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# Evaluating the Soil Landscapes of Canada Coverage Using Google Earth

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Canada

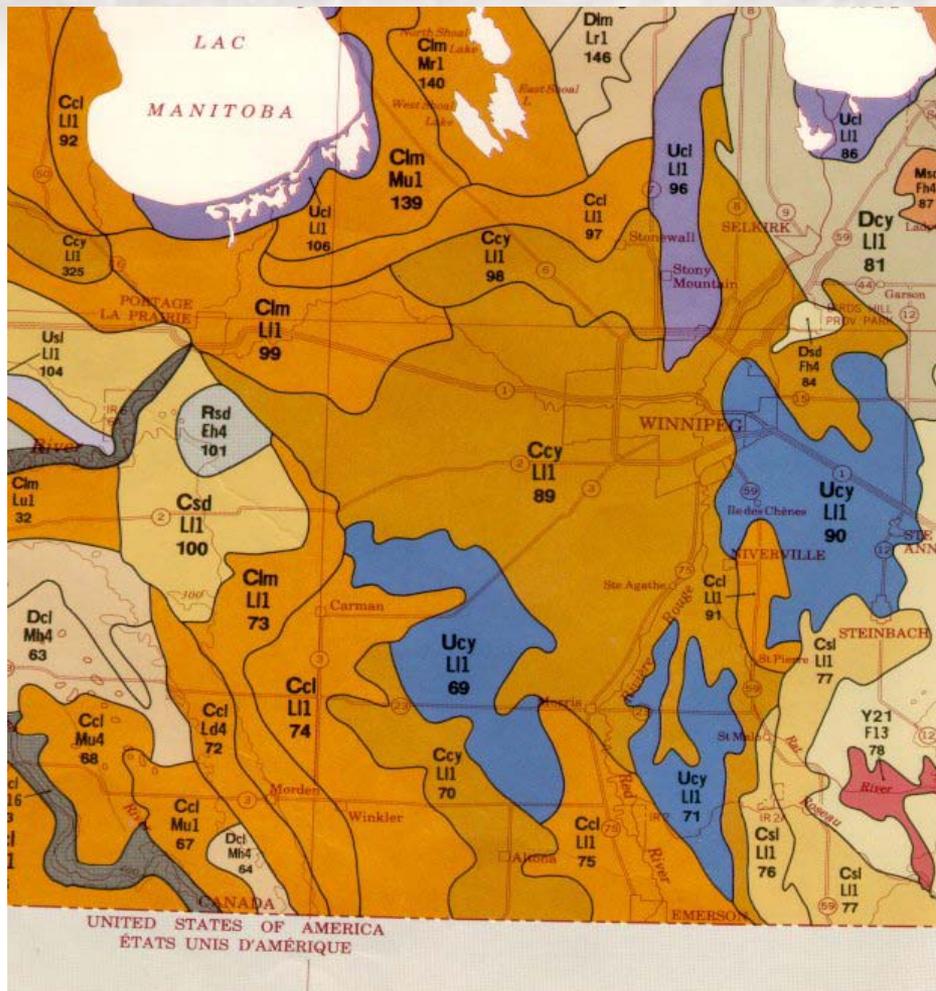


# Evaluating the SLC Coverage Using Google Earth



# Evaluating the SLC Coverage Using Google Earth

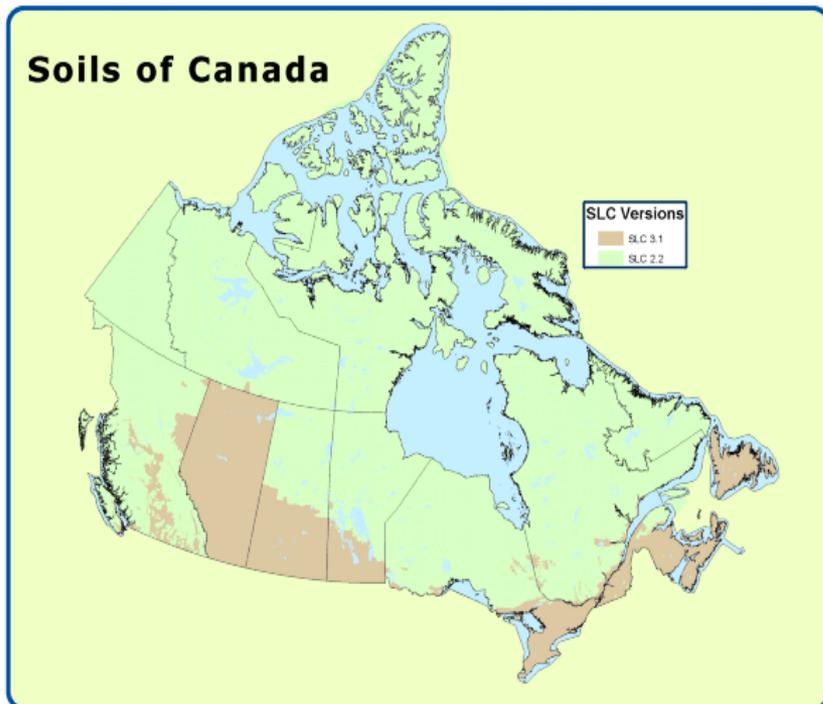
## The Soil Landscapes of Canada (SLC)



- The Generalized Soil Map coverage for Canada.
- Originally released as a set of 1:1 million scale printed maps.
- Digitized in the 1990s, with updated GIS releases to support many national and regional level modelling applications.
- Still the main soil map coverage for most of the non agricultural areas of Canada.

# Evaluating the SLC Coverage Using Google Earth

## SLC Upgrade (“SLC Version 4”)



- The current SLC “Version 3” polygon coverage has soil components linked to an extensive set of soil and landscape attributes.
- SLCv3 soils data limited to the main ag areas.
- A complete, national coverage (“SLCv4”) with upgraded polygon lines and soils information is needed to support many future applications, such as climate change, greenhouse gas emissions and Global Soil Map (GSM).
- **Completing this upgrade by 2014, with limited in house expertise, will be a challenge. New tools are needed!**

# Evaluating the SLC Coverage Using Google Earth

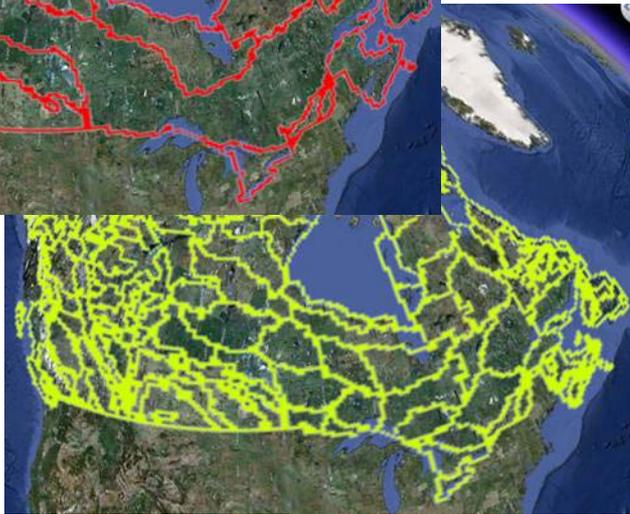


- In 2006, our AAFC unit initiated use of our SLCv3 coverage with Google Earth.
- GE is a useful tool to show soil landscape relationships.
- It also revealed many areas where the currently polygon registration was inaccurate.

# Evaluating the SLC Coverage Using Google Earth

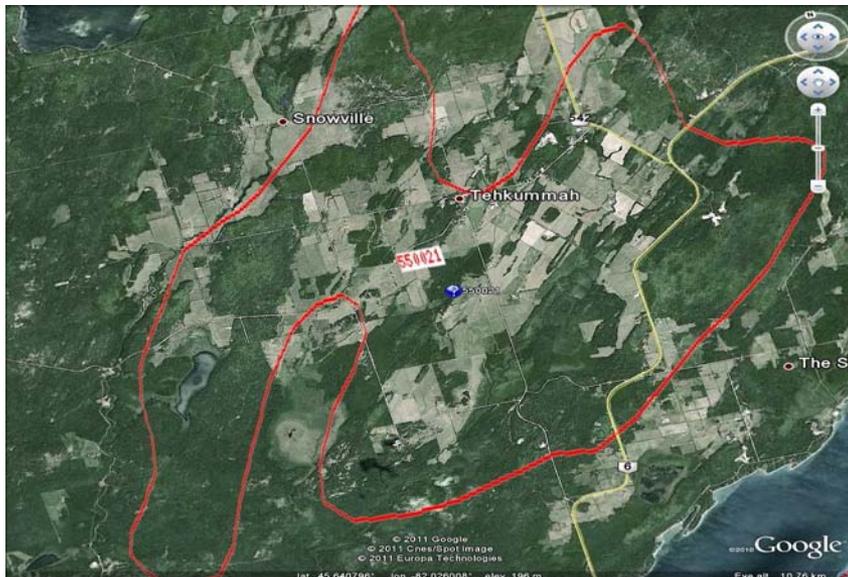
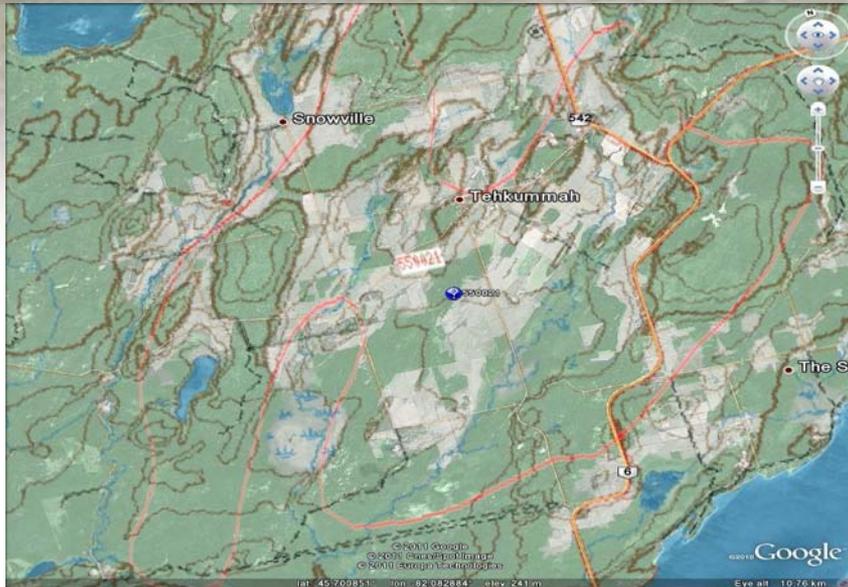
## SLCv4 Update – Phase 1

## Polygon Re-Assessment Using Google Earth



- The SLC coverage is “nested” to the Canadian Ecological framework.
- Ecozone, Ecoregion and Ecodistrict map layers were added to the CanSIS web map server.

# Evaluating the SLC Coverage Using Google Earth



NTS (National Topographic System) 1:250,000 and 1:50,000 contour maps were also added to the CanSIS web map server.

- NTS contour map transparency is adjustable in GE to show background imagery and SLC boundaries (in red).

# Evaluating the SLC Coverage Using Google Earth

How to load this layer within Google Earth:

If closed, launch Google Earth

Select **Add** from the top menu bar

(Fig. 1A), then select **Network Link**

Copy the following URL:

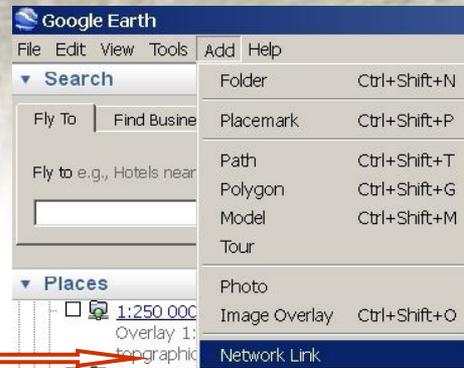
[http://wms1.agr.gc.ca/SLC\\_Edit/WORKING\\_COPY/KML/SLC\\_Centroid\\_3\\_2.kml](http://wms1.agr.gc.ca/SLC_Edit/WORKING_COPY/KML/SLC_Centroid_3_2.kml)

Paste the copied URL into the **Link** field

Give the link a name within the **Google Earth – New Network Link** window (e.g. “SLC centroids”)

Click **OK**

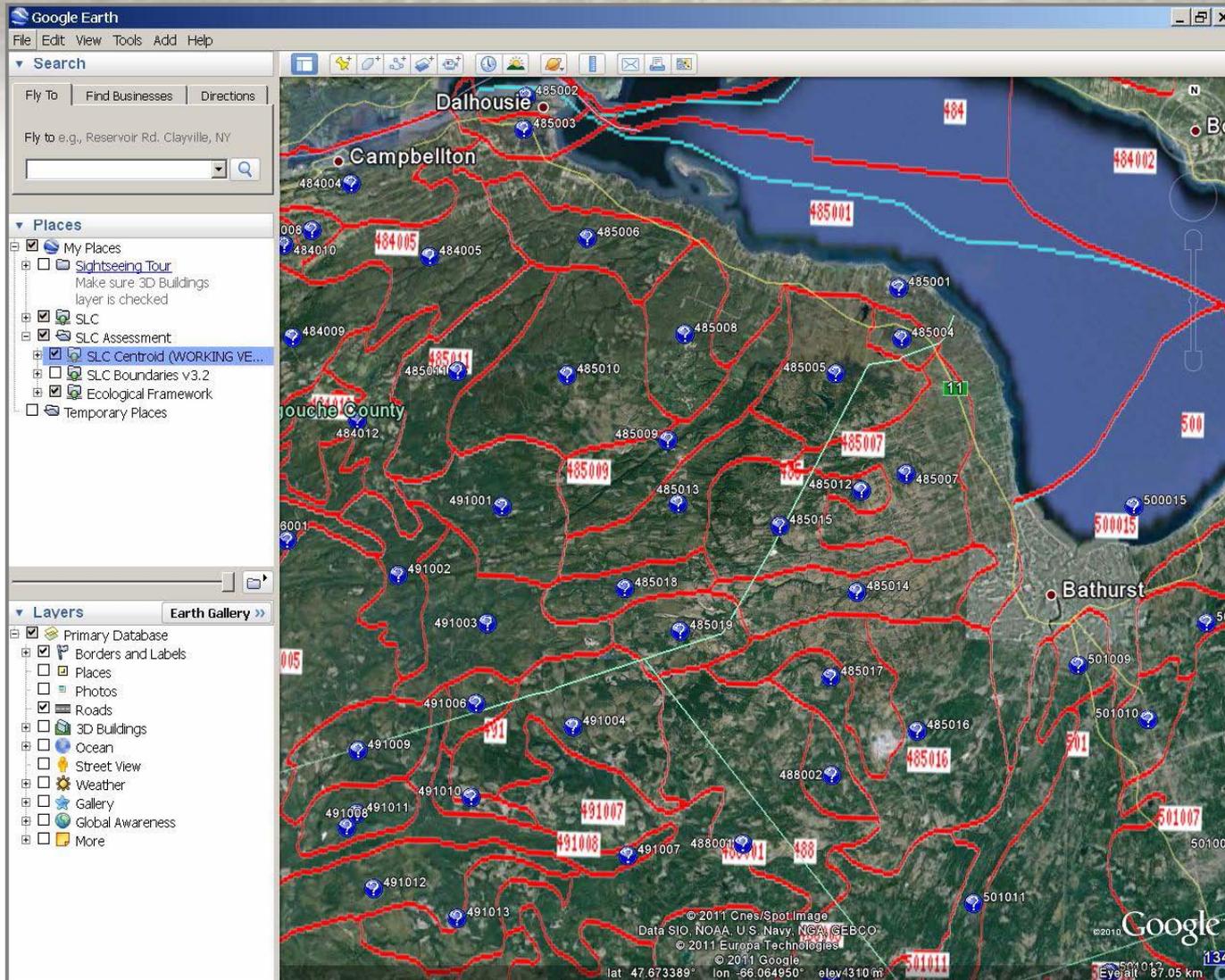
The layer with the specified name should now appear in the **Places** menu (Fig. 1B) and the centroids (Fig. 1H) should appear in the main map window within Google Earth (Fig. 1C)



## SLC Polygon Assessment Form (“PAF”) Users Manual

- Explains how to load the SLC layers and use the Polygon Assessment Form in GE.
- The manual is available within the on line PAF tool.

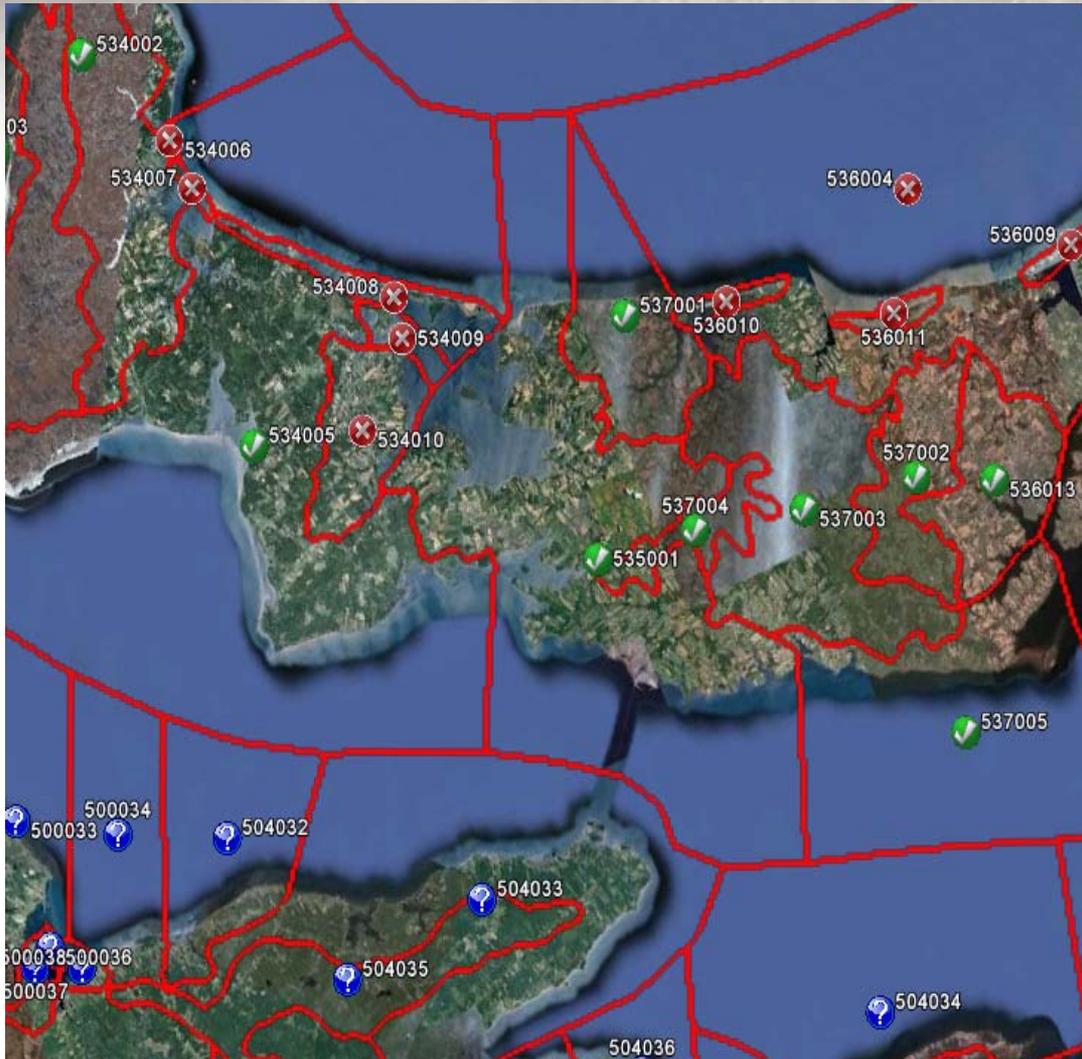
# Evaluating the SLC Coverage Using Google Earth



## Assessing SLC polygons in Google Earth

- SLC lines and centroids are options in the **Places** menu.
- When selected, SLC lines (red) and centroids (blue) appear on the GE map.

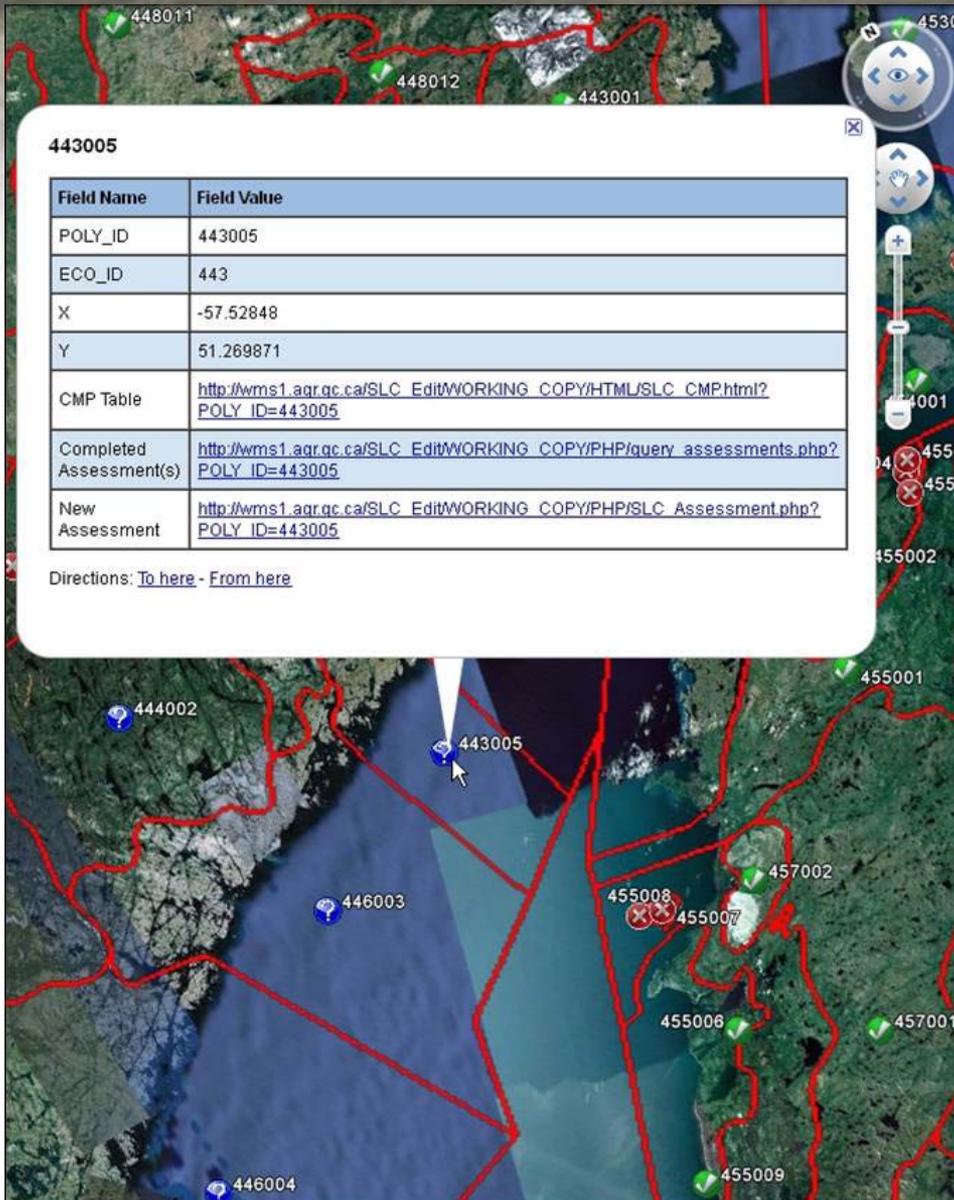
# Evaluating the SLC Coverage Using Google Earth



## Assessing SLC polygons in Google Earth

- SLC polygon centroids are loaded as a separate GIS point coverage.
- The centroids link to the soil component data and polygon assessment forms (“PAFs”).
- The centroid pin colour shows the status of the SLC polygon assessment.

# Evaluating the SLC Coverage Using Google Earth



The screenshot shows a Google Earth interface with a map of a coastal area. A white popup window is open over a blue-shaded polygon labeled 443005. The popup contains a table with the following data:

Field Name	Field Value
POLY_ID	443005
ECO_ID	443
X	-57.52848
Y	51.269871
CMP Table	<a href="http://wms1.agr.gc.ca/SLC_Edit/WORKING_COPY/HTML/SLC_CMP.html?POLY_ID=443005">http://wms1.agr.gc.ca/SLC_Edit/WORKING_COPY/HTML/SLC_CMP.html?POLY_ID=443005</a>
Completed Assessment(s)	<a href="http://wms1.agr.gc.ca/SLC_Edit/WORKING_COPY/PHP/QUERY_assessments.php?POLY_ID=443005">http://wms1.agr.gc.ca/SLC_Edit/WORKING_COPY/PHP/QUERY_assessments.php?POLY_ID=443005</a>
New Assessment	<a href="http://wms1.agr.gc.ca/SLC_Edit/WORKING_COPY/PHP/SLC_Assessment.php?POLY_ID=443005">http://wms1.agr.gc.ca/SLC_Edit/WORKING_COPY/PHP/SLC_Assessment.php?POLY_ID=443005</a>

Below the table, there is a link for directions: [To here](#) - [From here](#). The map background shows various other polygons with labels like 448011, 448012, 443001, 444002, 446003, 446004, 455006, 455007, 455008, 455009, 457001, 457002, and 4530. A mouse cursor is pointing at the 443005 polygon.

- Left click on any SLC polygon centroid to view an attribute table with web links to:
  - CMP Soil Component Table.
  - Completed Assessments (Polygon Assessment Table).
  - A new blank SLC Polygon Assessment Form (“PAF”).

# Evaluating the SLC Coverage Using Google Earth

## SLC Component Table Web Page

- Lists all soil components in the polygon.
- Link to the Soil Names Table defining each Canadian soil code.
- Link back to the Polygon Assessment Form (“PAF”).

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### Soil Landscape Component Table (CMP)

[SLC Polygon Assessment Form \(PAF\)](#)

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Component Table (CMP) - ped\_ca\_slc\_v3r2\_cmp

Selection Method  
 Show selected records     Show all records

SL	CMP	PROVINCE	SOIL_CODE	MODIFIER	LU	PERCENT	SLOPE	STONE	LOCSF	KIND	DRAINAGE	OR
<a href="#">536005</a>	1	PE	ARY	D	A	60	B	N	U	M	W	
<a href="#">536005</a>	2	PE	CTW	D	A	20	B	N	U	M	W	
<a href="#">536005</a>	3	PE	CLO	C	A	20	B	N	U	M	R	

# Evaluating the SLC Coverage Using Google Earth

## Web link to the CanSIS Soil Names Table.

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### Soil Landscape Soil Name Table (SNT)

Soil Name Table (SNT) - ped\_ca\_soil\_v2r000\_snt

Selection Method  
 Show selected records  Show all records

SOIL_ID	PROVINCE	SOIL_CODE	MODIFIER	PROFILE	SOILNAME	KIND	WATERBL	ROOTRESTRI	RESTR_TYPE	DRA
<a href="#">ABABCgl~N</a>	AB	ABC	gl~	N	ATHABASCA	M	YU	0	-	
<a href="#">ABABCst~A</a>	AB	ABC	st~	A	ATHABASCA	M	NO	0	-	
<a href="#">ABABCst~N</a>	AB	ABC	st~	N	ATHABASCA	M	NO	0	-	
<a href="#">ABABC~A</a>	AB	ABC	~	A	ATHABASCA	M	NO	0	-	
<a href="#">ABABC~N</a>	AB	ABC	~	N	ATHABASCA	M	NO	0	-	
<a href="#">ABACE~A</a>	AB	ACE	~	A	ALLIANCE	M	NO	0	-	
<a href="#">ABACV~A</a>	AB	ACV	~	A	ACADIA VALLEY	M	NO	0	-	
<a href="#">ABACV~N</a>	AB	ACV	~	N	ACADIA VALLEY	M	NO	0	-	
<a href="#">ABADMgl~N</a>	AB	ADM	gl~	N	ARDMORE	M	YU	0	-	
<a href="#">ABADMst~N</a>	AB	ADM	st~	N	ARDMORE	M	NO	0	-	
<a href="#">ABADM~N</a>	AB	ADM	~	N	ARDMORE	M	NO	0	-	
<a href="#">ABADYgl~N</a>	AB	ADY	gl~	N	ACADEMY	M	YU	0	-	
<a href="#">ABADYsa~N</a>	AB	ADY	sa~	N	ACADEMY	M	YU	4	SA	1
<a href="#">ABADYxp~N</a>	AB	ADY	xp~	N	ACADEMY	M	NO	5	LI	

*For a detailed description of all the fields in the SNT table, see:*  
[http://sis.agr.gc.ca/pls/meta/web\\_dataset?uri=http://sis.agr.gc.ca/cansis/nsdb/slc/v3.2/cmp&lang=en](http://sis.agr.gc.ca/pls/meta/web_dataset?uri=http://sis.agr.gc.ca/cansis/nsdb/slc/v3.2/cmp&lang=en)

Last updated: 25/02/2011  
Questions? Contact: [Rene.Duplain@agr.gc.ca](mailto:Rene.Duplain@agr.gc.ca)

# Evaluating the SLC Coverage Using Google Earth

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## SLC Polygon Assessment Form (PAF) (v1.4)

Welcome to your session! [Logout](#)

[Soil Landscape Component Table \(CMP\)](#)  
[Query Completed Assessments](#)

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### Description

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### Evaluator Details

Select profile:

Or, fill out information below:

a. First Name:  ✓  
b. Last Name:  ✓  
c. Organization:  ✓  
d. Position:  ✓  
e. Location (city):  ✓  
f. Province:  (e.g., 'ON') ✓

---

### Polygon Assessment

1. Date: 29/4/2011  
2. POLY\_ID: 536011 (?)  
3. Does this polygon need revising? ✓  
 YES (polygon needs to be revised)  
 NO (polygon does not need to be revised)  
4. Does the polygon have problems in any of the following areas (check = yes, unchecked = no)?  
 i) Eastern boundary (?)  
 ii) Western boundary (?)  
 iii) Northern boundary (?)  
 iv) Southern boundary (?)  
 v) Misalignment with hydrological features (?)  
 vi) Misalignment with topographic features (?)  
 vii) Entire polygon needs to be shifted (?)  
By the following amount (in km):  
  
In the following direction (N, NW, W, etc):  
  
 viii) Inaccuracy due to political boundary (?)  
 ix) Polygon should be subdivided into two or more polygons (?)  
 x) Polygon should be merged with one or more adjacent polygons (?)  
  
Note: For multiple polygons, please leave a space between POLY\_ID numbers (e.g., 100001 100002...).  
5. Additional comments?  
a. Additional information that pertains to the polygon's boundaries can be entered here (?):  
  
b. Additional information that pertains to the polygon's attributes can be entered here (?):  
  
  
Note: Before submitting, please verify that all ✖ have been replaced by ✓

## The SLC Polygon Assessment Form (PAF) opens as a separate web page.

- Separate sections identify the evaluator, whether the polygon needs revision (YES or NO), and the specific type of revision (polygon boundary or soil data).
- Completed assessments are uploaded to the central web server.
- All assessments can be viewed in GE, and additional assessments can be added for any SLC polygon.

# Evaluating the SLC Coverage Using Google Earth

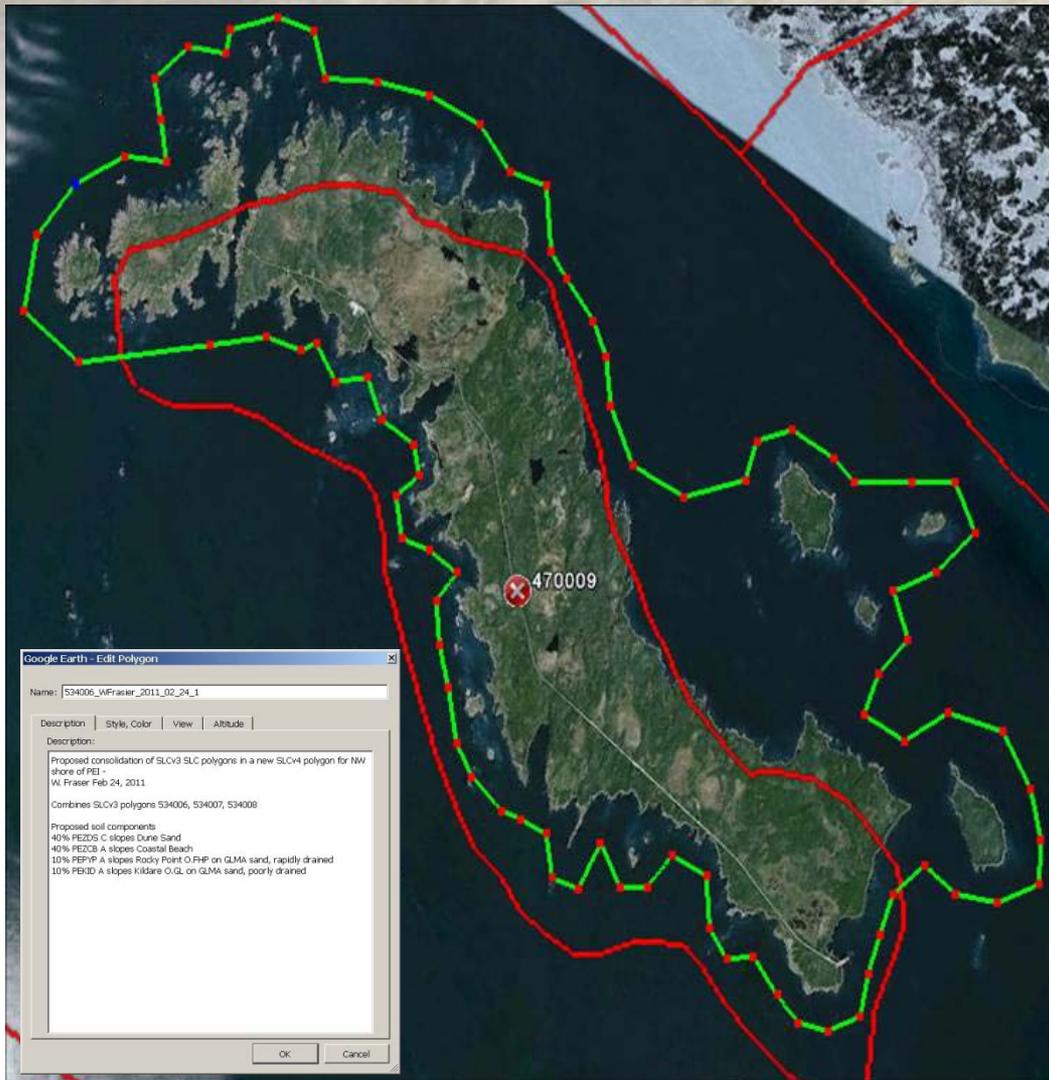
## Web link to the SLC Completed Polygon Assessments Table

[Back to previous page](#)

Query Results for POLY\_ID = ALL  
(As of 07/03/2011)

EVAL_DATE	EVAL_FNAME	EVAL_LNAME	EVAL_ORG	EVAL_POS	EVAL_CITY	EVAL_PROV	POLY_ID	REVISE	BOUND_E	BOUND_W	BOUND_N	BOUND_S
2011/01/31	Wally	Fraser	AAFC	Data Manager	Winnipeg	MB	849009	N	0	0	0	0
2011/01/31	Wally	Fraser	AAFC	Data Manager	Winnipeg	MB	870001	Y	0	0	0	0
2011/02/01	Wally	Fraser	AAFC	Data Manager	Winnipeg	MB	840003	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	471016	Y	0	0	0	0
2011/02/01	Xiaoyuan	Geng	AAFC	Data Steward	Ottawa	ON	471017	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	471008	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475002	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	538001	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	536015	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	536012	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475001	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475002	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475005	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475014	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475018	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475009	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475011	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475016	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	477001	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	477002	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475020	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475017	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475015	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475012	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475023	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	476001	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	471019	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475010	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475007	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475004	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	475006	N	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	474002	Y	1	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	474005	Y	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	474004	Y	1	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	474001	Y	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	474001	Y	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	472012	Y	0	0	0	0
2011/02/01	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	472006	N	0	0	0	0
2011/02/02	Ed	Woodrow	Contractor (Woodrow Consulting LTD.)	Soil Scientist	St John's	NL	471013	N	0	0	0	0

# Evaluating the SLC Coverage Using Google Earth



- The **Add Polygon** tool in Google Earth can be used to redraw any SLC polygon.
- New polygons (kml files) appear as additional items in the GE Places menu, and can be re-labelled and re-edited.
- The kml polygon files can be sent as email attachments to other pedologists, or uploaded to an online server directory.
- Kml files can also be imported into ArcGIS.

# Evaluating the SLC Coverage Using Google Earth



- The SLC Polygon Assessment Tool can be used by AAFC pedologists, and by any outside expert with a PC and GE.
- It is not a GIS, but a new method to identify specific problem areas in the current SLC map that require revision in the ArcGIS coverage.

# Evaluating the SLC Coverage Using Google Earth

- Questions ??

