a description of the

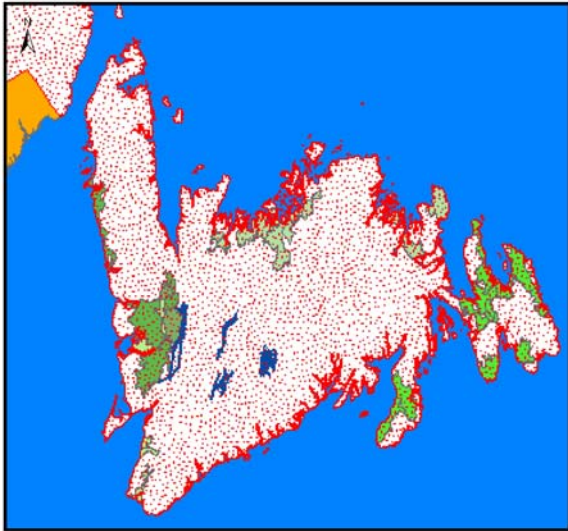
overall plant community through identification of a Plant Community Group. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute particular wildlife habitat value and associated biodiversity measures. In addition, data on location/extent and generalized classification of wetlands, non-forested areas and watercourses will also enable some limited assessment related to these features (proximity, identification of riparian areas, etc.).

The availability of historical forest inventory data in digital form for PEI from 1935, 1958, and 1980, may have particular value in terms of modelling of change in habitat values associated with forest cover attributes over time.

15 NEWFOUNDLAND

15.1 Land Base - Topography -

15..1 *Resource Maps for Newfoundland and Labrador (1:50,000)*



Abstract

This collections of 1:50,000 digital topographic maps are Newfoundland and Labrador's version of Canada's National Topographic Data Base (NTDB) 1:50,000 maps. The data was modified and enhanced, based on user input.

Agency

Provincial Government
Newfoundland Environment & Conservation
St. John's, NF

Access to Data

- Contact distributor for access and fee information. End user licenses required for digital data. Fees \$25 - \$100 per file dependent upon percentage of water. No use constraints identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 1920894284 for more detail on this dataset.

Summary Observations and Recommendations

The Resource Maps for Newfoundland and Labrador (Topographic Base Map) provides landscape topographic features that includes watercourses and elevations of surrounding land. In addition, infrastructure features such as classified roads and railway lines are also shown. As such, this information can be relevant for any wildlife species for which required habitat can be linked to these landcover classes, landforms or infrastructure features contained in the dataset. Water coverage information can be utilized to assist in definition of riparian zones for subsequent analysis in combination with agriculture definition layers and inventory coverages containing information on habitat values (forest and wetland inventories, rare species occurrence, protected areas, etc.). Transportation and utilities infrastructure data will assist in defining potential impacts on habitat (fragmentation, connectivity, limitations to quantity and quality of habitat).

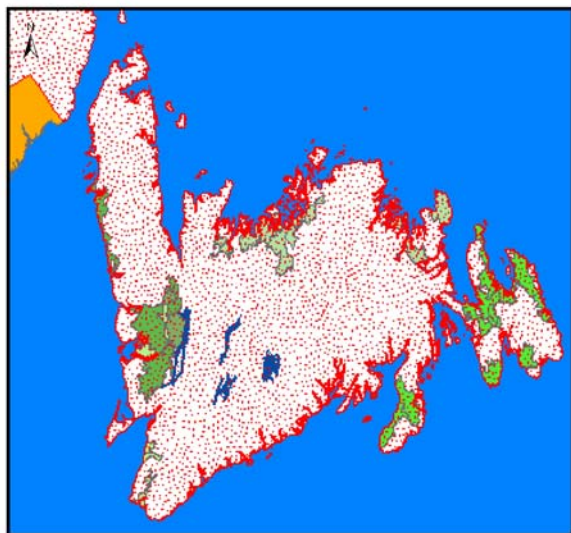
The features of the Resource Map series includes attributes that are relevant to biodiversity standards as the information contained allows for mapping and subsequent analysis of landcover classes, watercourses or infrastructure that would relate to biodiversity measures. The dataset may be useful in examination of broad scale issues at the landscape level utilizing the features in

the coverage (all watercourses, roads, etc.) or to enable examination of specific rivers, lakes, road corridors, etc. In combination with other coverages containing landcover and land use data, the topographic coverage will assist in defining the quantity and quality of habitat (patch size, fragmentation, connectivity, etc.), and thus assist in determination of biodiversity measures.

The topographic base map coverage can provide base coverage for landcover and infrastructure features on the landscape across the province that have a bearing on wildlife habitat values and biodiversity. As such these coverages could be useful for monitoring of existing habitat and biodiversity values, habitat conversion, and biodiversity measures (such as fragmentation of natural areas) that pertain to these features. The availability of transportation infrastructure features would enable identification of areas where these features intersect with farming areas/watercourses to enable assessment of potential impact in terms of siltation/sedimentation or fragmentation studies. Initial use of the information on infrastructure and other items (urban areas, etc.) contained in the topographic coverage will assist in defining biodiversity measures that are practical and that consider the existing human intervention on the landscape.

15.2 Land Cover - Terrestrial -Land Use

15.2.1 *Large Scale Mapping of Provincial Parks & Reserves for Newfoundland & Labrador*



Abstract

A collection of resource mapping of Provincial Parks, wilderness and ecological reserves, T'Railway Provincial Park and waterway Parks. Majority of data includes boundaries of protected areas derived from NTS 1:50,000 series.

Agency

Provincial Government
Newfoundland Environment & Conservation
Deer Lake, NF

Access to Data

- Access to the data is restricted, please contact distributor.
- No use constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:50,000

Link to Database

- Look in record 155343576 for more detail on this dataset.

Summary Observations and Recommendations

The database depicts areas within the Newfoundland landscape that has some form of protection and land use management criteria and enforcement. Several other datasets provide detailed habitat information for these areas. Status of these lands can indicate the likelihood of habitat enhancements or decreases for determining the adequacy of habitat in Newfoundland's various ecozones.

The Mapping of Provincial Parks/Reserves provides boundaries of provincial parks, wilderness and ecological reserves, T'Railway Provincial Park and waterway parks in Newfoundland. This coverage could be relevant to wildlife species habitat through overlay application with other coverages that indicate habitat values (forest, grassland, wetland inventories) and agriculture locations. This would enable display and analysis of levels of habitat protection afforded by these areas, dependent upon levels of protection that are provided in the protected areas/reserves.

Protected areas are an essential piece of land use/administrative information for understanding opportunities and constraints for habitat conservation or enhancement.

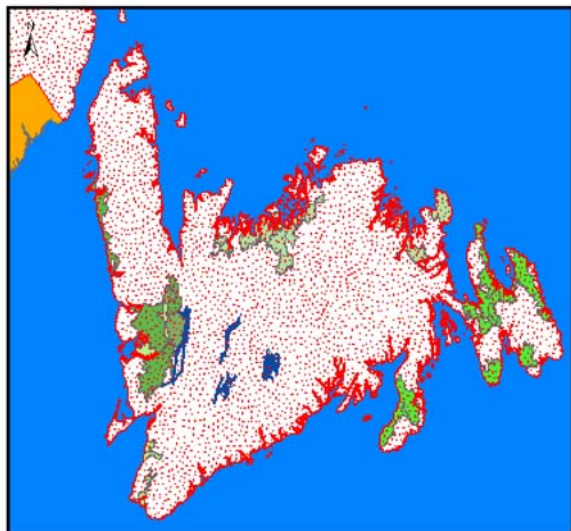
Overlay of this information with datasets indicating agriculture areas would be useful for

describing and assessing levels of protected habitat that could be considered in achieving biodiversity standards, where these areas are in proximity to agricultural areas. Use of habitat information shown to be contained within such protected areas in proximity to agricultural areas, dependent upon levels of protection, would contribute towards meeting biodiversity (habitat) standards in terms of providing for habitat requirements such as connectivity, required patches, amount of habitat available, and possibly key habitat requirements for food, cover or reproduction if identified within the boundaries.

This boundary coverage dataset can have use in combination with other datasets that provide detailed descriptive information on attributes that pertain to wildlife habitat and agriculture lands. It may also be useful to undertake analysis of land cover attributes from other datasets to assess any protected undisturbed areas of similar landscapes to agricultural areas to enable comparison for development of thresholds and targets for biodiversity indicators. In addition, where protected areas are in proximity to agricultural areas, definition of habitat values within such protected zones may assist in meeting overall threshold levels or targets.

Obtain on a regular basis to ensure up to date boundaries and definitions of protected areas.

15.2.2 Agriculture Atlas for Newfoundland and Labrador



Abstract

The Provincial Agricultural Atlas provides the locations, boundaries, land uses, soil types and other details of farms in Newfoundland and Labrador. The Atlas provides information on berry management units, agricultural development sites, pastures, Christmas tree farms, fur farms, and more, at a 1:250,000 scale.

Agency

Provincial Government
Newfoundland Natural Resources
Corner Brook, NF

Access to Data

- Access and use of this data is restricted, please consult the identified distributor for access and fees..

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

No URL linkage was available.

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250,000

Link to Database

- Look in record 1972943964 for more detail on this dataset.

Summary Observations and Recommendations

The Agriculture Atlas provides the boundary/extent and land uses of agriculture land use for the province. This dataset will be useful for overlay with any other GIS dataset on land cover/land use for describing the implications of agriculture land use on wildlife habitat values.

The database includes information on agricultural lands regarding: locations, extent, land uses, soil types, agriculture development sites and pastures.

Information on land uses will be relevant to wildlife habitat in terms of potential effects that the stated uses may have on habitat values of the agricultural lands themselves and potentially upon the surrounding forests/wetlands and other areas and thus on potential modelling of habitat values.

The Agriculture Atlas provides the boundary and extent of agriculture land use for the province. This dataset will be useful for overlay with any other GIS dataset on land base/land cover attributes for describing the implications of agriculture land use on biodiversity values.

This dataset has application to the biodiversity standards in that it provides for identification of agricultural areas, and thus the agricultural outline of such areas, for which the biodiversity standards are to be developed. The land use information provided in this dataset, in conjunction with other datasets describing other attributes that can define wildlife habitat suitability and

capability such as the Forest Inventory and the Maritime Wetlands Inventory, this dataset could provide the basis for analysis of attributes at the interaction of agricultural areas with forested and wetland habitats.

Information on land uses will be relevant to biodiversity in terms of potential effects of the stated uses on biodiversity values of the agricultural lands themselves as well as potentially upon surrounding forests/wetlands and other areas and thus on potential overall biodiversity for the general area.

The Agriculture Atlas would be useful for overlay analysis with other GIS datasets in order to identify the extent of agriculture land use in Newfoundland. This coverage will be useful to identify the outline boundary and thus the zone of transition between agriculture land use and forests, wetlands, urban use and other land cover/land uses. This coverage is important for application with other coverages in defining the agriculture lands and thus the area being directly considered for assessment of biodiversity standards. The data will also provide insight to the level and type of agricultural activity on the landscape for wildlife species for which these activities have relevance to their use of the area.

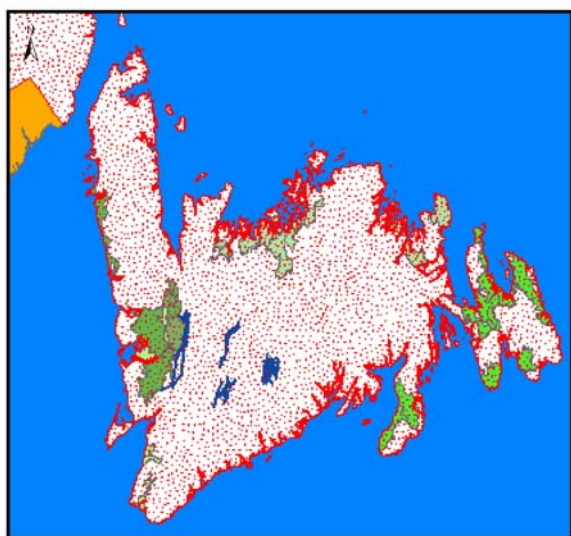
Land use information may be useful to assist in considering the types/magnitude of uses that may need to be considered in developing best management practices for agricultural areas. It may be possible to undertake analysis of the transition zones surround these areas to assess potential impacts of such practices to guide development of Best Management Practices.

The NAEIS program may want to incorporate some of the themes depicted in this map set for decision-making, and should review this dataset collection as a possible model for communicating and explaining biodiversity standards and providing supporting information to

land managers and private farmers across Newfoundland (e.g. selected themes from the Atlas and additional information relating to biodiversity and agricultural practices).

15.3 Land Cover - Terrestrial -Vegetation

15.3.1 Provincial Forest Inventory for Newfoundland & Labrador



Abstract

This database contains vegetation information for both forested and non-forested areas. For forested areas this includes tree species, height, age, crown density, and site. For non-forested areas it includes hydrology, wetlands, barren, scrub, cleared areas, and residential.

This database is currently available for approximately 85% of the island of Newfoundland (generally the south coast is not available) and 30% of Labrador (generally the north is not available).

Agency

Provincial Government
Newfoundland Natural Resources
Corner Brook, NF

Access to Data

Data is not available for download online, consult with identified distributor for information on data requests and associated fees. No use constraints were identified in the metadata.

Scope of Dataset

- Estimated to be approximately 70% of geographic area.

URL to More Information on the Web

No URL linkage was provided.

Currency

- Data collection frequency:
- Data maintenance frequency: Annually

Accuracy

- Scale not provided.

Link to Database

- Look in record 1966859146 for more detail on this dataset.

Summary Observations and Recommendations

Provides forest cover (forest stands) information, (also wetland identification, watercourses and non-forested areas), for the 85% of the island of Newfoundland and 30% of Labrador. Database attributes include: tree species composition, height, crown closure, age and site classification. The Forest Resources Inventory is relevant to any wildlife species for which the database attributes may apply in terms of assessment of habitat values (patch characteristics, corridors, distance to cover, amount and quality of habitat, etc.). General location and extent information on other land cover types (wetland, non-forested areas) and watercourses are also included which would allow some general assessments to be undertaken (proximity to water/forest types, riparian areas, etc.).

The relevance of this dataset is limited to the areas covered (not generally available for the south coast of Newfoundland or for the northern areas of Labrador).

The Newfoundland Forest Inventory provides a dataset available to describe forested areas for most of Newfoundland and the southern portion of Labrador. It provides information regarding tree cover for forested stands, and generalized non-forested classification of other areas that could be useful in monitoring, managing and modelling activities that have an effect on these aspects of biodiversity in terms of indicators, thresholds and targets.

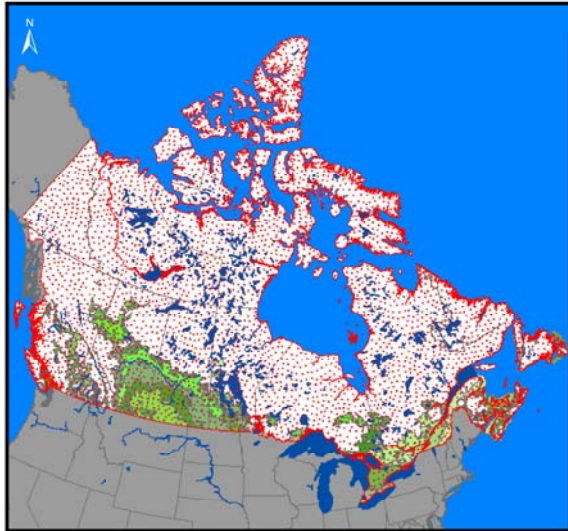
The relevance of this dataset is limited to the areas covered (not generally available for the south coast of Newfoundland or for the northern areas of Labrador).

The Newfoundland Forest Inventory includes information of tree cover and identification of non-forested areas. This data would be of particular value for monitoring ecosystems and wildlife modelling in areas where the inventory is available at any zones of forest-agricultural transition and for areas within the agricultural region where individual stands or blocks of tree cover (woodlots) may constitute particular wildlife habitat values and associated biodiversity measures. In addition, data on location/extent and generalized classification of wetlands, non-forested areas and watercourses will also enable some limited assessment related to these features (proximity, identification of riparian areas, etc.).

16 CANADA

16.1 Biological - Species at Risk -Various

16.1.1 *NatureServe Canada Managed Areas*



Abstract

Each Canadian NHP/CDC collects information on the Elements of biodiversity (plants, animals, and communities) within their jurisdiction and tracks the taxonomy and status of each Element at the global, national and subnational levels

The Managed Area records contains information that uniquely identifies Managed Areas, describes their location, size and status, specifies the responsible manager, and lists the Elements of biodiversity found within the Managed Area. This information is collected and maintained using established Natural Heritage Methodology developed by NatureServe and The Nature Conservancy (TNC). A Managed Area has legal boundaries defined by its component Tracts; it is distinct from a Site whose boundaries are ecologically determined. Until a Managed Area has been established, the SITE Record (SBR) is the repository for any information concerning the prospect of a future Managed Area. A Managed Area is defined by its management, not by its

ownership. The manager (or managing agency) should not be confused with the owner. The manager may not own the Managed Area, and the Managed Area may have more than one owner. A Managed Area may be divided into units with special management requirements (e.g., a Ranger District or a Research Natural Area in a National Forest). In this case, a Managed Area record is created for each unit, and the record for the unit will specify that that unit occurs within a larger Managed Area.

Managed Area records are created for the purpose of identifying and characterizing natural areas of land under distinct protective or potentially protective management. A Managed Area is usually under some formal or legal level of protection and may be managed in accordance with some unified set of stewardship plans. Managed Areas may be established through legislative actions or administrative orders to protect natural areas. They may also be established as the practical outcome of projects to protect formally designed Sites. These data are collected and maintained by the Natural Heritage Programs and Conservation Data Centres using a standardized methodology to provide accurate and current biodiversity and conservation information to public and private agencies and individuals. The primary emphasis is on species and ecological communities that are rare or otherwise imperiled. Uses of the data can include: natural resource management, conservation planning, environmental review, biological and ecological research, land acquisition, and economic development. Through aggregation of the EO data at regional, national, or range-wide scales, these data can be used to examine broad patterns and set priorities in a global context.

Agency

NGO

NatureServe Canada

Ottawa, ON

Access to Data

- The data is usually part of the Heritage Data Management System (HDMS) installation at a provincial Natural Heritage Program (NHP) or Conservation Data Centre (CDC).
- In order to obtain the data must contact the Publication Place:
- Provincial data centre (Yukon - Whitehorse; BC - Victoria; Alberta - Edmonton; SK - Regina; MB - Winnipeg; ON - Peterborough; PQ - Québec City; Atlantic - Sackville, NB
- Publisher: Yukon - Yukon Conservation Data Centre; BC - British Columbia Conservation Data Centre, AB - Alberta Natural Heritage Information Centre; SK - Saskatchewan Conservation Data Centre; MB - Manitoba Conservation Data Centre; ON - Ontario Natural Heritage Information Centre; PQ - Centre de données sur le patrimoine naturel du Québec; Atlantic - Atlantic Canada Conservation Data Centre
- Pricing is based on scale of data, geographic coverage, access requirements, and turnaround time required. Please contact the local NHP/CDC for data licensing fee information.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.natureserve-canada.ca/en/index.html>

Currency

- Data maintenance frequency: Continually

Accuracy

- Scale of 1:50000

Link to Database

- Look in record 1140613718 for more detail on this dataset.

Summary Observations and Recommendations

The Managed Area records contains information that uniquely identifies Managed Areas, describes their location, size and status, specifies the responsible manager, and lists the Elements of biodiversity found within the Managed Area. Managed Area records are created for the purpose of identifying and characterizing natural areas of land under distinct protective or

potentially protective management. A Managed Area is usually under some formal or legal level of protection and may be managed in accordance with some unified set of stewardship plans.

The primary emphasis is on species and ecological communities that are rare or otherwise imperiled. Uses of the data can include: natural resource management, conservation planning, environmental review, biological and ecological research, land acquisition, and economic development. Through aggregation of the EO data at regional, national, or range-wide scales, these data can be used to examine broad patterns and set priorities in a global context.

This data may be useful in providing data on protected areas and associated habitats for wildlife species that are considered to be rare or imperiled or are associated with such habitats. This may be useful to identify areas under protected status that are in proximity to agricultural areas. This data may be useful for assessing levels of habitat and areas of unique biodiversity under protected status in proximity to agricultural areas where the location data allows enough information to make such an assertion. The national wide nature of this dataset would then allow roll-up of information at a national level.

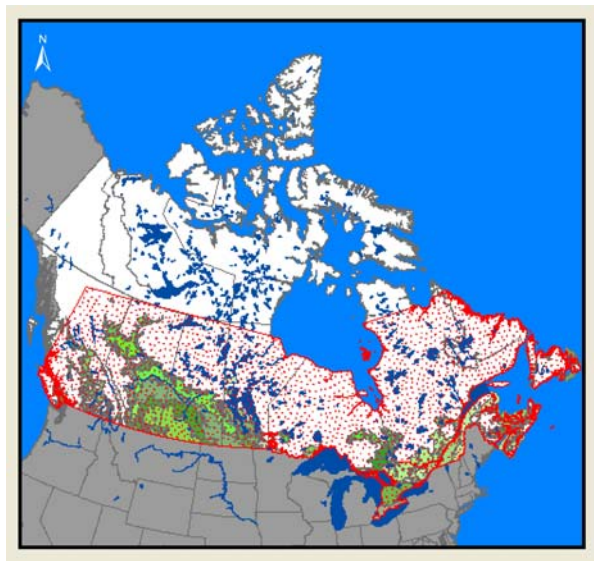
The data is indicated to be in tabular form and as such is not as readily useful for GIS spatial analysis, however, it is indicated that location data is provided for each record which allows for identification of the managed area in a geographic context. The Natureserve Managed Areas dataset may be useful, as a screening tool to search and investigate records for particularly key wildlife specie and/or wildlife habitat types that are contained within any particular Managed Areas that are in proximity to agricultural areas thus providing information on such areas that are in a protected status of some kind.

It may be useful to utilize this data in conjunction with the various CDC datasets across Canada

as a screening tool to search and investigate records for particularly key wildlife species occurrences and/or for identified occurrences of key wildlife habitat (plant/vegetation) communities from the CDC datasets that are found within these Managed Areas. As such, these identified locations could then be of assistance in identifying key "rare" ecosystems in close proximity to agricultural areas where these have been documented by the CDC.

16.2 Biological - Terrestrial -Management/Conservation

16.2.1 Canada Land Inventory - Land Capability for Ungulates



Abstract

The mapping of land capability for ungulates follows a national system developed with the aid of the Canadian Wildlife Service and the game branches of the provinces. The ungulate sector uses seven classes. In addition to class and subclass, the system indicates the ungulate species to which the classification refers. Capability for ungulate production implies a sufficient quantity and quality of food, protective cover, and space to meet the needs for survival, growth, and reproduction.

Capability mapping is accomplished through interpretation of air photographs and by field surveys. Capability ratings are also established on the basis of the optimum vegetational stage that can be maintained with good wildlife management practices.

Agency

Federal Government
NRC Canada Centre for Remote Sensing
Ottawa ON

Access to Data

- No access constraints were identified in the metadata.
- For use constraints refer to the user agreement at:
- <http://geogratis.cgdi.gc.ca/clf/en?action=userAgree>

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geogratis.cgdi.gc.ca/contexts/CanadaUngulatesInventory250kv100.xml>

Currency

- Data collection frequency: Not updated anymore
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250000

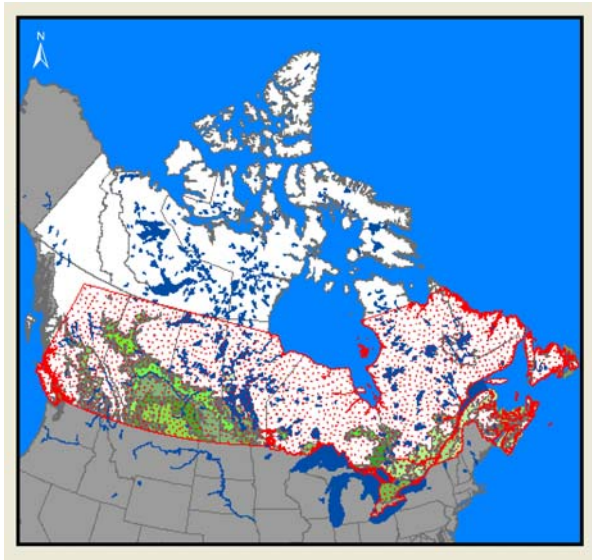
Link to Database

- Look in record 1364273689 for more detail on this dataset.

Summary Observations and Recommendations

This dataset is very broad in nature and can be readily used as both an inventory tool for land use planning and wildlife habitat protection at a national level. The dataset tends to be old and may not be applicable at a detailed level.

16.2.2 Canada Land Inventory - Land Capability for Waterfowl



Abstract

The mapping of land capability for waterfowl wildlife is based on a national classification system comparable with the other Canada Land Inventory sectors. Capability for waterfowl production requires a feeding habitat, protective cover, and space to meet the needs for growth and reproduction.

A class number is assigned to each land unit based on known or inferred information on parent material, soil profile, depth, moisture, fertility, landform, climatic factors, and vegetation. Colour coding the classes provides convenient means of separating the various class units.

The capability mapping has a scale of 1:250,000 and is accomplished through interpretation of air photography and by field surveys. Location of the land, access, ownership, distance from cities or roads, and present condition of the land unit are not considered in assigning a capability class. Excessive or insufficient hunting pressures do not limit the capability of the land and are not used in assigning classification values.

Agency

Federal Government
NRC Canada Centre for Remote Sensing
Ottawa, ON

Access to Data

- No access constraints were identified in the metadata.
- For use constraints refer to the user agreement at:
- <http://geogratis.cgdi.gc.ca/clf/en?action=userAgree>

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geogratis.cgdi.gc.ca/contexts/CanadaWaterfowlInventory250kv100.xml>

Currency

- Data collection frequency: No longer updated
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250000

Link to Database

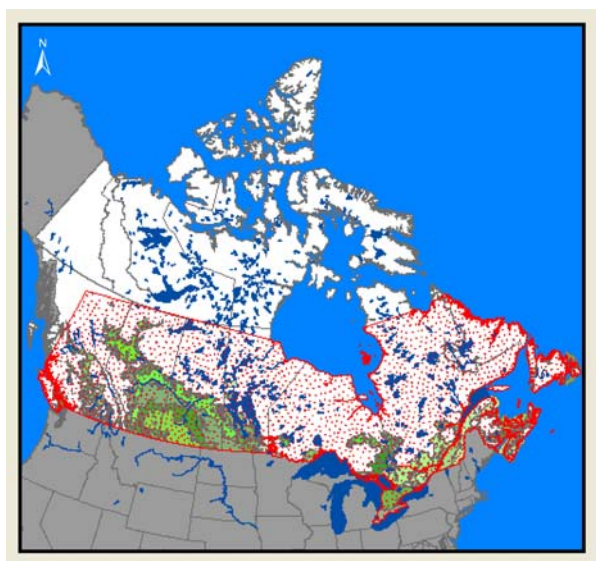
- Look in record -225856395 for more detail on this dataset.

Summary Observations and Recommendations

Assigning land units to a capability class serves as both an inventory tool for land use planning and wildlife habitat protection monitor. The dataset is now older and is coarse in nature. It can provide an excellent broad, national view of capability.

16.3 Biological - Terrestrial -Population

16.3.1 *Canadian Breeding Bird (Mapping) Census Database*



Abstract

Information taken from CWS Report provided for the rest of this entry:

Kennedy, J.A., Pam Dilworth-Christie and A.J. Erskine, 1999. The Canadian Breeding Bird (Mapping) Census Database. Technical Report Series Number 342, Canadian Wildlife Service, Ottawa, Ontario.

Data is derived from "spot- or "territory-mapping" census in variable sized plots across Canada. Habitat codes are appended to each plot to identify the primary and often secondary habitat types and dominant canopy, shrub and ground cover species present. Densities are calculated for all bird species counted at the plot. The database includes 928 censuses of 640 distinct plots, with records for 285 species. Records span censuses taken from 1927 to 1993, conducted in every province and territory except Prince Edward Island. Most of the data was collected from the 1960's to the 1980's.

NOTE: Paper (.pdf) report available from url provided. Data from 1966 to present already contained in EC internal GIS library - See Williams at EC in Regina as contact.

Agency

Federal Government
Environment Canada
Hull, QC

Access to Data

- No access constraints were identified in the metadata. Access database and report on CWS website.
- Limits to statistical robustness of the data due to inherent limitations of bird census techniques. Habitats are not assessed in relative percentage to their occurrence on the landscape. See report for discussion of limitations.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://www.ec.gc.ca/data_e.html

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Link to Database

- Look in record 1141133658 for more detail on this dataset.

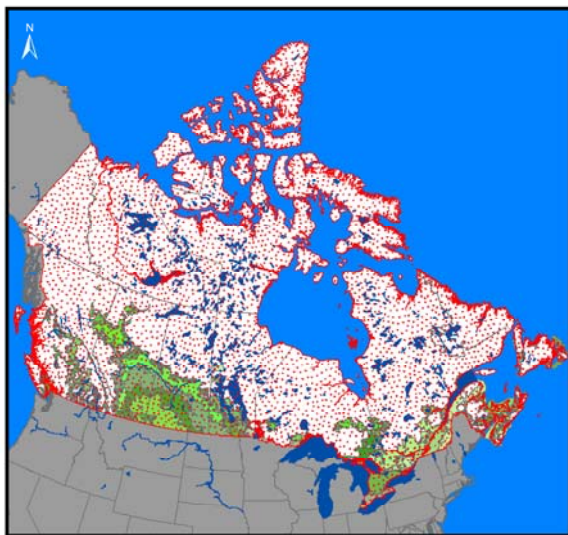
Summary Observations and Recommendations

The primary use of this tabular dataset may be to assist in development of habitat models for breeding birds for which habitat data has been captured in the dataset.

Habitat information is provided in addition to the bird density counts at the plots which may assist in habitat model development for the bird species included in the census. Should these bird species and related habitat conditions be associated with agricultural areas this data may be

useful to contribute to development of such models. The point nature of this data for specific plots measured in the assessment does not lend itself to application as an "inventory" of the habitat conditions directly. There may be some possibility to examine this data to develop correlation to other equivalent sites provided that some measured aspect from these plots can be correlated to mapped GIS polygons (forest stands, grassland type polygons, etc.).

16.3.2 Bird Studies Canada - BirdMap WFS



Abstract

Bird Studies Canada is the lead NGO in Canada for Citizen Science-based monitoring of avian biodiversity. BSC's BirdMap WFS makes locational information from several national bird monitoring programs available to the conservation community for conservation purposes. Bird Studies Canada gratefully acknowledges the support of Environment Canada - Canadian Information System for the Environment in developing this service.

Agency

NGO

Bird Studies Canada

Port Rowan, ON

Access to Data

- None recorded - public access
- Please acknowledge Bird Studies Canada and, where appropriate, its program partners, as defined in the capabilities document for this service.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geodiscover.cgdi.ca/gdp/search?action=entrySummary&entryType=service&entryId=3920&entryLang=en&displayHeader=true>

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Link to Database

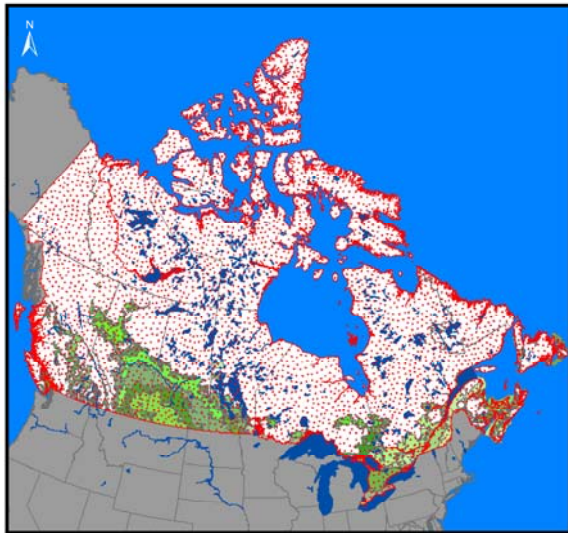
- Look in record 1141155028 for more detail on this dataset.

Summary Observations and Recommendations

BSC's BirdMap WFS makes locational information from several national bird monitoring programs available to the conservation community for conservation purposes

16.4 Imagery - Spaceborne -Multispectral

16.4.1 ASTER



Abstract

15 - 90m Medium Resolution Sensor consisting of 14 spectral bands and stereo imaging capabilities with a variety of spatial

resolutions. It can map the planet's surface and how it changes with time, and can determine the characteristics of land and water.

Agency

Federal Government

U.S. Geological Survey, CA

Access to Data

- 600.00 per scene, for ag extent 304 800\$US
- Order imagery online at provided link

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://edcimswww.cr.usgs.gov/pub/imswelcome/>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- 15m to 90m raster

Link to Database

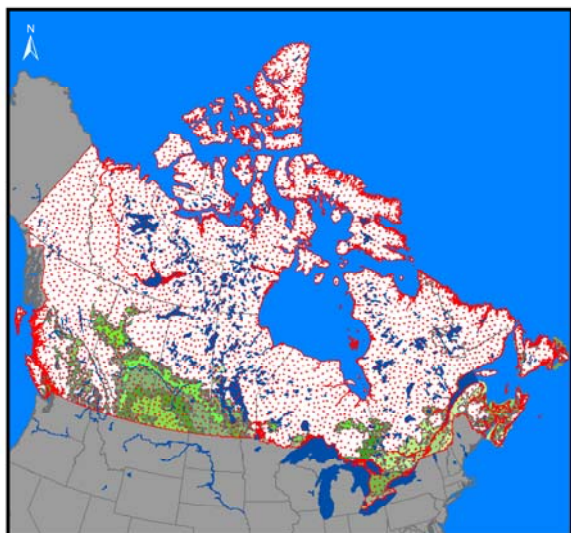
- Look in record -1350963574 for more detail on this dataset.

Summary Observations and Recommendations

May provide ancillary information concerning wildlife habitat change and how it relates to the other GIS datasets. This information may be useful, but with the presence of other more popular satellite offerings, this may not have the same impact such as Landsat or SPOT. Global coverage is limited to those areas where the satellite has been programmed to collect imagery. There is also a cost associated with the data

16.5 Imagery - Spaceborne -Various

16.5.1 CARTERRA High Resolution IKONOS Imagery



Abstract

Space Imaging launched the IKONOS satellite in 1999. As the owner of the first 1-meter satellite, Space Imaging is looking forward to fulfilling needs for high resolution, high-accuracy digital earth information. The potential uses of this data are widespread.

Since its launch in September 1999, Space Imaging's IKONOS earth imaging satellite has provided a reliable stream of image data that has become the standard for commercial high-resolution satellite data products. IKONOS produces 1-meter black-and-white (panchromatic) and 4-meter multispectral (red, blue, green, near infrared) imagery that can be combined in a variety of ways to accommodate a wide range of high-resolution imagery applications.

Agency

Private Corporation
Space Imaging, Inc

Access to Data

- various
- see user agreement when purchasing imagery

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://www.spaceimaging.com/default2.htm>

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually

Accuracy

- Scale of 1:

Link to Database

- Look in record -2041597159 for more detail on this dataset.

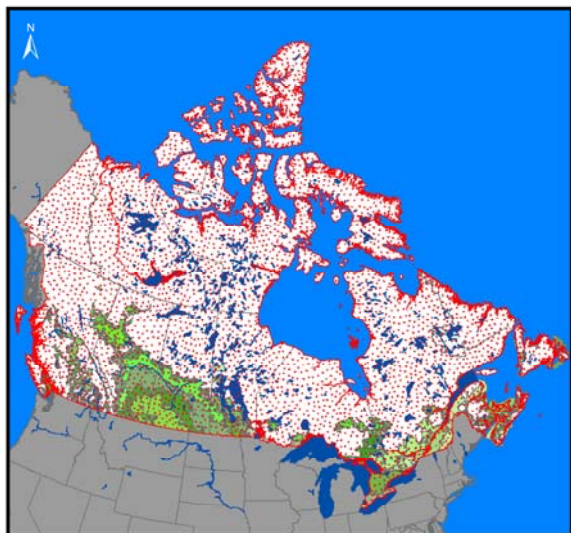
Summary Observations and Recommendations

Provides excellent coverage of land use areas - 1 meter resolution - many archived scenes for populated areas

This data comes at a relatively high cost, unless there exists an archive within the government of populated areas. No reference to IKONOS imagery archive just yet.

16.6 Land Base - Soils -

16.6.1 *Soil Landscapes of Canada Working Group v3.0. - Agriculture and Agri-Food Canada.*



Abstract

As a version of the Soils Landscapes of Canada (SLC), SLCv3.0 was compiled for National Agri-Environmental Health Analysis and Reporting Program (NAHARP) , National Carbon and Greenhouse Gas Emission Accounting and Verification System (NCGAVS) and other related national programs.

Agency

Federal Government
CanSIS
Ottawa, ON

Access to Data

- No access constraints were identified.
- Copyright 2005, Government of Canada

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://sis.agr.gc.ca/cansis/>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:1000000

Link to Database

- Look in record 1139427418 for more detail on this dataset.

Summary Observations and Recommendations

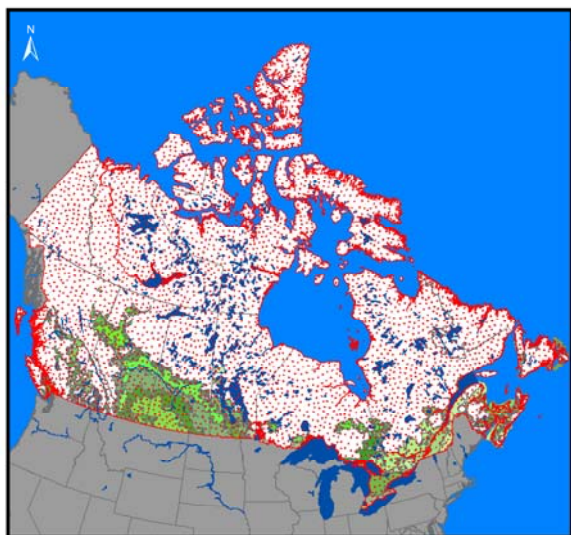
The soil landscapes of Canada offers a Canada wide coverage dataset describing soils features. This information can be relevant to wildlife species for situations where the soil conditions can be related to aspects of wildlife habitat that more directly impact the wildlife species itself. In particular, soils will have a direct bearing on vegetation cover and on crop types and farm practices in agricultural regions, which in turn will have more direct effect on wildlife habitat.

The soils landscapes of Canada attributes are relevant to biodiversity standards in that soil features are a major contributor to such coverages as ecological land classifications, including the ecological framework for Canada. Soils information is a key driver of other elements of the environment and the manner in which the environment can be impacted by farm management practices (crop types and resulting vegetation cover, erosion, siltation, loss of nutrients, etc.).

Where links can be developed between other elements of wildlife habitat (vegetation, water quality, etc.) and soils features, there can be potential for monitoring and modelling analysis to be conducted utilizing soil information, in concert with other elements of the environment. The Canada-wide geographic coverage of the Soil Landscapes of Canada coverage offers a coverage

that can be utilized across the country where correlations can be developed between soils and other features such as crop types, practices and land cover vegetation. This enables national roll-up and reporting using such a coverage where some jurisdictions may be lacking other replacement information.

16.6.2 CA Surficial Materials of Canada, Map 1880A



Abstract

The digital map data consist of geology, landforms, and hydrography on separate layers in .DXF, .MIF, or .E00 formats, and accompanying metadata. The metadata include the bibliographic file (Open File 3046) containing references to the published maps that were used in the compilation of 1880A.

The map shows the distribution of surficial materials in Canada, on land and in extensive offshore areas, at 1 : 5 000 000 scale. It portrays broad genetic categories of surface materials (alluvial, lacustrine, marine, glacial) and bedrock. The map was compiled using information from the Geological Survey of Canada, provincial geological surveys, and other sources. It provides a

generalized picture of surface materials for the entire country which serves as base information for a variety of applications.

Agency

Federal Government
Geological Survey of Canada

Access to Data

- Free
- Citation: Surficial materials of Canada / Matériaux superficiels du Canada; Fulton, R J. Geological Survey of Canada, "A" Series Map No. 1880A, 1995.
- File size: 30918 KB.
- Approximate download time (56.6 Modem): 88 min.
- View metadata and pricing from GEOSCAN

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://gsc.nrcan.gc.ca/map/1880a/index_e.php

Currency

- Data collection frequency: As Needed
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:5,000,000

Link to Database

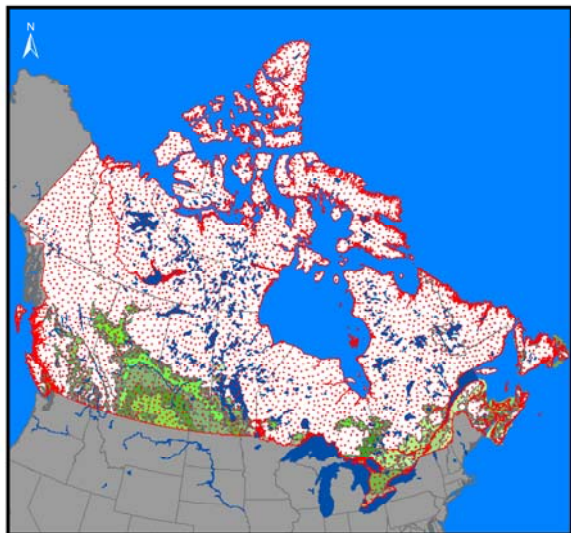
- Look in record -1658168751 for more detail on this dataset.

Summary Observations and Recommendations

It provides a generalized picture of surface materials for the entire country which serves as base information for a variety of applications, including determining how surficial geology may impact habitat suitability / capability.

16.7 Land Base - Transportation -

16.7.1 Road Network - National - 1: 50,000



Abstract

A Road Segment is a line feature that identifies a length of road having similar features and rankings. These include: primary, secondary and tertiary roads.

Agency

Federal Government

Centre for Topographic Information Section

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

Currency

- Data collection frequency: Annually
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

Link to Database

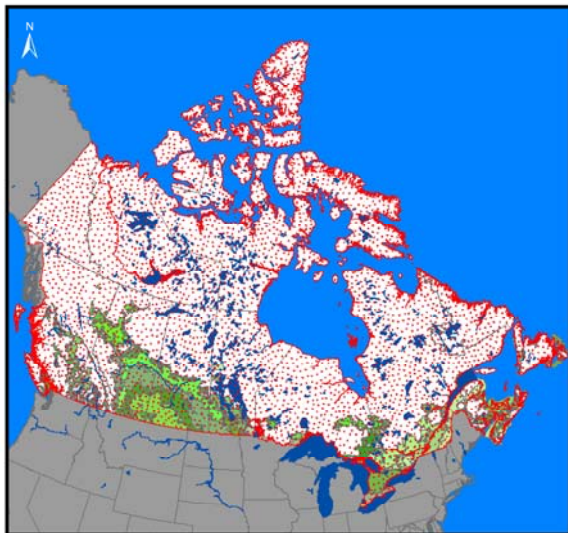
- Look in record -1867894932 for more detail on this dataset.

Summary Observations and Recommendations

Will give an overall impression of habitat fragmentation due to road access throughout Canada

Serves as a useful tool to determine the level of human impact on the environment, and how this might affect planning of wildlife corridors, etc.

16.7.2 CanMap Streetfiles - prov boundaries, regional municipality boundaries



Abstract

See the big picture with CanMap® Streetfiles. Locate, analyze and display customers, prospects and assets geographically. Enhance strategic decision-making, manage business decisions effectively, or offer value added services with CanMap Streetfiles.

North America's #1 choice for Canadian data provides an accurate map fabric for wireless and location based service applications (LBS), market analysis, target marketing, site location analysis, customer service and asset management.

This new release provides users with comprehensive coverage, detailed attribution, positional accuracy, current data and presentation-quality cartographics.

CanMap Streetfiles comprehensive nationwide coverage provides detailed topographic and geographic features at the highest level for all major Canadian urban areas.

Agency

Private

DMTI Spatial

Access to Data

- \$25,000 with addresses, \$15,000 without
- Coverage: Nationwide
- Level of Accuracy: Ranges from National Topographic Data Base (NTDB) standard to sub-metre accuracy
- Projection: Unprojected latitude, longitude
- Custom projections available
- Datum: NAD83
- Formats: ESRI and MapInfo
- Custom formats available upon request.
- With CanMap Streetfiles, you have the option to purchase quarterly, semi-annual or annual maintenance to keep your GIS data current. Product improvement updates are conveniently shipped to you automatically.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

http://www.dmtispatial.com/cm_streetfiles.htm

Currency

- Data collection frequency: Continually
- Data maintenance frequency: Continually
- Currency: Quarterly, semi-annual, or annual maintenance available

Link to Database

- Look in record -62268202 for more detail on this dataset.

Summary Observations and Recommendations

Excellent for up to date version of road database. A good use for up to date information on road databases throughout Canada. Comes available as a network with or without addressing information.

16.7.3 Canada Land Inventory - Land Capability for Agriculture



Abstract

The agriculture map illustrates the varying potential of a specific area for agricultural production.

Classes of land capability for agriculture are based on mineral soils grouped according to their potential and limitations for agricultural use. The classes indicate the degree of limitation imposed by the soil in its use for mechanized agriculture. The subclasses indicate the kinds of limitations that individually or in combination with others, are affecting agricultural land use. Characteristics of the soil as determined by soil surveys.

Agency

Federal Government
NRC Canada Centre for Remote Sensing
Ottawa ON

Access to Data

- No access constraints were identified in the metadata.
- For use constraints refer to the user agreement at:
- <http://geogratis.gc.ca/clf/en?action=userAgree>

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geogratis.gc.ca/contexts/CanadaAgricultureInventory250kv100.xml>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250000

Link to Database

- Look in record 94497952 for more detail on this dataset.

Summary Observations and Recommendations

The agriculture map illustrates the varying potential of a specific area for agricultural production. These results may impact assessments for wildlife habitat. These agricultural capability maps can be used at the regional level for making decisions on land improvement and farm consolidation, for developing land use plans, and for preparing equitable land assessments.

16.7.4 Census Agricultural Regions Boundary File



Abstract

This Cartographic Boundary File for Canada contains the boundaries of all 82 census agricultural regions delineated for the 2001 Census of Agriculture together with the shoreline around Canada and the larger inland lakes, all integrated in a single layer.

Agency

Cooperative
Eastern Ontario Model Forest
Kemptville, ON

Access to Data

- None Recorded
- None recorded

Scope of Dataset

- 100% of geographic area.

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

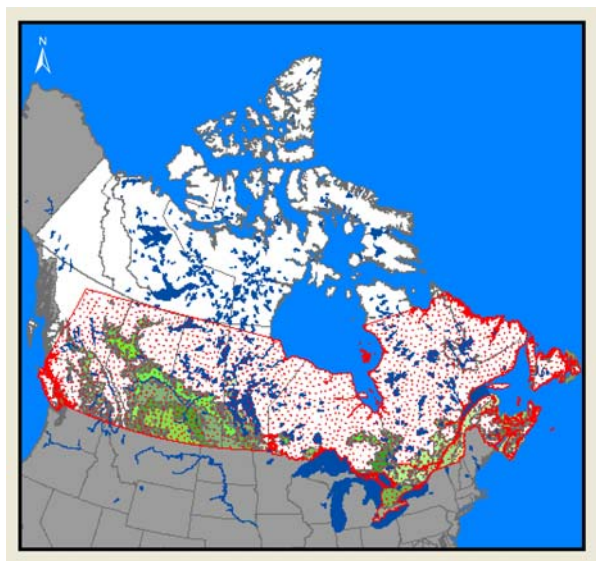
Link to Database

- Look in record -1946678967 for more detail on this dataset.

Summary Observations and Recommendations

Will provide relevant information concerning current agricultural holdings in Ontario and Canada.

16.7.5 Canada Land Inventory - Land Capability for Forestry



Abstract

The mapping of land capability for forestry is based on a national classification system comparable with the other Canada Land Inventory sectors. Land is rated according to seven classes on its capability to grow commercial timber in areas stocked with the optimum number and species of trees. This rating considers the land in its natural state, without improvements such as fertilization, drainage, or amelioration practices.

Land ratings and classes may change, however, significant changes will only be achieved through costly and continuing practices. The best lands for tree growth are Class 1 while Class 7 land can

not yield timber in commercial quantities, these represent the extremes.

The capability mappings have a scale of 1:250,000 and are accomplished through interpretation of air photographs and field surveys.

Agency

Federal Government

geogratis/CCRS

Access to Data

- No access constraints were identified in the metadata.
- For use constraints refer to the user agreement at:
http://geogratis.cgdi.gc.ca/e_license.html

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geogratis.cgdi.gc.ca/clf/en?action=fullMetadata&entryId=8360>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:250000

Link to Database

- Look in record 1140632950 for more detail on this dataset.

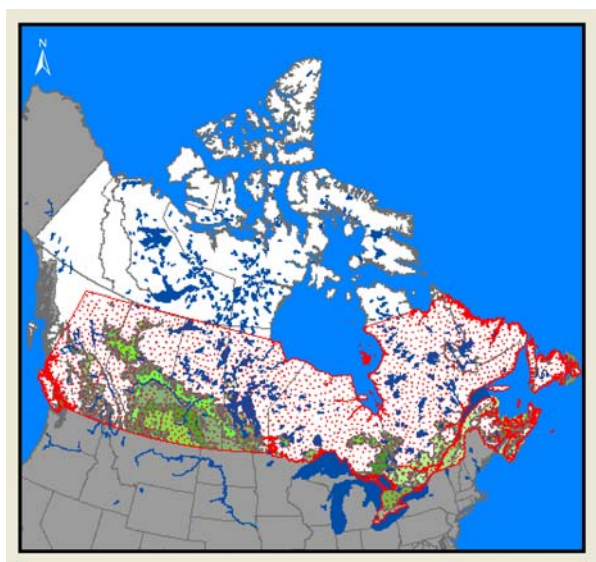
Summary Observations and Recommendations

This rating considers the land in its natural state, without improvements such as fertilization, drainage, or amelioration practices. This in turn may be used to quantify wildlife habitat

The mapping of land capability for forestry is based on a national classification system

comparable with the other Canada Land Inventory sectors. The CLI is broad in nature and is generalised into class-based information that has some limited use for modelling. The CLI is no longer maintained and is an older view of capability in Canada.

16.7.6 Canada Land Use Monitoring Program (CLUMP) Prime Resource Lands



Abstract

The Canada Land Use Monitoring Program (CLUMP) was a program of the Lands Directorate of Environment Canada established in 1978 to monitor land use change across the country. The program complimented the land capability and land use surveys of the Canada Land Inventory (CLI), in most cases with a higher level of detail.

The four major components of the CLUMP program were urban-centered regions, prime resource lands, rural areas and wetlands. The fruitlands data described in this collection are part of the prime resource lands component of the CLUMP program.

The fruitlands component was coordinated nationally but undertaken through four regional offices of the Lands Directorate. Information on land use change was originally classified

according to a land activity/land cover coding scheme designed specifically for the CLUMP program and applied at a scale of 1:50,000. The four major fruitland growing areas of Canada were mapped at this scale including the Annapolis Valley in Nova Scotia, the Eastern Townships in Quebec, the Niagara Peninsula in Ontario, and the Okanogan Valley in British Columbia.

Interpretation consisted of mapping from aerial photographs, augmented with field checks and supplementary information sources such as municipal planning maps, street maps and satellite images.

The CLUMP Prime Resources or Fruitlands program operated from 1961 to 1981 on a 10-year cyclical basis. The base-year inventory in 1961 was based on a very detailed 8-character land activity/land cover coding scheme, with multiple codes possible for each land unit. The coding scheme was later simplified to more generalized land activity/land cover classes, resulting in a 4-character coding scheme.

The CLUMP program was abandoned in the late 80's with most of the data residing in the Canada Geographic Information System (CGIS). Most of the original data have been recovered from the CGIS and the complex update methodology to derive proper 1971 and 1981 results has been repeated. As was the intent for the original fruitlands data, the recovery includes the horizontal integration on individual map sheets within one study area, the vertical integration of the multiple land use years, and a final vertical integration with CLI Land Capability for Agriculture.

To date, only the Annapolis Valley datasets have been fully recovered and integrated from the CGIS archives.

Agency

Federal Government
geogratis/CCRS

Access to Data

- None recorded
- GeoGratis licence agreement

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geogratis.cgdi.gc.ca/clf/en?action=fullMetadata&entryId=107>

Currency

- Data collection frequency: None – Now Complete
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50,000

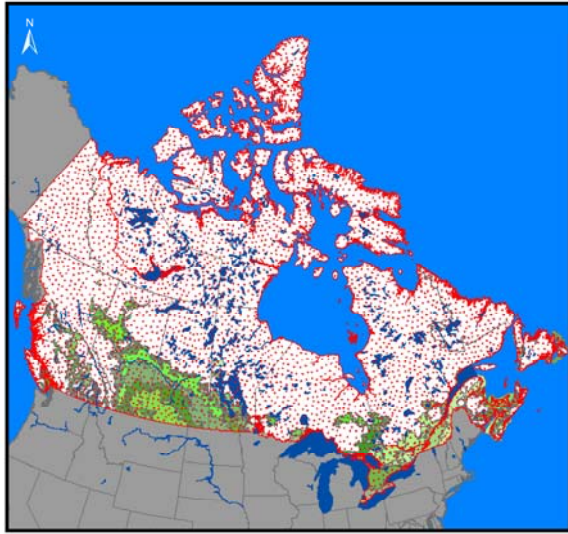
Link to Database

- Look in record 1140644747 for more detail on this dataset.

Summary Observations and Recommendations

This is an update to the CLI data listed earlier. This program complemented the land capability and land use surveys of the Canada Land Inventory (CLI). However, most data sets associated with CLUMP were compiled at a higher level of detail than the CLI. The dataset is no longer maintained but can provide an excellent historical view of land change across the country.

16.7.7 Enhanced Points of Interest (EPOI)



Abstract

The Enhanced Points of Interest (EPOI) file is a national database of over 1 million Canadian business and recreational points of interest. Engineered using CanMap® Streetfiles, each EPOI has been accurately geocoded and precisely placed; two criteria that are fundamental to any successful location sensitive service.

This location enriched point of interest database allows users to see and analyze selected point of interest data in a given geographic area, enabling applications such as wireless location-based services (LBS), Web, Telematics, planning, real estate multiple listing services (MLS), retail site analysis, competitive and market research, intelligent routing, sales territory analysis, business and tourism.

Features Include:

- This data set fully integrates across the CanMap® suite of mapping data products, and includes:

- Coordinate location (X, Y)
- Standard industry classification code (SIC)
- Business or recreational names address, city, province, postal code, telephone number
- Common Address Flag (CAF) allowing users to identify records with identical addresses
- Attribute precision codes
- Points of interest with enhanced attribution i.e. Health Care EPOI include information on number of beds available in a facility*
- *DMTI Spatial sourced points of interest include:
 - Aerodromes
 - Border Crossings and Custom Offices
 - Car Pool Lots
 - Gas Stations
 - Car Rental Agencies
 - Shopping Centres & Strip Malls
 - Education & Health Care
 - Financial Institutions
 - Hotel Accommodations
 - Golf Courses
 - Police Stations

- Toll Booths
- Tourist Information
- Weigh Stations
- Cinemas
- Ski Centres

Agency

Private
DMTI Spatial

Access to Data

- \$15,000

Scope of Dataset

- 100% of geographic area.

Currency

- Data collection frequency: Monthly
- Data maintenance frequency: Monthly

Link to Database

- Look in record -2019386445 for more detail on this dataset.

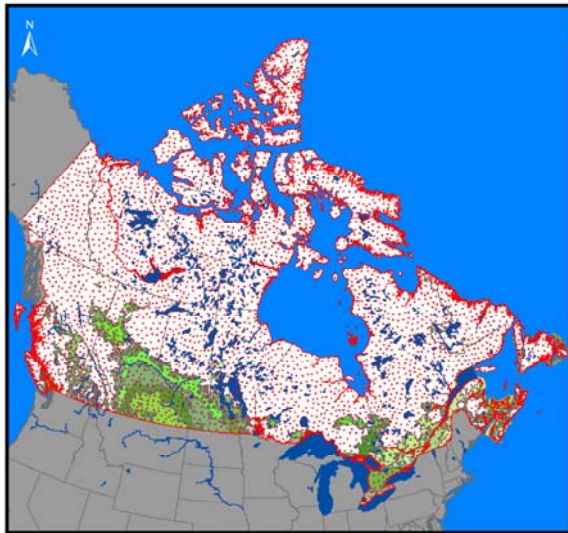
Summary Observations and Recommendations

Shows businesses and other points of interest over Canada

May be used to assist with land use classification and human influence on the landscape.

16.8 Land Cover - Terrestrial -Ecosystem

16.8.1 *State of Canada's Ecosystems in Maps (EcoMap)*



Abstract

EcoMAP (Ecological Mapping Analysis and Protocols) is a suite of geospatial data sets and analysis applications which has been developed by GeoInsight Corporation and A.M. Turner and Associates over the past three years with support from a number of government agencies. EcoMAP is built on the premise that by aggregating diverse data sets to a common geographic framework, spatial analysis can be used to derive and present complex ecological information. Such information is needed to guide the development of consistent policies and programs which are required for conservation and sustainable resource management. Parts of the EcoMAP database have also been used to present a national perspective of many ecological themes through the National Atlas of Canada. In order to provide continuity the EcoMAP name has been adopted for the National Atlas ecological module.

EcoMAP uses the Ecological Framework of Canada as the common framework for data and analysis.

Ecozones - First Level

The most generalized level in the framework is the ecozone. The country was grouped according to very broad physiographic and ecological similarities into 15 ecozones. These have been described previously by Wiken (1986).

Ecoprovinces - Second Level

The next level in the ecological framework is the ecoprovince. The ecozones were subdivided into smaller units based on finer categories of physiographic similarities. There are 53 units at the terrestrial ecoprovince level. Ecoprovinces are a useful ecosystem intermediate scale for national and regional planning and reporting purposes.

Ecoregions - Third Level

The ecological framework is divided into a total of 194 ecoregions (217 areas). Each ecoregion has a name, which is normally based on a prominent biophysical or physiographic feature within the ecoregion. The elements used to guide the consistent formulation of national ecoregions were the published national maps on climate (Ecoregions Working Group 1989), physiography (Bostock 1970), and existing provincial ecological frameworks. Wherever available, more detailed provincial climate and physiographic information was used, as well as geologic and vegetation cover information. Consultation between federal and provincial/territorial authorities ensured that local perceptions of the landscape were incorporated into the ecoregion construction.

Ecodistricts - Fourth Level

A similar process was followed to further subdivide ecoregions into 1021 ecodistricts. Each

ecodistrict is characterized by relatively homogeneous biophysical and climatic conditions. The differentiating characteristics of ecodistricts are: regional landform, local surface form, permafrost distribution, soil development, textural group, vegetation cover/land use classes, range of annual precipitation, and mean temperature. Ecodistrict size is a function of regional variability of these defining attributes, and minimum size is approximately 100,000 ha. Ecodistricts are designed for use at a map scale of 1:1 million to 1:2 million.

For free download from GeoGratis the ecodistrict framework has been tagged with a number of attributes to be used for display or analysis. The following table describes these attributes and the field names under which they are found in the database that accompanies the GIS file. Note that the ecodistricts are numbered from 1 to 1031. Of these ten are considered to be empty polygons because they are totally within bodies of water i.e. Great Slave Lake. These ten ecodistricts are 172, 240, 330, 673, 719, 721, 722, 725, 842 and 845. There are also a number of very small polygons with a class number of (0) which represent water areas.

Agency

Federal Government
NRC Canada Centre for Remote Sensing
Ottawa, ON

Access to Data

- Available for download on GeoGratis web site, map dealer may offer CD's.
- Licensing information located at http://geogratis.cgdi.gc.ca/e_license.html.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geogratis.cgdi.gc.ca/Ecosystem/ecosystem.html>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:1,000,000

Link to Database

- Look in record -1692817452 for more detail on this dataset.

Summary Observations and Recommendations

The EcoMAP concept as illustrated at the website associated with the URL link has been utilized for a number of applications relevant to wildlife habitat and biodiversity standards at a national level. It has included the following relevant to wildlife habitat:

1. The computation and mapping of the amount of protected wetland area in Canada,
2. The computation and mapping of the amount of protected forested area in Canada,
3. The modelling of habitat distributions by species and guilds.

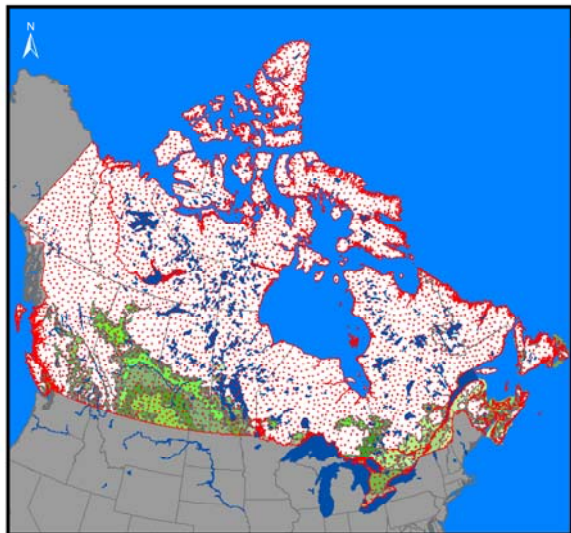
The EcoMAP website applications include a number of mapping analysis presentations that can be useful for establishing and illustrating information in place at the national level including:

1. Agriculture land use by ecoregion,
2. Landcover, forest and wetland diversity by ecoregion,
3. Protected area percentage by ecoregion.

The information being illustrated at the EcoMAP site and the data that would be behind these applications could be useful to assist in illustrating a national picture of current status and as a

future monitoring tool at the national level.

16.8.2 Ecozones, Ecoregions and Ecodistricts of Canada



Abstract

In 1991 a collaborative project was undertaken by a number of federal agencies in cooperation with provincial and territorial governments, all under the auspices of the Ecological Stratification Working Group, to revise previous work and establish a common ecological framework for Canada. The working group focused on three priority levels of stratification, namely ecozones, ecoregions, and ecodistricts. The resulting national report "A National Ecological Framework for Canada" was released by the Ecological Stratification Working Group in 1996. This dataset is the product of that work, as well as the intermediate ecoprovinces framework, and represents the official definition of those boundaries for Canada.

The national ecological framework provides a consistent, national spatial context within which ecosystems at various levels of generalization can be described, monitored, and reported on. The use of such a framework of standard ecological units provides for common communication and

reporting between different jurisdictions and disciplines, and provides a common ground to report on the state of the environment and the sustainability of ecosystems in Canada.

Agency

Federal Government
Agriculture & Agri-Food Canada (AAFC)
Ottawa, ON

Access to Data

- No access constraints were identified in the metadata.
- No use constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://sis.agr.gc.ca/cansis/nsdb/ecostrat/intro.html>

Currency

- Data collection frequency:
- Data maintenance frequency: Irregular

Accuracy

- Scale of 1:1000000

Link to Database

- Look in record -1412568585 for more detail on this dataset.

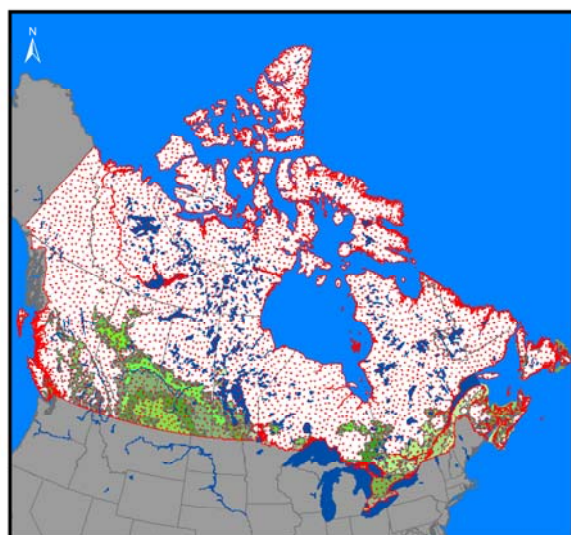
Summary Observations and Recommendations

The ecozones, ecoregions and ecodistricts comprise the "National Ecological Framework for Canada" and this dataset represents the official definition of those boundaries for Canada. Each of these levels of the framework provide a broad description of landforms, soil, climate, and vegetation providing background for assessment of wildlife habitat across larger areas within the boundaries of these ecological units.

The national ecological framework provides a consistent, national spatial context within which ecosystems at various levels of generalization can be described, monitored, and reported on. The Ecological Framework for Canada may be useful as a geographic framework for monitoring and reporting processes for the assessment of biodiversity within agricultural regions across Canada. This provides an already existing framework which has been embraced by a number of other resource applications such as forest management, and may provide a suitable framework for the accumulation of related information for application to development of the NAESI standards.

16.9 Land Cover - Terrestrial -Land Use

16.9.1 AAFC National Land Cover Classification Circa 2000



Abstract

Agricultural land cover for agr. extent of Canada. Developed, integrated and/or compiled by AAFC.

Agency

Federal Government
AAFC

Scope of Dataset

- 100% of geographic area.

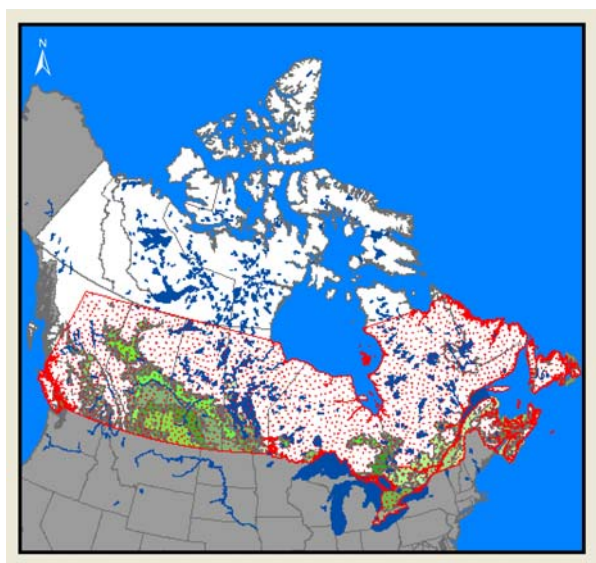
Link to Database

- Look in record -163161654 for more detail on this dataset.

Summary Observations and Recommendations

Will define the agriculture extent over Canada (and relatively recent being circa 2000), and may be used to compare against current wildlife habitat estimates and where there may exist some problems of habitat fragmentation Can be used as a good national coverage to describe current agricultural holdings and how they may impact habitat models for species across all provinces. This information has come from the NLWIS database and more detail is not available than what is seen here.

16.9.2 City Land Capability for Agriculture - Canada Land Inventory (1:50 000)



Abstract

City Land Capability for Agriculture, Canada Land Inventory 1:50 000 was only produced for the cities listed below.

The agriculture map illustrates the varying potential of a specific area for agricultural production. Classes of land capability for agriculture are based on mineral soils grouped according to their potential and limitations for agricultural use. The classes indicate the degree of limitation imposed by the soil in its use for mechanized agriculture. The subclasses indicate the kinds of limitations that individually or in combination with others, are affecting agricultural land use. Characteristics of the soil as determined by soil surveys.

The following Canadian cities and their UTM zone designation are contained in this data set:

- St. John's, Newfoundland
- UTM Zone 22
- Halifax, Nova Scotia
- UTM Zone 20
- St. John, New Brunswick
- UTM Zone 19 **
- Chicoutimi, Quebec
- UTM Zone 19
- Quebec, Quebec
- UTM Zone 19
- Montreal, Quebec
- UTM Zone 18
- Ottawa-Hull
- UTM Zone 18
- Oshawa, Ontario
- UTM Zone 17
- Toronto, Ontario
- UTM Zone 17
- St.Catherines-Niagara, Ontario
- UTM Zone 17

- Hamilton, Ontario
- UTM Zone 17
- Kitchener, Ontario
- UTM Zone 17
- London, Ontario
- UTM Zone 17
- Windsor, Ontario
- UTM Zone 17
- Sudbury, Ontario
- UTM Zone 17
- Thunder Bay, Ontario
- UTM Zone 16
- Winnipeg, Manitoba
- UTM Zone 14
- Regina, Saskatchewan
- UTM Zone 13
- Saskatoon, Saskatchewan
- UTM Zone 13
- Edmonton, Alberta
- UTM Zone 12 **
- Calgary, Alberta
- UTM Zone 11 **
- Vancouver, British Columbia
- UTM Zone 10
- Victoria, British Columbia
- UTM Zone 10

Agency

Federal Government
geogratis/CCRS

Access to Data

- None recorded
- Licensing information located at
- http://geogratis.cgdi.gc.ca/e_license.html

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geogratis.cgdi.gc.ca/clf/en?action=fullMetadata&entryId=5254>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:50000

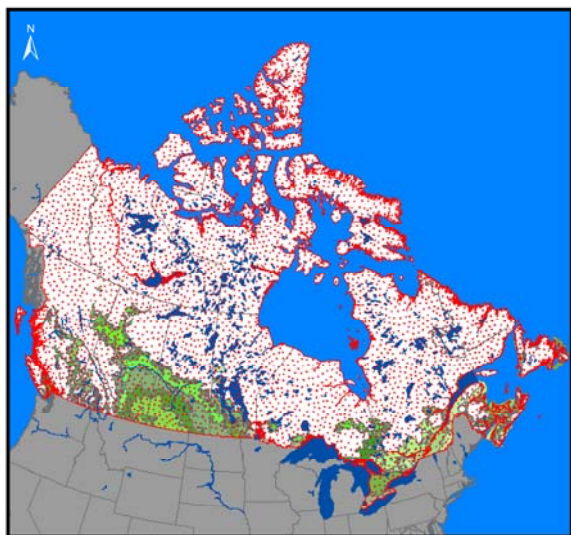
Link to Database

- Look in record -1525156263 for more detail on this dataset.

Summary Observations and Recommendations

The agriculture map illustrates the varying potential of a specific area for agricultural This data provides a good general idea of potential areas for agriculture production throughout Canada and adjacent to major cities. The scope of the data may not provide information in areas farther from urban areas listed above so it may only have application in specific areas.

16.9.3 Canadian Conservation Areas Database



Abstract

Due to the work and commitment from many regional agencies to establish conservation and protected areas, a framework is required to allow national analysis and reporting on these efforts. The Canadian Conservation Areas Database (CCAD) is a digital database (several databases - tabular and GIS) which contains a compilation of the conservation areas created and managed by numerous government and non-government agencies across Canada. This product required the cooperation of federal, provincial, territorial, and non-government data managers.

The database was developed by Natural Resource Canada's GeoAccess Division and the Canada Council on Ecological Areas (CCEA) in collaboration with the Canadian Wildlife Service's Habitat Division and Parks Canada. It is provided to the public at no charge via the GeoGratis data distribution service of Natural Resources Canada.

It is important to note that this product is a compilation of data from each province and territory as well as various federal departments. Contributions differ in conservation area definitions,

update cycles, and resolution. For details on individual records or jurisdictional contributions, please contact the CCEA.

Please note the following points:

- The data belong to each of the CCEA jurisdictional representatives who have contributed to CCAD.
- The records in CCAD are date stamped so that inquiries can be made with the appropriate representative regarding new data or recent changes.
- Numerous database Queries are provided in CCAD as a service. These are samples only and may be easily adjusted or copied.
- Caution is advised in analysis of the existing information due to database structure and software limitations. For example, summaries and counts may contain errors if the query allows duplication of records. Also, temporal analyses are not accurate since many sites have changes after initial site establishment.

The CCAD is a national repository of protected areas information. Until recently, this dataset was a tabular database with only the occurrence of protected areas provided, extents (boundaries) were not mapped. To enable international reporting on the status of Canadian protected areas, CISE is working with the Canadian Council on Ecological Areas (CCEA), Parks Canada and the Canadian Wildlife Service to apply the World Conservation Union (IUCN) classification to the Canadian Conservation Areas Database.

The database is structured to answer four basic questions:

- 1.What types of conservation areas exist?
- 2.What are their characteristics (location, size, year of establishment, etc.)?
3. What ecosystems are they associated with and represent?
- 4.What agencies are responsible for each conservation areas/protected area?

CCAD Contents include:

Government Conservation Areas

CCAD is a relational database that consists of over 20 coded attributes of information on each conservation area. This information includes the conservation area designation, the IUCN category, size, latitude/longitude, year of establishment, managing agency and enabling legislation. CCAD includes a variety of designations such as ecological reserves, parks, wildlife management areas, wildlife sanctuaries and historic sites. This file contains nearly 4000 records of individual protected areas and is stored in MS Access 97 format.

Non-Government Conservation Areas (not in September 2003 version)

NCADNGO includes non-government conservation sites ranging from areas owned or managed by national agencies such as the Nature Conservancy of Canada to provincial nature trusts and stewardship programs of Ducks Unlimited Canada. This file consists of almost 10,000 areas and is stored in MS Access format.

Conservation Area Boundaries (not in September 2003 version)

For use with Geographic Information Systems (GIS) or digital cartographic mapping systems.

The boundaries for over 1500 CCAD conservation areas have been assembled. These were initially created to depict large areas for mapping purposes and to more accurately assess ecosystem representation and ecosystem integrity. Separate files exist for each broad type of protected area.

For more information on the tabular versus GIS components of the CCAD please read the “Guide to the Canadian Conservation Areas Database” that accompanies the database. The guide can be viewed online at:

http://geogratis.cgdi.gc.ca/ccea/guide_e.html

Agency

Federal Government
NRC Canada Centre for Remote Sensing
Ottawa, ON

Access to Data

- The database was developed by Natural Resource Canada's GeoAccess Division and the Canada Council on Ecological Areas (CCEA) in collaboration with the Canadian Wildlife Service's Habitat Division and Parks Canada. It is provided to the public at no charge via the GeoGratis data distribution service of Natural Resources Canada. No access constraints were identified in the metadata.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geogratis.cgdi.gc.ca/download/Tabular/CCAD/>

Currency

- Data collection frequency:
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:

Link to Database

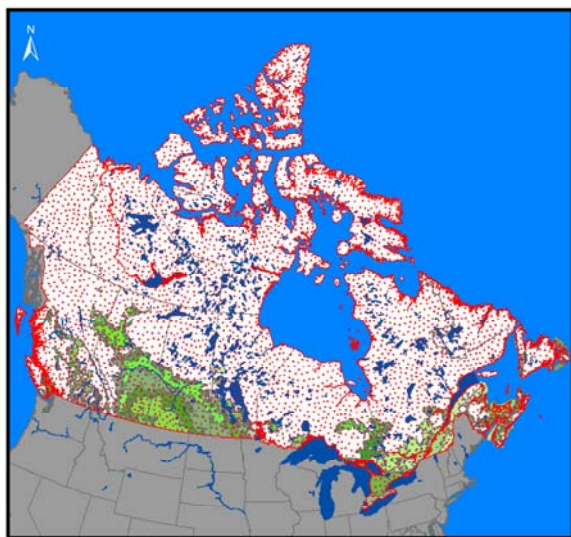
- Look in record -1811466280 for more detail on this dataset.

Summary Observations and Recommendations

This dataset provides an exceptional resource as a national level source of information on conservation areas and protected areas, and has come directly from the member agencies responsible for those areas.

16.10 Land Cover - Terrestrial -Vegetation

16.10.1 Canadian National Forest Information System (NFIS)



Abstract

The Canadian National Forest Information System (NFIS) data holding is a collection of natural resource data sets which have been developed by researchers in the Canadian Forest Service, and by provincial and territorial forest and environmental agencies. NFIS has implemented a spatial data warehouse to integrate, distribute and display these holdings in support of science and policy

initiatives which must report on issues such as sustainable resource management, climate change and biodiversity.

Agency

Federal Government
Natural Resources Canada
Victoria, BC

Access to Data

- NFIS is a spatial data warehouse housing data from a variety of sources. Access differs from holding to holding; most data is available to interested parties upon request.
- Spatial data is freely portrayed in GIF format over the Web.

Scope of Dataset

- 100% of geographic area.

URL to More Information on the Web

<http://geodiscover.cgdi.ca/gdp/search?action=fullMetadata&entryType=productCollection&entryId=60&entryLang=en&portal=gdp>

Currency

- Data collection frequency: 5 years
- Data maintenance frequency: As Needed

Accuracy

- Scale of 1:20,000 + (provincial forest records are generalized beyond this scale)

Link to Database

- Look in record 1140723926 for more detail on this dataset.

Summary Observations and Recommendations

To support science and policy initiatives which must report on issues such as sustainable resource management, climate change and biodiversity. The National Forest Information System will provide a good general overview of the state of Canada's forests, but should be supplemented with provincial coverages of forest inventories if the intent is to go to a local level of detail.

APPENDICES

Appendix A: Project Communications Log

The Project Team made use of many contacts via the web, phone and email in order to retrieve the data and information listed in this report and in the NAESI database. The following table is a generalised listing of individuals that were contacted for information. Not all of these individuals necessarily returned the contact or provided information.

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Canada/National				
Jon Haufler	Ecosystem Management Research Institute, USA	Wildlife habitat General enquiry	Feb. 9/06	Email
Chris Smith	Ducks Unlimited Canada	Wetlands Wildlife habitat General enquiry	Jan. 30/06	Email Phone
Newfoundland & Labrador				
Al Hanson, Wetland & Waterfowl Ecologist, Atlantic Region	Canadian Wildlife Service	Wildlife habitat General enquiry Maritime Wetlands Database	Mar. 8/06	Email Phone
R.A. Lautenschlager, Executive Director, Atlantic Canada CDC	Atlantic Canada CDC	General enquiry of all data types	Feb. 9/06	Email
Penny Holden, Chief Curator	Prov.Museum of NFLD & Labrador	General enquiry	Feb. 9/06	Email
Scott Payne,	NFLD & Labrador Forest Resources	General enquiry	Feb. 9/06	Email
Joe Brazil, Chief Endangered Species & Biodiversity	NFLD & Labrador Environment & Conservation – Wildlife Div.	General enquiry	Mar. 1/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Rob Otto, Senior Mgr. Wildlife & Natural Heritage Research	NFLD & Labrador Environment & Conservation – Wildlife Div.	General enquiry	Mar. 1/06	Email
Meherzad Romer	Atlantic Canada CDC	General enquiry	Mar. 2/06	Email
Jeff Wood, Project Engineer	NFLD & Labrador Environment & Conservation – Surveys & Mapping Div.	Resource Maps	Mar. 8/06	Email
Nova Scotia				
Al Hanson, Wetland & Waterfowl Ecologist, Atlantic Region	Canadian Wildlife Service	Wildlife habitat General enquiry Maritime Wetlands Database	Mar. 8/06	Email Phone
R.A. Lautenschlager, Executive Director, Atlantic Canada CDC	Atlantic Canada CDC	General enquiry of all data types	Feb. 9/06	Email
Ed Light, Mgr. GeoNOVA Portal	GeoNOVA	General enquiry	Feb. 9/06	Email
Richard Morash, GIS Project Mgr.	Nova Scotia Natural Resources	General enquiry	Feb. 9/06	Email
Charles Cron, President	Nova Scotia Wild Flora Society	General enquiry	Feb. 9/06	Email
Larry Bogan, President	Federation of Nova Scotia Naturalists	General enquiry	Feb. 9/06	Email
Randy Milton, Mgr. Wildlife Resources	Nova Scotia Natural Resources	General enquiry Wetlands & Coastal Habitats Inventory	Mar. 8/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
John Power	Nova Scotia	Enhanced DEM from NLWIS General enquiry	Mar. 16/06	Email
Hank Kolstee, Supervisor Land Protection	Nova Scotia Agriculture	Tile Drainage Maps by Farmer Name from NLWIS General enquiry	Mar. 16/06	Email
Prince Edward Island				
Al Hanson, Wetland & Waterfowl Ecologist, Atlantic Region	Canadian Wildlife Service	Wildlife habitat General enquiry Maritime Wetlands Database	Mar. 8/06	Email Phone
R.A. Lautenschlager, Executive Director, Atlantic Canada CDC	Atlantic Canada CDC	General enquiry of all data types	Feb. 9/06	Email
Ken Mayhew, Forest Information	PEI Energy, Environment & Forestry – Forests, Fish & Wildlife Div. See Bill Glen	General enquiry of all data types	Feb. 9/06	Email
Robert Nicholson, Mgr. Information Technology	See Bill Glen	General enquiry of all data types	Feb. 9/06	Email
Shane Murphy, Mgr. Agriculture & Agri-Food Section	PEI Agriculture & Agri-Food See Bill Glen	General enquiry of all data types	Feb. 9/06	Email
Bill Glen, Mgr. Resource Inv. & Modelling	PEI Energy, Environment & Forestry – Forests, Fish & Wildlife Div.	General enquiry of all data types	Feb. 9/06	Email
Susan Hawkins, Coordinator	PEI Eco-Net	General enquiry	Feb. 9/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Tom Duffy, Eastern Canada	Ducks Unlimited Canada	Wetlands Wildlife habitat General enquiry	Feb. 27/06	Email
Jana Chevier, GIS Specialist	Ducks Unlimited Canada	Wetlands Wildlife habitat General enquiry	Mar. 2/06	Email
Rosemary Curley, Program Mgr. Protected Areas & Biodiversity Conservation	PEI Energy, Environment & Forestry – Forests, Fish & Wildlife Div.	Wildlife habitat General enquiry	Mar. 1/06	Email
Randy Dibblee, Wildlife Biologist	PEI Energy, Environment & Forestry – Forests, Fish & Wildlife Div.	Wetland Inventory	Mar. 8/06	Email
New Brunswick				
Gary Beattie, Director Information Technology Branch	New Brunswick Natural Resources See Danny Crain	General enquiry of all data types	Feb. 9/06	Email
Stefen Gerriets, NatureServe Canada, Atlantic Canada CDC	Atlantic Canada CDC	General enquiry of all data types	Feb. 9/06	Email
Bernie Connors, Engineer, Geomatics	New Brunswick Environment & Local Government See Danny Crain	General enquiry of all data types	Feb. 9/06	Email
Doris Wu, Director Info Systems	New Brunswick Natural Resources See Danny Crain	General enquiry of all data types	Feb. 9/06	Email
Mike Sullivan, Director Fish & Wildlife	New Brunswick Natural Resources See Danny Crain	General enquiry of all data types	Feb. 9/06	Email
Daniel Murphy, Director Forest Management	New Brunswick Natural Resources See Danny Crain	General enquiry of all data types	Feb. 9/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Danny Crain, Manager GIS	New Brunswick Natural Resources	General enquiry of all data types	Feb. 9/06	Email
R.A. Lautenschlager, Executive Director, Atlantic Canada CDC	Atlantic Canada CDC	General enquiry of all data types	Feb. 9/06	Email
Jacques Thibault, Mines Branch	New Brunswick Natural Resources	Peatlands Database	Mar. 8/06	Email
Al Hanson, Wetland & Waterfowl Ecologist, Atlantic Region	Canadian Wildlife Service	Wildlife habitat General enquiry Maritime Wetlands Database	Mar. 8/06	Email Phone
Nicholas Rourke	New Brunswick Agriculture	Agriculture Layer from NLWIS	Mar. 16/06	Email
Bruce Kinnie	New Brunswick Agriculture	Agriculture Resource Management System from NLWIS	Mar. 16/06	Email
Ronald Bagnell	Service New Brunswick	NB Orthophotos from NLWIS	Mar. 16/06	Email
Quebec				
General Contact	St. Lawrence Center	General enquiry	Mar. 13/06	Email
General Contact	Fondation de la faune du Quebec	Wildlife habitat Biodiversity	Mar. 13/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Canadian Wildlife Service, Quebec	Environment Canada	Wildlife habitat Biodiversity	Mar. 13/06	Email
General Contact	Fisheries and Oceans Canada	Wildlife habitat Environmental monitoring	Mar. 13/06	Email
Daniel.Bordage	Black Duck Joint Venture	Wildlife habitat Wetlands	Mar. 15/06	Email
Carolyn Goodfellow, Federal relations manager for NLWIS	Agriculture and Agri-Food Canada	General enquiry	Mar. 16/06	Email Phone
Real St-Laurent	Geomatique du Quebec	General enquiry	Mar. 13/06	Phone
Ontario				
GIS Contact	Ausable Bayfield Conservation Authority	Wetlands and some wildlife	Feb. 15/06	Phone
GIS Contact	Cataraqui Region Conservation Authority	Wetlands and some wildlife	Feb. 15/06	Phone
GIS Contact	Catfish Creek Conservation Authority	Wetlands and some wildlife	Feb. 15/06	Phone
GIS Contact	Central Lake Ontario Conservation Authority	Wetlands and some wildlife	Feb. 15/06	Phone
Jerry	Conservation Halton	Wetlands and some wildlife	Feb. 15/06	Email
Brian	Credit Valley Conservation	Wetlands and some wildlife	Feb. 15/06	Email
GIS Contact	Crowe Valley Conservation Authority	Wetlands and some wildlife	Feb. 15/06	Email
Tom Dufour	Essex Region Conservation Authority	Wetlands and some wildlife	Feb. 15/06	Email Phone
Jeff Moxley	Ganaraska Region Conservation Authority	Wetlands and some wildlife	Feb. 15/06	Email
Zoe Green	Grand River Conservation Authority	Wetlands and some wildlife	Feb. 15/06	Email
Gloria Dangerfield	Grey Sauble Conservation Authority	Wetlands and some wildlife	Feb. 16/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Bruce Duncan	Hamilton Conservation Authority	Wetlands and some wildlife	Feb. 16/06	Email
Nancy Aspden	Kawartha Conservation Authority	Wetlands and some wildlife	Feb. 16/06	Email
Bryan Hall	Kettle Creek Conservation Authority	Wetlands and some wildlife	Feb. 16/06	Email
GIS Contact	Lakehead Region Conservation Authority	Wetlands and some wildlife	Feb. 16/06	Phone
Geoff Peat	Lake Simcoe Region Conservation Authority	Wetlands and some wildlife	Feb. 16/06	Email
GIS Contact	Long Point Region Conservation Authority	Wetlands and some wildlife	Feb. 16/06	Email
Ryan	Lower Thames Valley Conservation Authority	Wetlands and some wildlife	Feb. 16/06	Email
Shaun Mugilingam	Lower Trent Conservation	Wetlands and some wildlife	Feb. 16/06	Email
GIS Contact	Maitland Valley Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
Chris McAuley	Mattagami Region Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email Phone
GIS Contact	Mississippi Valley Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
Tara Metzger	Niagara Peninsula Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
Paul Sajatovic	Nickel District Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
GIS Contact	North Bay Mattawa Conservation	Wetlands and some wildlife	Feb. 17/06	Email
Tina Desroches	Nottawasaga Valley Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
GIS Contact	Otonabee Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
Hui Wei	Quinte Conservation	Wetlands and some wildlife	Feb. 17/06	Email Phone
Dorothy Hamilton	Raisin Region Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
Ewan Hardie	Rideau Valley Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
Martha Clendinning	Saugeen Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email Phone

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Lyman Jones	South Nation Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
Chris Durand	St. Clair Region Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
GIS Contact	Toronto and Region Conservation Authority	Wetlands and some wildlife	Feb. 17/06	Email
GIS Contact	Upper Thames River Conservation Authority	Wetlands and some wildlife	Feb. 17/06	email
Gillian McEachern	CPAWS	Wildlife enquiry	Feb. 20/06	Email Phone
Julee Boan	Wildlands League	Wildlife and bird habitat	Feb. 15/06	Phone Personal
Shari MacDonald	Ontario Ministry of Natural Resources	All Ontario data from LIO warehouse	Feb. 20/06	Email Phone
Jeanette Gysbers	Global Forest Watch Canada	Forest and Wildlife related request	Mar. 2/06	Email
James Holland	Ducks Unlimited Canada	Wetlands and wildlife request	Mar. 2/06	Email Phone
General Contact	Ontario Wildlife Foundation	Wetlands and wildlife request	Mar. 2/06	Email
Jan Mersey	University of Guelph	Wetlands and wildlife request	Mar. 2/06	Email
Manitoba				
Vince Crichton, Senior Scientist, Acting Chief, Game Fur & Problem Wildlife	Manitoba Conservation	Wildlife habitat General enquiry	Mar. 8/06	Email
Jason Greenall	Manitoba Conservation	Wildlife habitat	Mar. 8/06	Email
Greg Carlson, Mgr. Inv. & Resource Analysis	Manitoba Conservation	Forest Inventory General enquiry	Feb. 6/06	Email
Ron Lewis, Ag-Information Mgr., PFRA Manitoba Region	Agriculture & Agri-Food Canada	General enquiry	Mar. 6/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Guy Baillargeon	Agriculture Canada	General enquiry	Mar. 7/06	Email
Lindsay Donnelly, GIS Specialist	Manitoba Conservation	General enquiry	Feb. 16/06	Email
Nicole Firlotte	Manitoba CDC	Wildlife habitat Biodiversity General enquiry	Feb. 10/06	Email
Frank Wahl, Manitoba Remote Sensing Centre	Manitoba Conservation	Topographic Remote sensing General enquiry	Feb. 6/06	Email
Chris Smith, Mgr. Industry & Government Relations, Boreal	Ducks Unlimited Canada	Wetlands Wildlife habitat General enquiry	Jan. 30/06	Email Phone
Bill Henderson	Manitoba Hydro	General enquiry Hydro	Feb. 6/06	Email
Kevin Teneycke, Habitat Field Mgr.	Manitoba Habitat Heritage Corporation	General enquiry	Feb. 13/06	Email
Rick Baydack, Assoc. Dean & Prof. Env., Earth & Resources	University of Manitoba	Wildlife habitat General enquiry	Feb. 6/06	Email
Jim Duncan, Mgr. Biodiversity Conservation Section	Manitoba CDC	Wildlife habitat Biodiversity General enquiry	Feb. 10/06	Email
Manitoba Naturalist Society	Manitoba Naturalist Society	Wildlife habitat General enquiry	Feb. 9/06	Email
Manitoba Water Stewardship Branch	Manitoba Conservation	General enquiry	Feb. 9/06	Email
Patricia Pohrebniuk, Executive Director	Manitoba Forestry Association	General enquiry	Feb. 6/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Peter Haluschak, Soil Resource Spec. Agri-Env. Branch	Manitoba Agriculture, Food & Rural Initiatives	General enquiry	Feb. 6/06	Email
Roy Dixon, Manitoba Remote Sensing Centre	Manitoba Conservation	Topographic Remote sensing General enquiry	Feb. 6/06	Email
Bob Bruce, Manitoba Remote Sensing Centre	Manitoba Conservation	Topographic Remote sensing General enquiry	Feb. 6/06	Email
Saskatchewan				
Cynthia Edwards	Ducks Unlimited Canada	Biological	Feb. 27/06	Personal
Lyle Boychuk	Ducks Unlimited Canada	Remote sensing, GIS	Feb. 27/06	Personal
Conrad Olson	Saskatchewan Environment	Habitat	Feb. 15/06	Personal
Dave Arneson	Saskatchewan Environment	Habitat	Feb. 16/06	Personal
Etienne Soutiere	Saskatchewan Water Corporation	Vegetation	Feb. 22/06	Personal
Larry Lechner	Saskatchewan Environment	Environment assessments	Mar./06	Phone
Gordon Gray	Saskatchewan Environment	Environment assessments	Mar./06	Phone
Brad Champain	Saskatchewan Agriculture and Food	General enquiry	Mar./06	Phone
Mary Bick	Saskatchewan Agriculture and Food	Land use planning	Mar./06	Phone
Bill Adams	Saskatchewan Agriculture and Food	General enquiry	Mar./06	Phone
Carol Fisher	Saskatchewan Agriculture and Food	General enquiry	Mar./06	Phone
Helton Fan	Saskatchewan Research Council	Forest cover	Mar./06	Phone
Doug Campbell	Saskatchewan Environment	Forest cover	Mar./06	Phone
Jeff Keith	Saskatchewan Conservation Data Centre	Endangered species	Mar./06	Phone

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Chris Gebhard	Saskatchewan Archives	Habitat	Mar./06	Phone
John Leonard	Information Services Corporation of Saskatchewan	General Enquiry	Mar./06	Phone
Deb Weedon	Saskatchewan Environment	Land use planning	Mar./06	Phone
Tod Alexin	Saskatchewan Environment	Land use planning	Mar./06	Phone
Ken Yurik	Saskatchewan Environment	Digital data	Mar./06	Phone
Bob Dreidel	Saskatchewan Agriculture and Food	Land use planning	Mar./06	Phone
Glen McMaster	Saskatchewan Watershed Authority	General enquiry	Mar./06	Phone
Lorena Patino	Canadian Plains Research Centre	Vegetation and general enquiry	Mar./06	Phone
Ron Anderson	Saskatchewan Environment	Climate change vegetation study	Mar./06	Phone
Margret Skeel	Nature Saskatchewan	General enquiry	Feb./06	Personal
Jim Kroshus	Saskatchewan Wildlife Federation	General enquiry	Feb./06	Personal
Sarah	The Nature Conservancy of Canada	Land ownership	Mar./06	Phone
John Babcock	Saskatchewan Agriculture Development Fund	General enquiry	Mar./06	Phone
Barb Senkow	Agriculture Canada and Agri-Food	General enquiry	Mar./06	Phone
Mike Ash	Agriculture Canada Research	Species at risk	Mar./06	Phone

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
Joan Martin	Agriculture Canada Research	General enquiry	Mar./06	Phone
Erl Svendsen	Prairie Farm Rehabilitation Administration	Biodiversity	Mar./06	Personal
Karen Wilton	Prairie Farm Rehabilitation Administration	General enquiry	Mar./06	Personal
Pat Yeudall	Canadian Wildlife Service	General enquiry	Feb./06	Email
General Contact	Federation of Saskatchewan Indians	General enquiry	Feb./06	Personal
General Contact	Saskatchewan Association of Rural Municipalities	General enquiry	Feb./06	Personal
General Contact	Canada Saskatchewan Infrastructure Program	General enquiry	Feb./06	Personal
Alberta				
Mike Slomp	Alberta Environmental Farm Plan Company	General enquiry	Feb./06	Phone
British Columbia				
Susan Westmacott	Environment Canada	General enquiry	Feb. 23/06	Email
Jennifer Bowman, Land Information BC Discovery Service	British Columbia Ministry of Sustainable Resource Management	General enquiry	Feb. 23/06	Email
Isabelle Houde, Production Manager	UBC Faculty of Forestry	General enquiry	Feb. 23/06	Email
General Contact	Ducks Unlimited Canada, British Columbia	General enquiry Wetlands	Feb. 23/06	Email
Bruce Harrison, Senior Biologist	Ducks Unlimited Canada	General enquiry Wetlands	Mar. 8/06	Email Phone
Kym Hill	Bilston Watershed Habitat Protection Association	General enquiry Fish habitat	Feb. 23/06	Email

Name of Contact Source	Organization	Types of Data	Initial Start of Contact	Contact Method(s)
General Contact	Nature Conservancy of Canada	General enquiry	Feb. 23/06	Email
General Contact	British Columbia Conservation Foundation	General enquiry	Feb. 23/06	Email
Jon Vivian, Vegetation Resources Inventory Manager	British Columbia Ministry of Sustainable Resource Management	Vegetation Inventory	Feb. 27/06	Email
David Borth, Range Branch Director	British Columbia Ministry of Sustainable Resource Management	General enquiry	Feb. 27/06	Email
Dan Sirk, Spaitial Information Coordinator	British Columbia Ministry of Sustainable Resource Management	General enquiry	Feb. 27/06	Email
Dave Clark, Wildlife Habitat Ecologist	Ministry of Environment	General enquiry	Feb. 27/06	Email
Gail Harcombe	Ministry of Environment	General enquiry	Feb./06	Phone
Suzanne Baker	Ministry of Environment	General enquiry	Feb./06	Phone
Roxanne Smith	Ministry of Environment	General enquiry	Feb./06	Phone

APPENDIX B: Project Team and Project Management

Project Team

The project was undertaken by GeoSpatial Consulting Inc. and ERIN Consulting Ltd. Project management, database development and management were undertaken from the GeoSpatial Consulting office in Thunder Bay, Ontario, with additional support from an associate located in Burlington, Ontario. The ERIN Consulting members of the Project Team worked from the ERIN Consulting Ltd. Office in Regina, Saskatchewan. The Project Team included the following resources:

Name	Background/Experience	Project Roles & Responsibilities
GeoSpatial Consulting Inc.		
Craig Robinson, RPF	Project management Database development & management Report writing GIS systems and data applications Remote sensing mediums Forestry domain experience	Project Manager Database developer/manager Quebec jurisdiction Project report
Paul Ernsting	GIS systems and data applications Remote sensing mediums Forestry domain experience	Ontario jurisdiction
Adam Boczek	GIS systems and data applications Remote sensing mediums Forestry domain experience	B.C. jurisdiction

Name	Background/Experience	Project Roles & Responsibilities
Doug Mount, RPF	Report development & writing Forestry domain experience Sustainable Forest Management Planning	Maritimes & Manitoba jurisdictions Initial contact source identification Assist in project report preparation
ERIN Consulting Ltd.		
Wayne Pepper	Agriculture & wildlife habitat domain experience Research	Saskatchewan and Alberta jurisdictions
Lloyd Saul	Agriculture & wildlife habitat domain experience Research Report writing	Saskatchewan and Alberta jurisdictions
Laurie Hammond	Research Database analysis Report writing Environmental domain experience	Saskatchewan and Alberta jurisdictions
Adam Zitta	Agriculture & wildlife habitat domain experience Research	Saskatchewan and Alberta jurisdictions
Ian Seiferling	Vegetation & wildlife habitat domain experience Research	Saskatchewan and Alberta jurisdictions

Project Management

Throughout the course of the project the Project Manager oversaw the progress of the Project Team and also maintained ongoing liaison with the Project Authority at Environment Canada. Throughout the project, a series of weekly teleconference progress/update meetings were utilized to maintain contact and direction for the team. As the dataset search progressed the NAESI Database was updated and reviewed on a regular basis in order to ensure that any necessary modifications to the database could be made and to ensure consistency in its use by members of

the Project Team.

The Project Manager worked with the Project Authority to regularly review project elements and make minor changes where required. These changes or emphasis in direction were passed along to the other members of the Project Team through the weekly teleconference meetings and ongoing emails/discussions as needed.

These ongoing discussions with the Project Authority and the Project Team were key to maintaining the QC/QA process as feedback was incorporated to the scoping of the project and the development and update of the NAESI Database as work proceeded. It is important to note in reviewing the information contained in the NAESI Database that for many records of datasets the level of completeness of the record is often limited by the available metadata or other source data utilized to capture information about that particular dataset.

APPENDIX C: Additional Relevant Datasets not Described in Detail in Report

Additional Datasets Captured in Database but not reported in detail in this report. These datasets are still of interest to habitat modelling, however may be smaller in scope, or non-digital, or less relevant to agriculture. More information on each of these is available in the NAESI Database.

Jurisdiction	BUSINESS_THEME	TITLE_NAME
AB	AGRICULTURAL LANDS	Alberta 1997 State of the Environment Report: Terrestrial Ecosystems
AB	AGRICULTURAL LANDS	Reconnaissance Vegetation Inventory (RVI) Digital Scans
AB	AOI/RESEARCH	Winter habitat use by wolves, <i>Canis lupus</i> , in relation to forest harvesting in west-central Alberta
AB	ECOSYSTEMS	Environmentally Significant Areas of Alberta, Canada
AB	FORESTS	Foothills Model Forest - Model Forest Network
AB	LAND BASE	Environmentally Significant Areas Inventory of the Rocky Mountain Natural Region of Alberta
AB	WILDLIFE HABITAT	Yellowstone to Yukon Conservation Initiative
BC	AGRICULTURAL LANDS	Agricultural Land Use City of Surrey
BC	AGRICULTURAL LANDS	City of Abbotsford Cadastre - Agricultural Use
BC	AGRICULTURAL LANDS	Grassland Encroachment for the Cariboo Region
BC	AGRICULTURAL LANDS	Grazing Tenures - Miller Creek Area
BC	AGRICULTURAL LANDS	Green Zone - Livable Region Strategic Plan - GVRD
BC	AGRICULTURAL LANDS	Pasture Boundaries Clearwater Forest District
BC	AGRICULTURAL LANDS	Range Improvement Burns Penticton Forest District
BC	AGRICULTURAL LANDS	Range Improvement Features - Fences
BC	AGRICULTURAL LANDS	Range Improvement Features Penticton Forest District
BC	AGRICULTURAL LANDS	Range Pasture Units Merritt and Lillooet TSAs
BC	AGRICULTURAL LANDS	Range Tenure Horse Lillooet TSA

Jurisdiction	BUSINESS_THEME	TITLE_NAME
BC	AGRICULTURAL LANDS	Range Tenures And Pastures Kamloops TSA
BC	AGRICULTURAL LANDS	Range Tenures And Pastures Penticton Forest District
BC	AGRICULTURAL LANDS	Range Tenures Merritt and Okanagan TSA
BC	AGRICULTURAL LANDS	Range Units - East Kootenay
BC	AGRICULTURAL LANDS	Range Units Merritt TSA
BC	AGRICULTURAL LANDS	Stock Ranges Kamloops Forest District Lines
BC	AGRICULTURAL LANDS	Township of Langley, Cadastre - Agricultural Use
BC	AOI/RESEARCH	Areas of Interest and Approved Study Areas PAS Merritt TSA
BC	AOI/RESEARCH	Inland Pacific Connector Environmental Assessment Corridor DPE
BC	DISTURBANCE	Natural Disturbance Type - KBLUP
BC	DISTURBANCE	Natural Disturbance Types Lillooet Forest District
BC	ECOSYSTEMS	Connectivity Corridors - KBHLPO
BC	ECOSYSTEMS	Isobel Lake Ecosystem Mapping (Site Series) Kamloops TSA
BC	ECOSYSTEMS	Key Ecosystem Habitat South Okanagan-Similkameen SOSCP
BC	ENVIRONMENTAL MONITORING	Environmental Monitoring System (EMS)
BC	ENVIRONMENTAL MONITORING	Fire Suppression Zones in Parks for the Cariboo Region BC
BC	ENVIRONMENTAL MONITORING	Noxious Weeds
BC	ENVIRONMENTAL MONITORING	Noxious Weeds Kamloops TSA
BC	ENVIRONMENTAL MONITORING	Water Well Locations and Sample Results - Mission
BC	GRASSLANDS	Grassland Benchmark for the Cariboo Region
BC	GRASSLANDS	Grasslands Including Developed Areas Kamloops TSA
BC	GRASSLANDS	Grasslands Including Ecosystems Kamloops TSA

Jurisdiction	BUSINESS_THEME	TITLE_NAME
BC	GRASSLANDS	Grasslands Kamloops TSA
BC	IMAGERY	5 Metre Orthorectified IRS Satellite Imagery for Canada
BC	IMAGERY	Landsat Image Capture Date Polygon (SII)
BC	LAND BASE	Digital Baseline Mapping at 1:2,000,000 (NTS)
BC	LAND BASE	Digital Baseline Mapping at 1:6,000,000 (NTS)
BC	LAND COVER	Detailed Ecosystem Inventory South Okanagan
BC	LAND COVER	Ecoregion Ecosystem Classification of British Columbia
BC	LAND COVER	Forest Ecosystems Network Penticton Forest District
BC	LAND COVER	Fraser Lowland Wetland Inventory - CWS - Lower Mainland
BC	LAND COVER	Wildlife Tree Patches Penticton Forest District
BC	LAND USE	Land Use Classification Fraser Valley Regional District
BC	LAND USE	Land Use Classification Greater Vancouver Regional District
BC	LAND USE	Parks and Protected Areas BC
BC	RARE AND ENDANGERED SPECIES	Endangered Species and Ecosystems - Non Sensitive Occurrences BC
BC	RARE AND ENDANGERED SPECIES	Endangered Species and Ecosystems - Occurrences BC
BC	RARE AND ENDANGERED SPECIES	Important Habitat South Okanagan Species at Risk DPE
BC	RARE AND ENDANGERED SPECIES	Potential Red Listed Plant Communities Penticton
BC	RIPARIAN AREAS	Wetland and Riparian Habitat South Okanagan-Similkameen SOSCP
BC	VEGETATION	Dominant Eelgrass - Boundary Bay - CWS - Lower Mainland
BC	VEGETATION	Grassland Shrub-Steppe South Okanagan-Similkameen SOSCP
BC	VEGETATION	Invasive Alien Plant Program
BC	VEGETATION	Noxious Weeds in Parks within the Cariboo Region

Jurisdiction	BUSINESS_THEME	TITLE_NAME
BC	VEGETATION	Tall Bugbane Wildlife Habitat Areas - Proposed - Lower Mainland
BC	VEGETATION	Vegetation Cover BC
BC	VEGETATION	Vegetation Resource Inventory Sample Plots Okanagan Shuswap TSA
BC	VEGETATION	VRI Sample Points Okanagan TSA
BC	Water	Groundwater Aquifers and Wells BC
BC	WATER FEATURES	Community Watersheds - KBLUP
BC	WATER FEATURES	Fish Potential Watersheds - DSQ
BC	WATER FEATURES	Fisheries Watercourse Classification - Port Coquitlam - Lines
BC	WATER FEATURES	Lake Classification Kamloops Forest District
BC	WATER FEATURES	Lake Classification Penticton Forest District
BC	WATER FEATURES	Lake Classification Salmon Arm Forest District
BC	WATER FEATURES	Lake Classification Vernon Forest District
BC	WATER FEATURES	Macro Reaches by Gradient - LMR
BC	WATER FEATURES	Stream Classification Double Line for the Cariboo Region
BC	WATER FEATURES	Stream Classifications Clearwater Forest District
BC	WATER FEATURES	Stream Classifications Kamloops Forest District
BC	WATER FEATURES	Summer Limnology Survey Sites for the Cariboo Region
BC	WILDLIFE CENSUS	Caribou Telemetry (1980s) for the Western Cariboo Region
BC	WILDLIFE CENSUS	Caribou Telemetry (1993-2004) for the Eastern Cariboo Region
BC	WILDLIFE CENSUS	Caribou Telemetry (Charlotte Alplands) for the Western Cariboo Region BC
BC	WILDLIFE CENSUS	Caribou Telemetry (Quesnel Lk) for the Eastern Cariboo Region
BC	WILDLIFE CENSUS	Caribou Telemetry (Wells Gray Pk) - East Cariboo Region

Jurisdiction	BUSINESS_THEME	TITLE_NAME
BC	WILDLIFE CENSUS	Caribou Telemetry by GPS Collar for the Western Cariboo Region
BC	WILDLIFE CENSUS	Distribution of Native Char in Major Watersheds - LMR
BC	WILDLIFE CENSUS	Fish Locations for the Cariboo Region
BC	WILDLIFE CENSUS	Goat Survey Locations for the Cariboo Region
BC	WILDLIFE CENSUS	Incidental Species for the Western Cariboo Region
BC	WILDLIFE CENSUS	Moose Surveys for the Eastern Cariboo Region
BC	WILDLIFE CENSUS	Owl Habitat Survey (2001) for the Williams Lake Forest District
BC	WILDLIFE CENSUS	Sheep Telemetry (Churn Creek) for the Cariboo Region
BC	WILDLIFE CENSUS	Species Inventory BC
BC	WILDLIFE CENSUS	Steelhead Monitoring for the Fraser River in the Cariboo Region
BC	WILDLIFE CENSUS	Stream Fish Presence - FVRD
BC	WILDLIFE CENSUS	Wolf Telemetry for the Eastern Cariboo Region
BC	WILDLIFE HABITAT	American Bittern Breeding Distribution - Squamish Forest District
BC	WILDLIFE HABITAT	Aquatic Catalogue BC
BC	WILDLIFE HABITAT	Badger Habitat for the Cariboo Region BC
BC	WILDLIFE HABITAT	Badger Locations and Burrows for the Cariboo Region BC
BC	WILDLIFE HABITAT	Bald Eagle Overwintering Habitat - DSQ
BC	WILDLIFE HABITAT	Besa Prophet Winter Food and Habitat Capability - Omineca-Peace
BC	WILDLIFE HABITAT	Biodiversity Corridors Clearwater Forest District
BC	WILDLIFE HABITAT	Biodiversity Corridors Kamloops Forest District
BC	WILDLIFE HABITAT	Biodiversity Emphasis Options
BC	WILDLIFE HABITAT	Biophysical Habitat South Okanagan Similkameen SOSCP

Jurisdiction	BUSINESS_THEME	TITLE_NAME
BC	WILDLIFE HABITAT	Biophysical Ungulate Capability - South-eastern BC
BC	WILDLIFE HABITAT	Bull Trout Suspected And Known Presence Lillooet TSA Polys
BC	WILDLIFE HABITAT	Caribou Habitat Ratings Omineca Region
BC	WILDLIFE HABITAT	Caribou Model (Early Winter) for the Eastern Cariboo Region BC
BC	WILDLIFE HABITAT	Caribou Model (Late Winter) for the Eastern Cariboo Region BC
BC	WILDLIFE HABITAT	Caribou Model (Spring) for the Eastern Cariboo Region BC
BC	WILDLIFE HABITAT	Caribou Model (Summer) for the Eastern Cariboo Region BC
BC	WILDLIFE HABITAT	Caribou Model (Summer/West) for the Eastern Cariboo Region BC
BC	WILDLIFE HABITAT	Caribou Model (Winter Alpine) for the Eastern Cariboo Region BC
BC	WILDLIFE HABITAT	Caribou Model (Winter Forest) for the Eastern Cariboo Region BC
BC	WILDLIFE HABITAT	Caribou Movement Corridors Clearwater Forest District
BC	WILDLIFE HABITAT	Caribou Recovery Areas - Polygons - Kootenay Region
BC	WILDLIFE HABITAT	Caribou Suitability Clearwater Forest District
BC	WILDLIFE HABITAT	Coastal Giant Salamander Distribution - Chilliwack Watershed
BC	WILDLIFE HABITAT	Coastal Tailed Frog Wildlife Habitat Areas - LMR
BC	WILDLIFE HABITAT	Connectivity Corridors - KBLUP
BC	WILDLIFE HABITAT	Deer Critical Winter Range LRMP Kamloops TSA
BC	WILDLIFE HABITAT	Deer Winter Range - CBN Model - DSQ
BC	WILDLIFE HABITAT	Elk Connectivity Corridors Merritt TSA
BC	WILDLIFE HABITAT	Elk Corridors Merritt TSA
BC	WILDLIFE HABITAT	Elk Distribution Lillooet TSA
BC	WILDLIFE HABITAT	Elk Distribution LRMP Lillooet Forest District

Jurisdiction	BUSINESS_THEME	TITLE_NAME
BC	WILDLIFE HABITAT	Elk Winter Range Boundary Forest District
BC	WILDLIFE HABITAT	Elk Winter Range Southern Interior Region DRAFT
BC	WILDLIFE HABITAT	Fish Critical Habitat for the Cariboo Region
BC	WILDLIFE HABITAT	Fish Distribution - Lower Mainland
BC	WILDLIFE HABITAT	Fish Distribution for the Cariboo Region
BC	WILDLIFE HABITAT	Fish Distribution Habitat Reconnaissance Lillooet TSA
BC	WILDLIFE HABITAT	Fish Distribution Okanagan Shuswap TSA
BC	WILDLIFE HABITAT	Fish Habitat Potential based on stream gradient - DSC
BC	WILDLIFE HABITAT	Fisher Potential Distribution - DSQ
BC	WILDLIFE HABITAT	Fisheries Data Warehouse BC
BC	WILDLIFE HABITAT	Flammulated Owl Suitability SIR
BC	WILDLIFE HABITAT	Grizzly Bear Habitat - Valhalla Park
BC	WILDLIFE HABITAT	Grizzly Bear Habitat-DSQ
BC	WILDLIFE HABITAT	Grizzly Bear Linkage Potential - DSQ
BC	WILDLIFE HABITAT	Grizzly Bear Management Priorities - KBLUP
BC	WILDLIFE HABITAT	Grizzly Bear Suitability Okanagan TSA
BC	WILDLIFE HABITAT	Grizzly Bear Suitability Okanagan TSA BC
BC	WILDLIFE HABITAT	Grizzly Bear/Wolverine Management - DSQ
BC	WILDLIFE HABITAT	Habitat Capability for the Cariboo Region
BC	WILDLIFE HABITAT	Habitat Compensation Sites - FREMP - Lower Mainland
BC	WILDLIFE HABITAT	Habitat Inventories - FREMP - Lower Mainland
BC	WILDLIFE HABITAT	Halfway Graham Bison Capability - winter food habitat
BC	WILDLIFE HABITAT	Halfway Graham Elk Capability - winter food habitat

Jurisdiction	BUSINESS_THEME	TITLE_NAME
BC	WILDLIFE HABITAT	Halfway Graham Moose Capability - winter food habitat
BC	WILDLIFE HABITAT	Halfway Graham Sheep Capability - winter food habitat
BC	WILDLIFE HABITAT	Harlequin Duck Habitat Suitability - DSQ
BC	WILDLIFE HABITAT	High Value Fish Streams - KBLUP
BC	WILDLIFE HABITAT	High Value Wetlands for Moose in the Cariboo Region
BC	WILDLIFE HABITAT	Identified Watersheds for Grizzly Bear Mgmnt LRMP Lillooet FD
BC	WILDLIFE HABITAT	Marten Capability Ratings Okanagan Shuswap TSA
BC	WILDLIFE HABITAT	Moose Critical Winter Range LRMP Kamloops TSA
BC	WILDLIFE HABITAT	Moose Range Lillooet Forest District
BC	WILDLIFE HABITAT	Moose Winter Range Boundary Forest District
BC	WILDLIFE HABITAT	Moose Winter Range Capability Model
BC	WILDLIFE HABITAT	Moose Winter Ranges - Squamish Forest District
BC	WILDLIFE HABITAT	Mountain Goat Wintering Habitat for the Cariboo Region
BC	WILDLIFE HABITAT	Mule Deer Suitability Lillooet TSA Version 2
BC	WILDLIFE HABITAT	Mule Deer Winter Ranges for the Cariboo Region
BC	WILDLIFE HABITAT	Muskwa West South Elk Capability - winter food habitat
BC	WILDLIFE HABITAT	Muskwa West South Moose Capability - winter food habitat
BC	WILDLIFE HABITAT	Muskwa West South Sheep Capability - winter food habitat
BC	WILDLIFE HABITAT	North Thompson Caribou Habitat Clearwater Forest District
BC	WILDLIFE HABITAT	Owl Nesting Model for the Williams Lake Forest District
BC	WILDLIFE HABITAT	Pacific Water & Trowbridge Shrew - DSQ
BC	WILDLIFE HABITAT	Peregrine Falcon Habitat Suitability - DSQ
BC	WILDLIFE HABITAT	Potential Moose Habitat Lillooet Forest District

Jurisdiction	BUSINESS_THEME	TITLE_NAME
BC	WILDLIFE HABITAT	Rainbow Trout Presence Lillooet TSA
BC	WILDLIFE HABITAT	Rubber Boa Habitat Suitability - DSQ
BC	WILDLIFE HABITAT	Salamander Range - Chilliwack Watershed Area
BC	WILDLIFE HABITAT	Sheep Ranges Lillooet Forest District
BC	WILDLIFE HABITAT	Sheep Winter Range Boundary Forest District
BC	WILDLIFE HABITAT	Significant Fish Streams and Rivers - KBLUP
BC	WILDLIFE HABITAT	Snake Dens along the Fraser River for the Cariboo Region
BC	WILDLIFE HABITAT	Special Fish Habitats Okanagan Shuswap TSA
BC	WILDLIFE HABITAT	Tailed Frog Habitat Suitability - DSQ
BC	WILDLIFE HABITAT	Trumpeter Swan - Known & Potential Breeding Distribution - DSQ
BC	WILDLIFE HABITAT	Ungulate Winter Range - Revelstoke MAC
BC	WILDLIFE HABITAT	Ungulate Winter Range Shelter Model Clearwater Forest District
BC	WILDLIFE HABITAT	Ungulate Winter Range Shelter Model Kamloops Forest District
BC	WILDLIFE HABITAT	Wildlife Conservation Planning BC
BC	WILDLIFE HABITAT	Wildlife Management Areas - Lower Mainland
CA	AGRICULTURAL LANDS	Land Capability for Agriculture - Canada Land Inventory (1:50 000)
CA	AGRICULTURAL LANDS	PFRA Western Grain Transition Payment Program (WGTPP) Landcover
CA	ENVIRONMENTAL MONITORING	NCAD - North American Conservation Areas Database
CA	FORESTS	National Forestry Database - Forest Fires, Canada
CA	FORESTS	National Forestry Database - Forest Insects, Canada
CA	FORESTS	National Forestry Database - Forest Inventory, Canada
CA	FORESTS	National Forestry Database - Pest Control Product Use, Canada

Jurisdiction	BUSINESS_THEME	TITLE_NAME
CA	FORESTS	National Forestry Database - Silviculture, Canada
CA	FORESTS	White Pine and Red Pine Silvicultural Study, Ontario, Canada
CA	IMAGERY	Landsat 5 TM Mosaic of Vancouver Island, Canada
CA	IMAGERY	Landsat 7 Level 1-G Imagery over Canada
CA	IMAGERY	Multi-Temporal Land Cover Maps of Canada using NOAA AVHRR 1-km data from 1985-2000
CA	LAND BASE	Alberta Irrigation District Boundaries
CA	PLANNING	Canadian Conservation Areas Database (CCAD)
CA	TRANSPORTATION	North American Atlas - Roads
CA	VEGETATION	Alberta Grasslands Natural Region, Native Prairie Vegetation Inventory ARC/INFO Coverage
CA	VEGETATION	Canada 1-km, 10-day, SPOT/VEGETATION composites for growing season 1998-2004
CA	VEGETATION	PFRA Community Pasture range condition database
CA	water	Sask Water Control Structures
CA	WILDLIFE CENSUS	Migratory Bird Air-ground Transects for the Prairies
CA	WILDLIFE HABITAT	Elk/Moose Habitat Projects 1994 - 1995 Funding Proposal
CA	WILDLIFE HABITAT	Habitat Subregions - Priority Migratory Bird Habitats of Canada's Prairie Provinces
CA	WILDLIFE HABITAT	North American Bird Conservation Areas
CA	WILDLIFE HABITAT	Prairie Habitat Joint Venture
DC	FORESTS	Ecological Limitations to Commercial Forestry in Canada
MB	AGRICULTURAL LANDS	Community Pasture Lands of Manitoba
MB	IMAGERY	Digital Orthophoto Images for the Agricultural Region of Manitoba (1 to 60 k)
MB	IMAGERY	Landsat 7 Digital Orthos in NTS Blocks for Manitoba
MB	LAND BASE	Geology Map of Manitoba 1:1,000,000

Jurisdiction	BUSINESS_THEME	TITLE_NAME
MB	LAND BASE	Manitoba Topographic Base Map Scale 1:500,000
MB	LAND BASE	Red River LiDAR DEM
MB	LAND BASE	Soil Classification Maps - Agricultural Interpretation Database by Municipality for Manitoba
MB	LAND COVER	Conservation Areas of Middlesex
MB	LAND COVER	Land Use/Land Cover Landsat TM Maps for Manitoba
MB	LAND USE	Administrative Boundaries of Manitoba
MB	LAND USE	Areas of Special Interest (ASI) in Manitoba
MB	LAND USE	Conservation Lands of Manitoba
MB	LAND USE	Land Use Categories within Provincial Parks in Manitoba
MB	LAND USE	Special Conservation Areas of Manitoba
MB	LAND USE	Wildlife Management Areas of Manitoba
MB	LAND USE	Wildlife Refuges of Manitoba
MB	WATER FEATURES	Designated Drain Watercourse Maps for Agricultural Region of Manitoba
MB	WILDLIFE HABITAT	Animal Habitat Mapping of Specific Areas in Manitoba
NB	LAND BASE	St. Lawrence Coastal Series, Quebec, Canada
NB	WILDLIFE CENSUS	Migratory Game Bird Population Status, Canada
NB	WILDLIFE CENSUS	National Harvest Survey - Information on hunting activity and migratory game bird harvest in Canada
NB	WILDLIFE CENSUS	Waterfowl Survey Results for Clay Belt Study
NB	WILDLIFE HABITAT	Canadian Aquatic Biomonitoring Network
NB	WILDLIFE HABITAT	Location of Ovenbird and Redstart study sites in deciduous mixedwood forest in Western Canada
NB	WILDLIFE HABITAT	Population and Habitat Viability Assessment for the Grizzly Bear of the Central Rockies Ecosystem (Ursus arctos)
NF	FORESTS	Inter-disciplinary Forest Ecosystem Research (InFer) in Newfoundland

Jurisdiction	BUSINESS_THEME	TITLE_NAME
NF	LAND BASE	Geological Survey of Newfoundland & Labrador - Digital Open Files
NF	LAND USE	Federal Seabird Sanctuary Ecological Reserve Boundaries for Newfoundland & Labrador
NF	LAND USE	Land Use Atlas for Newfoundland & Labrador
NF	LAND USE	National Park Boundaries for Newfoundland and Labrador
NS	FORESTS	Generalized Land Cover Type Map of Nova Scotia
NS	LAND BASE	Coastal Series Maps (1:50,000) for Nova Scotia
NS	LAND COVER	Aerial Photograph Archive for Nova Scotia
NS	LAND COVER	Ecosystem Types of Wilderness Areas for Nova Scotia
NS	LAND USE	Private Lands - Inholdings, Critical Adjacent, and Protected Parcels, in Nova Scotia - Spreadsheets
NS	LAND USE	Protected Lands in Nova Scotia - Spreadsheets
NS	LAND USE	Restricted and Limited Used Land Database for Nova Scotia
NS	LAND USE	Significant Ecosites of Nova Scotia
NS	LAND USE	Wilderness Areas of Nova Scotia
NS	RIPARIAN AREAS	Cornwallis River Project, Nova Scotia, Canada
NS	VEGETATION	Plant Associations/Biotic Communities Ecosystem Classification Database (Developmental)
NS	WILDLIFE CENSUS	Fish Inventory Nova Scotia (FINS) Database
NS	WILDLIFE CENSUS	Furbearers & Upland Game Program, Small Game Application - Nova Scotia - FoxPro Database
NS	WILDLIFE CENSUS	Furbearers & Upland Game Program: Fur Harvest System for Nova Scotia
NS	WILDLIFE CENSUS	Marine Invertebrate Diversity Initiative (MIDI) Database
NS	WILDLIFE CENSUS	Nova Scotia General Status of Wild Species
NS	WILDLIFE HABITAT	Furbearers & Upland Game Program: Telemetry Data: Bobcat in Nova Scotia
NS	WILDLIFE HABITAT	Large Mammals Program: Telemetry Data: Moose in Nova Scotia

Jurisdiction	BUSINESS_THEME	TITLE_NAME
ON	AGRICULTURAL LANDS	Agricultural Resource Inventory (ARI)
ON	AGRICULTURAL LANDS	Eastern Ontario 2001 Crop classification from Landsat
ON	AGRICULTURAL LANDS	Eastern Ontario 2003 Land Cover Classification from Landsat
ON	AGRICULTURAL LANDS	Farm Field Delineation
ON	AGRICULTURAL LANDS	National Agri-Environmental Health Analysis and Reporting Program (NAHARP) Land Cover
ON	AGRICULTURAL LANDS	Tile Drainage Area (TDA)
ON	AOI/RESEARCH	Research Plot - GLHC
ON	DISTURBANCE	Fire Disturbance Area
ON	ECOSYSTEMS	Designated Old Growth Forest - Pembroke OMNR District
ON	ECOSYSTEMS	Ecological Land Classification (ELC) of Ontario (ELC)
ON	ECOSYSTEMS	Great Lakes Conservation Blueprint for Biodiversity: Terrestrial Conservation Blueprint - Southern Ontario and the Canadian Shield (GLCBB)
ON	ENVIRONMENTAL MONITORING	Mean Annual Temperature
ON	ENVIRONMENTAL MONITORING	Ontario NHIC Natural Areas Database
ON	FORESTS	Forest Management Compartments
ON	FORESTS	NCC Greenbelt Forest Inventory
ON	FORESTS	Trapline Area (TLA)
ON	FORESTS	Trapper Cabin
ON	FORESTS	United Counties of Stormont Dundas & Glengarry Forest Resource Inventory
ON	FORESTS	Woody Vegetation in Eastern Ontario
ON	Imagery	Great Lakes Mosaic of Landsat MSS Images, Canada
ON	IMAGERY	RADARSAT Ortho-rectified Mosaic of Canada, Lambert Conformal Conic - 250 Metres
ON	LAND BASE	Aquatic Resource Area - Pembroke OMNR District (WATESEG)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
ON	LAND BASE	Aquatic Resource Area (ARA)
ON	LAND BASE	Canadian Ecodistrict Climate Normals
ON	LAND BASE	Detailed Soil Database - Detailed Soil Surveys for Canada
ON	LAND BASE	Digital Elevation Model - Provincial Tiled Data Set (DEM)
ON	LAND BASE	Geological Survey of Canada Digital Maps
ON	LAND BASE	Qu'Appelle River Valley Land Planning Database, Canada
ON	LAND BASE	Slope Erosion Hazard
ON	LAND BASE	Soils - City of Sudbury
ON	LAND COVER	American Water-Willow Habitat Planning Range
ON	LAND COVER	AVHRR Land Cover Data for Canada
ON	LAND COVER	Conservation Areas of Middlesex
ON	LAND COVER	East-Central Labrador Ecological Land Survey
ON	LAND COVER	Eastern Ontario 1998 Land Cover Classification
ON	LAND COVER	Environmentally Sensitive Areas (ESA)
ON	LAND COVER	Landcover - Gran River Conservation Authority
ON	LAND COVER	Wild Rice Stand
ON	LAND USE	Algoma Headwaters Signature Site (AHSS)
ON	LAND USE	Cons_res - Great Lakes Heritage Coast (GLHC)
ON	LAND USE	Cottage Residential Area
ON	LAND USE	Digital Data Catalogue, Ottawa, Canada
ON	LAND USE	Landcover 2002 Greater Toronto Area ()
ON	LAND USE	Lot
ON	LAND USE	NCC Greenbelt Border

Jurisdiction	BUSINESS_THEME	TITLE_NAME
ON	LAND USE	Pit or Quarry
ON	LAND USE	Significant Ecological Areas
ON	LAND USE	Soils Ontario Packaged Product (Soils ON)
ON	TRANSPORTATION	Snow Route - GLHC
ON	TRANSPORTATION	Trans Canada Trail
ON	VEGETATION	Gattinger's Agalinis Habitat Planning Range
ON	VEGETATION	Ontario Seed Zones
ON	VEGETATION	Turkey Lakes Tolerant Hardwoods Ecosystem Research Project in Ontario
ON	VEGETATION	Vegetation Continuous Fields (MODIS Classification)
ON	WATER FEATURES	Ontario NHIC Central Databases
ON	WATER FEATURES	Waterbody Segment - Ontario
ON	WATER FEATURES	Waterline - GLHC
ON	WATER FEATURES	Watershed_ Prim - GLHC
ON	WATER FEATURES	Watershed_on - GLHC
ON	WATER FEATURES	Watershed_Tert - GLHC
ON	WETLANDS	An Evaluation of six wetlands in Southeastern Ontario, 1986
ON	WETLANDS	Muskoka District Enhanced Wetland Mapping
ON	WETLANDS	Wetland Unit
ON	WETLANDS	Wetlands - GeGrand River Conservation Authority
ON	WILDLIFE CENSUS	Den Site - NRVIS
ON	WILDLIFE HABITAT	Acadian Flycatcher Habitat Planning Range
ON	WILDLIFE HABITAT	American Black Duck Habitat Planning Range
ON	WILDLIFE HABITAT	Aquatic Feeding Area - North Bay OMNR District (AQUAFEED)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
ON	WILDLIFE HABITAT	Aquatic Feeding Area - Pembroke OMNR District (AQUAFEED)
ON	WILDLIFE HABITAT	Aylmer District Sample - A Technical Report Outlining the Status of the Northern Bobwhite in Aylmer District ()
ON	WILDLIFE HABITAT	Canadian Important Bird Areas
ON	WILDLIFE HABITAT	Feeding Area - NRVIS
ON	WILDLIFE HABITAT	Habitat Matrices for Eastern Ontario
ON	WILDLIFE HABITAT	Habitat Planning Range - NRVIS
ON	WILDLIFE HABITAT	Habitat Planning Range - Pembroke OMNR District (HPLANRGN)
ON	WILDLIFE HABITAT	Nursery - NRVIS
ON	WILDLIFE HABITAT	ON Yellow-Breasted Chat Habitat Planning Range
ON	WILDLIFE HABITAT	Protected Areas Gap Analysis Methodology Working Draft (World Wildlife Fund Canada, Toronto, February 1994)
ON	WILDLIFE HABITAT	The Status of Wildlife Habitat in Canada 1991: Realities & Visions (Wildlife Habitat Canada, High et. al., July 1991)
ON	WILDLIFE HABITAT	Wildlife Research Plot
ON	WILDLIFE HABITAT	Wintering Area
ON	WILDLIFE HABITAT	Wintering Area - NRVIS
ON	WILDLIFE HABITAT	Wolverine Habitat Planning Range
ON	WILDLIFE HABITAT	Wood Turtle Habitat Planning Range
ON	WILDLIFE HABITAT	Woodcock Habitat Planning Range
PE	FORESTS	Forest Inventory of PEI (1935 Version)
PE	FORESTS	Forest Inventory of PEI (1958 Version)
PE	FORESTS	Forest Inventory of PEI (1980 Version)
PE	IMAGERY	PEI 2000 Orthomap
PE	LAND BASE	Contour Mapping (2 Metre) from Photos for PEI

Jurisdiction	BUSINESS_THEME	TITLE_NAME
PE	WETLANDS	Wetland Inventory of PEI (1990)
PQ	LAND COVER	Parks Canada Geomatics Metadata Repository
PQ	LAND USE	Recreational and Protected Areas
PQ	WATER FEATURES	Atlas of Coastal Habitats and Fishery Resources - St.Lawrence River
PQ	WILDLIFE HABITAT	Atlas of Coastal Habitats and Fishery Resources - Northern Quebec
PQ	WILDLIFE HABITAT	Fluvial and Marine Fish/Invertebrate Database
PQ	WILDLIFE HABITAT	Marine Resources and Estuary Habitats of the St-Lawrence and Saguenay River
QC	WILDLIFE HABITAT	Potential Western Hemisphere Shorebird Reserve Network (WHSRN) Sites for Migrant Shorebirds in Canada, Technical Report Series no. 144 (CWS, Hull Quebec, Morrison et. al., 1991)
SK	AGRICULTURAL LANDS	A Study of Waterfowl Crop Depredation in Saskatchewan: Wildlife Report 2 (Sask Department of Natural Resources; Ross MacLennan; 1973)
SK	FORESTS	Cypress Hills Provincial Park Vegetation Management Plan (Sask Parks and Renewable Resources Park Branch; Prairie Environmental Services - Raymore, SK; May 1985)
SK	FORESTS	Fort a la Corne Forest Inventory, Saskatchewan, Canada
SK	FORESTS	Promoting a Sustainable Woodlot in Central Alberta
SK	IMAGERY	Aerial Imagery: FEB Photo Index
SK	IMAGERY	Aerial Photography, Mosaiced Air-Photos of the Townships of Eastern Ontario
SK	IMAGERY	IKONOS Image Index
SK	IMAGERY	QuickBird Imagery for Great Sand Hills
SK	LAND COVER	PFRA's Generalized Landcover
SK	LAND USE	Conservation Easements
SK	LAND USE	Manitou Sand Hills Integrated Resource Management Plan (Saskatchewan Environment and Resource Management, Saskatchewan Agriculture and Food; April 1996)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
SK	LAND USE	Thickwood Hills Land Use Study Proposal: Wildlife Technical Report 78-4 (Saskatchewan Tourism and Renewable Resources Fisheries and Wildlife Branch; D Noble; March 1978)
SK	RARE AND ENDANGERED SPECIES	Great Sand Hills Rare_Plant_Occurrences_v1.shp
SK	RARE AND ENDANGERED SPECIES	Rare Plant Rescue - 2002
SK	RIPARIAN AREAS	Round Lake 1995 Submersed Vegetation and other datasets
SK	VEGETATION	Cypress Hills Provincial Park - REA/plot data
SK	VEGETATION	Great Sand Hills - Vegetation Survey 2002
SK	VEGETATION	Great Sand Hills All_Addn_Tracks.shp
SK	VEGETATION	Great Sand Hills All_Tracks.shp
SK	VEGETATION	Rapid Ecological Assessment of RAN Sites - 2002
SK	VEGETATION	Vegetation Survey of the Manito Sand Hills (Saskatchewan Research Council Publication E-2550-1-E-93; J. Thorpe & R. Godwin of Applied Plant Ecology Section; Feb 93)
SK	WETLANDS	A Proposal for the Establishment and Development of the Fairy Hill Wildlife Management Area: Wildlife Technical Report 77-24 (Sask Tourism and Renewable Resources; D Hatch, V Lieffers; June 1977)
SK	WETLANDS	A proposal to Develop Midnight, Maiden and Stony Lakes as a Wildlife Management Area: Wildlife Technical Report 77-27 (Sask Tourism and Renewable Resources and Ducks Unlimited Can; DA Brewster, RJ MacFarlane, AR Iverson; June 1977)
SK	WETLANDS	Waterfowl Resource Inventory of the Yorkton Wetland Complex, 1973 (Saskatchewan Tourism and Renewable Resources)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
SK	WETLANDS	Wetland Habitat Inventory of the Kindersley SK (72N) Map Area: Wildlife Technical Rpt 81-12 (Sask Tourism and Renewable Resources Wildlife Research Program; AP Schmidt; Sept 1981)
SK	WILDLIFE CENSUS	A Proposal for The Management of Woodland Caribou in Saskatchewan: Wildlife Technical Report 92-3 (Saskatchewan Natural Resources, Wildlife Branch; T.W. Rock; May 1992)
SK	WILDLIFE CENSUS	Counts of Greater White-Fronted Geese on the South Saskatchewan River, 1994 (SERM Wildlife Branch; MA Gollop; February 1995)
SK	WILDLIFE CENSUS	Great Sand Hills All_SBBS_Sets.shp
SK	WILDLIFE CENSUS	Great Sand Hills Breeding_Survey_v1.shp
SK	WILDLIFE CENSUS	Great Sand Hills Incidental_Birds_2005.shp
SK	WILDLIFE CENSUS	Great Sand Hills Incidental_Mammals_2005.shp
SK	WILDLIFE CENSUS	Great Sand Hills Incidental_Other_2005.shp
SK	WILDLIFE CENSUS	Great Sand Hills Waterfowl_2005.shp
SK	WILDLIFE CENSUS	Pronghorn Antelope in Saskatchewan: Status and Management Strategies - Wildlife Technical Report 92-2 (Sask Natural Resources Wildlife Branch; M Killaby, D Dobson, C Dunn; August 1992)
SK	WILDLIFE CENSUS	Saskatchewan Big Game Management Report 1974 (Saskatchewan Tourism and Renewable Resources Fisheries & Wildlife Branch; ER Wiltse; June 1976)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
SK	WILDLIFE HABITAT	A Habitat Development and Management Plan for the Leaf Lake Wildlife Management Area: Wildlife Technical Report 77-26 (Sask Tourism and Renewable Resources Wetland Habitat Program and Ducks Unlimited; DA Brewster, RJ MacFarlane et. al.; n.d.)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Antelope Park P.F.R.A. Pasture: Wildlife Technical Report 77-2 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Nov '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Beaver Valley & Val Marie PFRA Pastures: Wildlife Technical Report 77-10 (Sask Tourism and Renewable Resources Terrestrial Habitat Program; D Noble, R Johnson, T Weins; January 1977)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Bertwell S.D.A. Pasture: Wildlife Technical Report 76-10 (Sask Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, R Beaulieu; Sep 1976)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Eagle Lake P.F.R.A. Pasture: Wildlife Technical Report 76-9 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Mar '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Fairview P.F.R.A. Pasture: Wildlife Technical Report 76-6 (Sask Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Mar 1976)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Hazel Dell P.F.R.A. Pasture: Wildlife Technical Report 76-4 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, R Beaulieu; Nov '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Heart's Hill P.F.R.A. Pasture: Wildlife Technical Report 77-1 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Nov '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Hillsborough P.F.R.A. Pasture: Wildlife Technical Report 77-3 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Nov '76)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Kindersley-Elma P.F.R.A. Pasture: Wildlife Technical Report 77-9 (Sask Tourism and Renewable Resources; D Noble, P Flory; November 1976)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Mantario P.F.R.A. Pasture: Wildlife Technical Report 77-8 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Nov '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Mariposa P.F.R.A. Pasture: Wildlife Technical Report 77-5 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Nov '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in McCraney P.F.R.A. Pasture: Wildlife Technical Report 77-4 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Nov '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Monet P.F.R.A. Pasture: Wildlife Technical Report 76-7 (Sask Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Mar 1976)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Montrose P.F.R.A. Pasture: Wildlife Technical Report 77-7 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Nov '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Newcombe P.F.R.A. Pasture: Wildlife Technical Report 76-8 (Sask Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Mar 1976)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Oakdale P.F.R.A. Pasture: Wildlife Technical Report 76-9 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Mar '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Pathlow S.D.A. Pasture: Wildlife Technical Report 76-11 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, R Beaulieu; Sep '76)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in Progress P.F.R.A. Pasture: Wildlife Technical Report 77-6 (SK Tourism and Renewable Resources Fisheries & Wildlife Branch Wildlife Research Unit Terrestrial Habitat Unit; D Noble, P Flory; Nov '76)
SK	WILDLIFE HABITAT	A Proposal for the Retention of Wildlife Habitat in the Manito Sand Hills (Saskatchewan Tourism and Renewable Resources)
SK	WILDLIFE HABITAT	A Wildlife Development and Management Plan for the Horsehide Lake Complex: Wildlife Technical Report 80-4 (Sask Tourism and Renewable Resources Wetland Habitat Program; DA Brewster; August 1980)
SK	WILDLIFE HABITAT	A Wildlife Development and Management Proposal for Foam Lake: Wildlife Technical Report 78-1 (Saskatchewan Tourism and Renewable Resources Wetland Habitat Program, Canadian Wildlife Service, Ducks Unlimited; D.A.Brewster and J.R.Caldwell; May 1978)
SK	WILDLIFE HABITAT	A Wildlife Management Plan for The Qu'Appelle Valley and Associated Drainages: Wildlife Technical Report 77-38
SK	WILDLIFE HABITAT	Area Sensitivity in Grassland Passerines: Effects of Patch Size, Patch Shape and Vegetation Structure on Bird Abundance and Occurrence in Southern Saskatchewan (University of Regina and Sask. Watershed Authority; Stephen K. Davis; in The Auk 121(4) 2004)
SK	WILDLIFE HABITAT	Big Game Utilization of Hardwood Cuts During a Mild Winter in Saskatchewan: Wildlife Technical Report 77-12 (Saskatchewan Tourism and Renewable Resources Wildlife Research Program; H. Hunt; January 1977)
SK	WILDLIFE HABITAT	CENSUS METHODOLOGY AND HABITAT USE OF LONG-BILLED CURLEWS in Sask (Janna M. Foster-Willfong) IN SASKATCHEWAN
SK	WILDLIFE HABITAT	Elk/Moose Habitat Projects 1993 - 1994 Progress Report
SK	WILDLIFE HABITAT	Food Habitats of Gray Partridge During Fall and Winter in Saskatchewan: Wildlife Technical Report 8109 (Saskatchewan Tourism and Renewable Resources, Wildlife Research Program; R. Melinchuk; Feb 1981)
SK	WILDLIFE HABITAT	Fort a la Corne Wildlife Study: Wildlife Technical Report 85-4 (Sask Parks and Renewable Resources, Wildlife Branch with funding from Sask Power Corp; RA Froc, BA Hanbidge, eg Scheffler, ID Systems Inc; June 1985)
SK	WILDLIFE HABITAT	Mixed Grass Prairie Passerines Exhibit Weak and Variable Responses to Patch Size
SK	WILDLIFE HABITAT	Prairie Pothole Project-Phase II: 1988 Annual Report (Sask Parks, Recreation and Culture Wildlife Branch, Environment Canada CWS; RD Russell, KH Eskowich; March 1989)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
SK	WILDLIFE HABITAT	Present and Potential Wildlife Habitat values of Rail Lines to be Abandoned in Saskatchewan: Wildlife Technical Report 78-13 (Sask. Tourism and Renewable Resources, Fisheries and Wildlife Branch; Nov 1978)
SK	WILDLIFE HABITAT	SK Environmental Assessment Branch Projects
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Cypress SK (72F) Map Area: Wildlife Technical Rpt 81-7 (Sask Tourism and Renewable Resources Wildlife Research Program; RT Hart, RR Stewart; May 1981)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Kindersley SK (72N) Map Sheet Area: Wildlife Technical Rpt 79-5 (Sask Tourism and Renewable Resources Wildlife Research Program; RT Hart, SR Barber; August 1979)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Melfort SK (73A) Map Area: Wildlife Technical Rpt 83-3 (Sask parks and Renewable Resources Wildlife Research Program; PM Flory; May 1983)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Melville SK - Riding Mtn (62L-K) Map Area: Wildlife Technical Rpt 81-6 (Sask Tourism and Renewable Resources Wildlife Research Program; RT Hart, HA Stelfox; Mar 1981)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the North Battleford SK (73C) Map Area: Wildlife Technical Rpt 81-10 (Sask Tourism and Renewable Resources Wildlife Research Program; RS Ferguson, HM Hunt; Jul 81)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Prelate SK (72K) Map Area: Wildlife Technical Rpt 80-7 (Sask Tourism and Renewable Resources Wildlife Research Program; RT Hart, HM Hunt; August 1980)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Regina SK (72I) Map Area: Wildlife Technical Rpt 80-1 (Sask Tourism and Renewable Resources Wildlife Research Program; PM Flory; Feb 1980)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Rosetown SK (72O) Map Area: Wildlife Technical Rpt 81-3 (Sask Tourism and Renewable Resources Wildlife Research Program; RT Hart, HM Hunt; n.d)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Saskatoon SK (73B) Map Area: Wildlife Technical Rpt 82-1 (Sask Tourism and Renewable Resources Wildlife Research Program; RT Hart, RR Stewart; March 1982)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Swift Current SK (72J) Map Area: Wildlife Technical Rpt 82-3 (Sask Tourism and Renewable Resources Wildlife Research Program; SR Barber; May 1982)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Weyburn SK (62E) - Virden (62F) Map Area: Wildlife Technical Rpt 79-6 (Sask Tourism and Renewable Resources Wildlife Research Program; RHA Stelfox; Nov 1979)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Willow Bunch Lake SK (72H) Map Area: Wildlife Technical Rpt 81-8 (Sask Tourism and Renewable Resources Wildlife Research Program; PM FLory; May 1981)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Wood Mountain SK (76-3) Map Sheet Area: Wildlife Technical Rpt 76-3 (Sask Tourism and Renewable Resources Wildlife Research Program; S Barber, W Runge, J Thorpe; Nov 76)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Wynyard SK (72P) Map Area: Wildlife Technical Rpt 81-17 (Sask Tourism and Renewable Resources Wildlife Research Program; RT Hart, RR Stewart; March 1982)
SK	WILDLIFE HABITAT	Terrestrial Wildlife Habitat Inventory of the Yorkton - Duck Mountain SK (62M-N) Map Sheet Area: Wildlife Technical Rpt 82-4 (Sask Parks and Renewable Resources Wildlife Research Program; RT Harps, HM Hunt; Feb 82)
SK	WILDLIFE HABITAT	The 1977 Aerial Survey for Elk: Wildlife Technical Report 77-13 (Saskatchewan Tourism and Renewable Resources Wildlife Research Program; HI Hunt, D. Dobson; February 1977)
SK	WILDLIFE HABITAT	The Ecology of Sharp-tailed Grouse During Winter in Saskatchewan: Wildlife Technical Report 92-1 (Saskatchewan Parks and Renewable Resources Wildlife Branch; Adam P. Schmidt; Fall, 1980)
SK	WILDLIFE HABITAT	The White-tailed Deer of the Crystal Beach Game Preserve: an ecological investigation - Wildlife Technical Report 85-1 (Saskatchewan Parks and Renewable Resources Wildlife Branch; Robert R. Stewart, Wayne Runge; June 1985)
SK	WILDLIFE HABITAT	Waterfowl Crop Damage Control Program Summary Report 1991: Wildlife Technical Report 92-4 (Saskatchewan Parks and Renewable Resources Wildlife Branch)
SK	WILDLIFE HABITAT	Waterfowl Recruitment on Converted PFRA Rangelands in the Boreal Transition Forest: Final Project Report - 1991 (Project 44914, Canadian Wildlife Service; GD Adams, JT Trevor; Dec 91)

Jurisdiction	BUSINESS_THEME	TITLE_NAME
SK	WILDLIFE HABITAT	Wetland Habitat Inventory of the North Battleford SK (73c) Map Area: Wildlife Technical Rpt 81-11 (Sask Tourism and Renewable Resources Wildlife Research Program; AP Schmidt; Sept 1981)
SK	WILDLIFE HABITAT	Wetland Habitat Inventory of the St. Walberg SK (73F) Map Area: Wildlife Technical Rpt 81-13 (Sask Tourism and Renewable Resources Wildlife Research Program; AP Schmidt; Sept 1981)
SK	WILDLIFE HABITAT	Wildlife Lands Habitat Management: Wildlife Development Fund (Saskatchewan Tourism and Renewable Resources Lands and Surveys Branch; RH Johnson, BJ Weichel Resource Management Consultants; April 1979)
TN	AGRICULTURAL LANDS	BOREAS/Agriculture Canada Central Saskatchewan Vector Soils Data
TN	FORESTS	BOREAS Follow-on DSP-09 Saskatchewan Raster Forest Fire Chronology, 1945-1996
TN	FORESTS	BOREAS SERM Forest Cover Data of Saskatchewan in Vector Format
TN	LAND BASE	Agriculture Canada Central Saskatchewan Vector Soils Data

APPENDIX D: Index

Aquatic, 151, 194, 196, 213, 223, 229, 306, 331, 350
ecozones, 128, 131, 183, 217, 369, 413, 416, 417
Forest, 25, 27, 36, 40, 155, 179, 180, 187, 218, 219, 220, 221, 266, 267, 268, 273, 274, 321, 322, 323, 334, 340, 341, 342, 343, 344, 357, 360, 361, 362, 363, 364, 373, 374, 375, 376, 378, 403, 427, 428, 430, 432, 433, 437, 439, 444
habitat, xi, xii, xiii, xiv, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 33, 34, 35, 37, 41, 42, 43, 56, 57, 58, 59, 60, 62, 63, 64, 66, 69, 70, 72, 74, 76, 78, 80, 82, 84, 85, 86, 87, 89, 92, 94, 96, 97, 98, 99, 100, 102, 104, 106, 108, 110, 112, 114, 115, 119, 121, 122, 125, 128, 131, 132, 135, 136, 138, 140, 143, 145, 146, 148, 149, 152, 153, 154, 155, 156, 157, 160, 165, 168, 170, 174, 175, 176, 177, 180, 181, 183, 184, 186, 187, 188, 190, 193, 195, 196, 197, 198, 199, 200, 201, 202, 204, 205, 208, 209, 211, 212, 215, 216, 217, 218, 220, 221, 225, 228, 230, 232, 235, 237, 241, 242, 243, 244, 245, 246, 247, 250, 253, 255, 256, 258, 260, 262, 263, 265, 268, 270, 272, 273, 274, 276, 279, 281, 283, 285, 288, 293, 295, 297, 299, 300, 302, 305, 306, 307, 308, 309, 314, 315, 317, 318, 320, 321, 322, 323, 326, 327, 328, 330, 331, 333, 334, 337, 339, 342, 343, 344, 346, 347, 349, 350, 352, 353, 355, 357, 360, 361, 363, 364, 366, 367, 369, 370, 372, 373, 375, 376, 380, 381, 382, 383, 384, 385, 386, 390, 394, 397, 399, 402, 405, 415, 417, 419, 430, 431, 432, 433, 434, 435, 437, 438, 442, 444
Heritage, 39, 120, 121, 172, 220, 239, 240, 377, 378, 379, 431, 438
Imagery, 128, 151, 178, 244, 246, 389, 391
Inventory, 144, 149, 155, 157, 158, 159, 160, 162, 165, 166, 198, 200, 218, 219, 220, 221, 266, 273, 306, 307, 308, 309, 310, 311, 320, 321, 322, 323, 331, 333, 334, 340, 343, 350, 351, 352, 357, 358, 360, 361, 362, 363, 364, 373, 374, 375, 376, 381, 383, 401, 404, 406, 408, 419, 420, 431, 433, 437, 442
landscapes, xii, 17, 19, 20, 29, 131, 132, 136, 152, 184, 218, 248, 253, 301, 370, 394
Monitoring, 406
Multispectral, 178, 246, 389
NAESI, xi, xii, xiii, xiv, xv, 16, 18, 19, 20, 21, 22, 23, 27, 28, 30, 31, 32, 33, 34, 35, 37, 40, 41, 42, 43, 44, 63, 66, 68, 74, 92, 99, 112, 115, 119, 170, 178, 198, 209, 241, 277, 279, 282, 285, 297, 298, 302, 305, 314, 327, 351, 362, 418, 430, 444, 445
Nesting, 24, 233, 235
Ortho, 244
ownership, 162, 163, 165, 193, 194, 219, 264, 341, 378, 383, 440
Parks, 130, 155, 182, 216, 269, 368, 369, 423, 424, 426
Prairies, 223, 224, 225
Project, xv, 18, 22, 23, 25, 27, 30, 32, 33, 34, 35, 40, 41, 151, 162, 176, 220, 223, 225, 259, 260, 338, 340, 431, 443, 444, 445
Protected, 25, 37, 130, 132, 183, 215, 216, 217, 270, 369, 415, 433
Soil, 38, 124, 134, 161, 250, 345, 346, 347, 393, 395, 439
Terrestrial, 123, 126, 155, 162, 165, 175, 198, 200, 202, 215, 218, 227, 236, 239, 271, 309, 321, 335, 338, 341, 356, 358, 361, 368, 374, 381, 385, 412, 418, 427
Vegetation, 124, 149, 155, 162, 165, 166, 202, 218, 321, 341, 352, 360, 361, 374, 427, 439, 440, 442, 444
Watersheds, 194, 196, 213, 214, 223, 225, 355