

Southern Ontario Land Resource Information System (SOLRIS)

Phase 2 - Data Specifications Version 1.2

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Contact :

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1.1 Data Specifications Sheet

Date: November, 2007

Section 1: Data Standard Information	
This section identifies the name, abbreviation, and extent of the Southern Ontario Land Resource Information System, and provides contact information for the producer and custodian of this data layer.	
Layer Name:	Southern Ontario Land Resource Information System (2000-2002)
Layer Abbreviation:	SOLRIS
Layer Description:	Regional, ecologically based, land cover /land use inventory. Represents the landscape current to 2000-2002.
References:	SOLRIS Methodology Pilot Study
Production:	Science and Information Branch, Ministry of Natural Resources (MNR)
Product Contact:	Ian Smyth, Remote Sensing Specialist, Ontario Ministry of Natural Resources, Science & Information Branch, ian.smyth@ontario.ca
Extent:	Ecoregions 6E and 7E.
Custodian:	Science and Information Branch, MNR

Section 2: GIS Data Layer Specifications									
This section identifies the geospatial criteria for this data layer.									
1. File Information									
File Type:				SHAPEFILE and GRID					
Projection File Name:				SOLRIS_2000_V1_2.prj					
Geometry Type	X	Grid	Pc	Lir	X	Polygon	Raster		
2. Coordinate System									
	Geographic	X	UTM	X	Lambert				
Horizontal Coordinate System: GCS North American 1983									

Section 3: SOLRIS ELC Units - This section provides additional information on data classes.						
Unit Name	CODE	NUM	Description	MMU (ha.)	Input Source	Possible Confusion
Open Cliff and Talus	CTO	2	Vertical or near-vertical exposed bedrock > 3 m in height / slopes of rock rubble at the base of cliffs. Subject to active processes / < 25% vegetative cover	0.5	NHIC Rare Community Data Base	NHIC feature deemed correct
Alvar	AL	3	Level, unfractured limestone (carbonate) bedrock/ patchy mosaic of bare rock pavement and shallow substrates (<15cm) over bedrock / tree cover < 60%	0.5	NHIC Rare Community Data Base	NHIC feature deemed correct
Open Shoreline	BBO	6	Substrate consists of unconsolidated parent or mineral material. Subject to active processes / < 25% vegetative cover	0.5	Features derived spectrally from Landsat ETM automated analysis and associated with NRVIS water bodies.	Results visually assessed from ortho imagery and corrected where required.
Open Bluff	BLO	8	Steep to near-vertical exposure of unconsolidated material > 2 m in height. Subject to active processes / <	0.5	Features derived spectrally from Landsat ETM automated analysis and associated with NRVIS water bodies. Differentiated from shoreline with high resolution ortho	Rare event, with no conservation value

			25% vegetative cover		imagery where available.	
Open Sand Barren and Dune	SBO	10	Exposed sands formed by extant or historical shoreline or aeolian processes. Subject to active processes / < 25% vegetative cover	0.5	NHIC Rare Community Data Base	NHIC feature deemed correct
Treed Sand Barren and Dune	SBT	12	Exposed sands formed by extant or historical shoreline or aeolian processes. Subject to active processes / 25% < vegetative cover < 60%	0.5	NHIC Rare Community Data Base	NHIC feature deemed correct
Open Tallgrass Prairie	TPO	20	Ground layer dominated by prairie gramminoids; variable cover of open-grown trees. Tree cover < 25%; shrub cover < 25%	0.5	NHIC Rare Community Data Base	NHIC feature deemed correct
Tallgrass Savannah	TPS	21	Ground layer dominated by prairie gramminoids; variable cover of open-grown trees, 25% < tree cover < 35%	0.5	NHIC Rare Community Data Base	NHIC feature deemed correct
Tallgrass Woodland	TPW	22	Ground layer dominated by prairie gramminoids; variable cover	0.5	NHIC Rare Community Data Base	NHIC feature deemed correct

			of open-grown trees, 35% < tree cover < 60%			
Forest	FO	27	Tree cover > 60%. Upland tree species > 75% canopy cover > 2 m in height	0.25	Perimeters visually extracted from high resolution ortho or satellite imagery. Attribute for forest type could not be derived spectrally from Landsat automated analysis due to size of feature.	Automated classification procedure is constrained to forest area polygons. Proportions of forest type not determinable due to size of feature. Forest may be confused with swamp and undifferentiated.
Coniferous Forest	FOC	28	Tree cover > 60%. Upland conifer tree species > 75% canopy cover > 2 m in height	0.5	Perimeters visually extracted from high resolution ortho or satellite imagery. Attribute derived spectrally from Landsat automated analysis	Automated classification procedure is constrained to forest area polygons. Proportions of forest type may not be exact. Forest may be confused with swamp and undifferentiated.
Mixed Forest	FOM	29	Tree cover > 60%. Upland conifer tree species > 25% and deciduous tree species > 25% of canopy cover > 2m in height	0.5	Perimeters visually extracted from high resolution ortho or satellite imagery. Attribute derived spectrally from Landsat automated analysis	Automated classification procedure is constrained to forest area polygons. Proportions of forest type may not be exact. Forest may be confused with swamp and idle land.
Deciduous Forest	FOD	30	Tree cover > 60%. Upland deciduous tree species > 75% of canopy cover > 2 m in	0.5	Perimeters visually extracted from high resolution ortho or satellite imagery. Attribute derived spectrally from	Automated classification procedure is constrained to forest area polygons.

			height		Landsat automated analysis	Proportions of forest type may not be exact. Forest may be confused with swamp and idle land.
Plantations - Tree Cultivated	CUP	36	Tree cover > 60%, minimum 2 m in height, linear organization, uniform tree type.	0.25	Perimeters visually extracted from high resolution ortho or satellite imagery	Forest type not differentiated. Mostly coniferous species. May be confused with upland forest. May include nurseries or Christmas tree plantations.
Hedge Rows	CUH	37	Tree cover > 60%, minimum 2 m in height, linear arrangement, minimum 10 m width, maximum 30m width.	.25	Perimeters visually extracted from high resolution ortho or satellite imagery	Confusion may exist with trees under 2m in height
Transportation	COT	42	Highways, roads	0.5	Derived from the National Road Network - buffered to standard road allowance of 22 m	National Road Network data deemed correct
Extraction	COE	43	Pits, quarries	0.5	Derived from NRVIS licensed pit/quarry data base. Active area derived spectrally from Landsat TM.	Automated classification procedure is constrained to licensed area. Results visually assessed from ortho imagery and adjusted where required.
Built-up Area Pervious	COP	44	Urban recreation areas, e.g. golf courses playing fields.	.25	Perimeters visually extracted from high resolution ortho or satellite imagery	Results visually assessed from ortho imagery and adjusted where required
Built-up Area Impervious	COI	45	Residential, industrial, commercial and civic areas.	.25	Perimeters visually extracted from high resolution ortho or satellite imagery	Results visually assessed from ortho imagery and adjusted

						where required
Swamp	SW	50	Open, shrub and treed communities - water table seasonally or permanently at, near, or above substrate surface - tree or shrub cover > 25% - dominated by hydrophytic shrub and tree species	0.5	Combined NRVIS Evaluated Wetlands and modelled/interpreted unevaluated wetlands from DEM, soils, orthos and satellite imagery	Possible confusion with upland forest and undifferentiated. Results visually assessed from ortho imagery and adjusted where required.
Fen	FE	55	Open, shrub and treed communities - water table seasonally or permanently at, near, or above substrate surface. - tree cover (trees > 2m high) ≤ 25% - sedges, grasses and low (< 2 m) shrubs dominate, sedge and brown moss peat substrate	0.5	Derived from NRVIS Evaluated Wetlands database	Rare event, previously mapped in the field
Bog	BO	59	Open, shrub and treed communities - water table seasonally or permanently at, near, or above substrate surface - tree cover (trees > 2m high) ≤ 25% sphagnum peat substrate	0.5	Derived from NRVIS Evaluated Wetlands database	Rare event, previously mapped in the field

Marsh	MA	63	Open, shrub and treed communities - water table seasonally or permanently at, near, or above substrate surface - tree and shrub cover ≤ 25% - dominated by emergent hydrophytic macrophytes	0.5	Combined NRVIS Evaluated Wetlands and modelled/interpreted unevaluated wetlands from DEM, soils, orthos and satellite imagery	Possible confusion with undifferentiated. Results visually assessed from ortho imagery and adjusted where required.
Open Water	OA	66	No macrophyte vegetation, trees or shrub cover	0.5	Derived from NRVIS hydrology database	Results visually assessed from ortho imagery and adjusted where required.
Undifferentiated	UN	99	Includes all agricultural features (e.g. field and forage crops and rural properties) as well as urban brown fields, and openings within forests.		Areas not mapped by the previous classes	May include wetlands.

1.2 Class Descriptions:

This section provides a more detailed description of derived class units.

Open Shoreline:

Description: Substrate consists of unconsolidated parent or mineral material. Subject to active processes, and less than 25% vegetative cover. Vegetation cover varies from patchy and barren to more closed and treed

Possible Confusion: May include portions of shallow water, which is characterized by submerged or floating leaf macrophytes, emergent vegetation present but not dominant, with no tree or shrub cover. May also include portions of sand dunes (active rolling sand, with variable stability and less than 60% tree cover), idle land, urban impervious, and bluffs or cliffs (active, steep to near - vertical exposures of unconsolidated material, with less than 10% tree cover). Docks, cottages and other shoreline structures below the MMU may be captured in this class.

Interpretation: Typically appears as bright linear or sinuous features in true colour or false-coloured imagery. This class undergoes active processes (wave energy, erosion and deposition) limiting these features to large waterbodies. Such active processes may result in variable shoreline widths and varying degrees of debris and plant cover.

Minimum Mapping Unit (MMU): Approximately 0.5 hectares.

Coniferous / Mixed / Deciduous Forest:

Description: A terrestrial vegetation community with at least 60% tree cover (definition of "forest" by Lee et al 1998) of which more than 75% is either coniferous or deciduous canopy cover to be considered coniferous or deciduous forest, respectively. A mixed forest class has at least 60% tree cover, with more than 25% conifer canopy cover, and also more than 25% deciduous canopy cover. A tree is defined as a woody plant usually with a single main stem and capable under the right condition, of reaching heights of several metres or more (Lee et al. 1998). Cover is described as the area of ground covered or the relative proportion of coverage a particular plant species, vegetation layer or plant form represents (Lee et al. 1998).

Possible Confusion: Identifying tree versus tall shrub cover may be difficult since a *tall shrub* is defined as "A shrub species that has the potential to grow > 2 m tall, or that forms part of a community in which at least some of the individuals are > 2 m tall" (Lee et al. 1998). Similarly, confusion may arise with thicket communities which are characterized by <10% tree cover and >25% tall shrub cover (Lee et al. 1998). Class confusion may also be present with swamps (coniferous, mixed or deciduous) where hydrological conditions such as gently flowing water that occurs seasonally or persist for long periods may not be apparent. Other areas of confusion include plantations and hedgerows as well as speciality crops such as Christmas trees, orchards, and nurseries. Refer to definitions of these classes for clarification.

Interpretation: Several considerations are made in interpreting forested areas (e.g.,

texture, shape, tone and location / context). Discerning whether trees versus tall shrubs are present is aided in part by the size of crowns, and the resulting shadow length. The proportion of conifer versus deciduous is best examined from spring orthophotography. The percent cover charts in Lee et al. (1998) provide a guide for estimating percent cover. The Woodland Editing Strategies document (SOLRIS 2005c) also describes a method of how a ¼ hectare square graphic can be used to aid in estimating percent cover. Other distinguishing features include irregular stand boundary (in contrast to well defined and linear plantations), and relatively coarse texture from canopies of uneven age and composition. Deciduous species are gray - beige in appearance (true colour, leaf-off spring imagery), and light red or yellow - pale orange in false-colour and Landsat 4-5-3 band combinations, respectively. In contrast, coniferous species are dark green in appearance (true colour spring imagery), and dark red or orange in false colour and Landsat 4-5-3 band combinations, respectively. Deciduous species typically have billowy closed-canopy conditions versus coarse and irregular canopies of conifers. Site conditions and substrate type are variable. But poorly drained, lower elevation organic areas are likely swamp or idle land

Minimum Mapping Unit (MMU): Approximately 0.5 hectares.

Plantation:

Description: A treed community with at least 60% tree cover in which the majority of trees have been planted (Lee et al 1998). A tree is defined as a woody plant usually with a single main stem and capable under the right condition, of reaching heights of several metres or more (Lee et al. 1998). Cover is described as the area of ground covered or the relative proportion of coverage a particular plant species, vegetation layer or plant form represents (Lee et al. 1998).

Possible Confusion: Class confusion may be present with natural forest communities (coniferous, mixed or deciduous), and speciality crops such as Christmas trees, orchards, and nurseries. Identifying tree versus tall shrub cover may also be difficult since a *tall shrub* is defined as "A shrub species that has the potential to grow > 2 m tall, or that forms part of a community in which at least some of the individuals are > 2 m tall" (Lee et al. 1998). Similarly, confusion may arise with thicket communities which are characterized by <10% tree cover and >25% tall shrub cover (Lee et al. 1998). In some instances, confusion may arise with swamps where hydrological conditions such as gently flowing water that occurs seasonally or persist for long periods may not be apparent.

Interpretation: Well defined stand boundaries and evidence of linear tree planting are key identifiers. Discerning whether trees versus tall shrubs are present is aided in part by the size of crowns, and the resulting shadow length. The percent cover charts in Lee et al. (1998) provide a guide for estimating percent cover. The Woodland Editing Strategies document (SOLRIS 2005c) also describes a method of

how a ¼ hectare square graphic can be used to aid in estimating percent cover. Image tones and texture typically appear relatively darker and smoother than forest communities since most plantations are even-aged coniferous plantings.

Minimum Mapping Unit (MMU): Approximately 0.25 hectares.

Hedgerow:

Description: A terrestrial vegetation community of at least 60% tree cover (definition of “forest” by Lee et al 1998) that is naturally occurring or planted as a linear feature, with a minimum width of 10 metres and a maximum of 30 metres. Hedgerows not connected to existing forested areas were to be excluded. A tree is defined as a woody plant usually with a single main stem and capable under the right condition, of reaching heights of several metres or more (Lee et al. 1998). Cover is described as the area of ground covered or the relative proportion of coverage a particular plant species, vegetation layer or plant form represents (Lee et al. 1998).

Possible Confusion: Identifying tree versus tall shrub cover may be difficult since a *tall shrub* is defined as “A shrub species that has the potential to grow > 2 m tall, or that forms part of a community in which at least some of the individuals are > 2 m tall” (Lee et al. 1998). Similarly, confusion may arise with thicket communities which are characterized by <10% tree cover and >25% tall shrub cover (Lee et al. 1998). Class confusion may also be present with swamps (coniferous, mixed or deciduous) where hydrological conditions such as gently flowing water that occurs seasonally or persist for long periods may not be apparent. Other areas of confusion include plantations or tree farms where harvesting operations may result in similar geometries to hedgerow features. Refer to definitions of these classes for clarification.

Interpretation: Several considerations are made in interpreting forested features such as hedgerows. The principle identifiers for hedgerow are the geometry (i.e., linear shape) and overall size (10 - 30 wide, with a MMU of 0.25 ha). Only hedgerows adjoining woodlots were to be captured, which forms an additional identifier for interpreting this class. Discerning whether trees versus tall shrubs are present is aided in part by the size of crowns, and the resulting shadow length. The percent cover charts in Lee et al. (1998) provide a guide for estimating percent cover. The Woodland Editing Strategies document (SOLRIS 2005c) also describe a method of how a ¼ hectare square graphic can be used to aid in estimating percent cover.

Minimum Mapping Unit (MMU): Approximately 0.25 hectares.

Extraction:

Description: An open-pit aggregate extraction site. Associated infrastructure such as

roads, buildings, weigh scales and ponds below the MMU of 0.5 hectare are included in this class. This class does not represent the intended land-use extent as typically outlined in operational plans or zoning permits, but instead delineates areas of exposed aggregate from current or past operations.

Interpretation: Examples of extraction are presented in SOLRIS (2005), with interpretative characteristics of exposed and disturbed areas over gravel deposits. Aggregate mounds and processing equipment are typically present along with a small building and road infrastructure. The feature is generally not within a residential or urban area, with the operation having a fenced boundary that is typically treed. Image tones and texture typically appear relatively bright with darker tones evident from shadows and ponds. Exposed soil and aggregates appear cyan to white in false or true colour infrared imagery.

Possible Confusion: New residential development (urban pervious) and exposed rock can be confused with this class since they are characterized as bright white - cyan in false or true colour infrared imagery. Abandon operations may also appear as idle land.

Minimum Mapping Unit (MMU): Approximately 0.5 hectares.

Built-Up Area Pervious:

Description: **Built-up** areas range from small hamlets at rural cross roads to large cities. An area is considered built-up when linear frequencies of structures were above 10 per 500 metres or 4 per 1 hectare box (SOLRIS 2005b). Areas within built-up features are further defined as pervious if green spaces and other permeable surfaces (e.g., grass, shrubs and residential ornamentals) representing more than 80% per 0.5 hectare. Built-up pervious areas may include land cover features such as water, woodlands, and impervious features (e.g. parking lots) below the MMU of 0.5 hectare. This class does not represent the intended land-use extent as typically outlined in operational plans or zoning permits, but instead delineates pervious features that meet the aforementioned building density. New developments adjacent to or enclosed as urban are considered built-up pervious. These new developments typically have early residential road patterns or partially built homes present. Interpretable recreation outside of an urban area such as golf courses, baseball diamonds, soccer fields and football fields are mapped as built-up pervious. Similarly, cemeteries are classified as built-up pervious. This class does not included permeable features within or adjacent to a farmstead.

Interpretation: Examples of built-up pervious are provided in SOLRIS (2005b), with green spaces, golf courses, and ball diamonds clearly evident in orthophotography. Primary identifiers are the shape and associated characteristics such as linear fairways, sand traps, and diamond pattern of ball fields. These permeable features are typically smooth, and even tone given the predominance of grass. False or true colour infrared imagery displays grass and low lying vegetation as pink - red in appearance. In contrast, built-up pervious features within a new urban development

appear cyan to white in false or true colour infrared imagery. These new developments are generally along the urban fringe and have residential road patterns.

Possible Confusion: Extraction sites and exposed rock can be confused with pervious surfaces that are characterized by bright white - cyan in appearance. Estimating the percent vegetation cover above the 80% per 0.5 hectare may also be challenging to differentiate pervious versus impervious in fragmented areas such as subdivisions. In the absence of orthophotography, recreational fields and cemeteries may appear as undifferentiated features.

Minimum Mapping Unit (MMU): Approximately 0.25 hectares

Urban Impervious:

Description: Areas with buildings, pavement and most other anthropogenic features are generally impermeable and thus classified as built-up impervious. These features along with residential, industrial, civic and commercial buildings are all found in urban areas and were spatially mapped when linear frequencies of structures were above 10 per 500 metres or 4 per 1 hectare box (SOLRIS 2005b). A road or railway line on its own is not a built-up feature, but within an urban area it is considered as built-up impervious. Green spaces and other pervious features may be included within built-up impervious if the portion of pervious surfaces (e.g., grass, vegetation and bare ground) is less than 80% per 0.5 hectare. Built-up areas range from small hamlets at rural cross roads to large cities. This class does not represent the intended land-use extent as typically outlined in operational plans or zoning permits, but instead delineates constructed features that meet the aforementioned building density. This class does not include constructed features such as farmsteads (silos, barns and house) or extraction sites. It does however include greenhouse complexes.

Interpretation: Examples of built-up impervious are provided in SOLRIS (2005b), with buildings, residential areas and infrastructure clearly evident in orthophotography as light to cyan tones of constructed materials mixed with darker tones from roof tops and shadows. Vegetated areas less than 80% per hectare - typically present within residential subdivisions - are also characteristic of built-up impervious features. Satellite imagery such as Landsat and IRS display similar characteristics (albeit with coarser spatial resolution) with built-up impervious features typically a cyan to almost white colour in false colour composites.

Possible Confusion: Extraction sites and exposed rock can be confused with impervious surfaces that are characterized by bright white - cyan in appearance. Estimating the percent vegetation cover below the 80% per 0.5 hectare may also be challenging to differentiate pervious versus impervious in fragmented areas such as subdivisions.

Minimum Mapping Unit (MMU): Approximately 0.25 hectares

Swamp:

Description: A mineral-rich wetland characterized by a cover of deciduous or coniferous trees (Lee et al. 1998). It is a wooded wetland with 25% cover or more of trees or tall shrubs. Occasionally swamp communities have a strong component of low shrubs. In this case, the tall shrub component must be dominant for the community to be considered a swamp. In swamps, standing to gently flowing waters occurs seasonally or persist for long periods on the surface. Frequently there is an abundance of pools and channels indicating subsurface water flow. The substrate is usually continuously waterlogged. Waters are circumneutral to moderately acid in reaction, and show little deficiency in oxygen or in mineral nutrients. The vegetation cover may consist of coniferous trees, tall shrubs, herbs and mosses. Many swamps are characteristically flooded in spring, with dry relict pools apparent later in the season (OMNR 1993 ab). There is usually no deep accumulation of peat (OMNR 1993a). Swamps include both forest swamps (having mature trees) and thicket swamps (or shrub carrs). Thicket swamps are characterized by thick growths of tall shrubs such as willow, dogwood and alder. Both forest and thicket swamps have similar characteristics of water levels and chemistry. Both are assessed as "swamp" wetland type, but can be distinguished by the predominance of either "tree" or "shrub" form. Silver maple, elm, black ash and yellow birch are among the best indicators of a hardwood forest swamp while white cedar, tamarack and black spruce indicate conifer swamps. White cedar, however, also grows well in upland sites (OMNR 1993a,b).

Possible Confusion: The seasonal (ephemeral) nature of some swamps may result in confusion with upland forest classes (mixed, deciduous and coniferous) and idle land. Discerning the extent of a wetland – especially in low relief areas – may also be problematic. As well, the degree and type of cover may be difficult to quantify resulting in possible confusion with marshes and undifferentiated features.

Minimum Mapping Unit (MMU): Approximately 0.5 hectares.

Marsh:

Description: Marshes are wet areas periodically inundated with standing or slowly moving water, and/or permanently inundated areas characterized by robust emergents, and to a lesser extent, anchored floating plants and submergents. Surface water levels may fluctuate seasonally, with declining levels exposing drawdown zones of matted vegetation or mud flats. Water remains within the rooting zone of plants during at least part of the growing season. The substratum usually consists of mineral or organic soils with a high mineral content, but in some marshes there may be as much as 2 m of peat accumulation. Waters are usually circumneutral to slightly alkaline and there is relatively high oxygen saturation. Marshes characteristically show zones or mosaics of vegetation, frequently interspersed with channels or pools of deep or shallow open water. They include open expanses of

standing or flowing water which are variously called ponds, shallow lakes, oxbows, reaches or impoundments. Marshes may be bordered by peripheral bands of trees and shrubs but the predominant vegetation consists of a variety of emergent woody plants such as rushes, reeds, reed grasses, and sedges. Low shrubs such as sweetgale, red osier, and winterberry may also occur. Where open water areas occur, a variety of submerged or floating plants flourish MNR 1993a, b).

Possible Confusion: Discerning the extent of a wetland – especially in low relief areas – may be problematic. Determining the degree and type of cover may also lead to possible confusion with swamp and undifferentiated classes. Shallow water marshes may result in confusion with shallow water and possibly open water classes. . Finally, riparian meadow marsh may be confused with pasture and upland grass communities.

Minimum Mapping Unit (MMU): Approximately 0.5 hectares.

Open Water:

Description: Aquatic communities in which the permanent water is generally >2 m deep and the total vegetation cover is <25%. Lake water that is free of emergent vegetation or artificial obstruction (Arnup et al.1999, OMNR 1993a, b). No macrophyte vegetation, trees or shrub cover.

Possible Confusion: May include shallow water, which is characterized by submerged or floating leaf macrophytes. Portions may also include structural features (e.g., docks) and Open Shoreline or shallow water artefacts. Septic lagoons, golf course water features, and shallow (< 2 m) streams are not included in this class.

Interpretation: Typically appears as very dark black objects in true colour or false-coloured imagery. These features become lighter in colour with increasing turbidity. Reflected sunlight or waves may also brighten the appearance of open water. Distinguishing shallow (<2m) versus deep water may be problematic in some cases where high turbidity appears similar to shallow water conditions where backscattering from substrates such as sand are present. As well, ensuring the absence of any submerged or floating macrophytes can be difficult.

Minimum Mapping Unit (MMU): Approximately 0.5 hectares.

Undifferentiated:

Description: Represents all remaining areas that are exclusive to the other data classes. Includes all agricultural lands (e.g. field and forage crops, orchards, vineyards, nurseries, rural properties and farmland not currently in production), as well as urban brown fields, hydro right-of ways, the edge of transportation corridors and clearings within forests.

Possible Confusion: Wetlands may be included in the undifferentiated class.

Interpretation: Represents all remaining areas that are exclusive to the other data classes; consequently a summary of interpretive characteristics cannot be provided.

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