



# Prairie Steward

## Farming For Your Future Environment



The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Spring Issue No. 53, 2008

## New President Shares Vision for SSCA

By Laura Reiter, PAg

*Laura Reiter made the following remarks at the SSCA Conference Banquet upon accepting the gavel as the new SSCA President.*

I was asked by an acquaintance why I would want to be in charge of a “dying organization”. At the time, I was at a loss for words. The term “dying organization” in

reference to the SSCA had never before occurred to me. I have since come up with an answer that I would like to share with you.

First a little look back: This organization has come a long way since its beginning. The main focus was the delivery of the Save our Soils program. We were lucky enough to hire a number

of staff and through their efforts, the message of soil conservation was spread throughout the province. As of 2006, Saskatchewan has the highest rate of adoption of low disturbance seeding in the country.

As for that answer to my acquaintance... I don't feel that the SSCA is “dying” for these reasons:

1. I see us continuing to be involved with conservation in Saskatchewan. And not just “soil conservation” as the name might suggest. We have been involved with **water and air quality issues** in the past and they will continue to be part of us in the future.

2. I also see more and more need for us in the area of **soil sinks**. There are many opportunities for the agriculture sector to be involved with ways to help our environment. After all, the environment is a big part of our industry.

3. I also think there are new places that we will fit in. With “technology transfer” being the first to come to mind. An example of this is the announcement last night that in June, the organization will be launching a new web-based journal aimed at educating producers and consumers on soil and crop management issues.

We may have some challenges ahead but I am very confident that SSCA will evolve and adapt just as it has in the past. It will continue to play a lead role in speaking on behalf the province's farmers on environmental opportunities and issues. And I am very pleased to become the president of an organization with such a promising future. ●



Laura Reiter during her acceptance speech.

Another thing that we have been very involved in is with regards to soil sinks. We have worked in various ways trying to represent farmer's interests in the development of the policies that will affect them. We were the first to run an offset trade in Canada that involved soil sinks. We are continuing to help educate farmers on the “ins and outs” of carbon trading.

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# SSCA Board Activity Report

The following report indicates the activities each Director has undertaken on behalf of the SSCA membership for the period December 1, 2007 to February 29, 2008.

## **Laura Reiter, President**

Dec 6 & 7 - Crop Advisors' Workshop, Saskatoon

Jan 9 - SSCA Booth at Crop Production Show, Saskatoon

Feb 10-13 - Fabulous SSCA Annual Conference, AGM and related board meetings

Feb 14 - Met with Provincial Minister of Agriculture in Regina

## **Doyle Wiebe, 1<sup>st</sup> VP**

Dec. 6 & 7 - APAS AGM in Regina

Farm Tech Conference in Edmonton

Feb 10 - 13 - SSCA Annual Conference and Board meetings in Regina

## **Keith Stephenson, 2<sup>nd</sup> VP**

Dec 6 & 7 - Crop Advisors' Workshop in Saskatoon and helped chair sessions

Jan - I finished my presentation to be given at the SSCA conference

Feb 10 & 11 - I attended a board meeting in Regina

Feb 11, 12, 13 - I help set up, chair sessions, make a presentation, and pack up for the SSCA conference.

Within the same time frame I have purused 123 e-mails that pertain to SSCA information or business.

## **Edgar Hammermeister, Past President**

Dec 6 - Tech Journal Committee Meeting - Saskatoon

Dec 6&7 - SSCA Crop Advisors' Workshop

Dec 10 - SCCC Board Executive conference Call

Dec 18 - Tech Journal Conference Call

Jan 24 - 20<sup>th</sup> Annual Conference - final organizational meeting

Jan 28 - Carbon Trading Presentation to Lower Souris Watershed Committee at Redvers

Jan 29 - Carbon Trading Presentation to Lower Sours Watershed Committee at Maryfield

Feb 10&11 - SSCA Board Meetings

Feb 12&13 - SSCA 20<sup>th</sup> Annual Conference and AGM

Feb 14 - SSCA Executive Meeting with Bob Bjornerud, Minister of Agriculture

Feb 19-21 - Alberta Soil Science Meeting - AB Offset Trading System Presentations

Feb 26 - Tech Journal Conference Call

## **Garry Noble**

Dec 18 - Tech Journal Conference call

Jan 8 - Reviewed and circulated summary of Green Peace *Cool Farming* report to Board

Jan 9&10 - Worked SSCA Booth Crop Production Show Saskatoon and met with Sanj Singh to discuss aggregator business plan

Jan 20 - Replied to preliminary questions from Sanj

Feb 10&11 - SSCA Board meeting, Regina

Feb 12&13 - SSCA Annual meeting and Conference, Regina

Feb 26 - Conference call SSCA Journal tenders for editor and market research

Many of the remaining Board members were in attendance at the Crop Advisors' Workshop and all of them attended the SSCA Board Meetings and Annual Conference and AGM in Regina February 10 - 13. ●

## 2008-09 SSCA BOARD OF DIRECTORS

### **Regional Directors**

Daniel O'Reilly SW 642-5863

Doyle Wiebe WC, 1st VP 283-4340

Laura Reiter NW, President 827-2267

Edgar Hammermeister SE, 489-2281

Keith Stephens EC, 2nd VP 334-2862

Vacant NE

### **Directors-at-Large**

Erni Hall, 554-3132

Ken Abrahamson, 595-2082

Garry Noble 354-2679

Trevor Plews 782-1345

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Blair McClinton, Executive Manager

Marilyn Martens, Office Manager

Juanita Polegi, Project Manager

**SSCA's mission is "to promote conservation production systems that improve the land and environment for future generations."**

### **Disclaimer:**

The opinions of the authors do not necessarily reflect the position of the Saskatchewan Soil Conservation Association.

# Challenges Ahead with High Grain Prices

By Blair McClinton, PAg  
SSCA Executive Manager

2008 is shaping up to be an interesting year in the agriculture industry. On the crop side, prices for most commodities are the best they have been in years, if not decades. As a result, optimism abounds in the industry. It's a different story with the various livestock sectors where the situation has been described as anything from grim to downright ugly.

So, what will this all mean for soil and water conservation? Traditionally, strong crop prices have had both positive and negative influences on soil conservation.

On the positive side, strong crop prices will, to some extent, encourage less summerfallow particularly outside of the Brown soil zone. However, the downward trend towards less fallow has been steady since the early 1970s through both

good and bad times. There are obviously many factors driving this trend. If we see relatively good crop prices for several years, I think the downward trend could accelerate.

Probably the biggest positive impact from good prices will be that producers will have cash to invest in soil conservation technology. Equipment cost has traditionally been a barrier to adoption for many producers wanting to move to direct seeding. Equipment manufacturers are already reporting stronger sales orders for all types of equipment.

On the negative side, strong crop prices encourage producers to put more land into production. This traditionally meant that hay and pasture lands were broken. Much of this land is marginal for crop production and has caused the most problems with soil erosion and salinity. There will also be increased pressure to drain wetlands and break pockets of bush or rangeland.

According to StatCan, between 2001 and 2006, around 5% of Saskatchewan's cropland was converted to perennial forages. How long will this newly converted land stay in forages? My personal opinion is that extremely marginal lands (Crop Insurance "Class P") will be safe from the plough. I would like to think we learned something from our mistakes of breaking some of this land in the 1970s. However, less marginal lands will be threatened.

Since there are both positive and negative pressures on our land use, can we develop better policies and programs to have an overall positive effect? This will be the challenge to policy-makers and groups like SSCA in the coming years. ●



## New SSCA Journal to Launch in June

By Juanita Polegi, PAg  
Project Manager

The Western Canadian Farm Progress Show in Regina will be the site of the launch of SSCA's new web-based **Ag Tech Journal**. The new journal will be unveiled June 18.

What makes this new web-based journal unique? The **key feature** is that the contributors of the major articles are **well known researchers** who will **synthesize the research** on a particular topic area. They then have the opportunity to speculate on what the research means, offering their opinions on the interpretation of the results and on what additional research is required. Articles on relevant topics related to production and management will also be included.

The goal of the journal is to become a handy resource and reference document for a broad audience including western Canadian farmers, consumers and other stakeholders in the agricultural industry. As the journal matures, the SSCA is

anticipating it won't be just the farmers who subscribe to the journal but all those with a genuine interest in prairie agriculture.

A variety of well-know researchers have agreed to contribute to the premier edition of the journal. The focus of this edition is **Agriculture and its Impact on the Environment**. Five major topics will be addressed including Agriculture and Greenhouse Gases; Soil Organic Matter on the Prairies: Implications for the Environment; Agriculture and Energy Use on the Prairies; Agriculture as a Source of Energy Generation: Is it sustainable?; and Is Our Food Safe?

As we await the arrival of the articles, much behind-the-scenes leg work has taken place. An **ISSN number** has been applied for so that the journal can be tracked through the library system. A **website address** has also been secured. In December, many SSCA members who are on the SSCA's email newsletter list were asked to complete a brief survey about the journal. We had excellent

feedback from a large number of members. By mid-April, over 1000 farmers in the three prairie provinces will have been contacted by Canwest, on behalf of the SSCA and Alberta's Reduced Tillage LINKAGES, to answer a more involved survey about the journal.

A web-based agricultural journal containing articles from researchers is a rather novel idea. The SSCA Board of Directors will be interested in what you think about the journal. If you are able to attend the **Farm Progress Show**, **please drop by the SSCA booth** to take a look at this new source of good information. Your comments will be heard! More details on subscribing to the journal will be sent to SSCA members in the summer. ●



# PERRL Pilot Carbon Trade: What di

By Blair McClinton, PAg  
SSCA Executive Manager

In the spring of 2005, SSCA developed the first agricultural soil carbon trade in Canada as part of Environment Canada's Pilot Emission Removals, Reductions and Learnings (PERRL) Initiative. 2007 was the final crop year in PERRL and we submitted our final claim report to Environment Canada at the end of February. Over the past three years, this project has provided many insights into soil carbon trading.

One of the most important things we learned is that farmers would participate in a carbon trade. While this may not seem like a big deal, for policy-makers in Ottawa, there was some scepticism that farmers would participate in an agricultural soil carbon trade. The success of this project helped ensure that ag soil sinks will be included in any offset trading system.

## Protocol Issues

Our PERRL project paid its farmers to restrict their management to meet the definition of zero till set out by Environment Canada. This definition was quite narrow and rigid with many restrictions like:

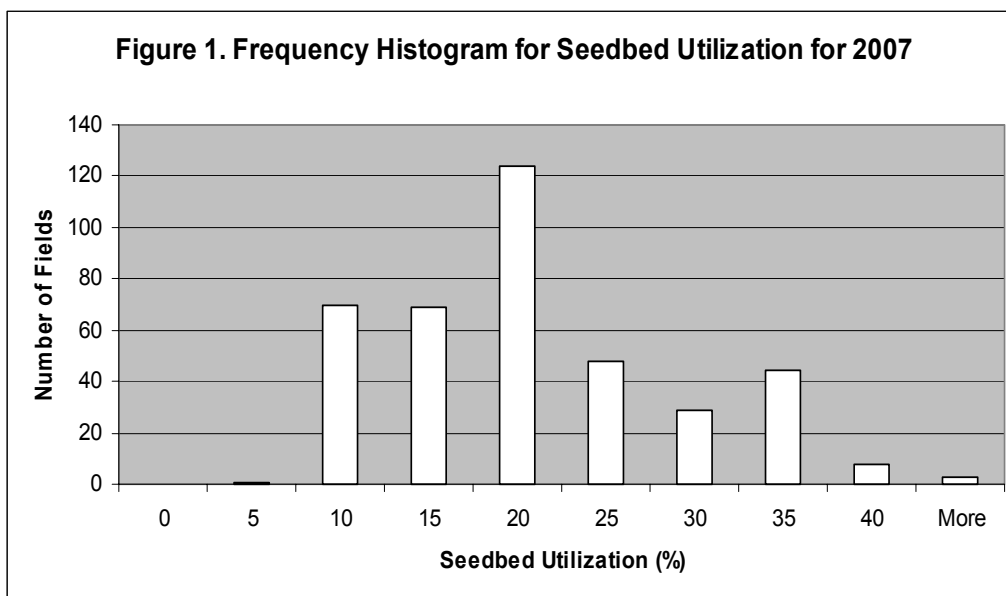
- Disturbance limited to less than 33% seedbed utilization
- No tillage
- No residue grazing
- No residue burning
- No straw baling or greenfeed crops
- No separate fertilizer banding (except for coulter injectors)

- No manure applications
- In addition, there were a couple of rotation restrictions of note:
- No fallow (including chemfallow) in the Black or Gray soil zones
  - Established forage crops were also not allowed.
- It was apparent from the start that this definition was not flexible enough to be practical. The restrictions on livestock production meant that this project did not fit well with mixed farm operations. The tillage protocol developed by the Soil Management Working Group incorporated many of our recommendations into the protocol

this would be simple and fairly straight forward, we identified one potential problem. The potential problem is that the measured width (measuring tape) is seldom the same as the advertised opener width. In other words, an opener sold as a 3-inch opener may actually measure out to 3.4-inches. This would mean a 38% SBU if this was on a 9-inch row spacing not the 33% that you would be expecting. If this farm was audited this



could mean that the farmer could be in a default position and not meet the project definition. However, this is a gray area that has not been adequately addressed by the tillage protocols developed to date. To resolve this in our project, we recommended that we use up



they developed for the proposed 2006 national offset system.

## Seedbed Utilization

Seedbed utilization (SBU) or the percentage of the seedbed that is disturbed by the seed opener is the way zero tillage is defined in activity-based protocols.

$$\text{SBU} = \frac{\text{opener width}}{\text{row spacing}} \times 100$$

For this project, SBU was restricted to 33% or less. 33% SBU translates into a 3-inch opener on a 9-inch row spacing or 4-inch opener on a 12-inch row spacing. While you would expect that

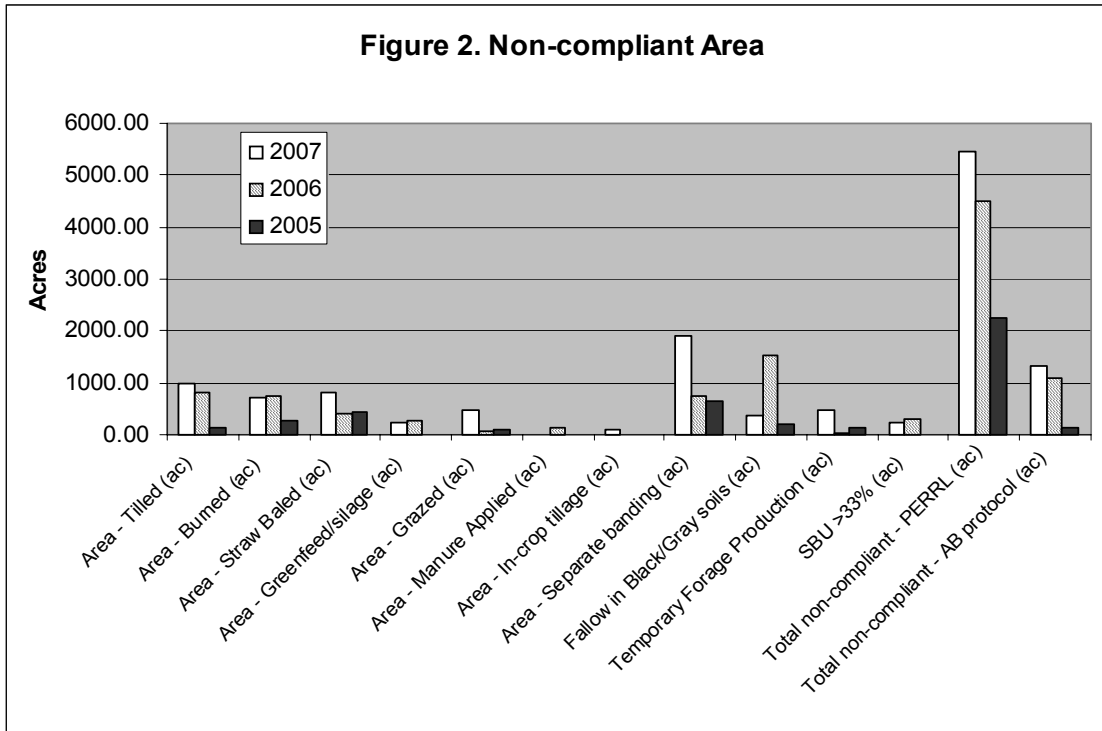
to 38% SBU as guidance for the verifier.

Figure 1 shows frequency distribution of SBU for 2007. The majority of fields in our project were well under the 33% limit with the most common disturbance level in the 15-20% range. This should have been expected since only paired-row and seed-placed fertilizer systems would use wider openers. However, we did note that some farmers were using spreader tip openers along mid-row banding. When you combine the disturbance from both the seed opener and mid-row bander, you may move beyond the SBU limit.

To take the disturbance of the mid-row bander into account, add 1/2-inch

# Did we Learn?

**Figure 2. Non-compliant Area**



tillage protocol (the AB protocol is based on the National SMWG protocol), non-compliance is affected only by the use of tillage and exceeding the SBU. When the non-compliant acres in PERRL are reviewed on the basis of the Alberta protocol, the number of non-compliant PERRL acres drops by 75% - from between 9 - 10 % to only 2 - 3% (Figure 3).

**Administrative Issues**

At the end of the day, carbon trading is largely an administrative exercise. It is mostly about documenting and verifying the appropriate farm practices to

to the width of the seed opener.

**Non-compliance**

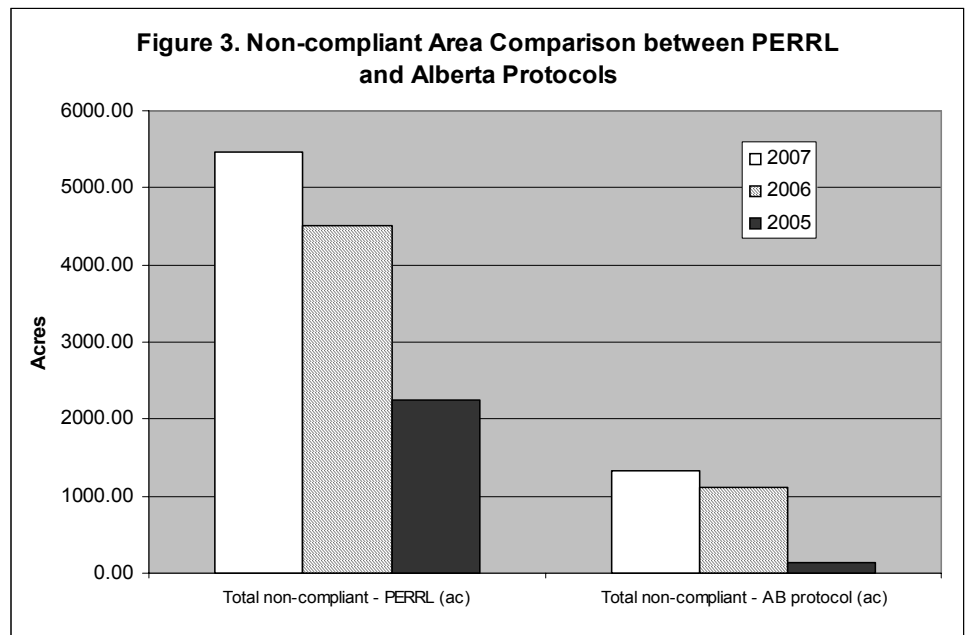
Non-compliance is an area that we hoped to learn more about during the project. Figure 2 shows the acres that were not in compliance with the PERRL protocol for each of the three years. There was significant year by year variability between both the amount of land in non-compliance and also the major non-compliance factors. The two largest single factors were fallow in the black/gray soil zone in 2006 and separate banding (fall) in 2007. The fall banding spike in 2007 was related to the rise in fertilizer prices. The high fallow in 2006 in the black/gray soil zones was related to unseeded acres due to wet conditions in eastern Saskatchewan. However, both of these factors are unique to this project and not factors in other tillage protocols including the one developed for the national offset system.

As a result, we were most interested in the tilled area which was relatively high in both 2006 and 2007. We contacted all cooperators who tilled more than 30 acres to learn more about why they needed to till. The

major cause for the increase was to level ruts from field operations in wet conditions. As field rutting is tied to moisture conditions, it may be possible to predict tillage non-compliance

create a credit. To do this we needed to collect information and manage it in a database. When Meyers Norris Penney verified our credit claims, they not only visited farm sites, they also

**Figure 3. Non-compliant Area Comparison between PERRL and Alberta Protocols**



based on weather data. Since tillage is the major non-compliance risk in new protocols, this may make it easier for aggregators to manage permanence risk. For instance, in the Alberta

looked at our data management system and documentation that backed up our claim.

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# A CLC Demonstration Site

By Garry Mayerle, PAg  
CLC Riparian Project Coordinator

As grain farms in Saskatchewan increase in size, adaptations are made to make practical and efficient use of resources. The driver behind these changes is economics. Another sector pressuring farmers for change is the environment. However, the driver pushing farms to adopt environmental practices is not so powerful. In fact, the economics issue in some instances may be a disincentive to environmentally friendly farming practices. Advocates of these environmental practices need to find all the drivers or catalysts they possibly can to bring about changes that benefit the environment.

A practical example of a different catalyst became evident at one of the Saskatchewan Conservation Learning Centre's riparian management demonstration sites. The co-operators were Troy and Lynnette Jones, farming just northeast of Kinistino. The demonstration was part of one of CLC's projects funded by Agriculture & Agri-Food Canada's Greencover Canada Program. The title of the project was *Managing Riparian Areas in a Cultivated Landscape Along the Carrot River*. One of the avenues the project is using to promote good riparian area management is to "square up" those fields which cut out small or irregularly shaped areas along creek and river waterways to make them more efficient for field operations and applications of inputs. Riparian areas need relatively wide buffers of well rooted perennial vegetation to function properly, filtering run-off water as it moves into the water way. Increasing riparian areas by squaring up fields is a good way to protect our water resource.

Jones is farming a 30 acre piece of ground almost abutting to the Carrot River. One of the difficulties with cropping this field is that there is no good access to this field without going through a neighbour's field which creates particular difficulties at harvest time. When the opportunity to participate in this project came along, he decided to seed the field down to a

forage mix for haying and grazing. In essence, this "squared up" the field by filling in an irregularly shaped small field that was very inconvenient for annual crop production. To prevent livestock from tromping the banks and damaging the riparian area where they



**Troy and Lynette Jones, cooperators with the CLC Riparian Project.**

water frequently, part of the project also included a remote watering system.

This last year, Jones cut and baled this field early in the haying season and then grazed it later in the fall. He was happy with the forage mixture supplied by the project. It was Farm Pure's Hi Gain forage mix which

**"Riparian areas need relatively wide buffers of well rooted perennial vegetation to function properly, filtering run-off water as it moves into the water way."**

includes 90% meadow brome and 10% alfalfa. His only comment was that it could have had more alfalfa in it. On the tour last fall it was quite obvious that with the moderate slope this field has toward the river, the perennial cover is providing some water erosion protection.

To "square up" annually cropped fields, the project is recommending that perennial species (such as forages), or woody species (such as hybrid poplar or willow) underseeded to a forage, be planted in the areas where annual disturbance is to be eliminated.

A good way to start the process of "squaring up" a field is to obtain a recent aerial photo of the land to provide a bird's eye view of the entire field. This project is offering producers in the Carrot River Valley the opportunity to access this imagery from Saskatchewan Watershed Authority through the project technician. Producers provide the land locations and the technician will access the maps and go over them with suggestions on how riparian areas can be enhanced. Of course, producers know the layout of their land much better than any outside observer, but often, looking at it from an aerial view clarifies the size and shape of some field details. That helps in determining how best to "square up" or more efficiently farm that piece of ground. It has even revealed where one or the other neighbour might be a bit over the property line!

Before heading out in the spring with the seed drill or sprayer, it's best to have an image in mind as to where those little areas destined for perennial establishment are located. When the rush of seeding the annual crops is over, those areas can then be seeded. Another approach to starting the "squaring off" process is to leave one or two drill widths in the deepest "necks" along a riparian area during the seeding operation to see how they appear before making a final decision about how to handle them. If they look good, then those areas can be seeded later on in the season.

Finding ways to benefit both the farmer's bottom line and the environment is not always easy. This demonstration project has shown that a small re-design of a field along a waterway can do both.

For more information about protecting riparian areas, contact Garry Mayerle, Riparian Project Coordinator (306) 893-5993. ●

# “Squaring Up Fields” Creates Operational Efficiency

By Garry Mayerle, PAg  
Based on Research conducted by PAMI

As annual cropping inputs go up in value, producers are thinking hard about getting the most efficient use of the resources they buy every cropping season. One of the areas of efficiency that hasn't been talked about much until recently is field operational efficiency and how that impacts wise use of inputs. Field operational efficiency is the benefit to look for when thinking about squaring up fields.

Prairie Agricultural Machinery Institute (PAMI) developed several projects to investigate mechanical overlap. They hoped to quantify it, and make practical recommendations that would reduce the bottom line for annual crop production and benefit the environment - in particular, enhancing riparian areas. The project leader was Nathan Gregg. Developing efficient field operation practices by squaring up fields has a great fit with farming more responsibly along riparian areas. It identifies small irregular shaped riparian areas where operational overlap is always high. If these areas are put to a perennial crop, the riparian buffer area is enhanced. The producer does give up farming small areas of land but because of the principles of operational efficiency, does not give up that much in net returns.

In this study, PAMI investigated 3 field operations: seeding, spraying, and fertilizer. They used case studies looking at fields with perimeter obstacles, multiple interior obstacles such as

land with lots of potholes, land with creeks or water runs cutting through the fields, and irregular fields with obstacles. By manipulating the data collected from 64 fields using theoretical calculations, they were able to come up with a model that they used to make recommendations based on trends observed even though the study was

larger fields, the percentage of headland overlap is significantly reduced. It is this author's opinion that GPS and sectional shutoff should be able to significantly reduce this factor for applied inputs. Even some seed drills are coming on to the market now that have sectional shutoff available. Of course, the costs of distance traveled such as fuel and labor, could not be lowered with GPS.

Obstacles in the field (interior obstacles) have perimeter overlap of their own so they certainly reduce the efficiency of field operations. From this study

PAMI recommends that any obstacles that are closer together than two widths of the implement should be combined into 1 obstacle to make operations more efficient. They also illustrate cases where it makes good operational sense to isolate obstacles, especially edge obstacles, even though some annual crop returns may be sacrificed for the returns from perennial crops. In other words, it makes sense to square up around obstacles especially edge obstacles as already discussed.

It is beyond the scope of this article to go into more detail on this study but those details can be accessed in fact sheets found on PAMI's web site. As acreage bases increase, and good labor becomes more expensive and difficult to find, producers are understanding more clearly the need for operational efficiency. Before deciding that the answer is to drain and "clearcut" land, and to buy the biggest operational units on the market, take a look at PAMI's fact sheets to see how their research might impact your decisions. ●

Table 1

TECHNOLOGY	< 5 Interior Obstacles		>5 Interior Obstacles		Edge Obstacle		Ditch/ Creek	
	acres	%	acres	%	acres	%	acres	%
No Assistance	13.75	7.26	24.97	13.93	19.78	10.61	14.94	9.82
Assisted Tracking*	11.48	8.97	12.38	7.72	8.97	8.73	13.37	6.39
Auto Steer	5.35	3.60	17.25	9.12	20.57	10.85		

From draft of "Case Studies Determining Options To Lower Mechanical Overlap In Cultivated Sinuous Riparian Areas" – PAMI

\* more units with boom control technology in this category (sprayers with GPS controlled sectional shutoff)

not detailed enough to do statistical analysis.

In their investigation, the most significant way for producers to reduce overlap is to use GPS guidance or auto steer equipment. In Table 1 it is obvious that in most comparisons, the GPS technology reduced overlap.

Another conclusion they drew was that smaller equipment was more

**“As acreage bases increase, and good labor becomes more expensive and difficult to find, producers are understanding more clearly the need for operational efficiency.”**

efficient. The parameters to keep in mind are that they considered pass-to-pass overlap without GPS at 1 shank of overlap. With GPS it was zero. They also assumed that headland overlap was one half of the implement width so narrow (small) implements had significantly less headland overlap. Because of this fact, they also concluded that if smaller fields can be amalgamated into

# SSCA Celebrates 20 Years at Annual C

Education and celebration were the two objectives for the SSCA's 20<sup>th</sup> Annual Conference: Fuelling the Farm.

Celebrating 20 conferences was the goal of the reception held the evening prior to the Conference. This event provided an opportunity for conference registrants to mix and mingle and reminisce. Several former board members and staff



**Lt. Gov. Dr. Gordon Barnhart offering congratulations on behalf of the Crown.**

were also in attendance. A slide show running throughout the evening contained slides of past and present Board members, past and present Staff members and several of the activities in which SSCA has been involved over the years.

During the brief program His Honour Lieutenant Governor Dr. Gordon Barnhart delivered a congratulatory message from the Crown.



**Key Note Speaker Dr. David Kohl.**

Deputy Premier Ken Krawetz also brought congratulations from the Government of Saskatchewan.

The SSCA then recognized Senator Herb Sparrow for the work he did in the early 1980's to bring the issue of soil degradation to the attention of Canadian farmers and governments. At the time, he was the Chair of the Senate Committee on Agriculture. Many of the recommendations from the book *Soils at Risk*, prepared by the Committee, became the foundation on which many of the modern day soil conservation programs were developed. Unfortunately, due to poor road conditions, Sen. Sparrow was unable to attend the celebration. His long-time friend, Mr. Graham Wilson spoke on Sen. Sparrow's behalf.

The following morning, the Conference was opened by Dr. David Kohl. Dr. Kohl is a Professor Emeritus at the Virginia Tech University. His presentation "*Straight Talk About Global Agriculture*" was informative and provocative. Following Dr. Kohl's presentation, the speakers in the first session focused on the impact direct seeding has on the soil and weed populations. Several production-oriented sessions followed. The day concluded with SSCA's Annual Meeting.

During the Conference Banquet, the Honourable Bob Bjonnerud, Minister of Agriculture, brought greetings and acknowledged the work the SSCA has done over the years especially in the areas of direct seeding and

soil carbon sinks. He was knowledgeable about the organization and his comments were appreciated.

In December of 2007, the former Dean of the College of Agriculture,



**Laura Reiter and Edgar Hammermeister greeting Deputy Premier Ken Krawetz at the Reception.**

Don Rennie passed away. Don received the SSCA Award of Merit in 2005. Glen Hass, the first Execu-



**On behalf of Sen. Herb Sparrow, Graham Wilson accepts gift from Edgar Hammermeister.**

tive Director of the SSCA and one of Don's many colleagues and friends, paid tribute to Don. Glen relayed the story Don had told him how, as a young boy growing up on a farm near Gull Lake in the '30's, he helped his mother place wet tea towels in the cracks around the doors and windows of the house to keep out the blowing soil. Don had a fascination with soil and after receiving his education, joined the faculty in the Department of Soil



# onference

Science, University of Saskatchewan in 1952. Don created quite an uproar in the early '70's when he made the statement that summerfallowing was a bad practice. He successfully defended his research and that became the basis



**Closing Speaker Dr. Graham Parsons.**

on which new land management practices were investigated. A couple of years ago, it was a dry, windy day in spring. Glen asked Don if he thought it was a horrible day. Don's reply was: "No! It's a wonderful day! All that wind and no dust in the air!" His research



**Brett Meinert 1<sup>st</sup> SSCA President, Edgar Hammermeister President and Laura Reiter 1<sup>st</sup> Vice President cut the Anniversary cake.**

had a tremendous impact on how that day differed from the days of his boyhood.

The Banquet is also a time for award presentations. The SSCA Award of Merit is presented annually to an individual who has made an outstanding contribution to the advancement of the soil conservation cause. The 2008 recipient is Glen Shaw. For over 20 years, Glen was the Senior Soil Conservationist with PFRA in Saskatoon. Glen played a key-role in the development of many of soil conservation and agri-environmental programs such as Save Our Soils, Green Plan and the Canada-Saskatchewan Farm Stewardship Program. These were popular programs and many Saskatchewan farmers have benefited from them.

The SSCA - Ducks Unlimited Conservation Farm Family Award is presented to a farm family that has made an outstanding contribution toward promoting production systems that reduce soil degradation, enhance water quality and maintain economic viability. This year's recipients are Lyle and Linda Stucky from

Osler. Establishing field shelterbelts, inserting winter wheat into their crop rotation and moving to direct seeding has enabled them to protect their rolling, light textured land from wind and water erosion. Lyle has also shared his conservation effort experience with other farmers.

The leadership of the SSCA was transferred from Edgar Hammermeister to Laura Reiter with the passing of the President's gavel. Retiring Board

members Stacey Moskal and Dr. Brian McConkey were recognized



**Honourable Bob Bjonnerud, Minister of Agriculture, speaking at the Banquet.**

for their service to the SSCA Board. A farmer from Brooksby, Stacey Moskal served one 3 year term as the NE Director. Dr. Brian McConkey, a research scientist



**Edgar Hammermeister passes the President's gavel to Laura Reiter. Laura becomes the SSCA's first female president.**

with AAFC in Swift Current served two 3 year terms as a Director-At-Large (DAL). Trevor Plews, an agrologist with DUC in Yorkton was welcomed to the Board as a DAL.

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# Prairie Stewards

By Edgar Hammermeister, PAg  
Past President and SE Director

At the Conference Banquet, Edgar took a few minutes to reflect on the advances Saskatchewan farmers have made in their efforts to conserve the soil and practice effective land stewardship. The following few paragraphs are the comments Edgar made at that time:

We are celebrating 20 years of the SSCA Conference. A conference that brings farmers together, to seek and share information on this concept of direct seeding. To open this year's conference, we heard from soil scientists discussing the impacts we are having on the soil. The physical, chemical and biological changes are positive and we are now reaping the benefit of those changes.

Would those of you who have been direct seeding for 10 or more years, please raise your hands? Would you now please raise your hands if you have been direct seeding for 20 or more years? Would those farmers who have been direct seeding for 25 or more years please stand and be recognized? The farmers that are standing, are the early adopters of direct seeding. Think back to the challenges that these earlier adopters overcame:

- Expensive glyphosate (\$30+ /liter)
- Seeding equipment not designed for the new purpose
- Social challenges
- These pioneering farmers were trying practices that were contrary to

"conventional" wisdom and were "certainly going to fail",

The scrutiny of the neighbours whose comments were not always complimentary.

You persevered. Inherently you knew the old ways of farming were not working, not for the long run. You



**Edgar Hammermeister just prior to speaking about the SSCA's Prairie Stewards at the SSCA Banquet.**

persevered and were willing to share. Thank you.

Over 20 years, the SSCA has had many successes. We have caused a paradigm shift in crop production that has had a huge multiplier effect for the Saskatchewan economy. According to the 2006 Census of Agriculture, 60% of seeded acres in Saskatchewan were direct seeded and

a further 25% are seeded using minimum tillage practices. Eighty-five (85%) of our crop land is now receiving conservation measures. **Farmers were environmentalists, practical environmentalists, before it became trendy.**

Climate change and its potential impacts continue to grow in public awareness. If it were not for the efforts of the SSCA, soil sinks would not be on the table as a tool for use to mitigate climate change. It was the efforts of the SSCA that forced the recognition of liability concerns connected to the permanence of soil sinks. Industry and Governments now appreciate that the farmer should not be left to shoulder the liability risks alone.

The SSCA takes pride in having organized the first carbon credit trade in Canada under the PERRL project. The learnings gained from this project are now being applied to Alberta's offset trading system and are being incorporated into Canada's Offset system as well.

New challenges are coming. They will have an environmental sensitivity. The food consumer is demanding safety, security and sustainability. As farmers, we are already undertaking measures to ensure their demands are met. I encourage you to prepare to debate with our city cousins. Educate them in what we are doing and the benefits we are generating. Take pride in what you are doing for we truly are, Prairie Stewards. ●

## PERRL PILOT CARBON TRADE: WHAT DID WE LEARN? ... CONTINUED FROM PAGE 5

As part of this project, we developed various tools to document our claims. Contracts, application forms and field reports all served a purpose in this process. Entering into producer agreements and collecting field records is not a normal part of SSCA's business. Over the past three years, we have had to learn a great deal about the process of collecting and managing this information.

Even developing the original proposal to Environment Canada was a learning experience. At that

stage, we began to ask questions about what information we would need from farmers and also how this could be verified. For example, we knew we needed an independent way to verify field size. Crop insurance information worked for most cooperators, but only about 2/3 of Saskatchewan farmers have crop insurance so we needed other sources. We used information from PFRA, SAMA and GPS data to fill in the rest. As well, because this was a sale agreement, we contacted various levels of governments about GST

and PST for all five jurisdictions we operated in. We knew back in January 2005 that GST would apply to carbon credits.

### Final thoughts

We have learned a great deal from going through this carbon trading process. We were fortunate to have been able to participate in this unique pilot project. The information garnered from this project has already played a major role in helping shape tillage protocols and trading rules in Canada and Alberta. ●

# Suggestions for Farmer's Own On-Farm Plots

By Bill Strautman

*This story is reprinted with permission from The Western Producer, where it was originally published in the Dec. 13, 2007 edition.*

The most important step when planning on-farm plots and research is to partner up, says William Punko. Speaking at the Alberta Reduced Tillage Linkages Direct Seeding Advantage Conference in Nisku, Punko provided personal perspectives based on research plots he has been involved with over the years.

Punko, who farms near Westlock, Alta., said working with other producers is a big part of conducting field trials. "I've partnered up with our local research group, Gateway Research out of Westlock. Throughout Alberta, there's all kinds of groups you can work with," he said. "They can help with doing stats calculations, once you get a lot of data. What does it mean and is there a difference between plot A and plot B? A lot of times they'll have summer students that will help with labour if you're doing plant counts. A lot of them have small equipment that you can use for plot maintenance, like mowing edges so you don't have weed issues. They may have small sprayers if you want to add a little trial across one end, for interest sake or demonstrations."

## Objectives

Punko said it's important to have clear objectives and design the project with them in mind.

"Do you want to compare inputs, different fertilizer blends, fertilizer rates, some of the slow release fertilizers that are on the market? Or is it some new chemicals or fungicides?" he said. "You may be comparing a new style of seeding tool, with all the independent openers on the market right now. You may wonder, 'are they going to give me a big enough advantage to accomplish what I want, or do I want to stay away from them be-

cause there's other drawbacks I didn't foresee on them?'"

Treatment and check

Punko urged producers not to get carried away when designing a project. Multiple replicates or adding an extra chemical trial are common problems, he added. "All of a sudden, your five little plots have turned into 50," he said. "You've got to keep it simple the first time out because you have to harvest this stuff. You don't want to go out and say, what did I get myself into?'"

Make sure the project has a control plot or standard check. "(Don't) have the rest of your field seeded to one canola variety and have five different varieties in your plots. You may have a winner in the plot, but did it actually yield any better than the rest of the field?" he said. "I've found, if you don't put your variety into the plot, you can harvest all your plots, then go, 'hmm, how did the rest of the field perform?' I have a field average number, but how would it have compared to the plot? What looked good in the plots may have not turned out any better than the rest of the field."

## Site selection

Topography and soil variability are important when selecting sites. Level land and uniform soil would be ideal, Punko said, to help achieve consistent results. "In my case, I don't have that. I have to deal with topography and soil variability. What I try to do is keep it consistent in the plot. I don't put part of my plot on a hillside and the rest in a low spot. If there's a sand ridge running across it, I try to position the plot so the sand ridge is roughly equal through all the plots."

Punko likes half mile long plots because they provide consistent data. Field history is also important. When picking one site, Punko used aerial photos to compare growth characteristics across his field. "We had an old fence line of trees, and an old post office in another part of the field. Things like old yard sites, old gas

wells or corrals — you have to be conscious of. An old barnyard can really screw up your plots," he said. "So I wouldn't recommend, if you have a new piece of property, to do trials on it, until you've seen what the growth characteristics are."

Punko said he knows of a farmer who had a diagonal strip that ran across one field. Investigations revealed an old fence line that had been cleaned up using a high rate of Tordon. "Until you've eliminated a lot of that, it can mess up data for you." Easy access is another consideration for plot maintenance and plant counts.

## Plot design

Punko said when the site is selected and it's time to design the plots, it's also time to lean on a producer's partners again. "They've got experience and ideas, they can help you set up your plot designs. For a lot of first timers, a single strip is where you want to start. If you start doing multiple reps, it can be a lot of work. But usually it's not that bad once you've gone through the experience a couple of times," he said.

"If you're looking at buying a new drill for your farm and want to check field finish, you do a lot of silage. For that, a single rep will probably work out. If you're doing fungicide trials, chemical or variety trials, you may want to look at multiplying the reps to get more consistent data."

With crops such as canola, which will be swathed before the data is harvested, it's a good idea to make sure the plots can accommodate that. "You may always seed a field north and south, so you seed your canola strips that way. Come harvest, you realize you normally swath east and west. Now, you have to cut your plots north and south and hope the wind doesn't get them, or call it a writeoff and try again next year," said Punko. "And you need enough space for your plots. If you've got a 120 foot sprayer and

**CONTINUED PAGE 13**

# Applied Pedology and Sustainable Land Use

**Angela Bedard-Haughn, Assistant Professor**  
**Department of Soil Science,**  
**University of Saskatchewan**

Growing up on a farm in the Black soil zone of Saskatchewan, I developed an early appreciation for soil: Soil was a beautiful thick mantle draped over the landscape, rich with possibility in the spring, impressive in its power to produce food and support rural families. When I moved to Saskatoon for my university training, I was drawn to studies of the landscape, first in physical geography and later in soil science. Studying soil science took my inherent appreciation for soil to a whole new level, as each course I took and each paper I read revealed some new and amazing service that soils provided – not just as a medium for growing food, but as a major contributor to environmental equilibrium. Eventually, my love of soil took me to California, where I pursued my doctorate, and where I was also exposed to soil that looked very different – and was treated very differently – from the inherently fertile soil that I had grown up with.

After returning to Canada and taking up a faculty position at the University of Saskatchewan, I began to develop a research program that strived to balance society's needs to support our burgeoning global population and to provide for healthy, sustainable ecosystems. Sounds a bit like the SSCA mission to "promote conservation production systems that improve the land and environment for future generations", doesn't it?

My research area is "Applied Pedology", which contributes to this mission or balance by examining how land use and climate change affect, and are affected by, soil properties and processes, including those relevant to soil formation and classifi-



**Angela Bedard-Haughn**

cation (the typical domain of pedology). My main emphasis is on nitrogen and carbon cycling within the soil: these nutrients are essential for healthy, productive ecosystems, but in excess can contribute to water quality concerns and greenhouse gas emissions.

In recent years, this emphasis has been reflected in studies on potential carbon sequestration in hummocky Chernozemic landscapes, the effectiveness of vegetative buffers for capturing excess nitrogen in surface runoff from managed (irrigated) pastures, and nitrogen-cycling processes in Gleysolic Prairie sloughs that have been linked

to high levels of nitrous oxide emissions. Currently, my research encompasses Prairie, Boreal, and Arctic ecosystems, but continues to build on these earlier themes of nutrient cycling, water quality, and greenhouse gas emissions.

Major initiatives currently underway in the Prairies include collaborative work with AAFC research scientists to assess the carbon and nitrogen balance of pulse crops in rotation to improve our understanding of the net effects of pulse crops on greenhouse gas emissions, carbon sequestration, and nitrogen availability to subsequent crops. This will help producers assess the pros and cons of including more pulses in their rotation, including the potential for reducing nitrogen fertilizer inputs while maximizing carbon storage.

On the water-quality front, I recently completed a major review for PFRA of potential short- and long-term land management practices suitable for agricultural soils affected by excess water, a frequent problem in the past few years. I also just participated in a workshop on Water and Agriculture sponsored by the Policy Branch of Saskatchewan Agriculture, rekindling my enthusiasm for research on riparian buffers. As my research program continues to expand, I look forward to developing more connections with both producer and conservation groups, so I can keep "applying pedology", contributing to a healthy balance between agriculture and sustainable ecosystems.

Website: <http://homepage.usask.ca/~akb133> ●

## SSCA CELEBRATES 20 YEARS AT ANNUAL CONFERENCE ... CONTINUED FROM PAGE 9

Day 2 of the Conference was filled with a number of sessions covering a variety of topics. The conference ended on a positive note with Dr. Graham Parsons sharing his thoughts on how, with the right plans in place, the future will be very bright for

both the province and its farmers.

A limited supply of Conference Proceedings are available for sale. Just call (306) 695-4233 and Marilyn will take your order. Or if you're trying to minimize the paper in your office, watch the SSCA's website [www.scca.ca](http://www.scca.ca) for the pro-

ceedings when they are posted there.

Planning for the 21<sup>st</sup> Annual Conference has already begun. It will be held February 12 & 13, 2009 in Saskatoon at the Saskatoon Inn. Watch the web site for more details as the planning progresses. ●

# Letters to the Editor

*On occasion, the SSCA Head Office receives letters or emails concerning articles that have appeared in a previous edition of the Prairie Steward. These letters are welcome. The viewpoints of the membership are important and are taken seriously. We received a letter in response to the reprinted article How Urbanization Changes Environmental Policy that appeared in Issue No. 52 of the Prairie Steward. Following the letter is the reply by Executive Manager, Blair McClinton.*

Hello,

As a proud member of the member of the SSCA for a number of years, you cannot imagine my embarrassment and dismay at finding a reprint of an article by Robert Sopuck of the Frontier Centre for Public Policy in the winter newsletter. The SSCA has a well-deserved reputation as a transparently-funded, non-partisan, science-based organization and has done more than any other association I

can think of to promote progressive and sustainable agricultural practices and policies in Saskatchewan. How on earth could anyone in your office risk this reputation by associating us with the right-wing nutbars, conspiracy theorists and spin doctors that fill the broom closets of the FCPP?

I realize that lack of sufficient funding may make it necessary to use previously published material from time to time. As long as the material adds to the body of knowledge of soil conservation, I welcome it. Hogwash from the likes of Mr. Sopuck, his "environmentalists" and "independent public policy experts" have no place in serious discourse and certainly no place in our publication.

David Bonli  
Bonli Farms Ltd.

Hi David,

Thank-you for your input. We try to find items that we think are relevant and of interest to our

members. The article in question was originally published in the Regina Leader Post and Saskatoon Star-Phoenix. When we saw the piece we thought it would meet our criteria of being relevant and of interest to our members. Our view is that different perspectives on agri-environmental policy is of interest to SSCA.

I would point out that the author, Robert Sopuck, is also the VP of Policy for Western Canada with Delta Waterfowl (a waterfowl conservation NGO). In that role he helped get the Alternate Land Use Services (ALUS) pilot project going in Manitoba, including lining up project funding through Delta Waterfowl. The ALUS concept to pay farmers for environmental goods and services is being widely promoted by the CFA and locally by APAS. In that project farmers are paid for things preserving natural areas and riparian buffer strips.

Regards,  
Blair McClinton, PAg ●

## SUGGESTIONS FOR FARMER'S OWN ON-FARM PLOTS ... CONTINUED FROM PAGE 11

you're doing a few chemical trials, you can eat up a lot of field in a hurry. Even with a simple two reps and eight canola varieties, that 60 foot drill will move you down the field in a big hurry. Will topography or water ponding bite me?"

Matching equipment can be a challenge. A plot seeded with a 60 foot drill is tough to cut with a 36 foot header. When it's time to lay out the plots, Punko said the old school method involves a tape measure and pin flags down the field. "The new school uses autosteer and GPS. I have a 39 foot drill, so when I did the plots I told them it was 41 feet. You wind up with a strip running down on each side of the plots. Then we harvested on a single strip using a yield monitor," he said. "Even though we use a GPS, we still put in a few stakes and signs. It's too easy to mess up later on in the year, and you can't remember what treatment was what."

Another thing to be conscious of is non-plot operations. If plots are sprayed the same direction as seeded, there may be one or two wheel tracks in one plot and none in the next.

"If you're coming down the middle of that plot with your combine and you're picking up the majority of the tracked area, it may affect your data. So if you're spraying, try to run across the plots instead of in the same direction."

Producers should decide the order of treatments ahead of time to minimize confusion and delays at seeding and harvest. In a 12 acre 2007 pea trial, with four treatments and three replicates of each, Punko used his autosteer and GPS to go up, back and up, in different locations, with each treatment. "If we were doing it with markers and pin flags, it would have been a lot of extra work. I suspect the plot may have taken me an extra two hours through the whole year because it was well thought out and designed. Two hours for seeding, spraying and

harvest really doesn't account for much," he said.

### Records and data

Punko said producers should determine what information they want to collect: yield; grade; maturity; lodging; visual differences though the year; nodule assessment in pulse crops on weather data recording. Data analysis and evaluation is important because things aren't always as they seem.

In one of his plots this year, Punko's yield monitor recorded 65 bushels per acre on plot A and 61 bu. per acre on plot B. It seemed straightforward until he looked at the weights: 2,940 pounds on plot A and 3,004 lb. on plot B. On the yield map, Punko noticed a long tail on the end of plot B. "We hadn't lifted our header quite high enough when running over to the truck. My area counter shows 0.74 acres and 0.81 acres. So you've got to be careful what you see. You can get tricked." ●

# SSCA Director Enjoys SSCA Board Work

By Juanita Polegi, PAg

After one year of serving as a Director on the Board of the SSCA, Ken Abrahamson of Pelly feels he has learned a lot. "I was interested in serving on the Board because I saw it as an opportunity to learn more about direct seeding and carbon sequestration", he said. Ken hasn't been disappointed. With a couple of researchers and 8 other farmers on the Board, Ken has been able to access all kinds of good information.

Ken and his wife, Theresa, and their children Kody and Stacy, farm north of Pelly in East Central Saskatchewan. Located in the Grey soil zone, the soils on their farm are primarily clay loam. Stones and potholes are not a problem. "We don't have a lot of little potholes to go around at seeding time. We either have sloughs in the fields or we don't." Ken said. Frost can be a problem, especially in the fall so they begin seeding as soon as they are able to get into the fields.

2008 will be the Abrahamson's fifth direct seeded crop. When they returned to the farm in 2002, the land was conventionally farmed, as was most of the land around them. In 2004, Ken purchased a Flexicoil air drill and equipped it with Poirer openers on 12 inch spacings. As alfalfa plays an important role in their

crop rotation, Ken likes the heavier shanks and wider spacing for seeding into the alfalfa sod. In the fall, he straight cuts as much crop as possible so he doesn't have to worry about the swath support.

Glyphosate is applied in early September to the alfalfa fields that are to be taken out of production. Ken finds he gets a



**Director-At-Large Ken Abrahamson of Pelly discusses the conference with Blair McClinton.**

good kill on the alfalfa. The following spring, it's those fields he seeds first. His crop rotation includes oats, canola, wheat and alfalfa.

The Abrahamsons have an interest in the cow herd Ken's brother runs, so residue management isn't a problem as the chaff is collected by the Redekopp cyclone system which drops the chaff back into the straw. The straw and chaff

are then baled together and fed to the cows.

Ken said when he first returned to the farm, while there wasn't much summerfallow in the area, there was a lot of "diesel and dust" as most of the farmers were conventionally seeding. He's noticed that over the last few years, things are beginning to change as more farmers are making the move to direct seeding.

Once seeding is over, Ken puts on his aerial applicator's hat. He's had the opportunity to spray fields throughout Saskatchewan and Manitoba. Ken has also served as a Director on the Saskatchewan Aerial Applicators' Association.

When asked about his vision for the future of the SSCA, Ken is confident that the SSCA will have a role to play as the province's farmers strive towards economic viability and environmental responsibility. "The Carbon credit strategy will need some strong leadership from

the SSCA. And while there has been a phenomenal change in the number of acres now direct seeded, the SSCA shouldn't quit pushing its message until we have 100% of the acres direct seeded", said Ken.

The SSCA is pleased to have Ken Abrahamson serving on the Board of Directors and looks forward to Ken's continuing contribution to the Board. ●

## ARE THE GOOD TIMES FOR AGRICULTURE BAD TIMES FOR SOILS? ... CONTINUED FROM PAGE 16

the world went to war in the 1940s. Again the focus was placed on increasing food production to replace that which was lost during the war years in Europe. This emphasis on maximizing production continued through the next three decades and with the innovations of fertilizers, herbicides and new crop varieties, agriculture productivity was testing the limits of our soil resources. This era could be considered as "good times". Then came the 1980s.

This period from the early 1980s through to the new millennium was probably the worst of times for grain farmers in western Canada. Interestingly, it was the time when the greatest ad-

vancements were made in terms of soil conservation and soil improvement. Most of the farming organizations in Canada that focus on soil (and the other associated resources, water, air and wildlife) were established in the mid to late 1980s. Also, most of the innovations in no-till seeding took place in western Canada during this time. Our agricultural scientists developed knowledge in areas such as crop rotations, nutrient management, and carbon sequestration that is not matched in any other region of the world. As a result, our soil, water, air and wildlife resources in western Canada are now in the best shape since the land was broken.

So now we start another cycle of good

times for grain production. Prices are at all-time highs, world stocks are low, and the movement into bio-fuels suggests more and more crop production will be dedicated to that industry. The government has a policy on developing the bio-fuel industry. They haven't, however, indicated any policies towards agriculture resource protection. This raises several questions. Will the focus switch back to maximum production? Will marginal land be taken out of perennial forage programs and put into annual crops? Will government policies place less emphasis on environmental programs? Will these good times be hard on our soils? ●

# More Photos from the 2008 Conference



Laura Reiter and Edgar Hammermeister present the Award of Merit to Glen Shaw (center) retired Senior Soil Conservationist with PFRA who was instrumental in developing many popular soil conservation and agi-environmental programs for producers.



Glen Hass pays tribute to Don Rennie, soil scientist and former Dean of the College of Agriculture, University of Saskatchewan.



President Laura Reiter presents Stacey Moskal, retiring NE Director, with a gift of appreciation from the Board. Dr. Brian McConkey also retired from the Board after serving two 3 year terms.



Doyle Wiebe (left) accepted the SSCA - DUC Farm Family Award on behalf of Lyle and Linda Stucky of Osler. Presenting the award is Mark Aikin of DUC and Laura Reiter.



Lynn Sentz of Davidson displays a "Dust Buck" that was used for the soil conservation "auction" at the 1990 conference in Yorkton.



Wendy Paquin and Marilyn Hammermeister were members of the conference registration team.

# Are the Good Times for Agriculture Bad Times for Soils?

**By Doug McKell, PAg**  
**Executive Director**  
**Soil Conservation Council of Canada**

*This article was originally posted as an entry on the Illative Blog ([www.illativeblog.ca](http://www.illativeblog.ca)) on January 31, 2008. It has been reprinted with permission from the Knowledge Impact in Society Project at the University of Saskatchewan.*

If you are a grain farmer it is good to see the high crop prices again and a return to levels of profitability not seen since the 1970s. But is this renewed financial situation good for the soil? The history of prairie agriculture might suggest otherwise.

The development of agriculture in Canada was primarily driven by political will and the resultant programs and policies to address this will. The rapid settlement of the western United States in the late 1870s and early 1880s was viewed by the Sir John A Macdonald government as a potential threat to Canada's North West Territories. The Macdonald government developed policies to promote settlement in western Canada and lauded the farming potential of the region. Farmers began to populate the West, bringing with them implements for breaking land that

were being used for grain production in eastern Canada; most important among these was the disc and the plough.

During this early settlement period the native soils of the prairies provided excellent fertility through the intensive tillage required to prepare land for seeding. Grain produced in the region was of high quality and produced superb flour and bread products. It wasn't long before western Canada became known as "the breadbasket of the world". The world became even hungrier for our grain during the Great War years 1914-1918 and the subsequent years of European reconstruction. Farmers generally experienced good times and profitability.

However, during this agricultural growth period there was an indication that an environmental problem was at hand. In 1923, a scientist at the Dominion of Canada Research Station, Indian Head - Dr. Shutt - identified the problem in his *Report on Soil Fertility, Dominion of Canada Department of Agriculture, Bulletin No. 21*. In this report Shutt stated, "there is a marked destruction of the organic matter and dissipation of the nitrogen where the crop/fallow system is followed, and this eventually will injuriously affect the soil both chemically and physically". He also reported, "there is a

natural destruction or dissipation of the organic matter in the soils from the oxidation and chemical reactions following the tilling, the cultivation of the soil, which results in the loss, more or less, of this organic matter".

Shutt's report suggests that our science was sound in terms of understanding agriculture practices and their affect on the environment. However, the political will at the time was to maximize production and feed a growing world population. Thus, during this period of good times for agriculture, the warning of pending soil degradation was largely ignored. It wasn't until the Great Depression and the terrible droughts of the 1930s that any national policy was aimed at soil conservation. The Prairie Farm Rehabilitation Administration (PFRA) was established in 1935 to "...secure the rehabilitation of the drought and soil drifting areas in the provinces of Manitoba, Saskatchewan and Alberta, and to develop and promote within those areas, systems of farm practice, tree culture, water supply, land utilization and land settlement that will afford greater economic security...".

However, good times for farmers soon returned when the droughts ended and

**CONTINUED PAGE 15**

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