



Ag-Capture

Agricultural Land Use Inventory Tool

Presentation to the
Beaver Hills Initiative: Planners Working Group

July 27, 2006

Candace Vanin, P.Ag.

Land Use Decision Support Unit

AAFC-PFRA, Edmonton

Outline

- Why create 'Ag-Capture'?
- What 'Ag-Capture' will do & will not do
- Benefits of 'Ag-Capture'
- How Ag-Capture works (ArcPad Form)
 - Form layout
 - Data capture
- What we've learned (or haven't) so far
 - Discrepancies/issues in land use data capture and interpretation
- Procedures for field data collection (manual)
- Next steps & other Pilot Sites

Why 'Ag-Capture'?

- Agricultural landscapes encompass majority of human settlement areas in Canada
- Contained therein a multitude of economic activities on a common land base
- Agriculture is complex, diverse, heavily capitalized and dynamic
- Often poorly represented as Ag-A or Ag-B
- Better information about the type and extent of agricultural activities creates linkages to economic drivers, opportunities and compatibilities
- Effective tool for local & regional decision making

What 'Ag-Capture' will do

- Collect agricultural land use information at the cadastral (parcel) level in a scientific, systematic and hierarchical manner
- Snapshot in time
- Customized based on client needs and landscape characteristics (differences in agriculture production)
- Captures an ag information void in planning
- Bridges the information gap between zoning maps and land cover mapping

What 'Ag-Capture' will not do

- Distinguish types of non-agricultural land use
- Geographic location below parcel level of land use types and features
- Tell a story → that requires subsequent analysis and evaluation by land use agrologists &/or planners
- Accurately quantify intensity (acres or livestock numbers)
- Building a future link to BMP's

Benefits to the BHI

- Bridge the data gap between land cover mapping and land use zoning maps
- Utilize data & maps for land use planning activities &/or address development issues
- Acquire a broader understanding of sub-sectors of agriculture within the watershed
- Analyze and understand the interaction of agriculture and other land uses

Ag-Capture's data capture

4 page form in ArcPad

1. Initial Overview of Land Use
2. Land Use and Sub-activities evident
3. Livestock and Structures present
4. Summary

Land Use [X]

Livestock and Structures Initial Overview Summary

Parcel ID: [] Owner Name: [] Acres: []

Residence Type: []

LIVESTOCK/STRUCTURES HETEROGENEOUS

IF HOMOGENEOUS, SELECT FROM THE FOLLOWING:

ANNUAL CROP			PERENNIAL	
CEREAL	OILSEED	PULSE	FORAGE	
Wheat	Canola	Peas	Hay-Grass	Past.-Grass
Barley	Flax	Beans	Hay-Legume	Past.-Mixed
Oats	Mustard	Lentils	Hay-Mixed	
Other Annual			Other Perennial	
Specify	[]	Specify	[]	
UNSEEDED			AGROFORESTRY	

Comments

[]

OK Cancel

Land Use Form - Initial Overview Page

- Parcel/Landowner Information** – derived from municipal cadastral [parcel] data
- Residence** – check if there is a residence then choose type
 - Residence types as per muni definition include:
 - Single family dwelling
 - Multiple family dwelling
 - Single residence – mobile home
- Livestock/Structures** - click button if livestock or structures are present, enables the livestock and structures page
- 2 or more crops** – click button if the parcel is not homogeneous (uniform cropping – only one crop present; uniform perennial production – all pasture or all hay, all agroforestry)
- Homogeneous** – pick the button with the best known detail for the homogeneous parcel
 - e.g. pick annual crop: if unsure of crop group or specific crop
 - e.g. pick crop group – cereal, oilseed, pulse, if unsure of specific crop
 - e.g. if unsure of perennial production type pick either forage or agroforestry
 - e.g. if homogeneous, annual of some other type, pick other and type in detail, same for other perennial
- Add any pertinent comments**
- Click OK** (if heterogeneous, go to LU and Activities page, if livestock/structures picked that page will be enabled; if livestock/structures checked and homogeneous, go directly to livestock and structures page)

Land Use

Land Use and Activities Livestock and Structures Ini

1. LAND USE (A) DESCRIPTION (A)

[Dropdown] [Dropdown]

LAND USE (B) DESCRIPTION (B)

[Dropdown] [Dropdown]

2. AGRICULTURE PRODUCTION RELATED USE:

Production Activity Type (1) % land

[Dropdown] [Dropdown]

Production Group (1) Crop (1)

[Dropdown] [Dropdown]

Production Activity Type (2) % land

[Dropdown] [Dropdown]

Production Group (2) Crop (2)

[Dropdown] [Dropdown]

Irrigation Type [Dropdown]

Confidence Level [Dropdown] 10/ 5/2005 [Dropdown]

Comments:

[Text Area]

OK Cancel

Land Use Form – LU and Activities Page

1. Land Use (Pick up to 2) based on footprint [i.e. extent]

Choose from the following categories:

1. Agriculture Production
2. Agriculture Support Services
3. Agriculture Value-Added Production
4. Other Agriculture (apiary; vineyard; nursery; sod; vegetables; fruit; u-pick, other)
5. Non-Agriculture

If activity 2 or 3 picked, then complete DESCRIPTION section

- If Ag. Support pick: fertilizer sales; pesticide sales; grain handling (elevator); auction services; implement dealer; veterinary services; or specify other
- If Ag. Value Added pick: meat processing; grain/oilseed processing; or specify other
- If Other Agriculture pick: apiculture; vineyard; nursery; sod; vegetables; fruit; u-pick; agri-tourism; or specify other

2. Agriculture Production Related Use (Pick up to 2) and range % of land base used (< 25, 26 – 50, 51 – 75, >75)

Then pick group: annual: perennial; or other and select corresponding crop

Eg. perennial selection: pasture – grass; pasture – grass/legume; hay – grass; hay – legume (pure); hay – mixed; or specify other

Pick irrigation if there is evidence of irrigation on the parcel, and specify the type (lateral wheel, pivot, sprinkler, drip, trickle)

3. Select Confidence Level: certain; uncertain; derived from imagery

4. Date - entered automatically

5. Comments - Add any pertinent comments (linked to initial page)

6. Click OK –if livestock/structures picked from initial page then go to livestock and structures page, if not go to summary page

Land Use [X]

Livestock and Structures | Initial Overview | Summary

LIVESTOCK PRESENT

Beef Cattle Poultry Sheep Hogs

Dairy Cattle Horses Other

Specify1 Specify2

STRUCTURES Not Visible

LIVESTOCK RELATED	Present	Not in Good Repair
Dairy Barn	<input type="checkbox"/>	<input type="checkbox"/>
Poultry Barn	<input type="checkbox"/>	<input type="checkbox"/>
Hog Barn	<input type="checkbox"/>	<input type="checkbox"/>
Other Barn 1 <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Barn 2 <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fence	<input type="checkbox"/>	<input type="checkbox"/>
Feedlot	<input type="checkbox"/>	<input type="checkbox"/>
Corrals	<input type="checkbox"/>	<input type="checkbox"/>
STORAGE STRUCTURES		
Grain	<input type="checkbox"/>	<input type="checkbox"/>
Equipment	<input type="checkbox"/>	<input type="checkbox"/>
Silo	<input type="checkbox"/>	<input type="checkbox"/>
Silage Pit	<input type="checkbox"/>	<input type="checkbox"/>
Other Silage	<input type="checkbox"/>	<input type="checkbox"/>
Manure - Earthen	<input type="checkbox"/>	<input type="checkbox"/>
Manure - Above Ground	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel

Land Use Form – Livestock and Structures Page

1. Select Livestock Present

Specify up to 2 other types of livestock present

2. Select Structures Present

1. Select If structures are not visible
2. Select Livestock Housing Facilities Present
3. Select Livestock Handling Structures Present
Note: indicate if these facilities are currently NOT being used
4. Select Feed, Grain, and Manure Storage Structures Present

FOR ALL STRUCTURES SPECIFY IF THEY ARE NOT IN GOOD REPAIR (NOT MAINTAINED IN ORDER TO FUNCTION FOR THEIR INTENDED USE – E.G. FENCE WILL NO LONGER CONTAIN LIVESTOCK)

3. Click OK – go to summary page

Possibility in future to Include Another Tab for Agri-Environmental Issues (e.g. watershed based)

Potential to collect information on:

- Riparian condition
- Erosion potential
- Various BMP's implemented
- ?????

Land Use

Livestock and Structures | Initial Overview | **Summary** | ◀ | ▶

Landowner and parcel information
Residence and type
Land Use 1
Land Use 2
Ag. Activity 1 % land
Ag. Activity 1 - Group
Ag. Activity 1 - Crop

Ag. Activity 2 % land
Ag. Activity 2 - Group
Ag. Activity 2 - Crop

Irrigation and type

Confidence Level

Livestock Present

Structures Present

Comments

OK Cancel

Land Use Form – Summary Page

Displays data input from previous pages

(final page before exiting parcel data input)

Data resides in an MS Access Database for ease of analysis, reporting and display in GIS

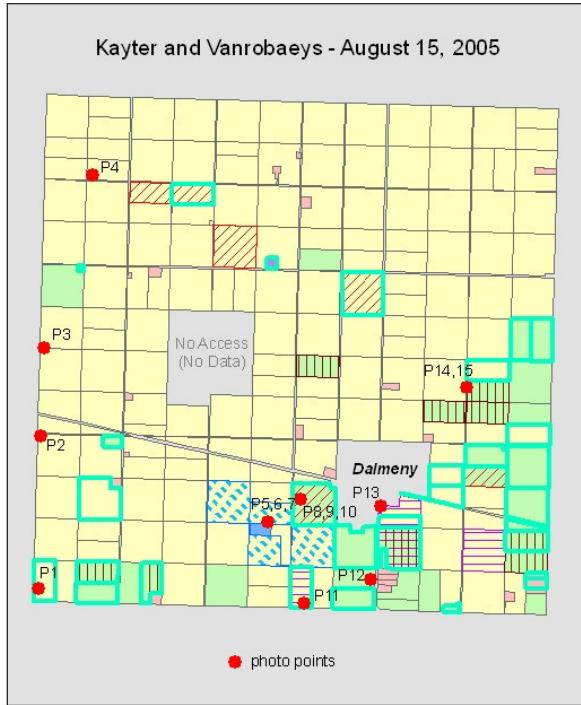
What we've learned so far

- Data discrepancies
 - Land use interpretation (ag vs. non-ag/transition)
 - Human error (missed seeing the evidence?)
 - Physical access to site
 - Temporal variation – harvest, livestock movement/rotation

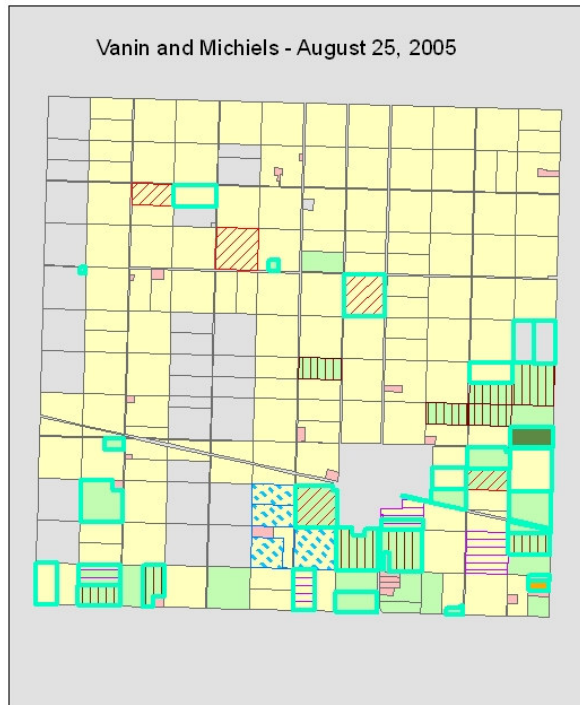
Land Use Mapping Exercise

TWP 39 RGE 06 W3M

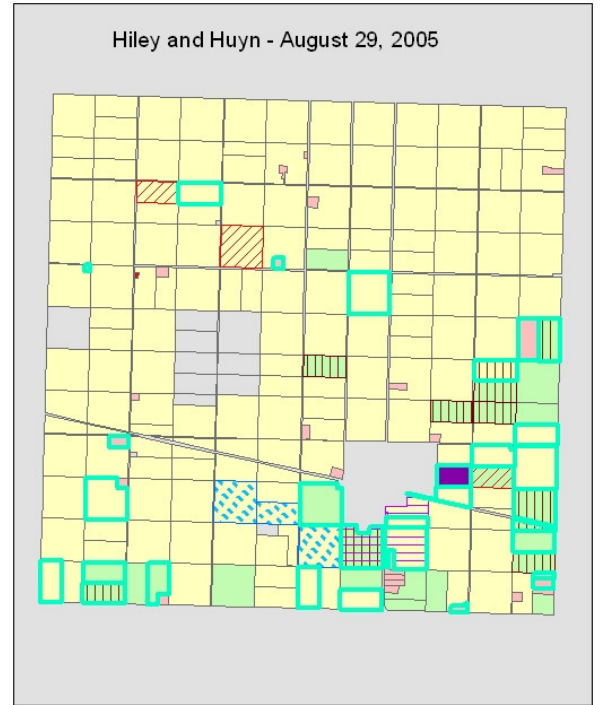
Kayter and Vanrobaeys - August 15, 2005



Vanin and Michiels - August 25, 2005



Hiley and Huyn - August 29, 2005



Legend

parcels_CK_JV

- no data
- DOMINANT PRACTICE**
- Non-Agricultural
- Annual
- Irrigation Pond
- Perennial
- SaskPower Easement
- U-Pick
- POI

BEEF CATTLE

- True
- POULTRY**
- True
- DAIRY**
- True
- SILO**
- True
- IRRIGATION**
- True
- POI

Legend

parcels_CV_PM

- no data
- DOMINANT PRACTICE**
- Non-Agricultural
- Annual
- Enter Text
- Perennial
- pasture/gravel
- POI

BEEF CATTLE

- True
- POULTRY**
- True
- DAIRY**
- True
- SILO**
- True
- IRRIGATION**
- True
- POI

Legend

parcels_JH_MH

- no data
- DOMINANT PRACTICE**
- Non-Agricultural
- Annual
- Not Collected
- Perennial
- wetland ephemeral
- POI

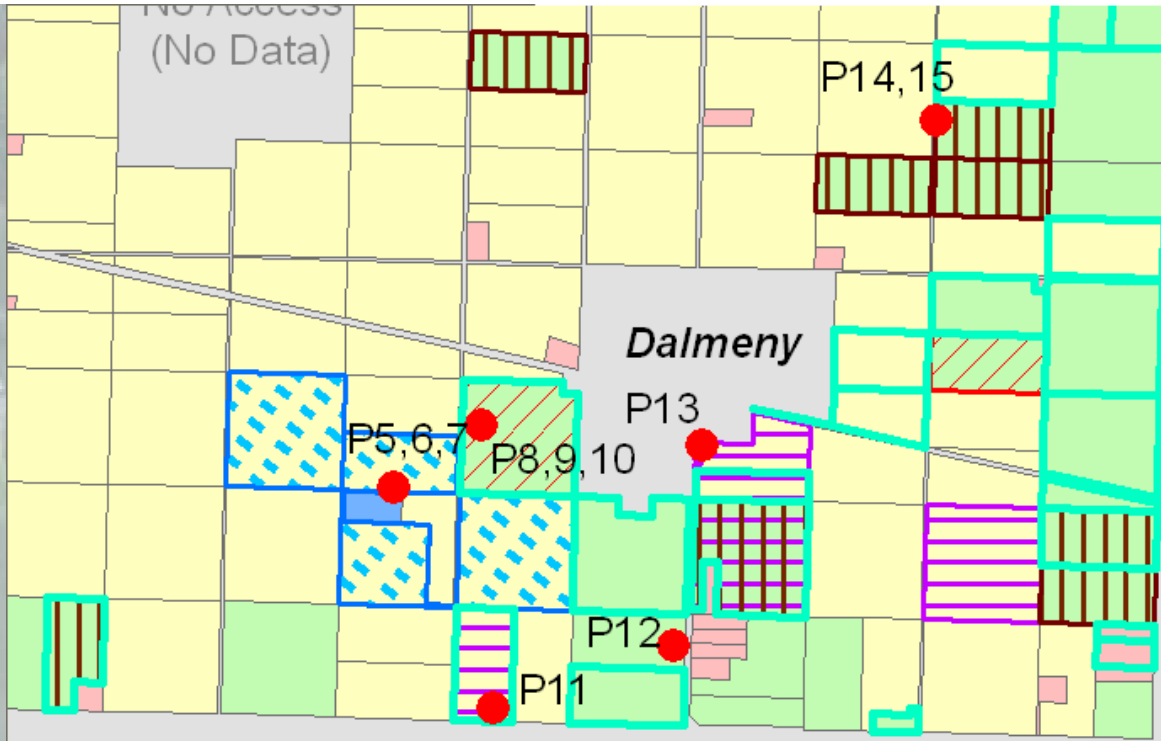
BEEF CATTLE

- True
- POULTRY**
- True
- DAIRY**
- True
- SILO**
- True
- IRRIGATION**
- True
- POI

Initial test in summer 2005

30 out of 221 parcels showed discrepancies

Why?



Where's the Beef?



Photo 14



Photo 15

Procedures/Users' Manual

- Incorporate survey protocols & land-use hierarchal land-use classifications
- Detailed photo library
- Promote awareness & conduct train-the-trainer for local data collection
- Increase capacity of staff to recognize and comprehend modern, contemporary agriculture
- Provide an effective tool to aid in collection, analysis, display and other applications
- Support informed decision making in agricultural landscapes

Next Steps & Other Pilots

- Collect data at 3 pilot sites
 - Lac La Nonne watershed
 - Beaver Hills area E of Edmonton
 - RM of Corman Park near Saskatoon
- Conduct QA/QC for data validation
- Analyze data, conduct comparative analysis and mapping outputs
- Complete the Users' Manual
- Work together with future clients to meet their data & information needs

Acknowledgements

- BC Ministry of Agriculture and Lands
- RM of Corman Park
 - http://www.rm-cormanpark.ca/index.php?option=com_content&task=view&id=154&Itemid=1
- National Land Use Decision Support Unit
- Lac La Nonne Watershed Stewardship Society



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AG-CAPTURE PROJECT



R.M. of Corman Park is very excited to be a part of the Ag-Capture Pilot Project in partnership with Agriculture Canada - Prairie Farm Rehabilitation Administration (PFRA).

You may see Agriculture Canada - PFRA vehicles throughout the Municipality performing "windshield surveys". Surveyors are capturing data that is visible only from public land.

Ag-Capture Project Information

The RM of Corman Park has a diverse and viable agriculture industry, having the highest farm count and highest total farm revenue of any rural municipality in Saskatchewan (Statistics Canada, 2001 Census of Agriculture) (Huynh, 2006).

Many of the agricultural primary products produced from farms in the region contribute to over 100 agri-food businesses that employ over 3400 people (Huynh and Kapstein, 2006).

Farms in this region contribute 8.7 million dollars in wages and

NEWSFLASH

DIVISION 2

NEWSLETTER

Division 2 Councillor Craig Riddell April 2006 Newsletter

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LAC LA NONNE WATERSHED STEWARDSHIP SOCIETY

Site 17, Box 22, RR 1

Gunn, AB T0E 1A0

Phone: 780-436-8280

Fax: 780-436-3689

Email: laclanonne@shaw.ca

Website: www.laclanonnewatershed.com

July 25, 2006

Ms. Candace Vanin, P.Ag
Regional Land Use Analyst
Room 945, Canada Place
9700 Jasper Ave.
Edmonton, AB T5J 4C3
Email: vaninc@agr.gc.ca

Dear Ms. Vanin:

Re: Ag-Capture An Agricultural Land Use Inventory Tool

Please let it be known that the Lac La Nonne Watershed Stewardship Society (LWSS) fully supports your endeavours in the above project. The Society recognizes the need for a cohesive and comprehensive form of communication between the Agricultural producers, PFRA and LWSS. With this in mind, we urge you to work closely with the respective Counties and their Ag Services Boards.

The Society is hopeful that the information gathered will be able to fill some of the data gaps presently within the State of the Watershed Report and in turn will be a useful tool in the stewardship of land use planning activities and initiatives.

An aerial photograph of a farm. In the center, there is a large, white, multi-story barn with a gabled roof. To the right of the barn is a tall, cylindrical silo. The farm is surrounded by green fields and some trees. In the background, there are other buildings and a road.

Questions?

- Thank you!
- Candace Vanin
 - vaninc@agr.gc.ca

National Land Use Decision Support Unit

