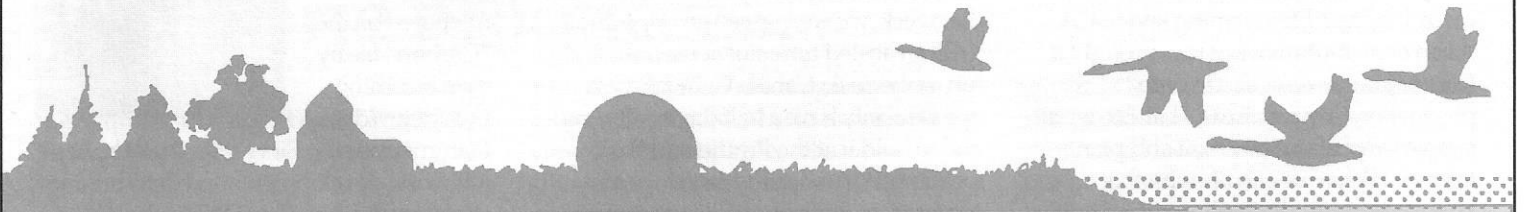




Prairie Steward

Farming For Your Future Environment



The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Winter Issue No. 59, 2011

Conservation Agriculture 2011 Conference and Annual General Meeting

By Garry Noble
1st VP, SSCA

On January 13th, members of the Saskatchewan Soil Conservation Association from across the province will be attending our annual general meeting and conference at the Saskatoon Inn, in Saskatoon.

The conference is now a one-day event held during Crop Week. We hope

travel to Saskatoon on Thursday morning.

SSCA members who register by January 5 pay only \$45 for the conference, early registration for non-members is \$70.

The keynote speaker is Dr Theodor Friedrich from the United Nations – Food and Agriculture Organization in Rome. Dr. Friedrich is speaking about conservation agriculture practices and machinery around the world.

Brian McConkey, AAFC Swift Current will update the audience on the science behind soil carbon credits. Dr. McConkey recently became a senior advisor in the Agri-Environmental Services Branch responsible for setting policy and science strategy for AAFC.

The team of John Bennett, Sask Pulse Growers, and Doyle Wiebe, SSCA, bring the latest news on carbon credits and the on-going development of a market for Saskatchewan farmers.

Ken Coles with Southern Applied Research Association, Lethbridge will speak on their work using GPS guidance to inter-row seed. Ken directs a research program which has other projects on the practical application of GPS on the farm.

David Lobb, University of Manitoba has a method for reclaiming eroded knolls which can cover the reclamation cost in 3 – 4 years and result in long-

term productivity gains. David also has some surprising findings on soil erosion from high-speed drilling and the benefits of subsoiling.

If you follow trends in conservation agriculture you already know cover crops are blanketing no-till fields in the United States. Dr. Bob Blackshaw, AAFC Lethbridge is testing several plant species under different cropping systems to identify potential cover crops for the Prairies.

From the front page of Grainews, to the front stage at the conference, Steve Larocque from Beyond Agronomy Inc will be sharing his experience with controlled traffic systems. Steve set up tramlines across his entire farm at Morrin, Alberta in 2010 to measure the impact on the crops and soils. Steve was recently in Australia with a group from Controlled Traffic Farming Alberta to tour farms practicing CTF.

Martin Entz has the final presentation of the conference on managing water-logged soils. Surface drainage works, but where do you drain the water too? Dr Entz's team at the University of Manitoba are testing three methods to "de-water" soils with plants. Learn about flood-tolerant crops, perennial forages and water use with full-season crops. Cover crops and double-crop

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SSCA members and other farmers will find the conference fits their plans to attend Crop Week and the Western Canadian Crop Production Show www.cropweek.com. Registration on January 13th begins at 8:00 am which may accommodate those who chose to

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President's Message

By Doyle Wiebe, PAg
SSCA President

As I look out on this typical December day and reflect somewhat on the year past, typical is one word I cannot use for either of the two primary areas of activity in my business life - farming and SSCA. As an over abundance of rain brought a feast or famine response in crop production in many areas, I believe we all learned a lot about how soil and plants interact. What we can do with this knowledge will only be determined over time as we carry on this business that relies on healthy soils and plants.

So too SSCA has come to recognize a new set of realities for its survival and prosperous future. In July your directors made a difficult decision and further downscaled staffing by eliminating the Executive Manager position. As a number of projects were completed, and others postponed, this decision was made to better reflect the fiscal realities of the organization. Blair had just been recognized in February for his 20 years of dedicated service and with him a bank of knowledge has also left. However, the board is continuing to provide leadership on a number of fronts and with the office manager still in place, we are able to continue the activities that we believe are important to our members. We apologize for not getting this edition of the Prairie Steward out sooner, but the transition to director managed activities has meant some seasonal demands on their time

now exists and may conflict with planned SSCA activities.

The other significant change for the organization this year is the upcoming conference being a part of the Crop Production Week activities. As much as there are already many activities going on that week, we were given an opportunity to fill a vacated time slot at the Saskatoon Inn as the Sask. Canola Growers have opted to only have a half day conference and to hold it at the Prairieland Park location. With so many meetings and conferences throughout the winter for farmers to attend, it was becoming increasingly difficult to draw sufficient interest to a stand alone event to make it feasible. We are down to one day, from 2 short days, and the topics will be different from any other event that week. The quality of the speakers will still be high and the cost will now be lower. This will now allow you to take in both our conference and other events that week with only one trip to Saskatoon.

The board would like to communicate more with its members using the most cost efficient means possible - which currently is e-mail. We do not have addresses for many of you, so I would encourage you to provide them to the office. If you simply send an email to the address: info@ssca.ca, along with your name, we will be able to add it to our list and you will receive periodic "E-mail Updates" from us. We do not sell email addresses, so you will not get more junk mail. Hopefully, we will be able to publish the "Prairie Steward"

using electronic means at some point as well.

When I joined the board 5 years ago, I was quickly mentored on the "Carbon" file by then incoming president Edgar Hammermeister. Since then I have been following developments and determining what may be the role of SSCA when/if this moves forward. As much as there have been many false starts nationally, Saskatchewan has now passed legislation and is expected to implement a carbon trading system in 2011. This system will have significant impacts on agriculture in both the short and longer term. The SSCA has been recognized by government officials as a leader in putting farmers' interests forward and are actively involved in shaping the system that will directly impact all farms. Even if you and/or your neighbours believe that the SSCA has run its course as minimum tillage has become common practice, the pending carbon trading system is by far reason enough to both continue membership and to get your neighbours to join. Active government relations involves considerable cost and manpower. Your support for our effort - regardless of your views of climate change - is critical to our success and future endeavours that will also impact how you farm the land. ●



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

SSCA's Vision is "to be the recognised driver and facilitator of change that leads to conservation agriculture being practiced on prairie agricultural land."

Disclaimer:

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

HEAD OFFICE

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Marilyn Martens, Office Manager

“Prairie Soils and Crops: Scientific perspectives for innovative management” A new technology transfer e-publication for prairie producers...

By Guy Lafond, PAg,
Agriculture and Agri-Food Canada,
Indian Head, SK

Producers are inundated on a daily basis with information on a wide range of topics and often this information is contradictory. This, in turn, makes decision-making more difficult for producers since additional effort is required to separate good information from bad. To address this concern, the Saskatchewan Soil Conservation Association (SSCA) developed new web-based e-publication called “*Prairie Soils and Crops: Scientific Perspectives for Innovative Management*”. The articles can be freely accessed at www.prairiesoilsandcrops.ca.

The main objective of this new e-publication is to provide producers with high quality, unbiased information on soil and crop management. Prairie agricultural researchers and other experts are invited to write articles on various topics and provide an unbiased scientific opinion on a range of topics. The articles are referenced with the most pertinent scientific papers to allow the reader the opportunity to learn more about the topic. We hope to reach out to the public at large and specifically to those interested in learning more about

the issues facing Prairie agriculture. Ultimately, the intent is to make world-class agricultural research on the Canadian prairies more accessible to everyone.

Since the initial launch in 2008, we have completed three issues. The first issue was entitled “Agriculture and its Impact on the Environment”, the second issue “Weeds, Herbicides and Management” and the third issue “Agricultural Soils of the Prairies”. The fourth issue underway and will focus on Pest Management. The fifth issue is in the early planning stages and will discuss the major findings from the various long-term studies on the Canadian prairies.

What we want to do with this new e-publication is to somewhat emulate what publications like “The Economist” or “Scientific American” accomplish. These are examples of global publications that deal with various topics pertaining to economics and recent scientific thought and many or most of the articles are contributed and written by knowledgeable experts in the field. The key point is that they are contributed articles on broad topics. The other important aspect of this publication is that it is intended for a wide audience which means that the

jargon is taken out of the language but is still based on sound and well researched facts. The style of writing in our proposed publication would be such that anyone who has an interest in agriculture will be able to keep abreast of the latest thoughts and findings.

Currently, scientists submit articles to scientific journals and all articles are extensively peer-reviewed. The style and the format required by each publication tend to be rigid and the audience is basically other scientists. The scientific language tends to be laborious making these publications difficult to read, even for scientists. The general public is not expected to read these publications and access to these articles would be the first obstacle. Over the years we have found that very few extension people even read these publications and yet it is the basis for much of soil and crop management knowledge.

The Prairie Soils and Crops e-publication is also an excellent professional development tool for both Agrologists and Certified Crop Advisors (CCA). Brief exams are being developed to accompany the e-publication articles. CCAs can earn continuing education units (CEU) by successfully completing these exams. ●

SSCA would like to thank and acknowledge our conference Platinum Sponsors:



Conservation Agriculture 2011

23rd SSCA Annual Conference

January 13, 2011

Saskatoon Inn, Saskatoon, SK

In Conjunction with Crop Production Week

TUESDAY, JANUARY 13, 2011- BALLROOMS A & B

FEATURED SPEAKER:

8:00 AM **Registration**

8:45 AM **Welcoming and Opening Remarks**

MORNING SESSION - SPONSORED BY SASKATCHEWAN PULSE GROWERS

9:00 AM **Keynote Address – Conservation Agriculture - An International Perspective**
- Dr. Theo Friedrich, FAO Plant Production and Protection Division, Rome

10:00 AM **Refreshment and Networking Break**

10:30 AM **The Science behind Carbon Credits**
- Dr. Brian McConkey, Agriculture and Agri-Food Canada

11:15 AM **Carbon credits – what's in it for farmers?**
- Doyle Wiebe, Saskatchewan Soil Conservation Association
- John Bennett, Saskatchewan Pulse Growers

12:00 PM **Luncheon and Awards Presentations**

AFTERNOON SESSION - SPONSORED BY SASK CANOLA

1:30 PM **Inter-row seeding with GPS guidance**
- Ken Coles - Southern Applied Research Association

2:00 PM **Potential to reclaim eroded knolls**
- Dr. David Lobb, University of Manitoba

2:30 PM **Cover crop potential for the Prairies**
- Dr. Bob Blackshaw, Agriculture and Agri-Food Canada

3:00 PM **Refreshment and Networking Break**

3:30 PM **Controlled Traffic Systems**
- Steve Larocque, Beyond Agronomy Inc.
- Sponsored by Seedmaster

4:00 PM **Rotations to manage water-logged soils**
- Dr. Martin Entz, University of Manitoba

4:30 PM **SSCA AGM**

Theodor Friedrich is an expert in conservation agriculture with more than fifteen years practical work experience in this field. Since 1994, he serves as Senior Officer of FAO/Rome in the areas of agricultural mechanization and crop production systems, particularly promoting Conservation Agriculture. Born in El Tigre, Venezuela, Friedrich is a German national and has worked since 1982 for different organizations in agriculture and development in more than 60 countries of the Americas, Africa, Asia, Europe and Australia.

After studying agricultural sciences with a major in crop production at Göttingen University/Germany and working for some years in the field, he returned to Göttingen where he earned his Ph.D. in 1988 in agricultural engineering.

Besides a broad background in agriculture, agricultural extension, as well as technical co-operation with developing countries, Friedrich specializes particularly in agricultural engineering and mechanization, conservation agriculture, pesticide application technologies and integrated pest management. He has published more than 50 papers in these subject areas, is a member of the World Association for Soil and Water Conservation (WASWC), the American Society of Agricultural and Biological Engineers (ASABE), the European Society of Agricultural Engineers (EurAgEng), the German VDI (MEG-VDI), and is serving on several organizing or scientific committees for international conferences.

ATTENTION CCA'S:
Conference Approved for
5.5 CEU's (SW: 4.0, CM: 1.5)

2011 SSCA Annual Conference Registration Form

Fax to SSCA at (306)695-4236 or
Mail to: SSCA, Box 1360, Indian Head, SK S0G 2K0

Name 1: _____

Name 2: _____

Address: _____

City: _____ Postal Code/Zip Code: _____

Telephone: _____ Fax: _____

E-mail: _____

Representing: _____ RM#: _____

Producer: YES / NO (circle one) SSCA Member: YES / NO (circle one)

Conference Fees: **Check appropriate boxes**

SSCA Members			Non-Members		
Before/On January 5, 2011	\$45.00	<input type="checkbox"/>	Before/On January 5, 2010	\$70.00	<input type="checkbox"/>
additional farm unit member	\$40.00	<input type="checkbox"/>			
After January 5, 2010	\$50.00	<input type="checkbox"/>	After January 5, 2010	\$75.00	<input type="checkbox"/>
additional farm unit member	\$45.00	<input type="checkbox"/>			

1 Year membership	\$100.00	<input type="checkbox"/>
3 Year membership	\$250.00	<input type="checkbox"/>
Additional Farm Unit Membership (one time fee)	\$ 25.00	<input type="checkbox"/>

Total Enclosed \$ _____

GST Exempt (Reg.# 137200515 RT001)

Method of Payment: Check one

Visa
 MasterCard
 Cheque (Payable to SSCA)

Card # _____ Expiry Date _____

Name on credit card (please print) _____

Signature _____

Cancellation:
SSCA will provide refunds if notified
before 12 noon, January 5, 2011

Agricultural Soil Compaction: Causes and Management

By Garry Noble
1st VP, SSCA

Alberta Agriculture and Rural Development released a new publication in October on soil compaction. The 10-page Agri-Facts bulletin was prepared by Ross McKenzie, an agronomy research scientist with the agriculture research division in Lethbridge.

Soil compaction occurs when the soil particles are compressed reducing the available pore space for air and water. Soil compaction affects water infiltration, crop emergence, root penetration and crop uptake of nutrients and water, which in turn reduces crop yields.

Soil bulk density (grams per cubic cm) is a measure of soil compaction. A loam to clay-loam soil will have a bulk density in the range 1.3 – 1.4 g/cm³. Tilled surface soils will have bulk density in the range 1.0 -1.2 g/cm³. As

pore space in the soil decreases, bulk density increases.

Yield loss from soil compaction must be correctly diagnosed before taking measures to prevent further damage. The bulletin provides a guide to identify symptoms of soil compaction.

There are two forms of soil compaction: surface soil crusting and subsurface compaction. Soil crusting can be prevented by reduced tillage which maintains crop residue, protects bare soil and adds organic matter to improve soil structure. Tillage can create a hard pan layer in the soil just below the depth of cultivation. Working wet soils with high silt or clay contents can lead to this compaction. Direct seeding, freeze-thaw cycles and rotations with tap and fibrous-rooted crops can be used to correct hard-pan.

Wheel traffic-induced compaction is a concern as farm machinery axle weights climb higher. The risk of this form of compaction is greater in the

spring when soils are wet. Compaction between 12-20 inches can be fractured using deep tillage, but there are 5 strategies to avoid this form of compaction, before it is a problem. There are adverse effects to using deep tillage.

The bulletin includes a list of best management practices to prevent soil compaction. The recent introduction of controlled traffic farming systems and the impact of tramlines on soil compaction is mentioned.

“Soil compaction is not considered a widespread, serious problem in Alberta. However, soil compaction can be a serious and unnecessary form of soil degradation. Preventing soil compaction is far better than trying to correct a compaction problem after it occurs.”

Agricultural Soil Compaction: Causes and Management can be found on the AARD website www1.agric.gov.ab.ca.

Long-Term No-Till Yields Extra 10 bu/ ac and 1% Protein

By Garry Noble
1st VP, SSCA

At the 2010 SSCA Conservation Agriculture conference in Regina on February 9-10, Jim Halford's presentation included a comparison between long-term and short-term no-till.

In 2001, trials at Halford's Indian Head farm measured a yield of 43 bushels of wheat per acre from long-term no-till (20+ years) fields and 23 bu/ac on first-year no-till fields, with the same no-till management and inputs! The wheat protein on the long-term no-till fields was 14.5%, compared

to 13.0% on the first-year no-till field.

was delivering higher output with the same inputs as short-term no-till. Economically and environmentally,

long-term no-till can be profitable and sustainable.

Statistics from the Census of Agriculture reveal how many acres of cropland in Saskatchewan will be reaching long-term status in 2011.

Only 10% of the total cropland acres in

Saskatchewan have been farmed no-till for 20 years. If 20 years is the time it takes for our soils to change and reach a higher level of nutrient mineralization, then this writer

	No-Till/Zero-Till Acres	Total Acres	% of Total
1991*	3,342,896	32,210,142	10.3
1996	7,250,545	33,202,335	21.8
2001	13,491,077	34,827,771	38.7
2006	19,839,959	32,984,104	60.1

(*1991 first Census data for no-till)

Subsequent research in the following years revealed long-term plots gave an extra 10 bu/ac yield and 1% grain protein, at the same nitrogen fertilizer rates as short term no-till plots.

It was exciting to hear Jim's observations that long-term no-till

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Precision Farming and Variable Rate Technology- A Resource Guide

By Ty Faechner, Ph.D., P.Ag.
Executive Director, ARECA
Sherwood Park, Alberta
and Garry Noble, SSCA

Adoption of precision agriculture technologies and methods has recently accelerated when the Federal Government provided financial assistance to assist with the purchase of GPS (Global Positioning System) guidance, yield monitors and mapping software. There were 2729 farmers in Alberta who spent \$41 million to buy this type of equipment. Farmers bought precision farming equipment (GPS information collection, GPS guidance (i.e. autosteer, lightbars, software), manual and variable rate controllers for variable fertilizer application.

Despite these technology purchases, there continues to be very little implementation of the technology beyond auto-steering. This is much more potential for precision agriculture including record keeping (mapping) as part of an integrated crop management plan and variable rate technology

(VRT) for more efficient application of fertilizer and herbicides.

Training farmers how to use the technologies of precision agriculture and VRT is complicated. In an initiative funded by Growing Forward and Alberta Agriculture and Rural Development, the Agricultural Research and Extension Council of Alberta (ARECA) is pleased to offer a VRT resource manual. The manual provides an overview of precision agriculture, GIS, GPS, VRT, economics, service providers, yield monitoring, remote sensing and websites/references.

Editor's Note: The following was written by Garry Noble.

The first edition of this guide was published in 2010 by the Agricultural Research and Extension Council of Alberta. The 72 page guide is available on the ARECA website www.areca.ab.ca as a 2.24 MB download.

The precision farming guide has sections on: global positioning systems, geographical information systems, variable rate technology, yield monitoring, remote sensing and

economics. In the back of the guide there is a four-page list of current precision farming websites, and a glossary to translate from precision farming to English.

The section on global positioning systems covers satellites, differential corrections, accuracy, autosteering, mapping and automatic sectional control. The GIS section introduces the *visualization of layers concept* that geographic information software systems are built on.

Variable rate has been the ultimate goal of precision farming from the start. The VRT section lists the multiple inputs to develop a prescription map and map-based control. The many applications for controlling input rates are discussed.

The management and safe storage of data is highlighted in the section on yield monitoring. The section on remote sensing describes the types of sensors and explains spectral bands. The section on economics rates mentions the rapid payback on guidance systems. VTR is a management tool and the economics will be determined by how the data is used. ●

CONSERVATION AGRICULTURE 2011 CONFERENCE AND ANNUAL GENERAL MEETING ... CONTINUED FROM PAGE 1

silage are strategies to extend late-season water use.

The annual general meeting is your opportunity to provide feedback and share your ideas with the Board. We will try to keep the formal business part of the meeting short to allow time for input on Board operations and direction from the SSCA membership. (You will NOT be asked to be a director or sit on a committee at the annual general meeting.)

Conservation Agriculture 2011 is a one-day conference for you to hear

about the latest farming practices to improve your operation. The time and money spent to attend the conference are a small investment which could see a large return for your business.

The Saskatchewan Soil Conservation Association would like to acknowledge the support of our conference sponsors who have invested in conservation agriculture in our province.

This year's **Platinum Sponsors** are the Saskatchewan Pulse Growers and

the Saskatchewan Canola Development Commission.

The SSCA recognizes the following agri-businesses for their support:

Gold Sponsors – Farm Credit Corporation, Seed Master, Dupont, Monsanto, Bayer Crop Science

Silver Sponsors – Canadian Wheat Board, BASF

Bronze Sponsors – Arysta Life Science, Cargill, Ducks Unlimited, Seed Hawk

See you in Saskatoon! ●

LONG-TERM NO-TILL ... CONTINUED FROM PAGE 6

would argue the full potential of no-till is just beginning to be realized.

The cropping practices and seeding equipment of 1991 have evolved into conservation agriculture systems in 2011. Can we

see the grain yield and protein boost of long-term no-till production sooner, with better farming practices and machinery?

The SSCA's mission "to promote conservation agriculture systems

that improve the land and environment for future generations" is not complete. Direct seeding was a destination, conservation agriculture is a journey. Are we there yet? NO ●

Building Soils for Better Crops, 3rd edition

By Garry Noble
1st VP, SSCA

The Sustainable Agriculture Research and Education (SARE) program of the USDA has recently released a new 294 page handbook on ecological soil management. The third edition is a practical guide that focuses on farming and soils in the United States, but has broader geographical scope. "The book has evolved into a more comprehensive treatise on sustainable soil management for a global audience".

The handbook is divided into four parts; part one *Organic Matter- The Key to Healthy Soils* has four chapters. The role of organic matter in the carbon and nitrogen cycles is explained. A section on the interaction between mycorrhizal fungi and plant roots is included.

Part Two *Physical Properties and Nutrient Cycles* has three chapters which discuss how the mineral, air and water components of a soil influence its properties. Chapter 6 covers the causes and impact of soil degradation. Chapter 7 on nutrient cycles and flows highlights the

importance of balancing inflows and outflows to maintain soil fertility

Part Three *Ecological Soil Management* is the largest section of the handbook with 14 chapters. The connection between soil health and plant health is found in Chapter 8. Chapter 9 talks about the steps to managing for high-quality soils. Read Chapter 10 to find out what all the fuss about cover crops is about. Crop rotations differ by region and by farm, but the general principles listed in Chapter 11 apply everywhere. Manure may be one of the oldest soil amendments but the chapter 12 explains its important role today. If the question is to compost or not to compost, you may find your answer in chapter 13.

Chapter 14 on reducing erosion and runoff reports 1/3 of the water erosion from a field during a thirty year period, commonly results from a single extreme rainfall event. Soil compaction is a hot topic and Chapter 15 is devoted to practices to prevent and lessen the problem. The benefits and limitations of reduced tillage systems are presented in Chapter 16. Chapter 17 on irrigation and drainage, cover the pros and cons of drainage and the environmental cost of water management.

Chapter 18 Nutrient Management introduces the use of fertilizer. Chapter 19 focuses on the management of nitrogen and phosphorus. Chapter 20 addresses other soil fertility issues. Soil testing is a valuable but sometimes controversial tool as you will learn in Chapter 21.

Part four *Putting It All Together* features a chart of soil health indicators in chapter 22 to answer the question "How good are your soils". Chapter 23 the final chapter in the handbook summarizes the strategies to improve soil health and applying management practices to suit your individual farm.

Building Soils for Better Crops is an excellent reference on soils. It is well illustrated, with many photographs, tables, charts, graphs and diagrams to explain the information. The handbook can be downloaded from the SARE website www.sare.org/publications/soils.htm, however the 13 MB file is huge. If you would rather have a printed copy of the handbook, the SSCA will be collecting addresses and money (about \$20) for a bulk order at our Conservation Agriculture conference January 13 in Saskatoon. ●

WWW.SSCA.CA

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